



HAL
open science

Explorer chaque jour à travers les réseaux sociaux : quelle incidence sur le développement de l'identité à l'émergence de l'âge adulte ?

Yannick Vincent

► To cite this version:

Yannick Vincent. Explorer chaque jour à travers les réseaux sociaux : quelle incidence sur le développement de l'identité à l'émergence de l'âge adulte ?. Psychologie. Université de Bordeaux, 2023. Français. NNT : 2023BORD0038 . tel-04088390

HAL Id: tel-04088390

<https://theses.hal.science/tel-04088390>

Submitted on 4 May 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

THÈSE PRÉSENTÉE POUR OBTENIR LE GRADE DE

DOCTEUR DE L'UNIVERSITÉ DE BORDEAUX

ÉCOLE DOCTORALE SOCIÉTÉS, POLITIQUE, SANTÉ PUBLIQUE

SPÉCIALITÉ : Psychologie

Par Yannick VINCENT

**Explorer chaque jour à travers les réseaux sociaux : quelle incidence sur le
développement de l'identité à l'émergence de l'âge adulte ?**

Sous la direction de Lyda LANNEGRAND, Professeure, Université de Bordeaux

Soutenue le 3 Mars 2023

Membres du jury :

Mme. Saskia KUNNEN	Associate Professor, Université de Groningen	Rapporteure
Mme. Elisabetta CROCETTI	Full Professor, Université de Bologne	Rapporteure
M. Baptiste BARBOT	Professeur des Universités, Université catholique de Louvain	Examineur
Mme. Lyda LANNEGRAND	Professeur des Universités, Université de Bordeaux	Directrice



YANNICK VINCENT

Sous la direction du Pr. LYDA LANNEGRAND

Explorer chaque jour à travers les réseaux sociaux : quelle incidence sur le développement de l'identité à l'émergence de l'âge adulte ?

Sous la direction de Lyda LANNEGRAND, Professeure, Université de Bordeaux

Laboratoire de psychologie / université de BORDEAUX

Université de Bordeaux – Laboratoire de Psychologie EA 4139

3 Ter Place de Victoire, 33 000 Bordeaux

Titre : "Explorer chaque jour à travers les réseaux sociaux : quelle incidence sur le développement de l'identité à l'émergence de l'âge adulte ?"

Résumé. Au cours de l'émergence de l'âge adulte, les individus font face à de nombreux défis et de nombreux changements personnels, institutionnels et sociaux qui pavent le chemin vers le devenir adulte et l'intégration de rôles sociaux stables. Parmi ces nombreux défis, le développement d'une carrière professionnelle et d'une relation amoureuse à long terme sont deux réalisations majeures à cette étape de la vie. De ce fait, le positionnement de soi dans ces deux domaines joue un rôle déterminant dans la tâche développementale fondamentale de construction de l'identité. L'identité s'exprime selon différentes temporalités : elle s'exprime à la fois sur des années et des décennies au cours desquelles des changements de vie majeur s'opèrent (i.e., le macro-niveau de l'identité), et s'exprime à la fois lors des transactions perpétuelles entre les individus et leur environnement, au cours desquelles les expériences émotionnelles pertinentes pour l'identité permettent l'évaluation de l'adéquation de chacun avec ses choix de vie (i.e., le micro-niveau de l'identité). Parce qu'ils occupent une place importante dans la vie quotidienne de la plupart des adultes émergents, les médias sociaux sont devenus des contextes dans lesquels se jouent de nombreux aspects du développement psychosociale. En adoptant une approche à la fois centrée sur les variables, les personnes et la personne, notre travail de recherche avait pour objectif de comprendre le rôle des expériences émotionnelles vécues au quotidien dans les médias sociaux sur le fonctionnement de l'identité dans les deux domaines majeurs à l'émergence de l'âge adulte (i.e., l'éducation et les relations romantiques).

Cette étude était composée de trois objectifs. Tout d'abord, notre premier objectif était de rendre compte dans quelle mesure l'état identitaire des individus (i.e., macro-niveau) a une incidence sur l'expression identitaire (i.e., micro-niveau) et sur les expériences dans les médias sociaux des individus au quotidien. Le second objectif de ce travail était de caractériser les liens entre l'expression de l'identité et les expériences dans les médias sociaux au quotidien. Enfin, notre troisième objectif était de mettre en lumière la dynamique de l'identité au quotidien et l'incidence des expériences émotionnelles vécues dans les réseaux sociaux sur ce fonctionnement, en mettant un accent particulier sur la distinction des systèmes plus ou moins ouverts au changement et aux expériences.

Nous avons conduit deux procédures distinctes, la première répondant aux deux premiers objectifs, et la seconde au troisième objectif. Notre population d'étude se compose d'adultes émergents étudiant à l'Université de Bordeaux.

A l'appui d'une approche longitudinale, la première procédure (N = 35) comportait trois vagues de recueil de données de sept jours, chacune séparée de quatre semaines. La première vague a eu lieu en Avril 2020 et la dernière en Juin 2020. Les participants étaient invités chaque jour de la semaine à répondre à des questionnaires relatifs à l'identité micro et leur utilisation des médias sociaux. Aussi, au début de chaque semaine, les participants devaient répondre à un questionnaire portant sur leur identité macro.

Avec une méthode longitudinale plus intensive, la seconde procédure (N = 78) s'étendait sur 21 jours (du 8 au 28 Mars 2021) et proposait aux participants de répondre chaque jour à une batterie de questionnaires comportant des mesures concernant leur identité micro et leur utilisation des médias sociaux.

Nos résultats suggèrent que les médias sociaux sont fortement liés aux comportements d'exploration identitaires et aux cycles d'évaluations et de réévaluation de l'identité, particulièrement dans le domaine des relations romantiques, et encore plus pour les individus ouverts au changement. De plus, nos résultats mettent en avant que les expériences émotionnelles positives dans les médias sociaux favorisent fortement le maintien et le renforcement des engagements des individus expérimentant des périodes de doute vis-à-vis du domaine éducationnel. Nos résultats soulignent aussi une certaine hétérogénéité des fonctionnements identitaires au quotidien, et de fortes distinctions entre les deux domaines identitaires au cours de nos trois objectifs. Pour finir, ce travail de recherche conduit à considérer les expériences émotionnelles dans les réseaux sociaux comme étant à la fois des leviers pour le renforcement de l'ajustement aux engagements identitaires, mais aussi comme des contextes véhiculant des informations conduisant à des conflits identitaires. Toutes ces observations fournissent des résultats empiriques complémentaires à la littérature, apportent des implications scientifiques fortes, et ouvre la discussion à des applications pratiques concernant l'utilisation des médias sociaux à l'émergence de l'âge adulte.

Mots-clefs : identité, réseaux sociaux, émergence de l'âge adulte, systèmes dynamiques, relations romantiques, éducation

Title: "Exploring everyday through social media: what incidence on identity development at emerging adulthood?"

Abstract. During emerging adulthood, individuals face many challenges, as well as many personal, institutional, and social changes that pave the way towards becoming an adult and integrating stable social roles. Among these challenges, the development of a professional career and a long-term romantic relationship are two major achievements at this stage of life. As a result, the positioning of oneself in these two domains plays a key role in the fundamental developmental task of identity construction. Identity is expressed in different temporalities: it is expressed both over years and decades during which major life changes take place (i.e., the macro-level of identity), and it is expressed during the perpetual transactions between individuals and their environment, during which identity-relevant emotional experiences allow for the evaluation of one's adequacy with life choices (i.e., the micro-level of identity). Because it occupies a significant place in the daily lives of most emerging adults, social media have become contexts in which many aspects of psychosocial development are played out. Taking a variable- and person-centered approach, our research aimed to understand the role of everyday emotional experiences in social media on identity functioning in the two major domains of emerging adulthood (i.e., education and romantic relationships).

This study had three objectives. Our first objective was to account for the extent to which individuals' identity state (i.e., macro-level) impact their identity expression (i.e., micro-level) and social media experiences in everyday life. The second objective of this work was to characterize the links between identity expression and everyday social media experiences. Finally, our third objective was to shed light on the dynamics of identity on a daily basis, as well as the impact of emotional experiences in social media on this functioning, with a particular focus on the distinction of systems that are more or less open to change and experiences.

We conducted two separate procedures, the first addressing the first two objectives, and the second addressing the third objective. Our study population consisted of emerging adults studying at the University of Bordeaux.

In support of a longitudinal approach, the first procedure (N = 35) involved three waves of seven-day data collection, each separated by four weeks. The first wave took place in April 2020 and the last wave in June 2020. Participants were asked each day to complete questionnaires related to micro identity and their social media use. Also, at the beginning of

each week, participants were asked to complete a questionnaire related to their macro identity.

With a more intensive longitudinal method, the second procedure (N = 78) spanned 21 days (March 8-28, 2021) and proposed that participants complete a battery of questionnaires each day with measures regarding their micro identity and social media use.

Our results suggest that social media are strongly related to identity exploration behaviors and identity evaluation and re-evaluation cycles, particularly in the romantic relationships domain, and even more for individuals open to change. Furthermore, our results highlight that positive emotional experiences in social media strongly support the maintenance and reinforcement of commitments of individuals experiencing periods of doubt towards the educational domain. Our results also highlight a certain heterogeneity of identity functioning in everyday life, and strong distinctions between the two identity domains during our three objectives. Finally, this research work leads us to consider emotional experiences in social media as both levers for strengthening adjustment to identity commitments, but also as contexts conveying information leading to identity conflicts. All these observations provide complementary empirical results to the literature, bring strong scientific implications, and open the discussion to practical applications regarding social media use in emerging adulthood.

Keywords: identity, social media, emerging adulthood, dynamic systems, romantic relationships, education

"The fact that even man, the jewel in the crown of creation, was a mere coincidence has always been difficult to accept..." Paul van Geert. Dynamic systems of development: Change bet between Complexity and Chaos. Harvester Wheatsheaf. (1994, p. 3)

"Time always tells what is real" Herjay. Please. (December 31st, 2015)

"Consignés à l'encre noir sur un parchemin, les mots sont le paradis des insensés" James Clemens. Le feu de la sorcière. Les bannis et les proscrits. (Traduit de l'anglais par Isabelle Troin. B. Bragelonne, 2006, p. 15)

Acknowledgments

Mes premiers remerciements vont à ma directrice de thèse Lyda Lannegrand. Je crois que je ne te remercierai jamais assez pouvoir m'avoir donné cette belle opportunité de conduire une thèse, et ce, malgré tous mes défauts. Jamais je ne serai arrivé là sans tout le temps que tu as pris pour me former et me guider. Merci de m'avoir soutenu, merci d'avoir su taire mes doutes, merci d'avoir été bienveillante et aidante, merci de m'avoir félicité, de m'avoir encouragé et réprimandé, merci de m'avoir fait rire et de m'avoir fait sourire, et par-dessus tout merci de m'avoir fait croire en moi. Un immense merci pour cette belle aventure Lyda.

My thanks then go to Saskia Kunnen, Elisabetta Crocetti, and Baptiste Barbot who all agreed to read, criticize, and evaluate this thesis. I hope that you will enjoy this research work and that it will lead to exciting discussions.

Je tenais également à remercier les membres de mon comité de suivi de thèse Véronique Rouyer et Pascal Mallet pour leur extrême bienveillance durant ces comités, nos belles discussions, ainsi que leurs conseils avisés.

Evidemment, cette thèse n'aurait jamais pu se concrétiser si les étudiant.e.s de l'Université de Bordeaux n'avaient pas accepté de participer à notre étude. Je tenais donc à les remercier chaleureusement pour leur engagement et leur souhaite beaucoup de réussite dans la poursuite de leurs études.

Je tenais à remercier aussi l'ensemble du personnel du laboratoire de Psychologie de Bordeaux. Merci Elisabeth et à Fabienne pour votre disponibilité et votre gentillesse, mais aussi merci à Solenne pour m'avoir beaucoup aidé dans la mise en place de mon protocole de recherche. Malgré le peu de temps que je nous ai accordé, je tenais à remercier tou.te.s les doctorante.e.s du laboratoire pour ne jamais m'avoir mis de côté, et de toujours m'avoir

considéré comme l'un des leurs. Je vous souhaite à toutes et tous de continuer à vous amuser ensemble durant ces années parfois difficiles. Comment remercier le personnel du laboratoire sans en venir aux membres de la TeamAdo. Merci Camille Brisset, Olivier Grondin, Jennifer Carrere, Simon Pineau, Yoann Fombouchet, Fiona Dubost, Matthieu Danias-Uraga, et Sandra Carvallo pour nos échanges scientifiques passionnant et nos verres en terrasse qui l'était tout autant. Je tenais par ailleurs à te remercier tout particulièrement Cyrille pour m'avoir tendu une pilule rouge. Au risque d'être mal interprété : merci beaucoup pour m'avoir fait découvrir la théorie des systèmes dynamiques. Je crois que je suis devenu un meilleur chercheur le jour où j'ai commencé à appréhender la psychologie par le prisme de cette théorie.

This is an opportunity for me to thank the entire scientific team of the Psychology department of the University of Groningen. You have welcomed me with great kindness and my stay of a few months has been decisive in the conduct of my thesis. Of course, thank you again Saskia for allowing me to do this in-doc internship. Mandy, Ole, I thank you very much for our exchanges and debates. And I thank you even more for having been so kind to me since the day we met.

Berto. Tu as été un mentor pendant de nombreuses années et nous retrouver au cours de cette fin de thèse aura été pour moi une véritable joie. J'espère sincèrement qu'on travaillera ensemble à l'avenir, mais j'espère encore plus sincèrement qu'on ira manger un churrasco ensemble très rapidement.

Merci à vous les gars, Benjos, Nana. Vous m'avez très souvent permis de relâcher la pression de ma thèse au cours de nos appels. Je regrette aujourd'hui que vous ne soyez pas à Bordeaux pour fêter ce rendu ensemble.

Enfin, mes remerciements vont à ma famille. Maman, merci pour tout. Sache que je suis terriblement désolé d'avoir été si absent durant ces dernières années. Papa, ce n'est peut-être pas

le terrain sur lequel ont pensé que j'allais gagner un jour, mais crois moi, j'ai gagné la plus belle de toutes mes victoires en rendant cette thèse. JR. Mon frère. Je n'ai pas les mots pour décrire à quel point je te suis reconnaissant pour toutes ces années passées à tes côtés et à quel point tu comptes pour moi. Tu es une personne magnifique et j'espère de tout mon cœur qu'on vivra encore de nombreux et magnifiques moments ensemble. A tous mes ami.e.s. Je vous remercie infiniment d'être dans ma vie. Capucine mon bébé, Guigui ma bouteille, je suis incroyablement heureux d'avoir fait votre connaissance pendant mes années à Décathlon. Sachez que nous allons enfin pouvoir reprendre le cours de nos amitiés dorénavant. La B.C.G., mes frères: Charlélie Toutain, Baptiste Petit, Mika Matisse, Gaël Tournon, Ernesto Rodriguez, Svetlan Brizini, Marcelin Beaufort, il ne s'est pas passé un seul jour sans avoir pensé à vous durant cette aventure. Vous êtes la famille que je me suis choisi et je remercie chacun d'entre vous pour me compter dans la vôtre.

Je crois que ça y est mon amour, nous avons réussi. Nous, parce que cette thèse t'appartient tout autant qu'à moi. Tu m'as supporté, aidé et aimé plus que de raison. Au-delà de ton amour, tu m'as apporté un regard de praticienne avisée et sensible. Chacun de nos échanges autour de cette thèse m'ont fait accomplir des pas de géant dans la réalisation de cette thèse. Je n'arriverai jamais à exprimer toute la gratitude que j'ai pour toi pour avoir été à mes côtés dans les bons comme les mauvais moments. Je n'arriverai jamais à exprimer également l'amour que je te porte à toi, à notre famille, et à Moka. Quel voyage nous avons vécu tous les trois. Encore merci, mille fois merci d'être dans ma vie.

Table of contents

Introduction	22
1. Emerging adulthood: facing challenges to define oneself as an adult	25
1.1. Emerging adulthood: explore to better build	25
1.2. The challenge of undertaking a higher education course	27
1.3. The need to develop a long-term relationship	28
1.4. Synthesis	30
2. Identity across time	32
2.1. Erikson's psychosocial identity	32
2.2. James Marcia's operationalization and the structural stages of identity	33
2.3. Neo-Eriksonian models and their scientific contribution	37
2.4. Identity in the educational and romantic relationships domains	40
2.5. State of the art of contemporary research on identity development in emerging adulthood	42
2.5.1. Developmental trajectories of identity processes and statuses	42
2.5.2. Emerging adults' identity development in the educational and romantic relationship domains	44
2.6. Introducing identity temporal aggregation: the micro and macro levels of identity	46
2.7. Synthesis of the second chapter	49
3. The dynamic system approach: a highly relevant framework to study identity changes	51
3.1. The dynamic system theory and its characteristics	53
3.1.1. Iterativity	53
3.2. The role of dynamic systems in understanding identity change	62
3.2.1. Identity dynamics	62
3.2.2. The role of emotional experience in identity functioning	65
3.2.3. The role of openness to change	66
3.3. Synthesis	67
4. Online social media: a potential context for identity change	69
4.1. Social media use in France	69
4.2. Incidence of social media use on psycho-social well-being	70
4.3. Identity-related social media uses	72
4.3.1. Social media use and self-presentation	74

4.3.2. Social media use and ego-identity.....	75
4.4. Synthesis.....	75
5. Research aims and hypotheses	79
5.1. Problematic.....	79
5.2. Objective 1: Exploring links between macro and micro levels of identity and social media use.....	83
5.2.1. Does identity state predict levels of micro-level identity processes and social media use within the same week?	84
5.3. Objective 2: Exploring links between micro-level identity processes and social media emotional experiences	85
5.3.1. How are micro-level identity processes and emotional experiences related to each other within individuals?.....	86
5.3.2. Do emotional experiences predict between-individual differences in micro-level identity processes?.....	86
5.4. Objective 3: Understanding daily dynamics of identity and social media emotional experiences	87
5.4.1. How do the daily dynamics of identity function in the general population?	89
6. Introduction of the empirical studies	92
7. Method of Study 1	94
7.1. Procedure.....	94
7.1.1. Study design	94
7.1.2. Recruitment	95
7.1.3. Data Anonymization	95
7.1.4. Participants	95
7.2. Measures.....	96
7.2.1. Sociodemographic questionnaire	96
7.2.2. Measurement scale of the repeated measures: the Visual Analogue Scale	96
7.2.3. Assessing micro-identity processes.....	97
7.2.4. Assessing macro-level of identity processes.....	98
7.2.5. Assessing openness to change.....	100
7.2.6. Daily measures of social media emotional experiences.....	101
7.3. Analysis plan	102
7.3.1. 1 st Objective analyses: Predictive value of macro-level of identity on micro-level of identity processes and social media emotional experiences between-individuals	102
7.3.2. 2 nd Objective analyses	103
7.3.3. Predictive value of social media emotional experiences on micro-processes of identity between-individuals	105
8. Descriptive statistics of Study 1.....	107

8.1. Socio-demographic descriptive statistics	107
8.2. Micro-level of identity descriptive statistics	107
8.3. Macro-level of identity descriptive statistics.....	108
8.4. Daily social media emotional experiences descriptive statistics.....	108
8.5. Correlational statistics	108
8.5.1. Correlational statistics in the educational domain.....	109
8.5.2. Correlational statistics in the romantic relationships domain	109
9. Results of the 1st objective: Exploring links between macro-level of identity and both micro-level of identity and social media experiences.....	111
9.1. Results of the educational domain models.....	111
9.2. Results of the romantic relationships domain models.....	114
9.3. Discussion of the results related to the first objective.....	117
9.3.1. The predictive value of identity macro-processes on their micro-level counterparts (H1)	117
9.3.2. The predictive value of macro-level identity processes on the other micro-level identity processes(H2).....	118
9.3.3. The predictive value of openness to change on all identity micro-processes (H3)	119
9.3.4. The absence of predictive value of in-depth exploration process on exploration of fit	120
9.3.5. The predictive value of macro-processes and openness to change on different indicators of daily social media emotional experiences (H3)	121
9.3.6. The absence of predictive value of both the macro-processes of identity and the openness to change on levels of commitment to fit's fluctuations (H4)	123
9.4. Limitations of the 1 st objective.....	123
10. Results of the 2nd objective: What are the micro-level relations between micro-level identity processes and social media emotional experiences? ..	125
10.1. Results of the second objective in the educational domain.....	125
10.1.1. Within-individual correlations between identity processes and social media emotional experiences	125
10.1.2. Between-individual linear mixed models between identity processes and emotional experiences	127
10.2. Results of the second objective in the romantic relationships domain.....	129
10.2.1. Within-individual correlations between identity processes and emotional experiences	129
10.2.2. Between-individual linear mixed models between identity processes and emotional experiences	131
10.3. Discussion of the second objective	132

10.3.1. Within-individual correlations between micro-level identity processes and indicators of social media emotional experiences (H5)	133
10.3.2. The predictive value of daily social media emotional experiences on micro-identity processes levels (H6).....	135
10.4. Limitations of the second objective.....	137
11. Method of Study 2	139
11.1. Procedure.....	139
11.1.1. Study Design	139
11.1.2. Recruitment	140
11.1.3. Data Anonymization	140
11.2. Participants	140
11.3. Measures.....	140
11.3.1. Daily measures of social media emotional experiences: Assessing congruency with commitments	141
11.4. Analyses plan	143
11.4.2. 3 rd objective analyses: assessing the daily dynamic of identity	143
11.4.3. Constructing open to change and not open to change groups	147
11.4.4. Missing data in intensive longitudinal design	148
12. Descriptive statistics of Study 2.....	150
12.1. Socio-demographic descriptive statistics	150
12.2. Descriptive statistics among all participants in both domains	151
12.3. Correlational statistics among all participants in both domains.....	152
12.3.2. Educational domain.....	152
12.3.3. Romantic relationships domain.....	152
12.4. Descriptive and correlational statistics among the open to change and not open to change groups in the educational domain	153
12.5. Descriptive and correlational statistics among the open to change and not open to change groups in the romantic relationships domain	155
13. Results of the 3rd objective: Understanding daily dynamics of identity and social media emotional experiences	157
13.1. Results for the third objective in the educational domain	157
13.1.1. Results of micro-level identity processes and social media emotional experiences dynamics across all participants in the educational domain.....	157
13.1.2. Results of micro-level identity processes and social media emotional experiences dynamics across open to change participants in the educational domain	159
13.1.3. Results of micro-level identity processes and social media emotional experiences dynamics across participants who were not open to change in the educational domain	162

13.2. Results for the third objective in the romantic relationships domain.....	165
13.2.2. Results of micro-level identity processes and social media emotional experiences dynamics across all participants in the romantic relationships domain	165
13.2.3. Results of micro-level identity processes and social media emotional experiences dynamics across open to change participants in the romantic relationships domain	168
13.2.4. Results of micro-level identity processes and social media emotional experiences dynamics across participants who were not open to change in the romantic relationships domain.....	171
13.3. Discussion of the results for the third objective	173
13.3.2. Discussion of the daily dynamics of identity in the educational domain.....	174
13.3.3. Results of the daily dynamics of identity in the romantic relationships domain	187
13.4. Similarities and differences between educational and romantic relationships domains	200
13.4.1. Similarities and differences regarding indicators of social media experiences .	200
13.4.2. Similarities between domains in the micro-level identity dynamics across all participants	201
13.4.3. Differences between domains in the micro-level identity dynamics across all participants	202
13.4.4. Discussing the functioning of the micro-level identity dynamics in both domains across specific groups.....	204
14. General discussion.....	209
Conclusion.....	223
Appendices	245

List of tables

Table 1. ARIMA model lags for within-individual time-series	105
Table 2 Between-individual linear mixed model in the educational domain.....	113
Table 3 Between-individual linear mixed model in the romantic relationships domain	116
Table 4. Within-individual time series correlations in the educational domain.....	127
Table 5 Between-individual linear mixed model in the educational domain.....	129
Table 6 Within-individual time series correlations in the romantic relationships domain	130
Table 7. Between-individual linear mixed model in the romantic relationships domain.	132
Table 8. Average standardized results of daily within-individual dynamic relations between micro-level identity processes and social media experiences for open to change participants in the educational domain.....	160
Table 9. Average standardized results of daily within-individual dynamic relations between micro-level identity processes and social media experiences for participants who were not open to change in the educational domain.	163
Table 10. Average standardized results of daily within-individual dynamic relations between micro-level identity processes and social media experiences for open to change participants in the romantic relationships domain.	168
Table 11. Average standardized results of daily within-individual dynamic relations between micro-level identity processes and social media experiences for participants who were not open to change in the romantic relationships domain.....	171
Table 12. Descriptives statistics in the educational domain.....	256

Table 13. Correlations between macro-level identity processes, micro-level identity processes and indicators of social media emotional experiences in the	257
Table 14. Descriptives statistics in the romantic relationships domain	258
Table 15. Correlations between macro-level identity processes, micro-level identity processes and indicators of social media emotional experiences in the romantic relationships domain ro.	260
Table 16. <i>Mann-Whitney U tests between the educational and romantic relationships domain</i>	261
Table 17 Descriptives statistics in the educational domain across all individuals	262
Table 18. Correlations between micro-level identity processes and indicators of social media emotional experiences across all individuals in the educational domain	264
Table 19. Descriptives statistics in the educational domain across individuals open to change and individuals who were not open to change	265
Table 20 Correlations between micro-level identity processes and indicators of social media emotional experiences across individuals open to change in the educational domain.....	266
Table 21Correlations between micro-level identity processes and indicators of social media emotional experiences across individuals who were not open to change in the educational domain.....	268
Table 22 Results of Mann-Whitney U tests between individuals open to change and individuals who were not open to change in the educational domains.	269
Table 23. <i>Descriptives statistics between micro-level identity processes and indicators of social media emotional experiences</i>	271
Table 24. Correlations between micro-level identity processes and indicators of social media	

emotional experiences across all individuals in the romantic relationships domain.....	272
Table 25. Descriptives statistics between micro-level identity processes and indicators of social media emotional experiences across individuals open to change in the romantic relationships domain.....	273
Table 26 Correlations between micro-level identity processes and indicators of social media emotional experiences across individuals open to change in the romantic relationships domain.	274
Table 27. Correlations between micro-level identity processes and indicators of social media emotional experiences across individuals who were not open to change in the romantic relationships domain.	275
Table 28. Results of Mann-Whitney U tests between individuals open to change and individuals who were not open to change in the romantic relationships domains.....	277
Table 29. Results of Mann-Whitney U tests between the educational and the romantic relationships domains.....	278
Table 30. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across all individuals in the educational domain.....	280
Table 31. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across individuals who were not open to change in the educational domain.....	281
Table 32. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across individuals open to change in the educational domain.....	282

Table 33. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across all individuals in the romantic relationships domain. 284

Table 34. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across individuals who were not open to change in the romantic relationships domain. 285

Table 35. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across individuals who were not open to change in the romantic relationships domain. 286

List of figures

Fig. 1 State space representation of an individual’s commitment-exploration system	51
Fig. 2 "A schematic representation of the development of commitments" from Bosma and Kunnen (2001).....	62
Fig. 3 Schematic representation of the Study 1 procedure.....	91
Fig. 4 Schematic representation of the Study 2 procedure.....	135
Fig. 5 Schematic representation of the dynamic multilevel model used.....	141
Fig. 6 Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the educational domain across all participants.....	155
Fig. 7 Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the educational domain across open to change participants.....	158
Fig. 8 Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the educational domain across participants who were not open to change	161
Fig. 9 Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the romantic relationships domain across all participants.....	163
Fig. 10 Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the romantic relationships domain across open to change participants	166

Fig. 11 Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the romantic relationships domain across open to change participants169

Introduction

In Western societies, emerging adulthood is a developmental period (between adolescence and adulthood) during which individuals try out many social roles, face many life choices leading to the integration of oneself in society as an adult (Arnett, 2000). Developing as an adult today means facing major challenges that guide individuals' desires, expectations, and behaviors (Arnett, 2015). Among these challenges, those of building a professional career and developing a long-term romantic relationship are central to typical emerging adults. Individuals in this period therefore engage massively in higher education pathways to acquire primarily social status, the success of which particularly defines the feeling of being an adult in France (Montgomery & Côté, 2003; Moulin, 2012). For many of them, the decrease of exploratory behaviors and the construction of a stable long-term relationship also reflect a gradual exit from emerging adulthood to the integration of adult roles (Lanz & Tagliabue, 2007).

Integrating sustainable social roles as an adult requires the development of a stable psychosocial identity (Erikson, 1950). Identity construction is a crucial developmental task in emerging adulthood, rooted in childhood identifications and adolescence self-explorations. Developing a sense of self-sameness and continuity over time and across the many domains of life occurs both through the different periods of life within particular social and cultural contexts, but also in the individual's real-time interactions with his or her proximal environment (Lichtwarck-Aschoff et al., 2008). All the identity-relevant experiences lived on a daily basis are factors that can reinforce the choices made as well as weaken them, thus leading individuals to engage in new life choices (Bosma & Kunnen, 2001). Transitions and changes in identity commitments occur in different ways and at different times. Depending on their own traits and

real time experiences, individuals at different points in their lives may be more or less in a state of uncertainty regarding these choices which tends to facilitate changes in commitments in important life domains. During these periods, perceived information from contexts that are important to individuals has a significant role in long-term identity development (Kunnen & van Geert, 2012).

Social media is a major part of emerging adults' lives (Subrahmanyam & Smahel, 2008). On a daily basis, these young adults consume social media massively, creating and co-creating their own online world through their numerous social interactions (Subrahmanyam et al., 2006). The multitude of functionalities offered by these digital platforms allow them to keep in touch with their relatives, but also to create links with new people, coming from different cultures and social worlds (Ellison et al., 2011; Ostic et al., 2021). Beyond the deleterious aspects that these media can convey, important aspects of psychosocial realization are played out through their use, such as identity, the choice of a love partner or self-esteem (e.g., Sumter et al., 2016; Tynes et al., 2004).

In light of this introduction, a question arises: to what extent do emerging adults' everyday experiences in social media influence their identity on a daily basis, and thus, on long-term development? By adopting a longitudinal and intensive approach, this research aims to answer this question. In the theoretical section, we first present the developmental period of emerging adulthood and the major challenges that individuals face (1. Emerging adulthood: Facing many challenges to define oneself as an adult). In the second chapter (2. Identity across time), we define identity and present a review of the literature regarding its recent conceptualizations. In addition, we discuss the course of its global development, its specificities to education and romantic relationships domains in emerging adulthood, and the nature of identity across time. The third chapter of our theoretical section (3. The dynamic system approach as a highly relevant framework to study changes in identity) focuses on developing

the fundamental characteristics of a developmental process such as identity and its expression within the complex living system that is an individual, and dealing with Bosma and Kunnen's (2001) conceptualization of the dynamic system of identity. The last part of this literature review is devoted to social media, their uses by young individuals, and their role as a developmental context (4. Online social media: A potential context for identity change). Following this theoretical part, all the elements dealt with are put into perspective, leading to the formulation of three research objectives to answer the problematic raised (5. Research aims and hypothesis). After a short introduction of the empirical part (6. Introduction of the empirical studies), the method of the first study is described (7. Method of Study 1), followed by the related descriptive statistics (8. Descriptive statistics of Study 1). Thereafter, results of the first study are presented and discussed regarding the first objective (9. Results of the 1st objective: Exploring links between macro-level of identity and both micro-level of identity and social media experiences) and the second objective (10. Results of the 2nd objective: Characterizing the relations between micro-level identity processes and social media emotional experiences). The method of the second study is presented next (11. Method of Study 2) followed by a section about the descriptive statistics related to this study (12. Descriptive statistics of Study 2). In the same way as for study one, the results of the second study are reported and discussed (13. Results of the 3rd objective: Understanding daily dynamics of identity and social media emotional experiences). The penultimate chapter is a general discussion of this research work aimed at bringing the three objectives into perspective and presenting the main results. This discussion also proposes to address the questions raised by the entire research and the limitations encountered during its implementation. Finally, it aims to link the results related to the three objectives by identifying the contribution and implications of our research in the understanding of the role of social media emotional experiences in the construction of identity at emerging adulthood (14. General discussion).

1. Emerging adulthood: facing challenges to define oneself as an adult

The study of emerging adulthood has been expanding since the 2000s after Arnett (2000) conceptualized this formerly disregarded developmental period between late adolescence and adulthood. In the 1960s, young people in their 20s were mostly married, about to have (or already having) a child, and they had entered stable and sustainable employment. Formerly considered as markers of the passage to adulthood, these landmarks are now reached by individuals only after a prolonged period of intense exploration (Arnett, 2000). As a result of numerous societal changes, this new period of development, between the ages of 18 and 29, is not an extension of adolescence but a specific period during which individuals are more emancipated, freer from parental authority, and exploring their life choices more independently (Arnett, 2015). In this chapter, we present the specific characteristics of this period of life and we then investigate the issues relative to education and romantic relationships, two major domains of life at this age.

1.1. Emerging adulthood: explore to better build

Nowadays, most young people do not settle into adult life immediately after adolescence and explore various experiences and social roles to build their personal and professional life choices gradually (Arnett, 2007). During this transition into adulthood, individuals face several personal, relational and professional challenges that are specific to this period. Arnett (2015) proposed five main features of emerging adulthood. First, it is a period of intense identity exploration. Emerging adults generally try out different lifestyles to gradually define their psychosocial identity and their role as an adult in society. This exploration of various possibilities is particularly prevalent in romantic relationships and work, thus leading emerging

adults into a certain level of instability. This is what constitutes the second specificity of this period of life, as the perception and exploration of these options can make their lives unstable. Third, emerging adulthood is a time when individuals tend to be more self-centered than at any other time in life. Fourth, emerging adults are no longer adolescents but not yet adults, thus creating a sense of "in-between" which can cause feelings of maladjustment to their environment. Fifth, this period of transition into adulthood offers numerous life opportunities that generally lead them to be very optimistic about the future (Arnett, 2000, 2007).

From a cross-cultural point of view, the period of emerging adulthood described by Arnett (2000) in an American population is also a specific period of life at the end of adolescence in France. In 1990, Galland conceptualized this new age in the lives of French young people, characterized by a moratorium on the formation of professional identity and a period during which individuals tend to "enjoy youth" (p. 549). This "post-adolescence" (Galland, 1990, p. 549) is also reflected in an assumption of independence from the parental home and a release from its associated obligations. Like emerging adults, post-adolescents postpone the moment when they engage in romantic relationships and more generally in lifestyles that would set their life trajectory. From a developmental psychology perspective, emerging adulthood as proposed by Arnett (2000) is thus also manifested in French young adults. The use of the term 'emerging adulthood' rather than 'post-adolescence' emphasizes its specificity in relation to adolescence.

Emerging adulthood is therefore a stage of life during which the primary developmental task is to construct a stable identity in the romantic and professional domains. The new sense of freedom from parents and school provides emerging adults with major opportunities to explore themselves, others and their future adult roles (Arnett, 2000). From these numerous options, emerging adults gradually construct their own norms, values and lifestyles in different areas of life (Erikson, 1968). Each of these domains has its own degree of significance, which depends on the cultural, societal and personal contexts in which each individual evolves

(Kunnen et al., 2008). The domains that most contribute to the psychosocial development of emerging adults are education and romantic relationships (Vosylis et al., 2017). Indeed, developing a professional career and a long-term relationship are two specific goals of emerging adulthood.

1.2. The challenge of undertaking a higher education course

Among various domains (work, religion, politics, etc), education has a major role in shaping the overall identity of emerging adults (Vosylis et al., 2017). Career choices are guided by the search for financial independence and social status (Arnett, 2015), but also by the need to express one's identity through work (Skorikov & Vondracek, 2011). Consequently, emerging adults explore many career options (Luyckx et al., 2014), leading to a renewed interest in university education (Arnett, 2015), as it provides a context in which young people can try out various directions (Montgomery & Côté, 2003). French young adults are massively engaged in higher education and France has become one of the countries with the highest number of university students in Europe (Kovess-Masfety et al., 2016). As they are usually searching for their personal identity, students are often faced with vocational indecision, resulting in hesitation in terms of both choice of studies and future profession (Moulin & Aguzzi, 2016).

Owing to institutional characteristics specific to the French education system, emerging adults are particularly invested in the success of their studies for the sake of their professional career and psychosocial development. Entering higher education has become a social norm and succeeding is crucial for developing a sense of adulthood (Moulin, 2012). According to French sociology, this is due to contextual institutional factors (Van de Velde, 2008). In this respect, a comparison of France and Quebec (Moulin, 2012) shows that emerging adults in Quebec consider themselves to be adults even before they reach the age of 18, while their French counterparts wait until they start their first job to have the same feeling. Moulin (2012) states that this is because institutions construct different political cognitive referentials (Muller, 2003).

In Quebec, going to university is much more difficult as students have to pay for their studies. Students who successfully enter university are seen as persevering individuals who have avoided dropping out: they see themselves as adults with professional obligations. In France, access to university is not the responsibility of the student but that of the parents, and the state partially funds university studies. Higher education students consider themselves, and are considered to be, in training, and are likely to face difficulties in their professional integration (Moulin, 2012). Reaching the adult status thus involves finishing university, with or without a job. When in search of a significant professional status rather than just a salary, emerging adults invest much energy into professional and academic paths leading to prestigious positions (Jellab, 2011; Moulin, 2012). As for young American individuals (Arnett, 2015), education is therefore crucial for emerging French adults in the pursuit of their adult status. Along with educational success, romantic relationships are a major domain of psychosocial achievement in emerging adulthood.

1.3. The need to develop a long-term relationship

Romantic relationships in emerging adulthood have received much attention (Arnett, 2015; Cohen et al., 2003). Of the major interpersonal domains of psychosocial development, romantic relationships are the most salient in emerging adulthood as they participate extensively in global identity formation (Vosylis et al., 2017). Throughout adolescence and into the early years of emerging adulthood, romantic relationships evolve in a developmental sequence from opening oneself to romantic relationships to seeking a long-term romantic connection (Brown, 1999; Seiffge-Krenke, 2003). Before committing to a long-term romantic relationship, emerging adults now believe that it is important to experience several other relationships and be with several partners before finding the right person (Arnett, 2015). Emerging adults therefore engage in numerous romantic and sexual experiences (Meier & Allen, 2009) to explore their

preferences (Henig & Henig, 2012). These exploratory behaviors take on various forms as adulthood emerges: some individuals experience numerous brief, short-lived sexual adventures without any emotional consequences (for the most part). These "hook-ups" are defined as sexual encounters between two strangers or two people who recently met, usually lasting only one night (Paul et al., 2000; Paul et al., 2008). There are also the "friends with benefits" relationships (Owen & Fincham, 2011), which are defined by two people who are in a friendly relationship and have occasional sexual encounters without engaging in a serious and exclusive romantic relationship (Owen & Fincham, 2011). The development of such relationships is often the result of a one-way romantic attachment between two friends (Bisson & Levine, 2009). Other emerging adults tend to engage in several stable romantic relationships, moving from an exclusive partner to another (Arnett, 2015). These "serial monogamists" (Trible, 2015, p. 45) are not sustainably committed to their romantic relationships (Shulman & Connolly, 2013). To them, sexual and romantic exploration is more acceptable when experienced in the context of an exclusive relationship. Emerging adults thus engage in various experiences, fulfilling their desire for romantic and sexual exploration while postponing commitment to a unique stable relationship.

While such a degree of exploration reflects a state of transition before adulthood, the gradual reduction of such behaviors and the growing stability of romantic relationships reflects the development of the self as an adult (Lanz & Tagliabue, 2007). Developing and maintaining a long-term intimate relationship is a major criterion of psychosocial adjustment in adults (Furman et al., 1999; Gonzalez Avilés et al., 2021). However, building a long-term romantic relationship is challenging for emerging adults. Many factors come into consideration, such as achieving financial independence to provide for the household, dealing with one's own insecurities as an adult, or meeting the needs of one's partner and potential family (Shulman & Connolly, 2013). Breakups often occur when couples have difficulties meeting the needs of

their relationship (Shulman & Connolly, 2013). Maintaining a long-term relationship involves coordinating individual life plans and committing to mutual ones (Levinson, 1977). The professional, residential and general lifestyle plans that the partners have developed personally must not conflict, at the risk of jeopardizing the relationship. Shulman & Connolly (2013) stated that "in developing a long-lasting partnership, the impact of a partner is beyond the romantic relationship per se" (p. 31). Emerging adults must therefore overcome major personal, relational and societal challenges specific to the period of emerging adulthood to develop and maintain a lasting romantic relationship over time.

1.4. Synthesis

Emerging adulthood is a developmental period during which individuals face several psychosocial challenges to position themselves as adults in society. The development of identity through major domains such as work and romantic relationships is the primary developmental task during this transitional period to adulthood. In the early stages of emerging adulthood, young individuals intensely explore vocational, romantic, and sexual options, thus postponing the moment of committing to adult roles and long-term lifestyles. The development of a professional career is guided by the desire to reach financial independence and recognition from society through social status. This is expressed by the number of higher education students in France, but also by the exploration of multiple vocational orientations and educational paths. Eager to share ultimately their lives with a romantic partner without committing too early to established adult roles (e.g. being married, having children, financially caring for a family, etc.), emerging adults engage in a variety of romantic and sexual relationships. While some of them experience numerous "one-night stands" with no emotional consequences, others experiment multiple romantic relationships with exclusive partners. Finding a job after completing higher education and committing to a stable relationship are therefore two major milestones of entering adulthood.

2. Identity across time

During emerging adulthood, building a stable identity is a fundamental task in the psycho-social integration of an individual in society. In recent decades, researchers have particularly investigated the topic of identity, its trajectories and development, as well as the psychosocial and emotional consequences of problematic identity functioning. In this chapter, we propose a review of the literature on identity from its theorization by Erikson (1950) to the search for precise comprehension of its functioning, by reviewing its multiple conceptualizations and operationalizations.

2.1. Erikson's psychosocial identity

According to the developmental psychology perspective, identity is a complex core structure in the psychosocial development of individuals. Erikson (1950) considered identity as the coherent whole of one's perceptions of the self, based on one's individual history and desire of who they wish to become. According to his theory, individuals acquire a sense of identity through the awareness and integration of different selves (self-sameness), and by maintaining a sense of coherence over time (continuity). Identity synthesis is the convergence of various identities both constructed during childhood and developed in the present, in a set of values, ideals and goals (Erikson, 1968). Self-sameness and continuity are both associated with a sense of personal identity (i.e., the conscious recognition of one's own existence), "the experience of 'knowing who (or that) I am'", and with a sense of ego-identity, that is "the experience of self-sameness, or the quality of the existence" (Peck, 2018, p. 5). Difficulties in acquiring this sense of identity and coherence may lead to *identity confusion*, while succeeding in achieving this sense of self-coherence over time may lead to *identity synthesis* (Erikson, 1950). Identity confusion is characterized by difficulties in bringing out one's history in the present, as well as a set of ideals, values and goals from which an individual may build his/her identity as an adult.

In the pursuit of sustainable internal consistency, the role of the environment is essential. Identity develops thanks to the continuous interaction between a subject and his/her social environment, which offers numerous possibilities of identification, self-fulfillment and exploration, but also sets limits. In his 1950 book, Erikson pointed out the role of the emotional dimension of social interactions on self-sameness and continuity, which he associated with ego-identity. Reciprocally, he stated that the ego is crucial in the quality of these experiences, since one must have the capacity to define “one’s self as something that has continuity and sameness” (Erikson, 1950, p. 38) to act in a coherent way. Individual psychosocial integration is made possible by engaging in multiple roles and life paths, which may either be proposed or imposed by society and are necessary to general personal development. Considering the major challenges linked to the subject of identity, many researchers have dedicated their work to its operationalization, such as James Marcia (1966), before studying its development empirically.

2.2. James Marcia's operationalization and the structural stages of identity

In his works of 1966, 1976 and 1993, James Marcia operationalized Erikson's (1950) theory by highlighting the two processes leading to identity formation. The first is the ‘exploration’ process (also called ‘crisis’ at the beginning of Marcia's work, 1966), which corresponds to a behavior aiming at researching and evaluating different orientations in the various domains of life of an individual. Exploration is used to make important life decisions (e.g., work, politics, religion, friendship, sexual orientation, romantic relationships, etc...), with a view to solving the psychosocial task of integration into society as conceptualized by Erikson (1956). The second process is ‘commitment’, which corresponds to one’s self positioning and commitments in various domains of life. Beyond taking a position regarding societal roles and life choices, commitment also refers to the personal adherence to a specific set of goals, values and beliefs (Erikson, 1978). From the combination of these two processes and their absence or presence, Marcia (1966) identified four identity statuses or profiles:

- *Identity achievement* is the most accomplished status. It refers to a high degree of commitment to different roles and life choices, achieved through self-exploration and exploration of various identity alternatives. This status is also the most often associated with well-being, high self-esteem, and the least associated with psychological and social disorders (Klimstra & van Doeselaar, 2017; Schwartz et al., 2013)
- *Identity foreclosure* also refers to individuals who are strongly committed to life choices. This status differs from the achievement status as foreclosed individuals have made commitments without prior exploration. These commitments are thus said to be "conferred" by others (often transmitted by parents during adolescence). Kroger and Marcia (2011) present them as "heirs to a bequeathed identity rather than having formulated their own via an exploratory process" (Kroger & Marcia, 2011, p. 34).
- *Identity moratorium* is defined by high levels of exploration and low levels of commitment. Individuals in identity moratorium are in a period of intense exploration and, for the most part, have difficulty committing to stable life choices. Yet, this status is still defined by an attempt to form a stable psychosocial identity from this period of exploration. As described by Kroger and Marcia (2011), "Their future directions were present but vaguely defined" (p. 34).
- *Identity diffusion* is associated with a lack of both exploration and commitment. Unlike those in moratorium, individuals in identity diffusion are not involved in an identity quest, and do not seem to be concerned by the psychosocial issues that can arise from the absence of commitments.

Identity statuses have been the subject of extensive research following Marcia's (1966)

operationalization of Erikson's (1950, 1968) writings, mainly concerning identity developmental trajectory (Berzonsky & Adams, 1999; Van Hoof, 1999; Waterman, 1982) and identity content (e.g., Adams & Fitch, 1982; Berzonsky, 1985). The identity developmental trajectory refers to the developmental sequence that individuals follow to reach their identity status. It is considered as the sequence everyone is expected to go through and refers to the process of progressive internalization of "values, goals, expectations, self-regulatory processes, and the like from which an identity structure or self-system emerges" (Berzonsky & Adams, 1999, p. 574). Identity statuses were long believed to follow a defined developmental sequence from the closest state to identity confusion (i.e., identity diffusion) to the closest state to identity synthesis (i.e., identity achievement), in the same way as structural stages of development do (Piaget, 1959). However, studies have revealed intra-individual variability in the developmental sequence of identity statuses (Waterman, 1982). Unlike the expected Diffusion (D) - Foreclosure (F) - Moratorium (M) - Achievement (A) sequence, many other sequences appear in the data of longitudinal studies. Regressive trajectories have been observed, such as F-M-D or M-D-F sequences (Marcia, 1972) or sequences from achievement to the other three statuses (Slugoski et al., 1984). M-A-M-A cycles have also even been observed by Stephen et al. (1992), which led these researchers to rethink the development of this sequence according to a more cyclical and less linear approach. Individuals may thus achieve their first commitments (Achievement) through a sequence beginning with "rigidity (Foreclosure) and lack of definition (Diffusion)" (Stephen et al., 1992, p. 296), passing through the desire to explore and consolidating relevant identity choices during a period of Moratorium. Then, confronted with information from the environment that challenges one's values, choices and goals, but also with new emotions, thoughts and feelings, as well as the development of new values, the initial identity may become unbalanced and lead the individual into a new period of moratorium. However, this intra-individual variability does not only manifest itself through different *courses*

of identity (i.e., developmental path), but also through different *contents* of identity.

Identity content refers to the propensity of identity to be a plural construct that encompasses views of the self in several crucial domains of individual psychosocial development. Identity was first operationalized in terms of occupational and ideological domains (Marcia, 1966). For Erikson (1963), it is primarily the inability to consolidate an occupational identity that leads to disorders in youth. By extending the research to specific groups of individuals (e.g., women, cultural groups, college students, etc...), interest in the study of domain-specific identity has rapidly increased. In addition to traditional domains such as work, politics and religion, many other identity domains have been incorporated into identity interviews (Kroger, 2000): friendships, romantic relationships and gender roles (Grotevant et al., 1982; Archer, 1989), career and family (Archer, 1985), and ethnicity (e.g., Phinney & Tarver, 1988). What emerges from these studies is that identity is not a structure reflecting a general positioning of the self in society, but rather a structure incorporating the positioning of different selves regarding each facet of psychosocial integration (e.g., interpersonal, ideological, etc.). Some domains have also been found to be more explanatory of individual identity than others, depending on age or culture (Adams et al., 1989; Bosma, 1985). During emerging adulthood, the domains of education, categorized as ideological, and romantic relationships, categorized as interpersonal, are particularly explanatory of the psychosocial adjustment of typical individuals (Arnett, 2015; McLean, Syed, Yoder, & Greenhoot, 2016).

Overall, the paradigm of identity status and the related interview tools developed from Marcia's operationalization (1966) make it difficult to understand the process of identity formation and maintenance, which seems to be (1) different according to individuals, (2) dynamic and not simply sequential, and (3) different according to the various domains involved in the psychosocial development of individuals. To fill these gaps, several authors have developed new models for understanding and evaluating identity.

2.3. Neo-Eriksonian models and their scientific contribution

Following Marcia's (1966) operationalization, several theoretical models aimed at describing the processes involved in psychosocial identity development more precisely. Two contemporary models of identity, also called neo-Eriksonian models, have underpinned studies on identity development. The dual-cycle model developed by Luyckx et al. (2006) is one of these two major neo-Eriksonian models. It conceptualizes identity formation in two cycles, each of which includes a form of exploration and a form of commitment. The first is a cycle of commitment formation, as in Marcia's (1966) model, where commitments are based on exploration in breadth (i.e., a broad exploration of various possible choices to commit to). Beyond this first 'traditional' cycle, Luyckx et al. (2006) extended Marcia's (1966) model by adding a second cycle of commitment evaluation, in which individuals determine whether they identify with the commitments they have previously made, through in-depth exploration of the fit between them and their commitments.

The second major model in the last decade is the three-dimensional model of Crocetti et al. (2008). This neo-Eriksonian model accounts for identity development through three processes: commitment, in-depth exploration, and reconsideration of commitments. It specifically captures "the iterative dynamic of adolescent (and emerging adults) identity development" (Crocetti et al., 2008, p. 208). The commitment process refers to the choices made by individuals regarding identity-relevant domains. It also defines the extent to which the commitments made by individuals fit their sense of self, and how individuals identify with these choices. In this model, commitment is the same process as in Luyckx et al.'s (2006) model and in Marcia's model (1966). In-depth exploration is a commitment evaluation process, which refers to the extent to which individuals reflect on and discuss their commitments with others. This process is seen as particularly adaptive as it reflects the way in which individuals deal with commitments that have already made, according to a certain set of psychosocial demands.

Individuals are different in terms of their capacity to be aware of and reflect on their commitments and what they imply for themselves and their environment (Luyckx et al., 2006). Finally, the third process in this three-dimensional model is reconsideration of commitments. It is similar to Marcia's (1966) process of exploration as it refers to research and interest in life choices prior to commitment. However, it also refers to the willingness to change previous commitments and explore other alternatives if they no longer correspond to the individual's values, ideals and expectations in a specific domain.

The addition of this "pivotal process" (Crocetti et al., 2008, p. 218) of identity dynamics is what makes this model particularly suited to the developmental period we are studying: emerging adulthood. Indeed, emerging adults no longer enroll in final life choices after leaving adolescence (Arnett, 2015). This extended period of exploration leads them to try out many social and societal roles, engaging in life choices that will potentially be reconsidered many times over the course of this period. Undeniably, changes in commitments in many areas of life (e.g., work, education, romantic relationships, politics) have become the norm rather than the exception in emerging adulthood (Arnett, 2015). This process of reconsideration of commitments is particularly relevant to Stephen et al.'s writings (1992) regarding the M-A-M-A cycles that their findings revealed. Stephen et al. (1992) suggested an explanation to this process of 'reconsideration' that may be triggered by a disequilibrium of one's initial identity, between one's self-image and commitments, between new feelings and past values. Finally, they posited that "identity process may be better described as spiral rather than as linear" (Stephen et al., 2008, p. 296). The conceptualization of identity development involving a double-cycle dynamic (i.e., a maintenance cycle and a formation cycle, Crocetti et al., 2008) is thus a crucial basis for the study of identity dynamics in emerging adulthood. Beyond the necessary development of a relevant framework to study identity dynamics, there is also a need for developing an operationalization model that captures different *courses* of identity and

different identity *contents* that pertain to multiple life domains.

The Utrecht - Management of Identity Commitment Scale (U-MICS; Crocetti et al., 2008) aims at assessing dimensions of the three-dimensional model: commitment, in-depth exploration, and reconsideration. Links between the U-MICS dimensions and relational and personality variables are in line with Erikson's (1956, 1968) conceptions (especially regarding psychosocial well-being) and Marcia's (1966) operationalization. Crocetti et al. (2008) highlighted positive associations between the commitment process and variables reflecting individuals' positive adjustment (e.g., emotional stability, extroversion, well-being), and negative associations with the variables reflecting adjustment difficulties (e.g., anxiety, depressive symptoms). In-depth exploration can express adaptive and maladaptive identity-related behaviors and thoughts. While it may reflect the individual's adaptation to his/her social environment and be positively associated with variables such as conscientiousness or openness to experience, intense repetitive in-depth exploration may also reflect maladaptive behaviors and thus be positively associated with variables such as anxiety or depressive symptoms. Some authors have even found opposite effects of in-depth exploration within the same individuals (Zimmermann et al., 2015). These results highlight the dual nature of in-depth exploration. Regarding the reconsideration process, it "truly represents the troublesome and crisis-like aspect of identity formation" (Crocetti et al., 2008, p. 219). Contrary to commitment, it is negatively associated with variables reflecting a positive adjustment of the individual (e.g., self-concept clarity, openness to experience) and positively associated with constructs related to internal and external psychosocial problems (e.g., anxiety, depressive symptoms, involvement in delinquent behaviors). Finally, the U-MICS (Crocetti et al., 2008) allows for the assessment of identity across multiple identity domains categorized as either ideological (e.g., education, work) or interpersonal (e.g., friendships, romantic relationships), as suggested by Schwartz (2001).

2.4. Identity in the educational and romantic relationships domains

The educational domain is the most explanatory of psychosocial adjustment in emerging adulthood. It refers to the study path chosen and how individuals “identify with, and have confidence in, their educational choices” (Negru-Subtirica et al., 2017, p. 2). This identity domain is constitutive of the broader psychosocial challenge that is the development of an occupational (i.e., vocational, career, professional, work) identity (Skorikov & Vondracek, 2011). Occupational identity is seen as “the conscious awareness of oneself as a worker” (Skorikov & Vondracek, 2011, p. 1). It represents the way individuals perceive the values and interests of an occupation, to be in line with their own self-beliefs, values and goals (Kielhofner, 2007; Skorikov & Vondracek, 2011). Occupational identity also refers to the complex elaboration (i.e., a “dynamic multiplicity of positions or voices in the landscape of the mind”, Meijers & Lengelle, 2012, p. 1) of a choice that fulfills both a sense of competence and effectiveness (Kielhofner, 2007; Meijers & Lengelle, 2012). Emerging adulthood brings about the considerable challenge of entering society as an adult through a professional career. However, in Western societies, it has become typical for young adults to engage in a period of identity moratorium during which they explore various occupational choices (Arnett, 2015). Education has thus become a predominant pathway as it meets two specific needs of emerging adults. While it helps them to start their working life, it also opens them up to various career options. However, changes in educational commitments do not often occur (Meeus et al., 1999). This is partly due to the difficulties of change induced by society and institutions. Individuals must sometimes “accept a relatively long crisis and low commitment because it is not always possible to simply change an unappealing position at school and work.” (p. 456). Thus, individuals experience longer periods of moratorium and less change in closed domains as education than in open domains as relation (Meeus et al., 1999).

Developing a professional career is thus a particularly important a psychosocial task for

the definition of oneself in society. In addition, developing a long-term romantic relationship is also one of the major challenges of this period.

The romantic relationships domain is considered as the most important interpersonal domain in defining a general sense of identity in emerging adulthood. In 1968, Erikson stated that "...love is an attempt to arrive at a definition of one's identity by projecting one's diffused self-image on another and by seeing it thus reflected and gradually clarified" (p. 132). He thereby expressed how the formation of truly intimate relationships is an essential factor in the construction and understanding of one's identity. Intimacy refers to an individual's ability to engage in an intimate relationship, to be known by another person in an intimate way, while identity is formed by getting to know oneself through an (intimate) relationship with someone else (Dyk & Adams, 1987; Erikson, 1968). The possibility of developing a stable intimate relationship comes after the formation of a coherent identity thanks to robust self-definition. Without this prerequisite, the individual may not be able to engage in a deep and potentially lasting intimate relationship, leading to reciprocal self-giving and sharing. Fragile and inconsistent self-definition can lead individuals to develop difficulties in opening up to others (Dyk & Adams, 1986). However, one must engage in intimate relationships (whether romantic or friendly) to build up emotional experience and develop more stable future intimate relationships (Erikson, 1968), otherwise individuals "may come to settle for highly stereotyped interpersonal relationships and come to retain a deep sense of isolation" (p. 135-136). The development of romantic relationships is therefore as necessary to the construction and definition of the psychosocial identity of emerging adults as it is to the feeling of well-being provided by the "true fusion or real self-abandon" (Erikson, 1968, p. 135) with the other.

Neo-Eriksonian models and measures are thus a new avenue for research on identity. In the two following subsections, we focus on identity in emerging adulthood. In the first one, we synthesize the most recent findings on identity developmental trajectories. In the second one,

we present recent research that focuses on identity content in the educational and romantic domains during emerging adulthood.

2.5. State of the art of contemporary research on identity development in emerging adulthood

Based on neo-Eriksonian models, recent studies on identity during emerging adulthood have tried to answer several fundamental questions: (1) how does personal identity mature between and within individuals? (2) what are the specificities of the various domains of identity? These research questions all stem from the search for developmental trajectories of personal identity processes and statuses (Branje et al., 2021; Klimstra & van Doeselaar, 2017).

2.5.1. Developmental trajectories of identity processes and statuses

During emerging adulthood, commitment usually follows a rather linear progressive trajectory. Researchers found that making strong and stable commitments to life choices becomes more normative during emerging adulthood than during adolescence, and that these choices are more important to the self (e.g., Luyckx et al., 2008; Luyckx et al., 2013). Despite this general trend, some individuals exhibit a decrease in their level of commitment during the early years of transition from adolescence to emerging adulthood, as it tends to stabilize only after this early stage of adulthood (Cramer, 2004). Although some studies have found rather stable trajectories of commitment after the early stage of emerging adulthood (from 24 to 30 years old), commitments are reinforced during this period (Kroger et al., 2010; Shirai, Nakamura, & Katsuma, 2016). The daily functioning of emerging adults is thus more likely to be guided by the quest to create such stable commitments (Luyckx et al., 2013).

Mean levels of exploration processes tend to be higher at the start of emerging adulthood than in late adolescence, and to decrease when approaching the late 20s (Klimstra & van Doeselaar, 2017). According to the maintenance cycle of the three-dimensional model (Crocetti

et al., 2008) and to the findings of Meeus (2018), in-depth exploration is a normative process throughout adulthood (Klimstra & van Doeselaar, 2017). However, it may become problematic and tend towards a maladaptive form of ruminative exploration (Luyckx et al., 2013). Rumination refers to the tendency to question oneself constantly and intensively, leading to feelings of malaise and to the onset of depressive or anxious symptoms (Luyckx et al., 2006, Luyckx et al., 2013). Reconsideration, which is close to the process of exploration in breadth of Luyckx et al.'s (2006), tends to diminish in emerging adulthoods as their commitments consolidate (Luyckx et al., 2013).

Despite a general maturation of identity during emerging adulthood, major differences in identity pathways have been observed in contemporary studies. The identity status continuum (Marcia, 1966; Meeus, 2018) suggests that individuals are more likely to change from one identity status to the closest one on the identity continuum (i.e., D – F – M – A). For example, individuals in moratorium status are more likely to evolve into foreclosed or achieved status than into diffused identity status. The meta-analysis by Kroger et al. (2010) showed that individuals tend to maintain a stable identity status during their higher education trajectory (49%) and that identity tends more towards progression (36%) than towards regression (15%). This meta-analysis supports the validity of the notion of identity status continuum and the fact that transitions tend to occur towards the closest status. However, the study by Kroger et al. (2010) showed many different progression or regression paths, some of which showed transitions between very distant identity statuses on the identity continuum. Carlsson et al. (2015) also observed different identity paths in emerging adulthood. While 50.8% of their participants reported being in the same identity status at ages 25 and 29, 24.2% reported a progression and 25% reported a regression in their identity status. Although they generally develop according to a trend of stability or progression towards a more accomplished status, identity trajectories seem to be governed by important inter-individual differences. One of the

factors that account for these differences seems to be related to identity content (i.e., identity domain).

The aforementioned studies were primarily interested in the developmental trajectories of global identity. As previously seen, the educational and romantic relationships domains are particularly important to emerging adults. However, they differ in terms of self-exploration and self-positioning. While there is a general tendency to engage in a single career path in the educational domain and multiple career explorations are scarcer, emerging adults generally tend to explore multiple possibilities in the romantic relationships domain and more rarely engage in exclusive long-term relationships (Arnett, 2015; Skorikov & Vondracek, 2011; Meier & Allen, 2009). It is very likely that these differences in general identity trajectories are due to inter- individual differences in these areas.

2.5.2. Emerging adults' identity development in the educational and romantic relationships domains

Recent research focusing on education and romantic relationships has questioned their place and contribution in overall identity development, but also the differences in identity statuses according to the domain considered. As they grow older, emerging adults become more able to cope and deal with identity issues (Crocetti et al., 2012). It has been demonstrated that several identity domains contribute to the development of identity. Crocetti et al. (2012) showed that emerging adults who have developed stable commitments in the educational and relational domains are better adjusted psychologically than individuals who have made unstable commitments in these two domains, or just in one of them. Similarly, Vosylis et al. (2017) highlighted the contribution of several identity domains in the formation and maintenance of an overall identity. All four domains investigated (i.e., partner, best friend, education, and work) were shown to contribute significantly to the maintenance and renewal of meaningful identity choices. The domain of interpersonal relationships (both friendly and romantic) seems to be the

most explanatory and constitutive of a general sense of identity in emerging adulthood. Results have shown that the most important domain in maintaining a stable identity (i.e., the one that contributes most to commitment and in-depth exploration) is the romantic domain (Vosylis et al., 2017). Crocetti et al. (2012) found that emerging adults (aged 19-29) who achieved significant stability in their romantic life experienced greater overall satisfaction than individuals who achieved stability only in the educational domain. In a qualitative study, Mclean et al. (2016) also found that romance-related verbatim was the most important to participants and the most significant in number.

These results led to adopt a domain-specific approach. In a study on the identity statuses that emerged in the educational and romantic relationships domains (Luyckx et al., 2014), differences in identity configurations between domains were highlighted. Some identity statuses were common to both the education and romantic relationships domains: achievement, foreclosure, moratorium, carefree diffusion (i.e., a state of detachment from commitments and serenity regarding the issues that arise from them) and the undifferentiated status (i.e., moderate levels in all identity processes). The ‘searching moratorium’ profile is present in the educational domain only and refers to individuals who are highly committed, yet actively and intensely question their commitments and their potential alternatives. According to the authors, individuals "...in searching moratorium in the career domain did maintain some commitments, but they were also exploring and worrying about where their career paths would take them" (Luyckx et al., 2014, p. 199). The ‘troubled diffusion’ profile is present only in the romantic relationships domain and refers to individuals who look for alternatives to their commitments but are unable to maintain this exploration (Luyckx et al., 2008). According to Luyckx et al. (2014), participants "in troubled diffusion in the relational domain did not appear to feel strongly committed to their partner, instead ruminating about where their relationship might be headed" (p. 199). Although this study provides evidence of differences in

identity statuses between domains, a major question remains: how to explain long-term changes and variability in identity trajectories?

2.6. Introducing identity temporal aggregation: the micro and macro levels of identity

On the journey to becoming an adult, one's sense of identity and commitments to life choices may change, sometimes tending towards a greater confusion of the self, of values and ideals, and sometimes tending towards a stronger and more stable sense of achievement. However, the way in which these changes occur and the mechanisms at work in the process of change have long been unclear. In an attempt to clarify these issues, identity processes have recently been studied within the framework of the micro-level of identity. While the macro-level of identity refers to the stable part of identity which extends and builds over decades, the micro-level of identity refers to the fluctuating and variable part of identity, which is dependent on the context and may change over the course of minutes, hours, or days. At the macro-level, identity relies on complex life choices related to values, beliefs and desires for the self. Macro identity refers to the level of integration of past and present self-images into a coherent whole, and the projection of a future ideal self. Individuals can thus more easily achieve self-reflection and be self-aware. At the micro-level, the nature of identity is more unconscious and closer to a feeling of adjustment, where in-depth reflections are not common. It is the level of action, emotions, thoughts and short-term goals. In other words, it is the level of identity expression in real time and in everyday contexts. It is thus at the micro-level that mechanisms of change responsible for the development of identity in the long term operate (Lichtwarck-Aschoff et al., 2008). To study these changes and the impact of this level of identity, an important challenge is to operationalize the micro-level of identity processes.

Based on major theories on the macro-level of identity (Crocetti et al., 2008; Luyckx et al., 2006), van der Gaag et al. (2016) conceptualized five micro-level identity

processes tailored to the time scale along which they are measured (e.g., micro-level time scale) and developed their operationalization. Two commitment processes and three exploration processes were defined as part of the micro level of identity: the commitment to fit (i.e., the extent to which individuals feel adjusted to their commitments), the commitment to choice (i.e., the commitment felt towards a concrete choice in a particular context), the exploration of fit (i.e., the extent to which individuals question the adjustment to commitments they made), the exploration of alternatives (i.e. the extent to which individuals look for other alternatives to their commitments), and the exploration of self (i.e. an exploration directed towards the self).

However, the operationalization of van der Gaag et al. (2016) needs to be slightly adjusted for both general and specific reasons. In terms of general conceptualization, the commitment to choice process needs to be removed. As van der Gaag et al. (2016) pointed out, it is more difficult to account for separate effects of the two micro--level commitment processes (i.e., commitment to fit and commitment to choice) than to account for separate effects of the three micro-level exploration processes (i.e., exploration of fit, exploration of alternatives and exploration of self). The process of commitment at the micro level is more unconscious and closer to a sense of general adjustment to what is experienced in life than at the macro level, in which individuals are more aware of their commitments and more able to reflect on the different aspects of these commitments (Litchwarck-Aschoff et al., 2008). If one wants to study interpersonal domains or to put into perspective interpersonal and ideological domains at the micro level, the exploration of self should be removed as it is a process specific to the educational domain. According to the authors, the career literature shows that "it is important to distinguish between exploration directed to the self, and exploration directed to the environment" (van der Gaag et al., 2016, p. 60). Regarding the interpersonal domain, the literature shows that one's self-knowledge is formed through relationships with others (Dyk & Adams, 1987; Erikson, 1968). This is important when studying identity at the micro level in a

population of emerging adults, since self-exploration in relation with others occurs through the experimentation of multiple relationships, especially romantic relationships (Arnett, 2015). Self-exploration is thus intimately connected to the exploration of one's environment and adjustment to others. However, it remains difficult to differentiate micro-level processes from their macro-level equivalents and understand the way they are linked. As mentioned previously, the general idea is that micro-level processes are primarily more unconscious than their macro-level counterparts. The 'commitment to fit' process refers to the perceived feeling of adjustment to life choices, i.e. to the agreement or disagreement between the self and the commitments, translated by feelings of well-being or unhappiness in response to real-time events (Lichtwarck-Aschoff et al., 2008). In contrast, macro-level processes refer to the complex elaboration of choices based on broader consideration of the different selves and its impact over time and on the pursuit of an ideal self (James, 1890/1950). The 'exploration of fit' process is conceptualized as "the act of actively investigating the fit between the chosen (e.g., educational or relational) context and the self", whereas the 'exploration of alternatives' process is characterized by "exploring alternative educational (or relational) directions" (van der Gaag et al., 2016, p. 61).

Although these micro-level processes are the conceptual equivalent of the macro-level processes in major theories operationalizing identity dynamics (Crocetti et al., 2008; Luyckx et al., 2006), the links between micro-level processes cannot be strictly derived from the well-known relations between their macro-level counterparts. At the micro level, relations between identity processes are particularly heterogeneous. In this respect, significant differences were highlighted in studies on the micro level of identity when the links between identity processes at a within-individual level were observed (Kunnen, 2006; van der Gaag et al., 2016). Despite a tendency towards heterogeneity in the ideological and interpersonal domains, the relations between the processes are relatively similar to those at the macro level: commitment to fit was

found to be negatively correlated with exploration of alternatives, the two exploration processes were positively and strongly correlated with each other, while the relations between commitment to fit and exploration of fit were too heterogeneous to reveal a trend (e.g., van der Gaag et al., 2016). However, empirical data is still lacking to characterize precisely the links between micro-level identity processes. Overall, despite the progress of research on the micro-level of identity, a significant gap remains in the literature regarding the functioning of identity and the mechanisms and forces that govern its variations in daily life.

2.7. Synthesis of the second chapter

Erikson's writings remain the reference in terms of conceptualization of identity in developmental psychology. Based on the first operationalization proposed by Marcia (1966), neo-Eriksonian conceptual frameworks have helped produce more precise and accurate studies of the understanding of identity development in adolescence and emerging adulthood. Along a general sequential trajectory from identity confusion to identity synthesis, identity is currently understood as a constant reassessment of the adjustment of the self with commitments in many life domains. Initially studied together and progressively more separately, these many life domains do not have the same significance for individuals depending on the time in life. While during adolescence, the domains of friendship and family are central in the general sense of identity, the domains of education and romantic relationships become the most important ones in emerging adulthood. Recent research has highlighted a plurality of identity trajectories in emerging adulthood, both in terms of general identity and identity specific to life domains.

However, the identification of long-term trajectories of identity has also brought its share of problems. First, their significant heterogeneity makes it difficult to identify laws that account for most individuals. Secondly, along with the particularly idiosyncratic character of identity, there is a lack of knowledge of the mechanisms underlying its development. Responses to these problems have been attempted by specifying: (1) the time scale in which the

mechanisms of identity change operate in individuals, and (2) the nature of the identity processes involved at this time scale. However, it remains difficult to really understand how the mechanisms underlying the change of identity work, and what forces drive them. For many years, researchers have tried to understand an extremely complex and dynamic phenomenon using models of understanding and analysis that do not account for these two intrinsic characteristics of identity. In the following section, we present how the theory of dynamic systems throws light on such a developmental process and helps to overcome the difficulties regarding the analysis of identity functioning and the apparent impossibility of establishing common laws between individuals.

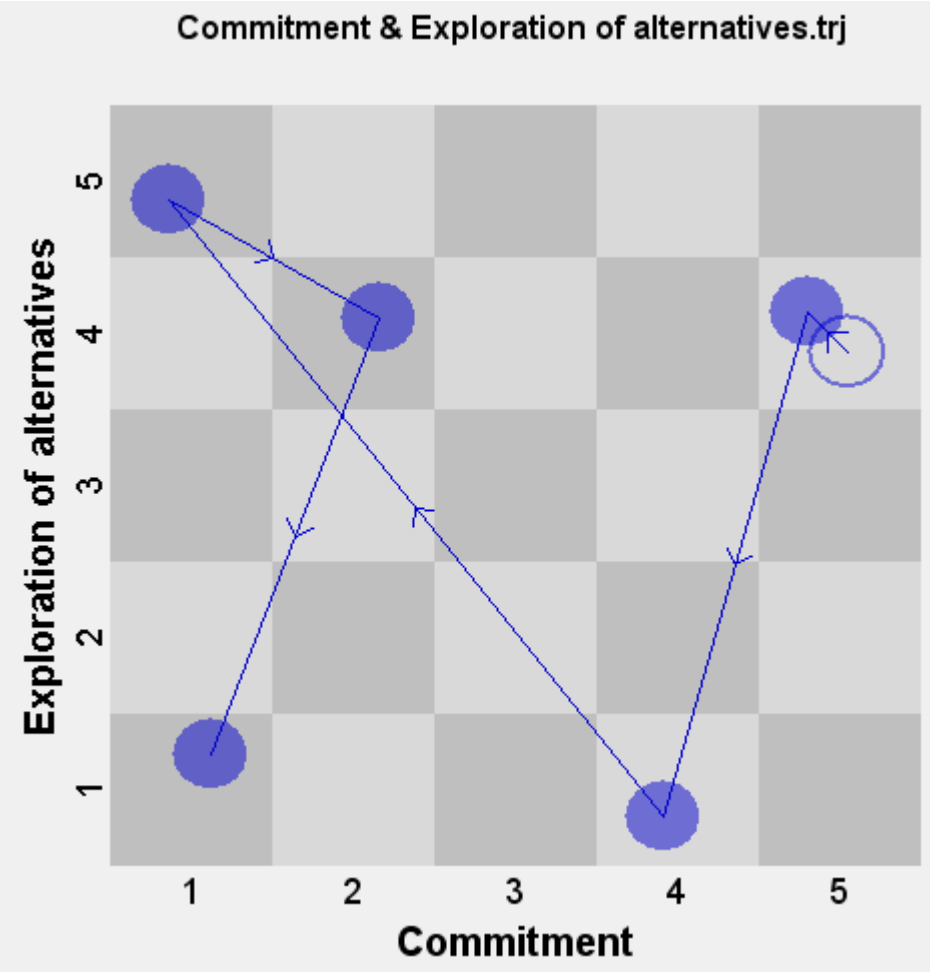
3. The dynamic system approach: a highly relevant framework to study identity changes

The dynamic system theory focuses on explaining the changes and transitions that occur within a system and is "... a means of describing how one state develops into another state over the course of time" (Weisstein, 2007, p. 1412). Dynamic systems are a set of interconnected elements that influence each other over time. Since the social and non-social world in which we live is "one enormous network of connected elements" (Kunnen, 2012, p. 19), one has to define the scope and boundaries of that system to study it. For example, if one wants to study the changes in a young adult's identity, one has to define the system containing the various processes involved in identity construction (e.g., commitment and exploration). However, regarding the impact of an emerging adult's social media experiences on his/her commitment changes, one also has to take into account the outcomes of these experiences as part of the system of identity. As they influence each other, these elements visit different states in the defined space of the system.

The state of the system at a given time t is represented by the location (and thus the value) of the elements that compose it in the state-space (Kunnen, 2012). This notion of state-space can be illustrated by a within-individual system composed of the feeling of being committed to an educational pathway and the exploration of other alternatives to that commitment. The variation of these components can be represented in a two-dimensional space: the abscissa axis corresponds to the feeling of being committed, and the ordinate axis corresponds to the extent to which the individual explores other alternatives (Fig. 1). Each point represents the levels of commitment and exploration of alternatives at a given time of measurement, or rather, the state of system exploration and commitment at this time of

measurement in the space of possible states. By following the progression of system states step by step, one may obtain an accurate representation of how the feeling of being committed to an educational pathway and the search for other alternatives evolve together in the state space during a certain time period. The “sequence of states of a system over time” (p. 15) is called a ‘developmental process’ (Kunnen & van Geert, 2012).

Fig. 1
State space representation of an individual’s commitment-exploration system



In this chapter, we present different characteristics of developmental processes and dynamic systems and how they are crucial in the study of identity. We first describe the characteristics of the development of dynamic systems: iterativity, non-linearity, ergodicity,

self-organization, transitions and variability, and attractors and repellers. We then highlight the value of understanding and studying identity development to support these concepts.

3.1. The dynamic system theory and its characteristics

A developmental process is intrinsically linked to many other aspects of change such as iterativity, non-linearity, variability, complexity or chaos (van Geert, 1994). This first part of this chapter clarifies some of these aspects and how they help in understanding change.

3.1.1. Iterativity

About the iterative nature of developmental processes, van Geert (1994) stated that “the iterative function expressing each state as being determined by a preceding state is an almost universal, inescapable property of change” (p. 21). Development is thus based on iterations of the system: the system’s behavior at a given time t is a function of the outcome of the system’s behavior at time $t-1$, as follows:

$$x_{i+1} = f(x_i)$$

This is valid regardless of the time window in which the individual’s development is considered. Applied to long-term development, this refers to the fact that what happened earlier in development has an impact on what is happening now. The intense exploration that occurs during adolescence leads to more stable social roles in emerging adulthood. If we reduce the focus to very short developmental temporalities, iterativity is reflected in the actions and emotions of individuals in real time, such as feeling a greater sense of self-esteem right after performing well in a college exam.

Considering the iterative nature of development (and the infinite nature of developmental processes themselves), the way processes change over time may differ from one to another, regarding either the course of the process itself or the random factors associated with it. To what extent does the outcome of the system’s behavior at time t determine the state of the

system at time $t+1$? Does the system change and vary over time in a rigid and deterministic way, or is it very flexible and subject to unknown random effects? These questions refer to what researchers call the temporal structure of a process (Den Hartigh et al., 2015). Some processes exhibit very predictable patterns, while others have more random behaviors. While the study of these variations can easily be adapted to cognitive psychology research focusing on a single process (a one-element system) where situations are controlled in a laboratory, the study of the evolution of systems in their ecological environments is much more complicated from a developmental psychology perspective. With the difficulty of studying patterns of behaviors in a perfectly standardized environment comes the complexity of the reciprocal influences between the many elements of these systems. Since some models of development are very complex, it may be difficult to provide an accurate explanation of how processes change, especially considering the many random factors involved in development. Unlike what might be believed, the study of these random factors provides information about the accuracy of the model of understanding (van Geert, 1994).

The iterative nature of development means that what is commonly thought of as random events or random errors (whether of measurement or of unknown "uncontrollable" variables) are crucial factors in understanding a developmental process (van Geert, 1994; Thelen, 1992). If a 'random' factor affects the state of development at time t , then it will affect the state of development at time $t+1$. Furthermore, the idea that standardized errors average out to zero over time is a mistaken belief (van Geert, 1994). In reality, when we study time series (i.e., a succession of measurement points at regular intervals in time), errors often present a variation structure of their own, bringing information about the nature of the process observed (Jebb, Tay, Wang, & Huang, 2015). These errors are sometimes called statistical noise.

There are three types of variation structures in the literature at various points along the continuum representing the stochastic nature of a process, from very slightly random to

completely random (Den Hartigh et al., 2015; Den Hartigh et al., 2017). The first is *white noise* and corresponds to a totally random variation structure. It does not contain any additional information on the nature of the process studied: the process is correctly understood, there is no structured effect in the error that has an impact on the way the process changes (i.e., no essential information left out for the understanding of the process). The second structure of variation is *brown noise*, corresponding to a process with very little randomness. This type of variation presents a developmental process in which each measurement point is intimately linked to the previous one. One can thus deduce precisely the value at time $t+1$ from the value at time t . A system whose development is governed by brown noise presents very rigid behavioral patterns. If the error presents such a variation structure, it either means that a parameter with a strong impact on variations has not been considered or that a parameter already taken into account has a different effect from what the model suggests. This parameter is then wrongly considered as an error owing to a poor understanding and/or design of the process. The third and last error structure is at the crossroads between white and brown noise and is called *pink noise*. This variation structure represents a process whose behavior is partly predictable and partly random. Unlike brown noise which presents dependence between close measurement times (from t to $t+1$) and unlike white noise which does not present such dependence, pink noise presents dependence between distant measurement times. It reflects long-term coherence while showing short-term variations. Pink noise is unique to complex systems of interactions, such as dyadic systems or systems between multiple elements, as typically discussed in developmental psychology (Den Hartigh et al., 2015; Wijnants, 2014; Wijnants et al., 2009). Depending on the time of measurement and the time during which the process is captured, pink noise may or may not exhibit a clear structure. As for brown noise, a clear structure of error over time implies a lack of understanding of the process (Den Hartigh et al., 2015; Den Hartigh et al., 2020).

3.1.2. *Non-linearity*

Non-linearity is another essential characteristic of a developmental process. The complexity of a living system (i.e., living organisms as individuals and groups of individuals) implies that it is "more than a sum of the actions of its components" (Van Geert, 2008, p. 246). Because of the complexity generated by the multiple interactions between the various elements of a system, it is impossible to correctly understand its functioning by a simple superposition of effects. The complexity of the interaction between elements of living systems thus generates nonlinear behaviors.

The non-linear behaviors of living systems over time are also due to the iterative nature of development for two main reasons. The first reason is that the trajectory of a complex dynamic system is also determined by its starting conditions (Howe & Lewis, 2005). Since the behaviors of a system depend on its past states, the trajectories of two systems quickly end up differing from each other over time, despite having similar growth parameters. This explains why two emerging adults experience romantic relationships differently depending on what they have experienced in this domain during adolescence. The second reason is that the change in processes of living systems cannot grow indefinitely (Kunnen & van Geert, 2012). Although exploring oneself seems necessary to implement and maintain healthy commitments, constant in-depth exploration may not reinforce these commitments indefinitely. On the contrary, excessive in-depth exploration can lead to a sense of not being able to achieve certain expectations and life choices, and therefore to feeling unhappy and distressed (Crocetti et al., 2008). Individuals may thus get stuck in a negative loop in which they are unable to complete satisfactory in-depth exploration, or because they are unable to be satisfied with the outcome of these explorations. These individuals will ultimately have difficulties engaging in stable and lasting commitments. This is a psychological reality because "strictly linear changes would go on in the same way forever and processes in living systems do not" (Kunnen & van Geert, 2012, p. 17).

3.1.3. Ergodicity

The complexity and non-linearity of developmental processes raises another essential question: do these processes develop similarly in all individuals? The answer is negative since developmental processes evolve differently in each individual according to their own temporality, which refers to their non-ergodic property (Molenaar, 2004; Molenaar & Campbell, 2009). Ergodicity implies that the analysis of interindividual variability yields the same statistical properties as that of intraindividual variability (i.e., the characteristics of the group data are the same as the characteristics of the individual data over time). In psychology, the ergodic property is often absent since psychological constructs are influenced by many individual factors: the history of each person, his/her past experiences, contexts of life, social ties, culture, etc. To draw conclusions from the interindividual level to the intraindividual level, the process studied must be characterized by both homogeneity (i.e., the model of understanding has to be strictly the same for each individual in the group) and stationarity (i.e., the process has to have the same mean and variance over time). As long as the process is not characterized by ergodicity, its analysis at a group level cannot be generalized to each individual separately.

After presenting the main characteristics of developmental processes, we focus on the characteristics that allow the notion of identity to be studied from a dynamic system approach, thus making it possible to overcome the difficulties encountered by previous conceptualizations of identity development.

3.1.4. *Self-organizing systems: understanding the interconnectedness of diverse temporalities*

Self-organization is a crucial feature in the understanding of dynamic systems. It refers to the general functioning of the system: from the outcomes of the constant interaction between different elements result more general characteristics of the system (Howe & Lewis, 2005;

Kunnen & van Geert, 2012). Higher-order parameters of a system emerge from its lower levels of functioning. As pointed out in the first chapter, emerging adults explore romantic relationships in various ways as they enter adulthood: some engage in a single intimate relationship with one exclusive partner, while others experience more ephemeral relationships with multiple partners at the same time. The preference of an individual for a specific type of romantic relationship is directly linked to his/her daily experiences in this domain. Let's take the example of Sasha, who experiences numerous flirtations and satisfying one-night stands that boost his self-esteem: Sasha may thus tend to identify himself as preferring a romantic lifestyle oriented towards multiple encounters. Now let's imagine that among these multiple ephemeral partners, Sasha meets Charlie whom he particularly likes and who triggers his desire in a unique way. The encounters with Charlie become more and more numerous and confirm Sasha's new desire to become exclusive with this one person, despite his initial reluctance to accept the idea of a single partner. Little by little, Sasha will surely tend to identify himself as preferring a more stable relationship with a single partner. This is just an example but it illustrates how the functioning of this living system stabilizes around more general states.

The self-organization of a system through the interplay between higher- and lower-order parameters also refers to the interweaving of longer and shorter temporalities in the functioning of complex systems. According to Howe and Lewis (2005), the self-organization of a living system is expressed both in real time (e.g., over the course of seconds or minutes) and in developmental time (e.g., over the course of months or years). While the behaviors, emotions and perceptions arising from the interaction between the elements of the system and the environment are the real-time essence of self-organization, the habits, behavioral patterns, stable reaction patterns of the system that are built up through iterativity and recurrence reflect the developmental time essence of self-organization (Howe & Lewis, 2005). These two levels interact constantly, both bottom-up and top-down. While the results of real-time

experiences, emotions and actions emerge from the more stable and general characteristics of the system (i.e., bottom-up), higher-order structures are the filter through which individuals perceive their world and interact with their environment (i.e., top-down). We previously observed how Sasha's romantic identity could develop and change from his various experiences. This shows how a system develops according to several temporalities. On the one hand, daily experiences seem to guide the way Sasha identifies with a type of romantic relationship in the long term. On the other hand, ephemeral encounters with multiple partners initially led Sasha to think he was not tempted by an exclusive relationship, which will probably affect the way he approaches his relationship with Charlie. In a shorter temporality, it could be interesting to see how Sasha explores his lifestyle adjustment during a discussion with a new partner (Gmelin & Kunnen, 2021). A longer temporality could be studied by looking at Sasha's romantic identity development.

3.1.5. Transitions and variability

From adolescence to emerging adulthood, from higher education to work, from the consumption of ephemeral intimate relationships to sharing a long-lasting love story, the life of individuals is punctuated by societal, psychological and cognitive transitions. From the point of view of the dynamic systems theory, the transition from one state of the system to another induces increased variability and chaos before stabilizing in a new stable state (Kunnen & van Geert, 2012). This variability is expressed in the real-time functioning of the system from which general patterns of behavior emerge (Hollenstein, 2007). To illustrate this transition period, let's return to Sasha's case. From a relational lifestyle that was strongly oriented towards ephemeral relationships with multiple partners, Sasha transitioned to an intimate lifestyle that focused on developing an exclusive long-term relationship. During the transition between these two lifestyles, the increased variability in the system reflected in the way he exhibited behaviors that tended towards both an ephemeral type of relationship (the current mode of operation of

the system) and a long-term relationship (the mode of operation towards which the system is moving). This is an expression of potential internal system conflict ("do I really want to be in an exclusive relationship?", "am I ready to have only one partner?"). One can easily imagine how Sasha had conflicting emotions that disrupted the stability of the system in real time during this period. It is only when the real-time functioning of the system regains stability that a new state and a new higher-order structure emerge.

The variability of a system is essential for its functioning, even during periods of non-transition. As stated above, living systems are in constant interaction with the environment and their elements are continuously interfering with each other. Living systems are constantly disturbed by the contextualized information that reaches them, even in a phase of significant stability. The extent to which a system is able to remain flexible and adapt to sometimes contradictory information is often the sign of good functioning. For example, the variability of adolescent girls' emotional states has been shown to be a sign of better adaptation to conflicts with their mothers (Lichtwarck-Aschoff et al., 2009), while teenagers with high emotional rigidity were stuck in the same negative emotional states regardless of the situation with their mothers. The mother-adolescent dyadic system had thus lost its "situational sensitivity" (p. 1372). The variability of a system is therefore expressed in real time and provides information about its change towards a new state of homeostasis, but also its capacity to be flexible to the information from the environment.

However, some systems exhibit rigidity and difficulties in breaking out of a particular state. In the study by Lichtwarck-Aschoff et al. (2009), among the three groups investigated (i.e., highly flexible, moderately flexible, and rigid ones), the rigid group showed a particular pattern of functioning. Adolescent girls with high emotional rigidity were unable to break out of their negative emotional state and shifted directly into an advanced state of conflict with their mother at the slightest mention of a sensitive topic. What drove them so

inexorably into these conflicted mental states? In the dynamic systems theory, these recursive patterns are called attractors.

3.1.6. Attractors and repellors

Some people sometimes have very rigid behaviors. They find it difficult to change their habits and reactions to certain daily situations. These behaviors all reflect the way the system works: a strong attraction to specific states. In the dynamic systems theory, this is called an attractor. An attractor is defined as "a state - a specific place in the state space - to which the system tends to return" (Kunnen & van Geert, 2012, p. 23). Certain characteristics of a system's attractors, such as the strength of their attraction or their number, are an important source of information regarding the state of a system. When the system fluctuates between different states and is disturbed by information from the environment, the speed at which it returns to a specific state provides information about its strength of attraction (Kunnen & van Geert, 2012). For example, Sasha might have difficulties committing into a single relationship because his multiple relationships lifestyle is too important to him. Committing to an exclusive relationship may thus seem more limiting than exciting to him. Despite the positive emotions felt during the time he spends with Charlie, the strong attachment to his previous lifestyle can lead him to minimize or even dismiss this information as contradictory to what he expects from his romantic relationships.

In periods of major disturbances to the system, several attractors of equivalent strength may manifest themselves simultaneously (Kunnen, 2012). This is a sign that the system is organizing itself in real time, in such a way that several higher-order structures emerge. The system is thus attracted to multiple states of equal importance, which indicates that it is in a phase of transition from one stable state to another. During the transition period towards an exclusive relationship, the repetition of pleasant experiences and intense positive emotions may lead Sasha to gradually consider committing to a relationship with Charlie. Meanwhile, the

attraction towards his previous lifestyle diminishes. During this period, Sasha is equally attracted to both lifestyles, as two attractors of equal strength are present in the system. In real time, the system will eventually tend towards one of these two attractors in a more stable way.

Living systems evolve in continuously changing information from their proximal and distal environments and are endowed with properties guaranteeing both the stability necessary to go through one's life, and the flexibility needed to deal with the tumult of sometimes contradictory information from real-time contexts. Since the processes of development studied in psychology express themselves within living systems, their evolution is governed by the same properties (e.g., self-organization, variability, etc...) and specific laws (e.g., iterativity, non-linearity). Identity development is a developmental process that expresses itself in complex living systems (i.e., individuals). At any stage of life, the development and functioning of identity are ruled by the laws we described above. Therefore, it is necessary to study identity within the framework of the dynamic system theory.

3.2. The role of dynamic systems in understanding identity change

Based on the aforementioned theoretical framework, we first present the dynamic system of identity as conceptualized by Bosma and Kunnen (2001) and the recent empirical results derived from it. In the second part, we investigate issues that are essential to the understanding of identity development.

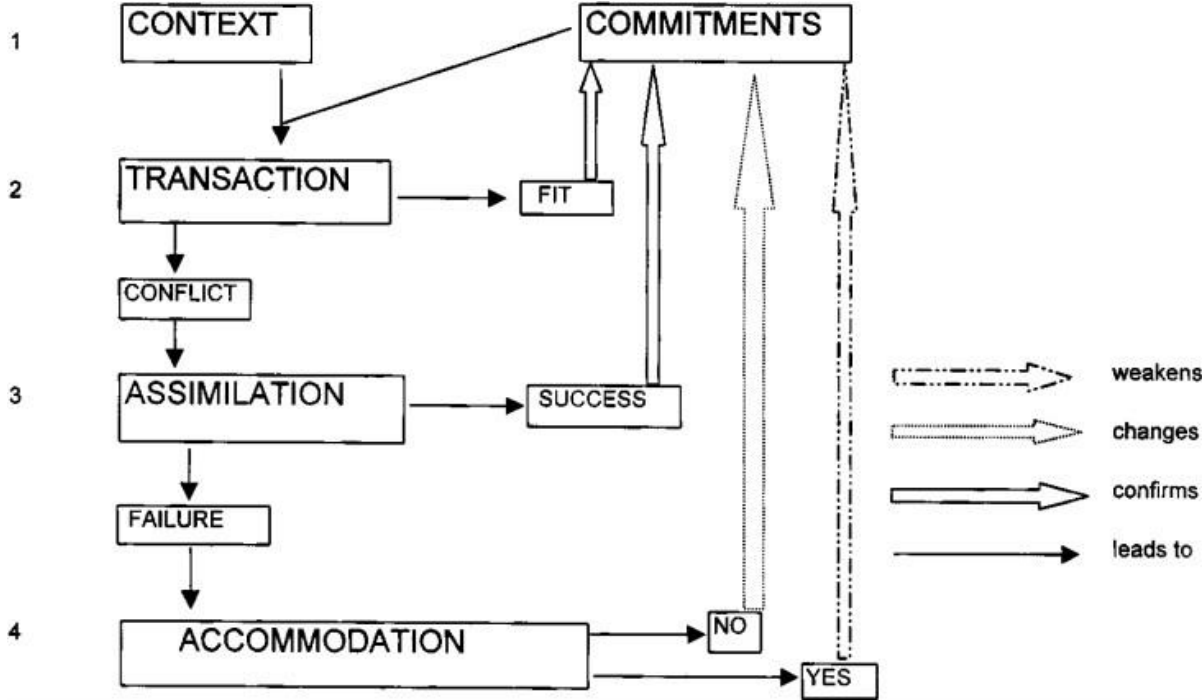
3.2.1. Identity dynamics

Using a dynamic system approach, Bosma and Kunnen (2001) developed a model in which the changes in one's identity are explained by a continuous iterative mechanism of repeated reevaluations of one's adjustment to their own commitments (Fig. 2). In this model, commitments are evaluated and reevaluated in the light of environmental information from every context-individual transaction. While congruent information leads to a feeling of

adjustment to one’s commitments and thus to their reinforcement, incongruent information from the environment leads to a conflicting feeling of being unadjusted to one’s commitments. Incongruent information is first processed by means of assimilation, which is often an automatic change in the perception of the information or in the information itself so that it no longer is disruptive. If this assimilation process succeeds, the individual’s commitments are confirmed and will not be affected by the incongruent information. However, if assimilation fails, an accommodation process takes place, whereby the individual readjusts his/her identity since the conflict is not manageable by assimilation. The individual may thus adjust his/her commitments, although the repetition of accommodation will weaken them in the long run, or he/she may change his/her commitments altogether.

Fig. 2

"A schematic representation of the development of commitments" (p.60) from *Bosma and Kunnen (2001)*



Identity thus seems to be organized in such a way that the system gives rise to higher-order structures or general identity states. This functioning unfolds during the interactions between individuals and their environment in real time, at the micro-level of identity, and guides

how they feel committed and adjusted to their life choices in the long term, at the macro-level of identity.

Considering the iterative and non-linear character of identity, recent studies have highlighted its dynamics at a micro-level and the impact of this real-time functioning on the development of identity in the long run. Using dynamic structural equation modeling (DSEM, Asparouhov et al., 2018), Becht et al. (2021) highlighted the iterative character of day-to-day identity in both the educational and relational domains. They analyzed how micro-level identity processes are linked over time from adolescence to emerging adulthood. In both domains, they found that increased reconsideration on a given day led to decreased commitment on the day after, and that increased in-depth exploration led to increased commitment. They also found that everyday identity functioning in adolescence affects the development of identity in emerging adulthood: adolescents who had lower levels of commitment and higher levels of reconsideration (both at a micro-level) in adolescence were more likely to belong to the moratorium profile upon entering adulthood. However, despite the operationalization of the various processes involved in identity functioning by van der Gaag et al. (2016) and the emphasis placed on micro-identity dynamics (Becht et al., 2021; Klimstra et al., 2010), a critical factor is lacking if we are to have a proper understanding of the mechanisms underlying identity change: emotional experience.

3.2.2. The role of emotional experience in identity functioning

Since identity development is rooted in real-time functioning, what specific information from real-time environment underlies identity change? It may arise from the emotional outcomes of real-time experience. Of the various aspects of an individual's experience, the emotional aspect seems to be the most crucial for identity change (Bosma & Kunnen, 2001; Klimstra et al., 2016; Kunnen, 2006; van der Gaag et al., 2017; Vleioras & Bosma, 2005). Two characteristics of identity-relevant emotional experiences (i.e., experiences related to emotional

identity content) are considered: the valence of the emotion felt (i.e., positive or negative), and the extent to which the outcome of these emotional experiences confirms or disproves the individual's commitments (i.e., perceived feeling of agreement or disagreement with the individual's commitments).

There is currently no consensus regarding the effects of valence on identity processes. As in the work of Bosma and Kunnen (2001), who postulated that conflict is what drives identity change primarily, several authors have attempted to identify clear trends regarding the effects of the valence of emotional experiences on micro-level identity processes. Klimstra et al. (2016) found commitment to be negatively related to negative emotions in both the educational and the relational domains. They also found a positive relation between reconsideration and negative emotions in the relational domain (Klimstra et al., 2016). Promoting a person-centered approach, van der Gaag et al. (2017) found contradictory links in the educational domain. First, they found that both positive and negative emotions predicted both higher and lower levels of commitment. Second, they found micro-level exploratory processes to be positively related to negative emotions, as Bosma and Kunnen (2001). There is thus little consensus in the literature regarding the directionality of the effects of emotional valence owing to the heterogeneity of results.

The heterogeneous links between the valence of emotional experiences and the various levels of micro-identity processes may be explained by the non-linear nature of identity (e.g., negative emotions can be processed by assimilation and lead to increased commitment) and by the fact that emotional valence itself can convey different information for the self (e.g., a new love interest that conveys strong positive emotions but is deleterious for the romantic relationship the individual is already committed to). These reflections around the heterogeneity of emotional outcomes on identity change were notably conducted by van der Gaag et al. (2017). According to them, one should focus on the content of a given experience beyond its

emotional valence. To evaluate more accurately how emotional experiences guide identity change, it would be interesting to examine how they may conflict with the individual's commitments (Bosma & Kunnen, 2001), regardless of whether they convey positive or negative emotions.

3.2.3. The role of openness to change

Considering the non-linear nature of identity and the heterogeneous effects of emotional experiences on its functioning, two questions arise: (1) why does the same information induce different reactions in different individuals, and (2) when does the same information induce change in identity commitments and when does it not? This refers to the intra-individual and inter-individual levels of the same concept: openness to change and experience (Berzonsky, 1990; Berzonsky & Sullivan, 1992; Bosma & Kunnen, 2001). Openness to change is the extent to which an individual is open emotionally, cognitively, socially and psychologically to novelty, new experiences and change. Let's imagine a situation in which Sasha's parents are opposed to his romantic relationship, which is an emotional experience. A key factor is Sasha's openness to his parents' remarks. His attachment and his feeling of adjustment to his commitment towards his romantic relationship will shape the extent to which these remarks affect him. If Sasha is already reconsidering his commitment, this information will have more impact than if he feels very adjusted. This illustrates the contextual aspect of openness to change and experience.

On an inter-individual level, openness to change refers to an intrinsic characteristic of each individual, his/her history and past experiences. Regarding identity, it refers to the way individuals face a conflict (Bosma & Kunnen, 2001). They naturally tend towards a specific type of functioning: while some have a strong tendency towards assimilation (i.e., many conflicts are necessary for them to change their commitments), others have an easier tendency towards accommodation (i.e., no need for many conflicts to change commitments).

From a within-individual perspective, each person experiences periods of life when he

or she is particularly open to change and experimentation. These moments are generally periods of transition of the system from one state to another, which are described as phases of increased variability during which complex living systems tend to be influenced by several attractors. The system is thus in a change-prone state and more sensitive to information from the environment (Kunnen & van Geert, 2012).

3.3. Synthesis

The dynamic system theory is an essential framework for understanding developmental processes, such as identity, and how they work in living systems. The different characteristics of developmental processes (i.e., iterativity, non-linearity, complexity, ergodicity) allow the precise conceptualization of the laws that govern their evolution. Iterativity refers to the way in which the state of the system is at all times influenced by its previous states. Together with the complexity of living systems, this recursive mechanism is at the heart of the non-linearity of development. The iterative nature of developmental processes associated with the various starting conditions, the complexity of the relations between the elements of living systems, and the presence of many random factors, make the course of these processes non-linear. A non-linear process is also non-ergodic since, by definition, its development is not strictly the same for each system. Complex living systems also have specific properties that shape the evolution of developmental processes (i.e., self-organization, transitions, variability, attractors). Living systems are self-organized, which means that patterns of behaviors and general characteristics emerge from their real-time operation. During a period of transition, systems move from one state to another, from one behavioral pattern to another, through a phase of increased variability in real-time functioning. During this phase, the system is drawn into multiple states by multiple attractors before stabilizing in a new higher-order structure.

As a developmental process, identity is governed by the principles of the dynamic systems theory. It is a constant process of evaluation and re-evaluation of individuals'

adjustment to previously undertaken commitments, life choices and roles in society. The extent to which individuals feel committed to their choices and adjust to them, or explore other alternatives, are a function of real-time experiences. Emotions emerging from daily experiences are the primary driver of identity change and guide how individuals feel adjusted to their choices in real time. Those that are consistent with the commitments made reinforce these choices, while emotions that are in conflict with an individual's commitments tend to weaken them. However, the way individuals deal with conflicting information differs as a function of their openness to change and experience. From a dynamic system perspective, openness to change is an influencing contextual factor of identity, as it defines its state of readiness to change and its ability to be affected by experience. It is both an intrinsic characteristic of each individual based on inter-individual differences, and a factor related to intra-individual variations according to the various situations encountered by an individual over the course of his/her life.

Along with openness to change, the environment is a crucial contextual element to understand identity development. During emerging adulthood, online social media are contexts that are strongly invested on a daily basis. The experiences lived on social media are particularly important for emerging adults and therefore deserve special attention.

4. Online social media: a potential context for identity change

Ever since online social media started expanding, their use by adolescents and emerging adults has been raising questions. Sometimes deleterious, sometimes helpful to psychosocial development, online social media (e.g., Facebook, Instagram, Twitter, LinkedIn, etc.) have been the subject of numerous studies focusing on their impact on young individuals. The so-called "digital natives" (Prensky, 2001), these emerging generation Y (born between 1980 and 1999) and generation Z (born after 2000) adults have been surrounded by devices with permanent access to virtual worlds that hold multiple promises. As a result, they are constantly immersed in these worlds. From maintaining and developing offline interpersonal relationships to discovering personal and cultural otherness, online social media are platforms for exchange and communication that transcend the barriers of the physical world (Subrahmanyam & Smahel, 2010). Throughout the quest to define oneself as an adult in society, social media respond to an increased demand of emerging adults to connect with friends, romantic partners and family (Subrahmanyam & Smahel, 2010). In this chapter, we draw a picture of the use of social media in France and present the effects of the use of these digital platforms, whether they are harmful to well-being and mental health or beneficial in terms of psychosocial development. Finally, we address the links between these digital media and both self-identity and ego-identity.

4.1. Social media use in France

Social media use worldwide has grown in recent years, and France has been no exception to this tendency. According to a study by WeareSocial and Hootsuite (2022), French individuals (from 4 to 64 years old) spend an average of 106 min per day using social media (+5 minutes compared to 2021). Of the 52.6 million social media users (80.3% of the total

population) in January 2022, almost half were emerging adults as defined by Arnett (2000): 21.7% (11.41 million) were between 18 and 24 years old and 24.9% (13.1 million) were between 25 and 34. 51% of French users are women. The most used social media platforms are Facebook (25.5%), Instagram (16.6%), WhatsApp (11.3%) and Snapchat (6.9%). The main reasons for their use are keeping in touch with friends and family (54.1%), filling spare time (41.9%), reading new stories (29.8%), finding content (22.4%), sharing opinions (21.6%), looking for things to do or buy (21.4%), checking the hot topics (19.99%), etc. Since the COVID-19 health crisis, the use of social media has increased drastically from 39 million users in 2020 to 49.6 million in 2021, and finally reaching 52.6 million users in 2022. Social media are now fully integrated into the daily lives of people and they relate to many domains of life. Examining the repercussions of social media use on individual psychosocial adjustment is therefore a core issue.

4.2. Incidence of social media use on psycho-social well-being

From a clinical psychology perspective, social media use (and more generally the internet) has long been considered problematic for the mental health of adolescents and emerging adults as they are the main consumers of these digital platforms (e.g., Błachnio et al., 2013; Błachnio et al., 2016; Huang, 2017; Sherlock & Wagstaff, 2019).

Well-being and mental health are influenced by two aspects of social media use. The first one is the content offered and experiences lived on these media (i.e., online aspects). Some of them, like Instagram, offer their users a continuous flow of photos and videos that are modified by their owners using filters to appear more attractive and desirable. This kind of content tends to create in viewers a perception of their own image that is devalued by a process of social comparison (Festinger, 1954). This issue particularly affects young individuals and their relationship to their own bodies. The use of Instagram has been positively correlated with body dissatisfaction and physical appearance anxiety (Sherlock & Wagstaff, 2019) and negative

social comparison experiences have been positively associated with suicidal ideation (Spitzer et al., 2022). The second aspect is related to the screen time induced by the use of social media. Excessive screen time may lead to mental health complications in young individuals. It has been linked to depressive symptoms (Błachnio et al., 2016), anxiety (Labrague, 2014), self-esteem issues (Błachnio et al., 2013), or even suicide-related outcomes and sleeping problems (Tamura et al., 2017; Twenge et al., 2018). Owing to the significant presence of social media in the lives of emerging adults both from a social perspective (i.e. staying connected with friends) and from an emotional perspective (i.e. enjoying using social media), some young individuals tend to feel a certain 'fear of missing out' (Baker et al., 2018; Przybylski et al., 2013). This fear (FoMO) is defined as "the desire to stay continually connected with what others are doing" (Przybylski et al., 2013, p. 1) to avoid missing important moments experienced by others, and is associated with depressive symptoms and lower mindful attention (Baker et al., 2018).

The picture we have just painted of the psychosocial problems associated with social media use is however mixed, even from a clinical point of view. Some authors argue that results are not sufficient and robust enough to conclude that social media use has harmful effects on mental health (Heffner et al., 2019). According to two recent meta-analyses (Huang, 2017; Ferguson et al., 2022), the hypothesis of a deleterious effect on mental health cannot be sustained, either in terms of content or in terms of screen time. Both analyses highlighted the weak effect size (below the threshold $r = .10$) found in the literature and its subsequent lack of robustness. Other authors even suggest that there may be a positive effect of social media use on mental health through self-disclosure behaviors towards friends, promoting the quality of friendly relationships and well-being (e.g., Wang et al., 2014).

Social media are also seen as a developmental context of their own. Studies have shown that they are particularly related to social capital (e.g., Ellison et al., 2011; Ostic et al., 2021),

which is defined by Putnam (1995) as "features of social life - networks, norms, and trust - that enable participants to act together more effectively to pursue shared objectives" (pp. 664 – 665). Social capital comprises two dimensions: bridging and bonding (Putnam, 1995, 2001), which refer to the nature of the ties or associations in a community or group. While bridging social capital refers to social ties that bring together individuals with different cultures, norms, and values from different groups (i.e. between-social-group ties), bonding social capital refers to ties that are internal to the same community (i.e. within-social-group ties) and generally stronger-than-external ties. These two social capitals are distinguished by their contributions to individual psychosocial development and well-being. Bridging social capital is composed of links that bring new information and allow the exploration of other perspectives. Bonding social capital is typically composed of family and close friends and is an important source of emotional support (Putnam, 2001). These two forms of social capital are developed and maintained through the functionalities of online platforms (Ellison et al., 2007; Ellison et al., 2011). Researchers have also found social media use to be positively related to social capital, the latter being related to psychological well-being and greater life satisfaction (Bano et al., 2019; Chen & Li, 2017; Ostic et al., 2021).

Social capital was linked by Côté (2005) to identity capital, which he defined as a set of capacities "that appear to be necessary for people to intelligently strategize and make decisions affecting their life courses (i.e., to individualize)" (p. 225). He posited that the process of acquiring identity capital unfolds through interpersonal exchanges in multiple contexts. Social media bring individuals immense possibilities in terms of connectedness, exploration of new perspectives, and development of necessary skills to develop oneself (e.g., Subrahmanyam & Smahel, 2010; Subrahmanyam & Smahel, 2011). Social media are thus also extensively studied with regard to their role in identity development.

4.3. Identity-related social media use

Understanding the different issues of identity development in digital social contexts has been one of the central questions in the study of adolescents' and emerging adults' social media use. As seen previously, building a psychosocial identity during emerging adulthood is the most prominent developmental task, especially in the romantic and educational domains. During this period of life, social media become an integral part of the daily life of young individuals (Lenhart, 2015). Emerging adults explore various aspects of psychosocial development via online chat rooms (Smahel & Subrahmanyam, 2007; Subrahmanyam et al, 2006; Tynes et al., 2004), instant messengers (Boneva et al., 2006; Gross et al., 2002), or dating applications such as Tinder (Sumter et al., 2016). Importantly, the virtual and real worlds are intrinsically connected in emerging adulthood (Subrahmanyam & Smahel, 2011), meaning that experiences in one world impact those in the other. In the following two subsections, we present the links between social media and both self-identity and ego-identity.

4.3.1. Social media use and self-presentation

According to Baumeister and Twenge (2003), self-presentation refers to behaviors disclosing information about the self. Online self-presentation behaviors include the sharing of photos, videos, statuses or even stories about oneself. They are all used by emerging adults to put themselves forward for peer evaluation (Michikyan & Subrahmanyam, 2012). Through social media, individuals can try out new selves: more idealistic, more atypical, more daring or more outgoing selves. Ongoing feedback from social media on these self-presentation behaviors (e.g., likes, comments, views) affect how individuals value these different selves (Michikyan et al., 2014). The reactions of other people (validation or other feedback) make their integration into a larger self either easier or more difficult. Social media are thus a context in which emerging adults try on different selves under the gaze of a social community, thus constructing self-representations. However, the development of self-identity through the

integration of different representations of the self with the feedback of other social media users is only one aspect to be examined. Through experiences and contents on social media, individuals can explore multiple possible life choices and compare them with their own. Therefore, a major aspect of identity development still needs to be studied regarding social media use: the development of ego-identity.

4.3.2. Social media use and ego-identity

Studies focusing on the link between social media use and psychosocial identity development, as defined by Erikson (1950, 1968) and operationalized by Marcia (1966), are particularly scarce. To our knowledge, only two studies have attempted to examine the role of social media use in identity development in emerging adulthood (Dantias-Uraga, 2022; Michikyan, 2020). By measuring the degree of identity coherence, representing the identity synthesis vs. identity confusion continuum, Michikyan (2020) first showed that emerging adults with high self-concept clarity presented themselves online more honestly and in the same way over time. Conversely, those with a more confused identity presented themselves less honestly. They tended to engage in self-presentation behaviors that were deceptive but socially favorable to them. According to Michikyan (2020), individuals with a more coherent identity are more confident about who they are and seek less social desirability. They are thus able to present themselves as they are and report their true feelings and beliefs.

Based on the neo-Eriksonian model of Luyckx et al. (2006, 2008), Dantias-Uraga (2022) cross-referenced adolescents and emerging adults' identity statuses with their digital use profiles. These profiles were built thanks to several indicators: (1) the social and emotional integration of social media in users' lives, (2) their passive and active uses of social media, and (3) the forms of self-presentation (i.e., real-self, ideal-self, and role-exploration, comparison, and deception false-selves). Overall, they found that individuals with a diffuse identity status were underrepresented in the digital profiles reflecting truthful self-presentation. The

moratorium status was overrepresented in the digital profiles reflecting a very high use and integration of social media, with multiple types of self-presentation. Achievement and foreclosure statuses were overrepresented in the digital profiles reflecting moderate use and integration of social media, with a tendency towards truthful self-presentation. The achievement status was also underrepresented in the profiles reflecting individuals presenting false selves online.

The findings of these two studies are relatively close and depict a similar link between social media use and ego-identity. The closer individuals are to identity synthesis and having higher self-concept clarity, the more likely they are to present themselves in an honest and truthful manner. With higher internal coherence (i.e., a feeling of being strongly adjusted to the societal roles and life choices undertaken), these individuals are less likely to behave differently online and offline. Social media are also less emotionally and socially integrated in the lives of individuals who are closer to identity achievement. Conversely, individuals tending towards identity confusion and lower self-concept clarity are more likely to engage in multiple self-presentation behaviors (sometimes related to an ideal self, a false self, and more rarely a real self), and social media are more emotionally and socially integrated in their lives. Although these studies focus on the links with identity construction, they approach social media use mainly by considering contents that are related to self-presentation. They do not consider the other forms of online identity experiences present on social media, which can have as much impact on the development of ego-identity.

4.4. Synthesis

Social media are an important part of young individuals' lives. Over the last two years following the COVID-19 crisis, social media use has continued to increase, with emerging adults using their smartphones, tablets and computers for over an hour a day. Although it was already considered as excessive by health professionals, this screen time has been linked to

mental health issues such as depression, anxiety and increased suicidal ideation. Whether it is due to contents or to the time spent on the Internet and on social media, many users even develop specific psychological problems such as a the ‘fear of missing out’ or an increased depreciation of their body image. However, these deleterious effects may not be attributable to social media use alone, since recent meta-analyses have underlined the weak effects of these links when they are studied without a third explanatory factor. Regarding the links between identity and social media, most researchers have focused on how individuals use social media as a practice ground for the self. Emerging adults in search of self-concept clarity present various images of themselves (sometimes false, idealized or real), seeking feedback from other users conveying approval or rejection. These online self-presentation behaviors, as well as the emotional and social integration of social media into young users’ lives, are related to how individuals have integrated these various self-images into a single coherent self. Therefore, since individuals with high self-concept clarity are more likely to be close to identity synthesis, individuals in identity achievement present themselves more honestly on social media while individuals in identity confusion present themselves in multiple ways (sometimes false, sometimes idealized, sometimes real). However, self-concept clarity is only one of the prerequisites for achieving a stable and sustainable psychosocial identity. The experiences related to the integration of various selves in a coherent whole are indicators of identity development. Daily emotional experiences contribute to the construction of one’s psychosocial identity and its maintenance in the numerous domains of life. Although there have been recent characterizations of the links between psychosocial identity, the self and digital uses, no study has yet answered the question: what impact do social media experiences as a whole have on the development of ego-identity?

5. Research aims and hypotheses

5.1. Problematic

Defining one's own identity is an important psychosocial task in emerging adulthood. For most individuals, it is a period of exploration of different roles, leading to adjusted psychosocial commitments (Arnett, 2015). Overall, research on the construction of identity has focused on identity development over long periods, both transversally and longitudinally. More recently, scholars have examined the functioning of identity to understand what complex mechanisms are involved at the micro-level (i.e., weekly or daily level) and how variability and changes at lower levels may explain transitions at higher-order levels, as suggested by the dynamic systems theory (e.g., Kunnen & van Geert, 2012; van Geert, 1994). However, it seems difficult to settle on a common understanding of identity functioning which could account for intra-individual differences and similarities in both micro-level variations and macro-level transitions. One of the biggest challenges of this thesis is thus to understand how the dynamic system of identity functions on an everyday level in emerging adulthood.

Whether empirical studies have focused on the micro or macro level of identity, the educational and romantic relationships domains have received particular attention as they are typically the most important ones in an emerging adult's life (Arnett, 2015; Vosylis et al., 2017). However, to our knowledge, no study has taken both domains into account in the search for intra-individual similarities or differences in identity functioning during emerging adulthood. This thesis therefore addresses two domains and explores their similarities and differences.

Before probing our main objective of examining how identity works on a daily basis in both the educational and romantic relationships domains, the first step is to understand to what extent the macro and micro levels of identity are linked. Researchers have argued that micro-level processes are the conceptual equivalent of the macro-level processes in major theories

operationalizing the identity dynamic (Lichtwarck-Aschoff et al., 2008; van der Gaag et al., 2016; Vincent & Lannegrand, 2022). Although the theory of dynamic systems informs us about the relations between the different levels of a single developmental process, to what extent it is empirically possible to draw conclusions about one level from another remains elusive. A specific feature of a dynamic system is the way in which higher-order properties constrain lower-order parameters (Kunnen & van Geert, 2012). As far as identity is concerned, this translates into the fact that the state of identity in which the person is at a given time (which could be called identity status) has a strong impact on the way that person will live and experience everyday events. We thus sought to understand the extent to which macro-level identity processes have an impact on micro-level processes.

As they progressively integrate psychosocially into society as adults, individuals are exposed to multiple challenges in which identity commitments are put to the test by environmental information from ever-changing contexts (Bosma & Kunnen, 2008). The emotions that arise from these identity-relevant experiences have been conceptualized as the force that drives changes in identity commitments. The valence of emotions (i.e., positive or negative) obviously has many effects on individuals. Positive emotions can either have a positive or negative effect on the feeling of adjustment to one's own commitments. Similarly, negative emotions can lead individuals to feeling both adjusted or unadjusted to their commitments (Kunnen, 2006; van der Gaag et al., 2017, Vleioras & Bosma, 2005). These heterogeneous links should be clarified to provide a better understanding of the issues related to emotional experiences. It is thus necessary to consider both the valence of emotions (i.e., positive or negative) and the extent to which it confirms or disproves the commitments made (i.e., the degree of agreement or disagreement with the commitments). There are few empirical studies about how daily emotional experiences impact the processes of identity, which seem to be a primary force in this dynamic system. We thus chose to assess both emotional valence and

the outcomes of emotional experiences with empirical results to clarify the extent to which emotional experiences may promote identity changes.

In line with the conceptualization of identity as a dynamic system, the context in which daily emotional experiences occur is a major aspect of change (Kunnen & van Geert, 2012). Context can be understood both as the environment and as the state of the system at a given time. We must thus pay attention to these two contextual elements. First, we decided to assess emotional experiences in social media contexts, as they lead individuals into identity-relevant experiences and daily self-exploration (Subrahmanyam et al., 2011). These contexts are also a space for interaction with other individuals who share various life experiences, values, and references, as in any open living context (Kroger, 2015). Nowadays, the consequences of the use of social media are inseparable from the psychosocial development of emerging adults (Ellison & Steinfield, 2007, Ellison et al., 2011). Beyond investigating the role of emotional experiences in the daily functioning of identity, this thesis also aims at determining the impact of social media contexts on identity development by understanding the environment in which these experiences are lived.

The second contextual element specific to the self-organizing nature of identity is the identity state of each individual, i.e. his or her degree of openness to change. According to the dynamic system theory, each system is self-organizing in two interacting directions: a bottom-up and a top-down way. The bottom-up interaction refers to the way in which real-time emotional experiences affect and shape one's general identity. The top-down interaction refers to the way in which an individual's general identity shapes his or her relation to real-time experiences. The latter aspect is particularly important in understanding the relation between everyday emotional experiences and micro processes of identity. Indeed, depending on the general state of the system at the time of the analysis of its functioning, the impact of emotional experiences will be different. For instance, conflicting information from the environment will

have little or no impact on the commitments of an individual in a period of stable identity, while it may be particularly impactful on an individual in a period of deep reconsideration of commitments. As highlighted in our literature review, this refers to the state of readiness and openness to change (Berzonsky & Sullivan, 1992; Bosma & Kunnen, 2001; Kunnen & van Geert, 2012). In this research, we seek to understand the functioning of identity by taking into account levels of openness to change. We thus distinguish intra-individual differences in sensitivity to emotional experiences, and more broadly to the mechanisms underlying identity development.

Finally, in this study of such complex developmental process which evolve over time, we had to examine the notion of ergodicity (Molenaar & Campbell, 2009). Ergodicity may be assumed when relations between variables at an inter-individual level are the same relations as those that can be observed in each individual over time, as argued by Molenaar and Campbell (2009). Psychological variables and developmental processes are non-ergodic by nature. To overcome this transgression of the ergodicity assumption, scholars have proposed to study the process at an intra-individual level, as long as it does not prove to be characterized by ergodicity (Molenaar & Campbell, 2009). It is recommended to first study the process at the individual level and then identify invariants, rather than draw conclusions at the individual level from results obtained at group level. However, few studies have examined the relations between micro-level identity processes at an intra-individual level and at an inter-individual level (e.g., Becht et al., 2021; van der Gaag et al., 2016). One of the purposes of this thesis is to overcome this lack of empirical results to understand how identity functions at both the inter-individual and intra-individual levels.

5.2. Objective 1: Exploring links between macro and micro levels of identity and social media use

As stated by Kunnen & van Geert (2012) “One’s identity, self-definition, commitments

and values will determine why, when and how one reacts to a potential threat to one's identity" (p. 154). The first objective was thus to look at how the macro level of identity (i.e., the identity state) affects (1) the micro level of identity (i.e., the functioning of identity in everyday life), (2) daily social media emotional experiences, and (3) the variability of the feeling of adjustment to one's commitments. Van der Gaag et al. (2016) defined micro-level processes corresponding to each of the macro-level processes described in the literature. However, the extent to which macro-level processes have an incidence on micro-level ones has not yet been empirically demonstrated. The question here is to understand how the factors reflecting the identity state of an individual (i.e., macro-level processes and openness to change) can predict identity functioning on a daily basis (i.e., micro-level processes). How does commitment (macro) predict commitment to fit (micro) in the same week (i.e., the predictive value of a macro process on its micro counterpart)? How do individuals' commitments affect the extent to which they explore alternatives or stick to their commitments during that week (i.e., the predictive value of macro-level processes on all micro-level processes)? The self-organization of the dynamic system of identity implies that the macro identity state of an individual shapes his or her relation to identity experiences in real time. The second question is thus whether the identity state of an individual can predict the real-time importance, intensity and emotional valence of daily social media experiences. Given that variability is an important aspect of different time-scale relations (van Dijk & van Geert, 2014), we also wanted to know whether day-to-day fluctuations in the feeling of adjustment towards commitments (i.e., the commitment to fit process) may be predicted by macro-level identity processes and openness to change. We therefore investigated how each macro-level identity process and openness to change may predict micro-level identity processes, daily social media emotional experiences and the variability of commitment to fit within the same week.

5.2.1. Does identity state predict levels of micro-level identity processes and

socialmedia use within the same week?

Using a between-individual approach, we first hypothesized that the levels of each macro identity process would positively predict the levels of its micro counterpart. We also assumed that commitment would positively predict commitment to fit, that reconsideration would positively predict exploration of alternatives, and that in-depth exploration would positively predict exploration of fit (**H1**). Second, we hypothesized that higher levels of commitment would predict lower levels of exploration of alternatives the same week, and that higher levels of reconsideration would predict lower levels of commitment to fit the same week, as a result of the major consensus on this relation (Becht et al., 2021; Crocetti et al., 2008; Luyckx et al., 2006, van der Gaag et al., 2016). Conversely, as there is no consensus to date on the link between commitment and in-depth exploration (e.g., Zimmerman, 2015; Skhirtladze et al., 2015), and the link between commitment to fit and exploration of fit (e.g., Becht et al., 2021; van der Gaag et al., 2016;), we could not make a clear hypothesis about the directionality of their relation. We therefore explored how these two processes between the macro and micro levels are related. We assumed that in-depth exploration levels would positively predict exploration of alternatives levels the same week, and that reconsideration levels would positively predict exploration of fit levels the same week. We also hypothesized that levels of openness to change would positively predict levels of both exploration processes and negatively predict levels of commitment to fit (**H2**). Third, we hypothesized that the more individuals would be in a period of identity exploration, change, or search for other choices to their commitments, the more they would (1) tend to have social media experiences related to identity in the investigated domain, (2) the more important these experiences would be to them, and (3-4) the more they would perceive significant degrees of positive and negative intensity of emotional experiences. We thus expected that the lower the levels of commitment would be, the more experiences individuals would have, and the more important these experiences would

be to them. We also expected that the higher the levels of exploration (of any kind) and the higher their openness to change would be, the more experiences individuals would have related to the identity domain, the more important these experiences would be to them, and the more they would perceive significant levels of intensity of both emotional valences (**H3**). Finally, we hypothesize that higher levels of commitment would predict lower levels of commitment to fit fluctuations, and that higher levels of exploration of alternatives would predict higher levels of commitment to fit fluctuations. Moreover, considering the difficulties in accounting for a specific directionality of the relation between commitment and in-depth exploration, we further explored this link between in-depth exploration and commitment to fit fluctuations. We hypothesized that individuals with greater openness to change would show higher variability of commitment to fit (**H4**).

5.3. Objective 2: Exploring links between micro-level identity processes and social media emotional experiences

The second objective is to understand how micro-level identity processes are interlinked and how multiple aspects of social media emotional experiences may account for these processes in the educational and romantic domains in emerging adulthood. Considering that the variables under study are non-ergodic by nature and that their relations are non-linear, significant within-individual differences were expected. We thus focused on exploring the relations between micro-level identity processes (i.e. commitment to fit, exploration of fit, exploration of alternatives) and indicators of daily social media emotional experiences at both intra-individual and inter-individual levels. In each domain, our questions were: (1) how are micro-identity processes and emotional experiences related to each other within individuals? And (2) do emotional experiences predict inter-individual differences in micro-level identity processes?

5.3.1. How are micro-level identity processes and emotional experiences related to each other within individuals?

Using the operationalization of micro-level identity processes by van der Gaag et al. (2016), we assessed the strength of the relations between the three types of micro processes: commitment to fit, exploration of fit and exploration of alternatives. We also assessed the directionality and strength of their relations with indicators of social media emotional experiences. Although we expected significant heterogeneity in the relations between emotional experiences and micro-level identity processes within individuals, we expected some correlations in both the educational and romantic domains. Regarding the relations between micro-level identity processes, we assumed that both types of exploration would be positively correlated with each other and negatively correlated with the commitment to fit process. Regarding the relations between emotional experiences and micro-level identity processes and considering the heterogeneous results found in the literature, we did not expect any directional effect (**H5**).

5.3.2. *Do emotional experiences predict between-individual differences in micro-level identity processes?*

First, we expected that higher levels of presence on social media and of importance of the experiences lived in one domain would predict higher levels of both exploration of fit and exploration of alternatives in this domain. Second, both positive and negative emotions were shown to have a positive or negative effect on commitment strength and are expected to vary greatly within individuals (Kunnen, 2006; van der Gaag et al., 2017; Vleioras & Bosma, 2005). However, negative emotions mostly had a negative effect on commitment, at both inter-individual and intra-individual levels (Kunnen, 2006). According to Bosma and Kunnen's model (2001), negative emotional experiences lead to a decreased level of commitment and increased levels in exploration processes, while positive emotional experiences lead to an increase in commitment. We thus aimed to explore whether both positive and negative emotions influence levels of micro-identity processes. We hypothesized that negative emotions would

positively predict the levels of exploration processes and negatively predict the level of commitment to fit. Conversely, we assumed that positive emotions would positively predict the level of commitment to fit and negatively predict the levels of exploration processes (**H6**).

5.4. Objective 3: Understanding daily dynamics of identity and social media emotional experiences

Our third objective was to understand the functioning of identity on a daily basis. As evidenced in our literature review, researchers have provided a rather precise conceptualization of how identity works in everyday life (Bosma & Kunnen, 2001). Beyond the role of exploratory processes in the identity dynamic of evaluation and re-evaluation of commitments on a daily basis, emotional experiences also seem to play a major role in this dynamic (Kunnen, 2006; van der Gaag et al., 2017). Empirical studies have particularly focused on the impact of positive and negative emotional valence of real-time experiences on micro-level identity processes, in both the educational and romantic domains (van der Gaag, 2016; Vincent & Lannegrand, 2022). However, these studies have shown that the valence of emotions is not sufficiently informative as to its real impact on micro-level identity processes. This is in line with the model of Bosma and Kunnen (2001), who argued that it is the sense of conflict emanating from emotional experiences that drives identity changes. We therefore aimed to study daily identity dynamics and the impact of the outcomes of social media emotional experiences (i.e., the feeling of agreement and disagreement with commitments arising from these experiences), to understand how these experiences drive identity changes. Overall, the daily functioning of identity, including both the micro-level identity processes and the results of emotional experiences dynamics, has not yet been examined empirically. Our third objective was to fill this gap by proposing to study how micro-level identity processes and the outcomes of emotional experiences in social media dynamically affect each other within individuals.

Beyond investigating the micro-functioning of identity, we also looked at how different

types of system, whether flexible or rigid, function differently on a daily basis. Regarding identity, we posited that individuals' openness to experience and change may influence the way they live emotional experiences daily, but also the extent to which they are affected by them. We therefore investigated how the functioning of this dynamic system of identity may differ between individuals who are open to change and others who are not. Groups were formed and compared based on a change-inducing period rather than on personality, which could discriminate some individuals for their general rigidity in life. We explain this in detail in the "Analysis Plan" section. As for the other objectives of this thesis, each of these secondary objectives was addressed with respect to the educational and romantic relationships domains.

Regarding the daily dynamics of identity and outcomes of social media emotional experiences, we focused our attention on three aspects of the daily functioning of identity: first, the way in which the different variables of the identity system (i.e., commitment to fit, exploration of fit, exploration of alternatives, disagreement with commitments, agreement with commitments) influence each other during the same day (i.e., dynamic concurrent associations); second, the extent to which these variables are stable over time (Kunnen & van Geert, 2012), which is referred to as stability paths; and third, the extent to which the states of these variables on one day influences their state the following day, referred to as cross-lagged relations or daily dynamic relations (Becht et al., 2021). We formulated various hypotheses about the functioning of different dynamic systems according to these three aspects.

We observed the following groups: (1) a general population group, (2) a group of individuals open to change, and (3) a group of individuals largely hermetic to change. We first present our hypotheses on the expected functioning of the first group according to the three abovementioned aspects. We then present the expected differences in general functioning between the general population group and each subgroup (i.e., open to change and largely hermetic to change).

5.4.1. How do the daily dynamics of identity function in the general population?

Using a within-individual approach, we first hypothesized that the dynamic concurrent associations between the variables of the dynamic system of micro identity function in accordance with the relations found in the literature. We thus expected an increase in levels of commitment to fit one day to predict a decrease in levels of exploration of fit, exploration of alternatives and disagreement with commitments from social media emotional experiences the same day. We also expected increased levels of commitment to fit to predict increased levels of agreement with commitments from online emotional experiences the same day. Given the results of van der Gaag et al. (2016), we posited that an increase in exploration of fit a day would predict an increase in exploration of alternatives and disagreement with commitments, and a decrease in levels of agreement with commitments the same day. We also expected increased exploration of alternatives to predict higher levels of disagreement and lower levels of agreement with commitments from social media emotional experiences on one day (**H7**).

Our second set of hypotheses concerned the stability paths of the variables included in the daily dynamics of identity. For micro-level identity processes, we hypothesized that commitment to fit would be the most stable identity process, followed by exploration of fit and exploration of alternatives. No hypothesis was made regarding the two results of emotional experiences since they are not specific processes. This means that there is no particular functioning from which we could have inferred their auto-regressive character (**H8**).

Finally, for day-to-day dynamic relations between the variables involved in identity functioning, we hypothesized that increased levels of commitment to fit would predict lower levels of both exploration processes and levels of perceived conflict with social media emotional experiences the following day. We also posited that increased levels of commitment to fit would predict increased levels of perceived agreement to commitments from online experiences the next day. An increase in levels of exploration of fit was expected to predict an

increase in levels of exploration of alternatives and perceived disagreement with commitments from social media the next day, and a decrease in levels of commitment to fit and perceived agreement with commitments from online emotional experiences the following day. We hypothesized that increased levels of exploration of alternatives would predict increased levels of exploration of fit and disagreement with commitments the next day. Increased levels of exploration of alternatives were expected to predict decreased levels of commitment to fit and agreement with commitments from social media emotional experiences the following day. Regarding outcomes of social media emotional experiences, increased levels of disagreement with commitments were expected to predict decreased levels of commitment to fit and increased levels of exploration of fit and exploration of alternatives the next day. Conversely, increased levels of agreement with commitments were expected to predict decreased levels of commitment to fit and decreased levels of exploration of fit and exploration of alternatives the next day (**H9**).

5.4.1.1. Identity daily dynamics of individuals open to change

Overall, we expected individuals open to change to be governed by identity exploration and have more intense emotional experiences with respect to their commitments. We hypothesized that exploration processes and outcomes of emotional experiences would have a higher incidence on commitment to fit on the same day. We also expected stability paths to be weaker than in the general population and assumed that both exploration processes would present the highest stability paths. In addition, we expected more significant effects in the day-to-day relations between variables, reflecting a larger cycle of identity evaluation-reevaluation (**H10**).

5.4.1.2. Identity daily dynamics of individuals who are not open to change

We hypothesized that individuals who are not open to change would show fewer meaningful relations (either dynamic concurrent associations or day-to-day dynamic relations)

and more stable levels of micro-level identity processes. We expected both exploration processes and outcomes of social media emotional experiences to have weaker effects on commitment to fit than in the general population group. Standardized stability paths of the various micro-level identity processes were expected to be higher than in the general population and the groups of individuals open to change groups. Finally, we hypothesized that non-significant day-to-day dynamic relations between variables would appear in the results, owing to the significant rigidity of these systems towards change (**H11**).

6. Introduction of the empirical studies

Given the empirical gaps that prevent us from understanding identity development through the mechanisms that underlie its everyday functioning, we have identified three objectives, to which we have responded with two separate studies. The explanation for conducting two separate studies rests on two points. First, the temporalities related to identity constructs differ according to the objectives (i.e., macro and micro levels). It was therefore necessary to conduct a procedure extending over at least several months to capture identity states at a developmental level (macro-level of identity). It was also mandatory to capture the identity functioning (micro-level of identity) as such as daily social media experiences, to link them to the macro-level of identity. Second, we needed to use a dynamic approach to properly address the Objective 3, in other words to have enough consecutive observation points (i.e., consecutive procedure days) to analyze and conclude on the daily dynamic of identity. However, the conduct of a procedure extending over several months during which individuals would have to respond every day was too difficult to implement due to the means we had, and above all, due to the burden involved in following such a procedure for the participants. For these two reasons, we conducted two separate procedures. This **first study** was conducted between April and June 2020 and aimed to shed light on the nature of the links between identity processes at a macro and a micro levels, and various indicators of daily social media use and emotional experiences. The third objective was tested during a **second study** that has been set up from 8 to 28 March 2021, in order to understand precisely the mechanisms that underlie the functioning of identity, that is, the daily identity dynamics.

These two studies are presented in sequence, beginning with the method, and ending with a discussion of the specific results for each study. Thus, for the first study, we present the method part dedicated to it, followed by the results regarding Objective 1, a discussion of these

results, then the results regarding Objective 2 with a discussion of these last results. Then, we present the method of the Study 2 dedicated to Objective 3, the results, and a discussion specific to these results. Finally, a general discussion put all the results into perspective.

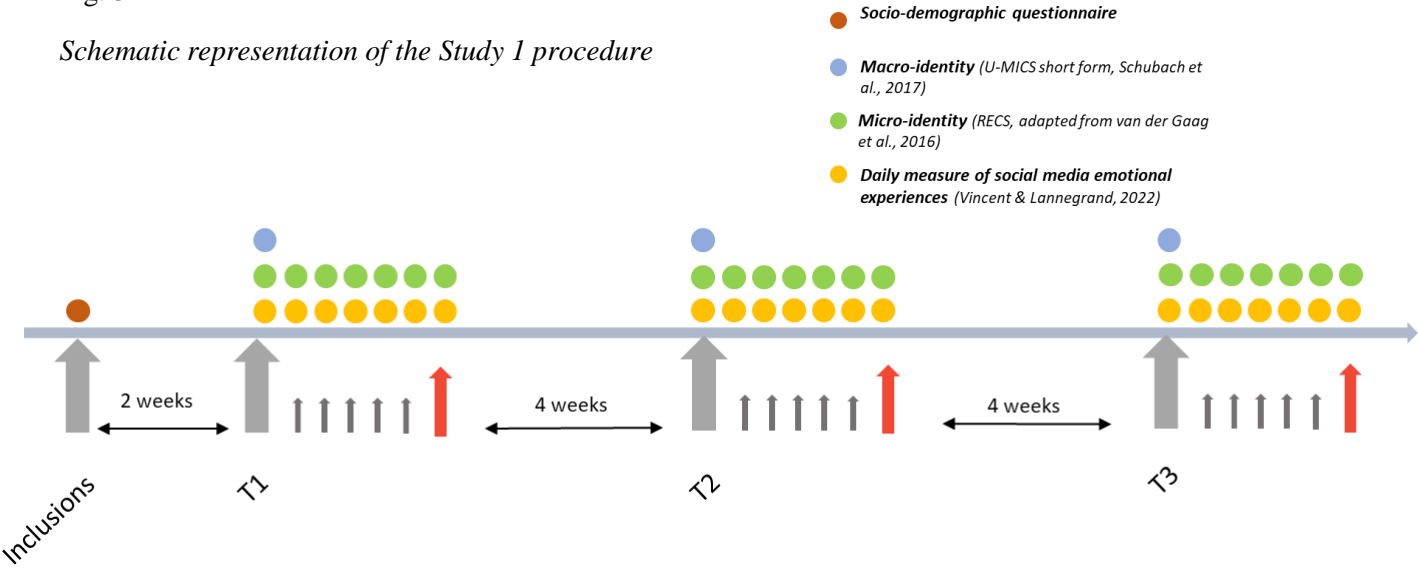
7. Method of Study 1

7.1. Procedure

7.1.1. Study design

In order to characterize links between both macro and micro levels of identity processes, the 1st study followed a fifteen-week procedure containing three measurement periods each consisting of seven daily measures (Fig. 3). Between each measurement period, there were four weeks during which no assessment was performed. All along the measurement periods, at each time point, the participants were asked to report on the different measures presented below. Every day at 6:00 pm, the participants received an e-mail or a phone message containing a link leading to the LimeSurvey questionnaire in which they could answer the study questions. They were specifically asked to respond to the measurement tools regarding the previous 24 hours. At recruitment, two weeks before the procedure, participants were asked to complete an initial socio-demographic measure. This procedure was conducted in compliance with the University of Bordeaux ethics committee approval.

Fig. 3
Schematic representation of the Study 1 procedure



7.1.2. Recruitment

Participants were recruited through their university email address. Two weeks before

the study, we first contacted them through their university email address that contained a link to a LimeSurvey webpage that allowed them to register. On this web page, and before they could validate their registration, more details about the study were presented: the investigators of the study, the objectives, the detailed procedure, and the data anonymization procedure (presented in a dedicated sub-section below). They were also presented with their rights concerning the possibilities: to withdraw from the study at any time, to have a report of the results, to be able to contact the principal investigator to answer any questions, and to provide a space for discussion of any problems encountered during the conduct of the study or related to the subject of the study. For tracking purposes, participants were asked to provide either their e-mail address, telephone number, or both, at their convenience.

7.1.3. Data Anonymization

For data anonymization, we randomly generated a 3-character identification code (random letters and numbers). These identification codes were linked to the participant's e-mail address and telephone number (if provided) throughout the study to ensure longitudinal response tracking. To ensure final anonymization of the data, a single data file was generated that includes only the participant's ID code. The general data file available on LimeSurvey (containing the answers associated to the participants' email and/or phone number) was destroyed at the end of the surveys, thus, not allowing to make the link between the participants and their answers to the procedure.

7.1.4. Participants

Among all the emerging adult students from the University of Bordeaux that were asked to participate via their university mailbox (N = 865), 160 agreed to participate in the study. Using the method of van der Gaag et al. (2016), we excluded from analyses (a posteriori) individuals from the first sample (N = 160) according to three criteria: either (1) if they had not completed at least two of the three proposed macro measures, (2) if they did not show any

variations in more than 3 variables in both domains (among a total of five variables), or (3) if they did not complete enough measurement reports (minimum $n_{\text{report}} = 15$, maximum $n_{\text{report}} = 21$). One hundred and ten individuals (68.75%) reported less than two macro measures and were therefore excluded from study. Five individuals (3.125%) were excluded because they reported the same levels for 3 of the 5 processes assessed during the procedure period (i.e., 21 days). Ten individuals (6.25%) were excluded because they completed fewer than the fifteen measurement reports required. In sum, fifteen individuals did not meet the criteria for our analyses, leaving 35 participants. The participants from the final sample of our first study ($N = 35$) were aged from 18 to 24 years old (85.71% women, 14.29% man) who were enrolled in freshman ($n = 9$; 25.71%), sophomore ($n = 6$; 17.14%), third year ($n = 10$; 28.57%), fourth ($n = 6$; 17.14%), or fifth year ($n = 4$; 11.43%).

7.2. Measures

7.2.1. Sociodemographic questionnaire

The socio-demographic questionnaire was conducted at the beginning of each week of measurement. Participants had to report on a measure capturing their age (from 18 to 29 years old), gender (i.e., male, female, non-binary), the course of study they were pursuing, and their romantic relationships situation (in a couple, single, other with a text).

7.2.2. Measurement scale of the repeated measures: the Visual Analogue Scale

For all measures in our procedure (except for the socio-demographic questionnaire previously presented, and the amount of time spent in the social media per day), the response scales were adapted from a qualitative ordinal Likert scale (0 to 6) to a Visual Analogue Scale (VAS) ranging from 0 (not at all) to 100 (very much). VAS is mostly used in clinical psychology research into pain and mental health (see Miller & Ferris, 1993, for a review). VAS has been found to be particularly well suited to investigating constructs that are, by their very nature, inaccessible to objective scrutiny, such as moods or feelings (Zealley & Aitken, 1969). Also,

multiple uses of VAS over time allow the assessment of changes in variables within individuals (Vautier, 2011). Indeed, “the person may be viewed as her own stable gauge of the subjective phenomenon to be assessed. Thus, two ratings from the same person using the same device can be compared to each other, and their difference can be interpreted as a measurement of change” (Vautier, 2011, p.12). Considering the micro-level of identity processes, VAS is highly relevant in that this timescale (i.e., on a day-to-day basis) fosters change and variability, and because identity at a micro-level is conceptualized as a feeling of being adjusted to one’s commitment (Lichtwarck-Aschoff et al., 2008). For the same reasons, this measurement scale was used for the daily assessment of emotions in social media. Lastly, the macro-level of identity can also be subject to variation within the same individual. In this sense, the VAS is also relevant in the assessment of the macro-level. In the end, the measures were standardized and were more consistent for individuals throughout the procedure, thus avoiding adding a greater burden to the test. Finally, in accordance with the writings of Vautier (2011), during each week separately, participants were asked to respond at time t based on their previous responses at time $t-1$.

7.2.3. Assessing micro-identity processes

The RECS-E (Repeated Exploration and Commitment Scale in the domain of Education) assesses processes of identity at the micro-level (van der Gaag et al., 2016): the commitment to fit (CF), the exploration of fit (EF), and the exploration of alternatives (EA). The validity of the RECS-E was obtained using the convergent-construct validity method. Intra-individual correlations between constructs showed sufficient construct-convergent validity (van der Gaag et al., 2016). The measurement of the micro-level of identity processes was achieved each day of the procedure, except for the last measurement time.

Because the measure of micro-level of identity processes was firstly built to assess the educational domain, and because there is an important issue about the items used to assess identity in intrapersonal domains in the U-MICS (Crocetti et al., 2008) and the RECS-E (van

der Gaag et al., 20016) mainly they are about a specific person – and therefore are more relationship quality measures-, we adapted the items to have a relevant measure for romantic relationships. First, it was specified to the participants that by “romantic relationship” we meant any relationship experienced through the prism of romance, regardless of the duration of this relationship, its intensity, or the degree of commitment in this relationship. The questionnaire administered was not only addressed to individuals who considered themselves to be in a stable relationship (as a couple) but also to participants who were in a more recent or even more ephemeral romantic relationship. We therefore asked about stable and lasting relationships as well as the amorous meeting, the flirtation, the date, or the maintenance of a more flexible relationship. In addition, participants were asked to respond, not specifically to one or more romantic partners, but to "what they were currently experiencing in their romantic relationships". Therefore, participants who did not consider themselves to be in a romantic relationship of any kind were free to answer the questions related to the romantic relationships domain by considering their current situation regarding their romantic relationships. For example, we adapted the item from “Do you feel that this romantic relationship suits you?” to “Do you feel that what you are currently living in your romantic relationships suits you?”.

7.2.4. Assessing macro-level of identity processes

To assess macro-level of identity processes we used the Utrecht Management of Identity Commitments Scale (U-MICS) short version developed by Schubach et al. (2017) and adapted from the long version by Crocetti et al. (2008). The french version of the U-MICS was validated by Zimmermann et al. (2012). The short version validated by Schubach et al. (2017) measures the level of the three processes involved in the development of identity from Crocetti et al.'s (2008) model, with 3 questions assessing each process. The assessment of the macro level of identity was done once at the beginning of each week. This scale has a good internal consistency ($\alpha = .78$) as do each of the 3 dimensions of identity formation: commitment ($\alpha = .81$),

exploration in depth ($\alpha = .69$), and reconsideration ($\alpha = .83$).

The reliability of the U-MICS (Crocetti et al., 2008) in our sample, has been assessed using Robust Maximum Likelihood (MLR) estimator for non-normal data (Kline, 2016). Based on criteria suggested by Kline (2016) and Hu and Bentler (1999), we used several indices: (1) the Comparative Fit Index (CFI), (2) the Root Means Square Error of Approximation (RMSEA), and (3) the Standardized Root Mean Square Residual (SRMR). Values of CFI $> .90$, RMSEA $< .06$, SRMR $< .08$ represent an excellent fit (Hu & Bentler, 1999). We also looked at a non-significant χ^2 . However, it is well known that χ^2 tends to be significant for large sample sizes or skewed data (Kline, 2016). In this respect, chi-square was consulted as an informative but not decisive index in the analysis of the reliability of the scale.

Results of these indices showed a good fit for the data in the educational domain (χ^2 (24) = 43.78, $p < 0.008$, CFI = 0.953, RMSEA = 0.083, SRMR = 0.081) with the following modification: in the commitment dimension, the item 1 and the item 3 in the French version “Ce que j’étudie m’offre des garanties de stabilité dans la vie” and the item 3 “Ce que j’étudie m’offre des garanties pour l’avenir” are conceptually similar. Thus, we allowed the error of the two items to covariate with each other (χ^2 (23) = 25.53, $p < 0.323$, CFI = 0.994, RMSEA = 0.03, SRMR = 0.049). For the data in the romantic relationships domain, poor indices were found at the start of the analyses (χ^2 (24) = 132.09, $p < 0.001$, CFI = 0.859, RMSEA = 0.193, SRMR = 0.137). Modification indices first demonstrated that the 2nd item of the exploration in depth dimension is also explained by the reconsideration dimension. In the French version, « Je pense souvent à ce que j’étudie » appears to be a deep exploratory activity on commitments already made, however, it seems that, this activity of “often thinking about what I am studying” is strongly related to exploration directed towards a confrontation of the actual commitments with other potential commitments (i.e., one would expect that individuals scoring high on this item would tend to have higher commitment reconsideration scores). In this sense, we allowed this

item to also be explained by the reconsideration dimension ($\chi^2 (23) = 94.466, p < 0.001, CFI = 0.907, RMSEA = 0.16, SRMR = 0.083$). Similarly, as the educational domain, further modification indices demonstrated the need for an error covariance between items 1 and 3 of the commitment dimension. Thus, we also allowed the error of these items to be correlated, as for the educational domain ($\chi^2 (22) = 58.936, p < 0.001, CFI = 0.952, RMSEA = 0.118, SRMR = 0.077$). Further modification indices showed a need for releasing the parameter between the item 3 of the reconsideration dimension “En fait, je cherche à étudier des choses différentes”, and the item 1 of the commitment dimension “Ce que j'étudie m'offre des garanties de stabilité dans la vie”. These items conceptually translate an opposite state of identity. Therefore, their errors were not allowed to covariate with each other. Regarding the RMSEA index that did not reach the threshold (.06), it has been shown that the RMSEA has serious problems with simpler models with few degrees of freedom. Simply, to account for complexity, RMSEA, that is built as an absolute fit index that incorporates model complexity, includes a “penalty” at the model for few degrees of freedom. As a result, models with few degrees of freedom often have poor RMSEA even when they fit the data quite well (Kenny et al., 2014).

7.2.5. Assessing openness to change

A score for openness to change was calculated from the scores of the three macro-level identity processes. Openness to change reflects the extent to which an individual is in a state of readiness for change. Considering the three processes of macro identity (Crocetti et al., 2008), an individual who is particularly open to change would be represented by high levels of exploratory processes and low levels of commitment. In order to reflect the idea of openness to change, at each of the three macro measures (one measure at the beginning of each week) the commitment process score was reversed and then averaged together with the two exploration process scores. That is, an individual who had a score of 100 (reversed, so 0) for commitment, 65 for in-depth exploration, and 25 for reconsideration, had an openness to change score (OC)

of 30 ($OC = 0 + 65 + 25 / 3 = 30$). The higher the individual's openness to change score, the more it reflected a high state of openness.

7.2.6. *Daily measures of social media emotional experiences*

The measures related to experiences in social media were of two types: (1) the measures of daily emotional experiences, and (2) the measure of the time spent in social media each day. Both measures of social network experiences were administered on each day of the procedure, except for the last measurement time. First, based on the methods of Vleioras & Bosma (2005) and Kunnen (2006), daily social media emotional experiences were assessed using a combination of questions about (1) the extent to which experiences lived in social media (“today”) were related to both identity domains assessed (i.e., domain-related experiences, DRE), (2) the perceived importance of these experiences (i.e., importance of the experiences in the domain, IED), and (3-4) a measure of the intensity of both types of emotions felt (i.e., positive and negative, PE and NE), administered in this exact order. Each question was asked for both the educational and the romantic relationships domains. The first and second items focused on all emotional experiences lived in social media regarding each domain. The third and fourth items gave a measure of the intensity of the valence of the emotions related to the emotional experiences lived each day in social media. Second, participants had to report each day on the amount of time spent in the social media per day. Specifically, we asked the participants: "How much time did you use social media today?" with answers ranging from 1 (0 to 10 min), to 13 (more than 120 min).

Because our tool does not have enough items to conduct exploratory factor analysis, and we could not add additional tools to the intensive procedure to account for divergent or convergent validities, we just looked at its reliability. Thus, the daily measure of social media emotional experiences had a good reliability for the educational domain ($\alpha = 0.714$; $\omega = 0.757$), and an acceptable reliability for the romantic relationships model ($\alpha = 0.697$; $\omega =$

0.751).

7.3. Analysis plan

7.3.1. 1st Objective analyses: Predictive value of macro-level of identity on micro-level of identity processes and social media emotional experiences between-individuals

The first objective was attempted using linear mixed models (LMM) to assess the predictive value of the identity state at a macro level (i.e., levels of macro-level of identity processes and openness to change score) on micro-level of identity processes and specific social media emotional experiences (i.e., the domain related experiences encounter as well as the importance of these experiences for the individual). Mixed models are common regression analyses that explicitly account for the dependency among data points using random-effect parameters. As argued by Singmann and Kellen (2019), mixed models provide more accurate estimates of the effects, improved statistical power, and non-inflated Type I errors. Regarding our study design (i.e., repeated measures), the independence assumption was expected to be violated at an individual level as well as at group level. Thus, we applied mixed models to control for this independence between data points.

For both identity domains investigated, we assessed the effects of macro-level of identity processes and openness to change (the macro measure at the start of the week), on micro-level of identity processes and daily social media emotional experiences (the micro measures the same week). To do so, we added each macro-level of identity processes and openness to change as fixed effects in the model (without interaction term). Moreover, we added the participants and the four macro-level variables as random effects. In this way, we estimated four models for each relation between a macro-level variable and one of the seven variables from the micro-level of identity processes (i.e., CF, EF, EA) and the daily measure of social media emotional experiences (i.e., DRE, IED, PE, NE). Thus, we estimated for each relation (1) a model with fixed effect without random effect, (2) a model with individuals as random effect, (3) a model

with the macro-level variables as random effect, and (4) a model where both the participants and the variable of the measure of emotional experiences were added as random effects. In a final step, we extracted the results from the most parsimonious and explanatory model. To perform the LMM we have used the package *lme4* (Bates et al., 2015) in *R* (R Core Team, 2020).

7.3.2. 2nd Objective analyses

7.3.2.1. Within-individual relations between identity processes and daily social media emotional experiences

For the second objective, we used within-individual Spearman correlations (r_s) to address the relations between the processes involved in the micro-level of identity dynamic and the different indicators of daily social media emotional experiences (i.e., commitment to fit, exploration of fit, exploration of alternatives, domain-related experiences, importance of the experiences, positive and negative emotions). The use of intra-individual correlations to account for ergodicity is a common methodology in dynamic system research (Zhang & Wang, 2014). However, an important methodology issue pointed out by Shirai and Kunnen (2020) concerns the dependency between measurement points. We followed the procedure of Shirai and Kunnen (2020) in order to control for autocorrelation in each time series. First, we had no hypothesis that cyclical influences existed in our data. Therefore, we expected autocorrelation to decrease with increasing time lags. We performed Autoregressive Integrated Moving Average (ARIMA) models for each process time series within each individual. To start with, we modeled each process sequence with ARIMA model (0, 0, 0). Then, if we did find a significant autocorrelation, we increased the time lag with one step using ARIMA model (1, 0, 0), and performed the test again. If a significant autocorrelation appeared after testing the ARIMA model (1, 0, 0), we increased the time lag with another step using ARIMA model (2, 0, 0), and so on until no significant autocorrelation was found. Lastly, we prewhitened the time

series with a significant autocorrelation to eliminate the autocorrelation. As explained by Shirai and Kunnen (2020), “prewhitening means that the raw time series were replaced by data generated by the ARIMA model that were sufficiently corrected for autocorrelation” (p. 6). We used residuals from fitted ARIMA models (i.e., the score after eliminating the autocorrelation) instead of raw data to compute the within-individual correlations (, see Dean & Dunsmuir, 2016, for a discussion on prewhitening). We report the number of lags for each process within individuals in Table 1. We also used the classification approach adopted by van der Gaag et al. (2016) to report the results of the correlations. To perform the ARIMA models, we have used the package *forecast* (Hyndman et al., 2021) in *R* (R Core Team, 2020)

Table 1

ARIMA model lags for within-individual time-series

Time series	AR (0, 0, 0)	AR (1, 0, 0)	AR (2, 0, 0)	AR (3, 0, 0)
E – CF	11	12	7	5
E – EF	21	5	8	1
E – EA	18	4	12	1
E – DRE	15	16	4	0
E - IED	22	12	1	0
E – PE	17	14	4	0
E – NE	18	16	1	0
RR – CF	14	11	9	1
RR – EF	20	8	6	1
RR – EA	21	8	5	1
RR - DRE	20	13	1	1
RR - IED	22	12	1	0
RR - PE	18	16	1	0
RR - NE	15	19	1	0

Note. E: Educational domain; RR: Romantic relationships domain; CF: Commitment to fit; EF: Exploration of fit; EA: Exploration of alternatives; DRE: Domain-related experiences; IED: importance of the experiences; PE: Positive emotions; NE: Negative emotions; AR: Auto-regressive

7.3.3. Predictive value of social media emotional experiences on micro-processes of identity between-individuals

We used linear mixed models (LMM) to assess the predictive value of social media emotional experiences, the importance of these experiences and both the positive and negative emotional valence intensity, in levels of micro-identity processes. To do so, we added each of the four variables of our daily measure of social media emotional experiences as fixed effects in the model (without interaction term). Moreover, we added the participants and the four variables of the daily measure of social media emotional experiences as random effects. In this way, we estimated four models for each relation between a variable of the daily measure of social media emotional experiences and a micro-identity process: (1) a model with fixed effect without random effect, (2) a model with individuals as random effect, (3) a model with the variable of the measure of emotional experiences as random effect, and (4) a model where both the participants and the variable of the measure of emotional experiences were added as random effects. In a final step, we extracted the results from the most parsimonious and explanatory model. To perform the LMM we have used the package *lme4* (Bates et al., 2015) in *R* (R Core Team, 2020).

8. Descriptive statistics of Study 1

The descriptive statistics for the first study were carried out with the responses of the 35 participants who met the inclusion criteria (reported in the Method - Study Design section). In the first part of this chapter, we compare each domain assessed regarding the descriptive statistics for each variable (Appendix 2). In the second part, we describe the correlations between these different variables in both domains separately. Since our data did not follow a normal distribution, Spearman correlations (ρ) were conducted for the results in both domains and Mann-Whitney U tests were conducted to account for significant differences in the levels of the different variables between domains.

8.1. Socio-demographic descriptive statistics

Participants were studying psychology ($n = 16, 45.71\%$), law ($n = 8, 22.86\%$), biology ($n = 3, 8.57\%$), sociology ($n = 2, 5.71\%$) or computer science ($n = 2, 5.71\%$), and 4 of them were on a single study path (engineering, economics, public health, and physics, $n = 4, 11.43\%$). None of the participants changed educational path during the time of the study. Regarding the situation of the participants' romantic relationship at the beginning of the study, 20 reported being single (57.14%) and 15 reported being in a relationship (42.86%). During the procedure, 2 participants reported a change in their romantic relationship situation: they switched from being in a relationship to single (5.71%).

8.2. Micro-level of identity descriptive statistics

Concerning the micro-level identity processes (i.e., commitment to fit, exploration of fit, exploration of alternatives), levels of the exploration processes did not differ between those specific to the educational domain (EF: $Mdn = 26.6$, EA: $Mdn = 18.4$), and those specific to the romantic relationships domain (EF: $Mdn = 26$, EA: $Mdn = 19.1$). However, levels of

commitment to fit (CF) were significantly higher in the educational domain ($Mdn = 70.9$) than in the romantic relationships domain ($Mdn = 53.1$).

8.3. Macro-level of identity descriptive statistics

Levels of macro-level identity processes and of openness to change were all significantly higher in the educational domain (E) than in the romantic relationships domain (RR). Levels of commitment (COM: $Mdn_E = 65.2$, $Mdn_{RR} = 49.5$), in-depth exploration (EXP: $Mdn_E = 77.2$, $Mdn_{RRS} = 49$), and reconsideration (REC: $Mdn_E = 36.7$, $Mdn_{RR} = 18.4$) were significantly different. The same goes for openness to change (OC) which was significantly higher in the educational domain ($Mdn_E = 49.4$) than in the romantic relationships domain ($Mdn_{RR} = 38.1$).

8.4. Daily social media emotional experiences descriptive statistics

On average, individuals in our sample reported spending almost 70 min ($M = 7.93$, $SD = 3.48$) per day in online social media (Appendix 3). Concerning the four indicators of social media emotional experiences, individuals reported having significantly more experiences related to the educational domain (DRE: $Mdn = 40.9$), than to the romantic relationships domain ($Mdn = 18.9$). Participants also reported that these experiences were significantly more important for the educational domain (IED: $Mdn = 33.4$) than for the romantic relationships one ($Mdn = 12.4$). In contrast, there were no significant differences reported between the intensities of positive (PE: $Mdn = 43.2$) and negative (NE: $Mdn = 26.1$) emotions in the educational domain, and positive ($Mdn = 43.9$) and negative ($Mdn = 17.6$) emotions in the romantic relationships domain. The results of the Mann-Whitney U test can be found in Appendix 3.

8.5. Correlational statistics

8.5.1. Correlational statistics in the educational domain

Among the correlations between the different variables assessed in the educational domain several significant results were found (Appendix 4). First, considering the variables

assessed at the micro-level, the time spent per day in social media (TSSM) was negatively related to the micro-level identity exploration processes, namely the exploration of fit (EF: $r_s = -0.366, p < .05$) and the exploration of alternatives (EA: $r_s = 0.356, p < .05$). Also, DRE was positively related to IED, PE, and NE (from $r_s = .348, p < .01$, to $r_s = .872, p < .001$). Results also showed that IED was positively related to PE ($r_s = 0.502, p < .001$) Regarding EF, it was found positively related to EA ($r_s = 0.661, p < .001$).

Second, regarding the relations between the variables assessed at the micro-level and those assessed at the macro-level, results showed IED to be positively related to EXP ($r_s = 0.403, p < .001$). Moreover, NE was positively related to REC ($r_s = 0.278, p < .05$), and OC ($r_s = 0.314, p < .01$). Commitment to fit (CF) was positively correlated with REC ($r_s = 0.366, p < .01$) and with COM ($r_s = 0.6, p < .001$), but was negatively related to REC ($r_s = -0.290, p < .05$), and OC ($r_s = -0.342, p < .01$).

Third, considering the relations between variables assessed at the macro-level, EXP was positively correlated with COM ($r_s = 0.6, p < .001$) and OC ($r_s = 0.256, p < .05$). Reconsideration was positively correlated with OC ($r_s = 0.913, p < .001$), and negatively with COM ($r_s = -0.29, p < .05$). Finally, COM was negatively correlated with OC ($r_s = -0.432, p < .001$).

8.5.2. Correlational statistics in the romantic relationships domain

Results of the correlation between the variables assessed in the romantic relationships domain showed some differences from those found in the educational domain (Appendix 4). First, considering the variables assessed at the micro-level, DRE was positively related to IED ($r_s = 0.782, p < .001$), and PE ($r_s = 0.635, p < .001$). Moreover, IED was positively related to PE ($r_s = 0.672, p < .001$), and EF ($r_s = 0.385, p < .05$). Results also showed EF to be positively related to EA ($r_s = 0.577, p < .001$). Additionally, EA was negatively related to CF ($r_s = -0.557, p < .001$).

Second, for the relations between the variables assessed at both a micro and a macro-level, results showed NE to be positively related to REC ($r_s = 0.423, p < .05$), and OC ($r_s = 0.388, p < .05$). Furthermore, EA was positively related to REC ($r_s = 0.59, p < .001$), and OC ($r_s = 0.639, p < .001$), but was negatively related to COM ($r_s = -0.396, p < .05$). Additionally, CF was positively related to COM ($r_s = 0.676, p < .001$), and negatively related to both REC ($r_s = -0.414, p < .05$), and OC ($r_s = -0.555, p < .001$).

Third, regarding the relations between the variables assessed at the macro-level, results showed EXP to be positively related to commitment ($r_s = 0.706, p < .001$). Also, REC was negatively correlated with COM ($r_s = -0.497, p < .01$), and positively related to OC ($r_s = 0.931, p < .001$). Finally, COM was negatively correlated to OC ($r_s = -0.6, p < .001$).

9. Results of the 1st objective: Exploring links between macro-level of identity and both micro-level of identity and social media experiences

In the next two chapters, we present the results related to the two research objectives of the Study 1. In this first chapter, the results concerning the links between the macro and micro levels of identity are displayed. First, we present the results of the linear mixed models related to the educational domain. Second, we describe the results found in relation to the romantic relationships domain. In a third section, we discuss each hypothesis of the first objective regarding the similarities and the differences found in the results for each domain. Throughout this third section, we put the results into perspective with the literature.

9.1. Results of the educational domain models

Among the set of models fitted to the data, the models containing only the random effect of subjects were the most parsimonious. The addition of other random effects did not significantly increase the fit of the models (from $\chi^2(df = 1) = 0 ; p = 1$; to $\chi^2(df = 1) = 1.48; p = 0.224$). Only the linear mixed model assessing the predictive value of reconsideration (REC) on levels of fluctuations of the commitment to fit (CF_F) process differed. The model that fitted the best included both the effects of the subjects and the variable (i.e., reconsideration) as random effects ($\chi^2(df = 1) = 9.27 ; p < .05$). Results of the linear mixed models for the educational domain are displayed in the Table 2.

Considering the links between macro-level identity processes and their counterparts at the micro-level, results showed that levels of commitment (COM) positively predicted levels of CF ($\beta = 0.332, t(93.25) = 3.313, p < .01, \text{Conditional } R^2 = 0.735, \text{Marginal } R^2 = 0.111$).

Levels of REC positively predicted levels of exploration of alternatives (EA: $\beta = 0.284$, $t(92.77) = 2.772$, $p < .01$, Conditional $R^2 = 0.493$, Marginal $R^2 = 0.082$). Levels of in-depth exploration (EXP) did not significantly predict levels of exploration of fit (EF).

Concerning the links between the identity state (i.e., the macro-level identity processes and openness to change) and both the micro-level identity processes and the indicators of social media emotional experiences (domain related experiences, importance of these experiences, negative and positive emotional valences of these experiences), the results showed that COM almost negatively predicted levels of fluctuations of the commitment to fit (CF_F) the same week ($\beta = -0.218$, $t(63.49) = -1.965$, $p = .054$, Conditional $R^2 = 0.293$, Marginal $R^2 = 0.049$). However, levels of COM did not significantly predict any levels of EF, EA, domain related experiences (DRE), the importance of these domain specific experiences (IED), nor the intensity of negative (NE) or positive emotions (PE) from these experiences.

Results showed that levels of EXP positively predicted levels of CF the same week ($\beta = 0.282$, $t(75.48) = 3.928$, $p < .001$, Conditional $R^2 = 0.773$, Marginal $R^2 = 0.078$). Moreover, levels of EXP did not predict either EA, CF_F, DRE, IED, PE, nor NE.

Also, levels of REC negatively predicted levels of CF the same week ($\beta = -0.302$, $t(86.65) = -3.602$, $p < .001$, Conditional $R^2 = 0.742$, Marginal $R^2 = 0.094$). Besides these results, levels of REC did not predict levels of CF_F, DRE, IED, PE, nor NE.

The openness to change (OC) negatively predicted levels of CF ($\beta = -0.236$, $t(93.28) = -2.201$, $p < .01$, Conditional $R^2 = 0.703$, Marginal $R^2 = 0.059$), and positively predicted levels of EA ($\beta = 0.233$, $t(80) = 2.15$, $p < .05$, Conditional $R^2 = 0.467$, Marginal $R^2 = 0.055$). However, levels of OC did not predict levels of EF, CF_F, DRE, IED, PE, nor NE. All these results are displayed in Table 2

Table 2
Between-individual linear mixed model in the educational domain

Fixed effects	Commitment to fit			Exploration of fit			Exploration of alternatives			Commitment to fit fluctuations			Domain related experiences			Importance of the experiences			Positive emotions			Negative emotions				
	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>		
COM	0.332	0.1	.001*	-0.021	0.117	.854	-0.09	0.116	.44	-0.218	0.111	.054	-0.166	0.114	.153	0.008	0.115	.944	0.072	0.117	.537	-0.014	0.117	.732		
EXP	0.282	0.072	0*	-0.069	0.102	.498	-0.092	0.098	.352	-0.145	0.099	.305	-0.027	0.098	.784	0.053	0.104	.609	0.138	0.099	.168	0.028	0.096	.773		
REC	-0.302	0.084	0*	0.101	0.109	.353	0.284	0.103	.007*	0.02	0.113	.859	-0.036	0.106	.736	-0.001	0.11	.992	-0.06	0.108	.584	0.121	0.105	.247		
OC	-0.236	0.094	.014*	0.054	0.113	.637	0.233	0.108	.03*	0.084	0.116	.453	0.05	0.111	.654	0.026	0.113	.819	0	0	.993	0.131	0.11	.236		
Random effects	Var	SD		Var	SD		Var	SD		Var	SD	Cor	Var	SD		Var	SD		Var	SD		Var	SD			
COM																										
Participants	0.617	0.512		0.377	0.614		0.456	0.675		0.237	0.487		0.4295	0.655		0.285	0.534		0.4	0.632		0.531	0.728			
EXP																										
Participants	0.709	0.842		0.379	0.616		0.474	0.689		0.31	0.557		0.443	0.666		0.277	0.526		0.418	0.646		0.532	0.729			
REC																										
Participants	0.632	0.795		0.363	0.602		0.407	0.638		0.507	0.712		0.325	0.571	0.23	0.45	0.671		0.287	0.535		0.427	0.654		0.518	0.719
OC																										
Participants	0.613	0.783		0.371	0.609		0.404	0.636		0.273	0.523		0.419	0.648		0.281	0.53		0.418	0.646		0.51	0.716			

Note. SE: standard error; Cor: correlation; COM: Commitment; EXP: In-depth exploration; REC: Reconsideration; OC: Openness to change

9.2. Results of the romantic relationships domain models

Among the numerous models fitted to the data, the models containing only the random effect of subjects were the most parsimonious. The addition of other random effects did not significantly increase the fitted of the models (from $\chi^2(df = 1) = 0 ; p = 1$; to $\chi^2(df = 2) = 5.82 ; p = .054$).

Results of the links between macro-level identity processes and their counterparts at the micro-level showed that levels of COM positively predicted levels of CF the same week ($\beta = 0.55, t(65.89) = 5.913, p < .001$, Conditional $R^2 = 0.639$, Marginal $R^2 = 0.341$). Also, levels of REC positively predicted levels of exploration of alternatives ($\beta = 0.396, t(92.96) = 4.107, p < .001$, Conditional $R^2 = 0.65$, Marginal $R^2 = 0.164$). However, levels of EXP did not significantly predict levels of EF the same week.

Concerning the links between the identity state and both the micro-level identity processes and the indicators of social media emotional experiences, results showed that levels of COM did not significantly predict levels of EF, EA, CF_F, DRE, IED, nor NE. However, COM tended to positively predict levels of PE ($\beta = 0.23, t(81.68) = 1.972, p = .052$, Conditional $R^2 = 0.613$, Marginal $R^2 = 0.053$). Furthermore, levels of EXP tended to positively predict levels of CF ($\beta = 0.16, t(78.42) = 1.842, p = .052$, Conditional $R^2 = 0.66$, Marginal $R^2 = 0.027$). However, EXP did not predicted any levels of ether EA, CF_F, DRE, IED, PE, nor NE. Considering the reconsideration process, results showed that levels of REC positively predicted levels of NE ($\beta = 0.289, t(63.4) = 2.679, p < .01$, Conditional $R^2 = 0.289$, Marginal $R^2 = 0.083$).

Also, levels of REC almost significantly and positively predicted levels of EF the same week ($\beta = 0.184, t(81.68) = 1.808, p = .074$, Conditional $R^2 = 0.657$, Marginal $R^2 = 0.034$). For the last variables under study, levels of REC did not predict any significant level of CF, CF_F, DRE, IED, PE, nor NE.

Finally, levels of OC negatively predicted levels of CF ($\beta = -0.305$, $t(84.42) = -2.964$, $p < .01$, Conditional $R^2 = 0.621$, Marginal $R^2 = 0.106$), and positively predicted levels of EA ($\beta = 0.402$, $t(80) = 3.903$, $p < .001$, Conditional $R^2 = 0.603$, Marginal $R^2 = 0.174$). Levels of OC almost positively predicted significant levels of NE ($\beta = 0.202$, $t(80) = 1.79$, $p = .08$, Conditional $R^2 = 0.259$, Marginal $R^2 = 0.041$). However, levels of OC did not predict any significant levels of EF, DRE, IED, nor PE. All these results are displayed in Table 3.

Table 3
Between-individual linear mixed model in the romantic relationships domain

Fixed effects	Commitment to fit			Exploration of fit			Exploration of alternatives			Commitment to fit fluctuations			Domain related expériences			Importance of the experiences			Positive émotions			Negative emotions		
	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>
COM	0.55	0.09	0*	0.115	0.116	.327	-0.029	0.117	.802	-0.153	0.119	.202	0.196	0.116	.096	0.044	0.12	.718	0.23	0.117	.052	0.048	0.119	.687
EXP	0.16	0.087	.07	0.076	0.092	.408	0.073	0.092	.43	-0.098	0.097	.315	0.057	0.092	.54	-0.06	0.094	.524	0.112	0.095	.242	0.05	0.109	.649
REC	-0.117	0.099	.241	0.184	0.102	.074	0.396	0.096	0*	-0.022	0.109	.837	0.106	0.104	.311	0.046	0.11	.665	0.031	0.107	.775	0.289	0.108	.01*
OC	-0.305	0.103	.004*	0.13	0.111	.244	0.402	0.103	0*	0.006	0.116	.96	0	0.113	.993	-0.045	0.12	.699	-0.04	0.12	.734	0.202	0.113	.08
Random effects	Var	SD		Var	SD		Var	SD		Var	SD		Var	SD		Var	SD		Var	SD		Var	SD	
COM																								
Participants	0.265	0.514		0.636	0.797		0.599	0.774		0.552	0.743		0.672	0.82		0.662	0.814		0.564	0.751		0.281	0.53	
EXP																								
Participants	0.589	0.768		0.608	0.78		0.618	0.786		0.551	0.742		0.632	0.795		0.692	0.832		0.548	0.74		0.271	0.521	
REC																								
Participants	0.601	0.775		0.622	0.789		0.464	0.681		0.553	0.744		0.662	0.814		0.672	0.82		0.577	0.759		0.207	0.455	
OC																								
Participants	0.455	0.674		0.604	0.777		0.397	0.63		0.554	0.745		0.642	0.801		0.672	0.82		0.573	0.757		0.218	0.467	

Note. SE: standard error; Cor: correlation; COM: Commitment; EXP: In-depth exploration; REC: Reconsideration; OC: Openness to change

9.3. Discussion of the results related to the first objective

The first objective of this thesis was to assess the extent to which the macro-level of identity could predict the micro-level of identity and the daily identity-relevant social media emotional experiences the same week. For both domains, we conducted linear mixed models to assess the predictive values of the three macro-level identity processes (i.e., commitment, in-depth exploration, and reconsideration) and the openness to change, on seven variables measured on a daily basis: the micro-level identity processes (i.e., commitment to fit, exploration of fit, and exploration of alternatives), and the variables measuring daily social media emotional experiences (i.e., domain related experiences, importance of these experiences, intensity of positive and negative emotional valences of these experiences). This objective was composed of four hypotheses regarding: **(H1)** the predictive value of identity macro-processes on their micro-level counterparts, **(H2)** the predictive value of macro-level of identity processes on the other micro-level identity processes, as well as the predictive value of openness to change on all identity micro-processes, **(H3)** the predictive value of macro-processes and openness to change on different indicators of daily social media emotional experiences, and **(H4)** the predictive value of both the macro-processes of identity and the openness to change on levels of commitment to fit's fluctuations.

9.3.1. The predictive value of identity macro-processes on their micro-level counterparts (H1)

Regarding the first hypothesis, as we expected, the commitment and the reconsideration processes positively predicted levels of their micro-level counterparts in both the educational and the romantic relationships domains. However, the in-depth exploration process did not predict levels of the exploration of fit during the following week in both domains. According to these findings, individuals who have integrated greater commitments seem to feel more adjusted to their romantic or educational choices on a daily basis. Similarly, individuals who are in a period of reconsideration of these life choices seem to explore alternatives choices on a daily basis to a

greater extent. In general, this may reflect the extent to which the unconscious expression of identity in real time (i.e., the micro-level of identity) operates based on the conscious integration of the person's commitment to these life choices (i.e., the macro-level of identity). These findings are thus an empirical proof of the self-organizing quality of identity as a dynamic system (Kunnen & van Geert, 2012), since the two levels of identity investigated seem to have a clear top-down relation. Furthermore, these results highlight the possibility of empirically and theoretically articulating Crocetti et al.'s (2008) macro-level conceptualizations and van der Gaag et al.'s (2016) micro-level conceptualization. However, the in-depth exploration did not predict acts of exploration directed towards the fit. This difference is discussed further in this section but also in a specific section of the General Discussion (p. 205). Finally, the results of this first hypothesis did not reveal any differences between identity domains.

9.3.2. The predictive value of macro-level identity processes on the other micro-level identity processes (H2)

Regarding the similarities between the domains found in the results of the second hypothesis, commitment did not significantly predict the exploration of alternatives nor the exploration of fit. Results also showed that for both domains, in-depth exploration did not predict the levels of exploration of alternatives. In contrast, the findings showed that in-depth exploration positively predicts levels of commitment to fit. This relation was significant for the educational domain and almost significant for the romantic relationships domain. These results are contrary to those found in the literature (Crocetti et al., 2008; Luyckx et al., 2006, van der Gaag et al., 2017; Zimmermann et al., 2015). These previous studies were interested in the links between the different identity processes located at the same level of identity (i.e., macro or micro) whereas we were interested in the links between the two levels of identity. In this sense, our results showed that some of the relations that have been agreed upon in the literature (e.g., the link between commitment and exploration) are not so easily observable between two levels of identity expression.

Beyond the similarities between domains, we found specific results. In the educational domain, on average, individuals who had higher levels of reconsideration tended to feel less adjusted to their commitments, and individuals who had lower levels of reconsideration tended to feel much more adjusted to their commitments. This is in line with the results of Klimstra et al. (2010) and van der Gaag et al. (2016) micro-level studies that found negative relations between the reconsideration and commitment processes (both conceptualized at the micro-level) in the educational domain. In contrast, in the romantic relationships domain, while the reconsideration process did not predict levels of commitment to fit, the results showed that levels of reconsideration positively predict levels of exploration of fit. This latter result is at odds with Vosylis et al.'s (2017) study, whose results showed a negative relation between reconsideration and macro-level in-depth exploration in romantic relationships. However, our results are in line with those of Zimmermann et al.'s (2015) who found at a macro-level a positive association between in-depth exploration and exploration in breadth.

9.3.3. The predictive value of openness to change on all identity micro-processes (H3)

Concerning the openness to change, the results showed that it significantly predicted both negatively the commitment to fit, and positively the exploration of alternatives for both domains. Also, openness to change did not significantly predict levels of exploration of fit for either domain. These results are in line with the assumptions of multiple researchers (Berzonsky & Sullivan, 1992; Bosma & Kunnen 2001; Kunnen & van Geert, 2012) who have argued that openness to experience and change is a state of the system that reflects some instability in its higher order patterns and a tendency to visit multiple states. Thus, in terms of identity, this is reflected in the way that openness to change (as we assessed it) negatively predicts levels of feelings of adjustment to commitments and positively predicts levels of exploration of alternatives to those commitments. Both findings are consistent with those recently encountered in the literature that have focused on the link between identity processes at similar levels (Bechtel et al.,

2021; van der Gaag et al., 2016; Zimmermann et al., 2015).

9.3.4. The absence of predictive value of in-depth exploration process on exploration of fit

The results of these two first hypothesis (i.e., **H1** and **H2**) highlight the difficulties of predicting general levels of exploration of fit from levels of in-depth exploration. On average, the extent to which individuals explore in depth about their commitments does not suggest that they explore their fit to their commitments at a daily level. Moreover, results showed that levels of in-depth exploration significantly and positively predicted higher levels of commitment to fit in the educational domain. In the romantic relationships domain, the same results were almost found with a clear tendency and levels of reconsideration almost significantly and positively predicted levels of exploration of fit.

Taken together, these results highlight the difficulties to articulate the macro and micro levels of identity regarding the in-depth exploration and the exploration of fit processes. These difficulties could be explained by the fact that these two processes are expressions of different quality and intensity of a general reflective process of identity. Indeed, as conceptualized and operationalized by Crocetti et al. (2008), the in-depth exploration process is understood in relation (1) to behaviors of a general interest of the individual towards his or her commitments (i.e., "I often think about what I am studying", "I often talk with others about what I am studying") and (2) to behaviors of interest turned towards the values and standards that his or her commitments convey (i.e., "I am really interested in understanding the value of what I am studying"). In contrast, as conceptualized and operationalized by Van der Gaag et al. (2016), the exploration of fit refers to the extent to which individuals question themselves about how they are adjusted to their commitments (i.e., "have you been asking yourself whether this education is right for you?") and seems to be closer to a process of evaluating the commitments by reassessing the fit to those commitments. Thus, at different levels of temporal aggregation the two processes seem to be almost opposite in nature. For example, one would expect an

individual who is passionate about his or her education to think about it regularly or to be particularly eager to talk about it with relatives. This individual would most certainly report high levels of commitment and in-depth exploration. For the same individual, one would also expect little questioning to be present on a daily basis regarding the fit to his or her commitments. In fact, this individual would most certainly report high levels of commitment to fit and low levels of exploration of fit. This same differentiation in the nature of the in-depth exploration process was previously found in the work of Zimmermann et al. (2015). The author had put forward two forms of in-depth exploration in adolescence and emerging adulthood. The first form refers to the "careful evaluation of existing commitments" and is positively related to the commitment process. The second form refers to a "certain form of reconsideration of commitment corresponding to individuals' efforts to change or discard current commitments" (p. 136), and is negatively related to the commitment process, and positively related to ruminative exploration (Zimmermann et al., 2015). Thus, the first form would be favorable to the reinforcement of commitments while the second one would be close to the reconsideration of commitments and would take part in a reevaluation mechanism notably when the individual feels a disagreement with his or her commitments. Considering the difficulties associated with conceptualizing the in-depth exploration process and the magnitude of the issue, we assign a specific section to this point in the general discussion.

9.3.5. The predictive value of macro-processes and openness to change on different indicators of daily social media emotional experiences (H3)

Regarding the links between the macro-level identity processes and the different indicators of daily social media emotional experiences (**H3**), results showed few significant relations for both educational and romantic relationships domains. In the educational domain, results showed an almost significant positive relation between the commitment process and the perceived intensity of positive emotions from daily social media experiences. As such, on average, individuals seemed to perceive experiences in social media related to their education

more positively if they had stronger commitments. Also, in the romantic relationships domain, results showed that higher reconsideration predicted greater intensity of negative valence of emotional experiences. The same relation was almost significant regarding openness to change and negative emotions. These findings in the romantic relationships domain may reflect the idea that individuals in a period of greater sensitivity to change and experiences may feel more intensely the negative emotions that come from social media experiences. These results are a second evidence of the self-organization of identity and are also in line with Bosma and Kunnen's (2001) identity conceptualization, in that the experiences lived at a real-time seem to be shaped by general patterns of the system (i.e., the identity state). Still, there is a general lack of meaningful relations particularly regarding the encounter of domain-related experiences and their importance for individuals. However, these latter findings are also consistent with the literature in that the experiences in social media are mostly related to daily activities that respond to short-term needs (Greitemeyer et al., 2014; Ostic et al., 2021). Indeed, it seems difficult to link the encounter of experiences in social media and their importance for individuals directly to macro-identity states, whether they are related to the educational as well as the romantic relationships domains. In fact, it may be easier to relate the importance and quantity of social media identity-related experiences on a daily basis, to the micro-level of identity, where goals, emotions and actions are played out in real time (Lichtwarck-Aschoff et al., 2008).

9.3.6. The absence of predictive value of both the macro-processes of identity and the openness to change on levels of commitment to fit's fluctuations (H4)

With regard to the fourth hypothesis, results showed no significant results for both domains. In this sense, neither commitment, in-depth exploration, reconsideration, nor openness to change significantly predicted levels of fluctuation in commitment to fit. Yet, in the educational domain, the results showed a tendency for commitment to negatively predict commitment to fit fluctuations. Thus, there was a tendency of higher levels of commitment process to predict less fluctuations of commitment to fit, and of lower levels of commitment

process to predict more fluctuations of commitment to fit. Considering the small sample size, these results in the educational domain may reflect the idea that during a period of instability, the system tends to fluctuate more significantly (Kunnen, 2012). However, this result shows that these mechanisms may be more readily apparent in the educational domain than in the romantic relationships one. In the same way as the third hypothesis, the few results obtained do not justify the validation of the fourth hypothesis.

9.4. Limitations of the 1st objective

Our findings partially account for the idea that macro-level of identity seems to determine the conditions and defines the parameters of immediate goals and concerns during daily interactions between the individual and the context (Kunnen & van Geert, 2012; van Geert, 1994). However, our results did not capture the extent to which macro-level identity state is guided by real-time identity functioning. For example, regarding our results in the romantic relationships domain, it cannot be ruled out that individuals experienced a period during which many conflicting social media experiences related to their romantic relationships led to a higher state of reconsideration of the commitments. In fact, the same goes for the results found in the educational domain: did the perception of more intense positive emotions from social media experiences lead to stronger commitments? As Bosma and Kunnen (2001) suggested, and as the self-organization of a dynamic system implies, real-time experiences influence (i.e., bottom-up relation) and are influenced (i.e., top-down relation) by general characteristic of the system. Unfortunately, the design of this first objective only brings empirical evidence for a top-down relation. Therefore, to understand more precisely the relation between social media emotional experiences and macro-level identity processes, further investigation is required. But before addressing this link, it is necessary to understand how identity works in real time, as to say to characterize the links between micro-level identity processes and emotional experiences in everyday contexts. This corresponds to the second objective of this thesis whose results are presented and discussed in the next chapter.

10. Results of the 2nd objective: What are the micro-level relations between micro-level identity processes and social media emotional experiences?

The next set of results addresses the second objective of our thesis, which is to characterize the links between micro-level identity processes and different indicators of emotional experiences in social media. For each domain, beginning with the educational one, we first present results of within-individual correlations between the variables of interest, and then present mixed linear models. The latter analyses propose to highlight the links between the different variables at a between-individual level. After presenting the results for both domains, we discuss these findings for each domain and then put them into perspective for both domains with respect to the similarities and differences found. These results were published in the special issue: Real-time identity processes, in the journal *Identity: An international Journal for Theory and Research*, Vol 22, Issue 1 (2022). This article is provided as an appendix to this manuscript (Appendix 5).

10.1. Results of the second objective in the educational domain

10.1.1. Within-individual correlations between identity processes and social media emotional experiences

In this section, we report the main results for within-individual correlations (see Table 4). To account for a significant difference between occurrences among the intra-individual correlations, a difference of at least 2 occurrences was expected to show a distinction between positive and negative occurrences.

Overall, the correlations between processes in the educational domain were widely spread from strong negative relations to strong positive relations. First, for the micro-level identity

processes, relations between commitment to fit (CF) and the two types of exploration were negative for 52.94% (EF) and for 57.58% (EA) of individuals. The relations between the two types of exploration at a micro-level were mainly positive (78.79%). Second, for the relations between micro-level identity processes and emotional experiences, CF was positively correlated with DRE (47.06%), IED (41.18%), PE (50%) and NE (41.18%). The correlations between EF and the four variables of the daily measure of emotional experiences in social media have hardly reached a clear majority of positive occurrences (DRE: 47.06%, IED: 36.36%, PE: 44.12%, NE: 44.12%), and negative occurrences (DRE: 41.18%, IED: 33.33%, PE: 38.23%, NE: 41.18%). EA was positively related to IED (43.75%) and PE (51.52%), negatively related to NE (40.63%) and equally distributed between positive (36.36%) and negative occurrences (39.4%) for DRE.

Table 4.

Within-individual time series correlations in the educational domain

Type of correlation	M	SD	Min.	Max.	n% Excluded ¹	Occurrence n (%) per type of correlation ²		
						Negative	Negligible	Positive
CF – EF	-.1	.426	-.951	.85	1 (2.86%)	18 (52.94%)	7 (20.59%)	5 (14.70%)
CF – EA	-.176	.527	-.956	.985	2 (5.71%)	19 (57.58%)	3 (9.09%)	10 (30.3%)
EF – EA	.589	.292	-.081	1	2 (5.71%)	0 (0%)	2 (6.06%)	31 (78.79%)
CF – DRE	.056	.375	-.568	.77	1 (2.86%)	10 (29.41%)	8 (23.53%)	16 (47.06%)
CF – IED	.032	.38	-.885	.896	1 (2.86%)	12 (35.29%)	8 (23.53%)	14 (41.18%)
CF – PE	.114	.376	-.857	.916	1 (2.86%)	7 (20.59%)	10 (29.41%)	17 (50%)
CF – NE	.003	.386	-.951	.916	1 (2.86%)	11 (32.35%)	9 (26.47%)	14 (41.18%)
EF – DRE	.056	.421	-.945	.958	1 (2.86%)	14 (41.18%)	4 (11.76%)	16 (47.06%)
EF – IED	.054	.338	-.503	.893	2 (5.71%)	11 (33.33%)	10 (30.31%)	12 (36.36%)
EF – PE	.031	.325	-.753	.682	1 (2.86%)	13 (38.23%)	6 (17.65%)	15 (44.12%)
EF – NE	-.04	.368	-.846	.679	1 (2.86%)	14 (41.18%)	5 (14.7%)	15 (44.12%)
EA – DRE	.014	.356	-.723	.948	2 (5.71%)	13 (39.4%)	8 (24.24%)	12 (36.36%)
EA – IED	.097	.275	-.51	.588	3 (8.57%)	6 (18.75%)	12 (37.5%)	14 (43.75%)
EA – PE	-.05	.327	-.997	1	2 (5.71%)	9 (27.27%)	7 (21.21%)	17 (51.52%)
EA – NE	-.015	.388	-.846	.995	3 (8.57%)	13 (40.63%)	8 (25%)	11 (34.38%)

Note. CF: Commitment to fit; EF: Exploration of fit; EA: Exploration of alternatives; DRE: Domain-related experiences; IED: importance of the experiences; PE: Positive emotions; NE: Negative emotions.

¹ A case was excluded when no variation ($t_{n+1} - t_n = 0$ for all change scores) was shown within an individual dataset among 3 of the 5 items of interest (i.e., CF, EF, EA, PE, and NE).

² For the occurrence per type of correlation, the calculation of the percentages is based on the total of included cases, the excluded cases are omitted (i.e., % occurrence = $n \text{ occurrence} / (\text{total } n [35] - \text{excluded } n) * 100$).

10.1.2. Between-individual linear mixed models between identity processes and emotional experiences

Considering all the models fitted to the data for the relations between emotions experienced and the micro-level identity processes, the addition of both the random effects of the subjects and the random effects of three of the four variables significantly improved the model (from $\chi^2(df = 2) = 10.51$; $p < .01$; to $\chi^2(df = 2) = 55.51$; $p < .001$). For the predictive value

of negative valence on levels of the commitment to fit process, the model including only the effects of the subjects as a random effects was the most parsimonious ($\chi^2(df = 2) = 0.539 ; p > .05$). The final model for the three other variables of the daily measure of emotional experiences in social media and each micro-level identity process included the fixed effects of the variables, and the random effect of the subjects and the variable (see Table 5). Commitment to fit (CF) levels were not predicted by levels of domain related experiences (DRE), importance of these experiences (IED), nor the intensity of both positive (PE) and negative (NE) emotions (from $\beta = -0.004, t(19.92) = -0.105, p > .05$, Conditional $R^2 = 0.698$, Marginal $R^2 = 0$; to $\beta = 0.073, t(24.99) = 1.229, p > .05$, Conditional $R^2 = 0.728$, Marginal $R^2 = 0.005$). Similarly, neither DRE, IED, PE, nor NE predicted levels of the exploration of fit (EF) process (from $\beta = -0.0004, t(29.93) = 0.006, p > .05$, Conditional $R^2 = 0.514$, Marginal $R^2 = 0$; to $\beta = 0.096, t(14.46) = 1.066, p > .05$, Conditional $R^2 = 0.544$, Marginal $R^2 = 0.008$). Considering the exploration of alternatives (EA), neither DRE, IED, PE, nor NE predicted levels of this process (from $\beta = 0.005, t(32.22) = 0.071, p > .05$, Conditional $R^2 = 0.636$, Marginal $R^2 = 0$; to $\beta = 0.061, t(27.80) = 0.740, p > .05$, Conditional $R^2 = 0.657$, Marginal $R^2 = 0.003$).

Table 5

Between-individual linear mixed model in the educational domain.

Fixed effects	<i>Commitment to fit</i>			Exploration of fit			<i>Exploration of alternatives</i>		
	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>
DRE	-0.007	0.14	0.712	0.033	0.73	0.655	0.05	0.09	0.597
IED	-0.018	0.05	0.730	0.029	0.06	0.637	0.061	0.08	0.466
PE	0.073	0.06	0.230	0.0004	0.07	0.995	0.005	0.9	0.944
NE	-0.004	0.03	0.917	0.1	0.09	0.304	0.035	0.09	0.717
Random effects	Variance	SD	<i>Cor</i>	Variance	SD	<i>Cor</i>	Variance	SD	<i>Cor</i>
DRE	0.03	0.16		0.12	0.35		0.24	0.49	
Participants	0.68	0.82	-0.24	.045	0.67	-0.19	0.53	0.73	-0.04
IED	0.05	0.22		0.07	0.26		0.18	0.42	
Participants	0.65	0.8	0.09	0.44	0.66	-0.24	0.54	0.73	-0.14
PE	0.08	0.28		0.1	0.31		0.12	0.35	
Participants	0.63	0.79	-0.35	.044	0.66	-0.18	0.55	0.74	.08
NE	0.006	0.07		0.19	0.43		0.22	0.47	
Participants	0.68	0.82	-0.04	0.41	0.64	0.40	0.51	0.71	-0.16

Note. SE: standard error; Cor: correlation; CF: Commitment to fit; EF: Exploration of fit; EA: Exploration of alternatives; DRE: Domain-related experiences; IED: importance of the experiences; PE: Positive emotions; NE: Negative emotions.

10.2. Results of the second objective in the romantic relationships domain

10.2.2. Within-individual correlations between identity processes and emotional experiences

Similar to the educational domain, within-individual correlations for the romantic relationships domain showed results that varied broadly from one individual to another. In this section we report the main results for within-individual correlations (see Table 6). Firstly, for the relations between the micro-level identity processes, correlations between CF and EF were mostly negative (58.06%), as well as the relations between CF and EA (65.63%). The relations between the two types of exploration at a micro-level were mainly positive (80%). The relations between CF and DRE were negative (51.61%) as well as the relation between CF and IED (38.71%). Relations between CF and PE were quite positive (48.4%), and no majority has

emerged from the relations between CF and NE (45.16% for both positive and negative occurrences). Between EF and the four variables of the daily measure of emotional experiences, we found a clear majority of positive occurrences (DRE: 62.07%, IED: 62.07%, PE: 51.61%, NE: 48.4%). The same results were found between EA and DRE (58.62%), PE (61.29%), as well as NE (58.62%).

Table 6

Within-individual time series correlations in the romantic relationships domain

Type of correlation:	M	SD	Min.	Max.	n% Excluded ¹	Occurrence n (%) per type of correlation ²		
						Negative	Negligible	Positive
CF – EF	-.0518	.474	-.709	1	4 (11.43%)	18 (58.06%)	3 (9.68%)	10 (32.26%)
CF – EA	-.152	.478	-.785	1	3 (8.57%)	20 (65.63%)	4 (12.5%)	8 (21.88%)
EF – EA	.449	.414	-.663	1	5 (14.29%)	4 (16.67%)	1 (3.33%)	25 (80%)
CF – DRE	-.048	.468	-.887	1	4 (11.43%)	16 (51.61%)	5 (16.13%)	10 (32.26%)
CF – IED	.013	.443	-.803	1	4 (11.43%)	12 (38.71%)	10 (32.26%)	9 (29.03%)
CF – PE	.137	.498	-.881	1	4 (11.43%)	8 (25.80%)	8 (25.80%)	15 (48.4%)
CF – NE	.074	.513	-.892	1	4 (11.43%)	14 (45.16%)	3 (9.68%)	14 (45.16%)
EF – DRE	.137	.327	-.595	1	6 (17.14%)	6 (20.69%)	5 (17.24%)	18 (62.07%)
EF – IED	.25	.379	-.528	1	6 (17.14%)	5 (17.24%)	6 (20.69%)	18 (62.07%)
EF – PE	.122	.432	-.528	1	4 (11.43%)	9 (29.03%)	8 (25.80%)	16 (51.61%)
EF – NE	.097	.427	-.528	1	4 (11.43%)	10 (32.26%)	6 (19.34%)	15 (48.4%)
EA – DRE	.151	.425	-.755	1	6 (17.14%)	9 (31.04%)	3 (10.34%)	17 (58.62%)
EA - IED	.114	.421	-.515	1	7 (20%)	11 (39.28%)	5 (17.86%)	12 (42.86%)
EA – PE	.205	.399	-.417	1	4 (11.43%)	8 (25.80%)	4 (12.91%)	19 (61.29%)
EA – NE	.214	.402	-.403	1	6 (17.14%)	7 (24.14%)	5 (17.24%)	17 (58.62%)

Note. CF: Commitment to fit; EF: Exploration of fit; EA: Exploration of alternatives; DRE: Domain-related experiences; IED: importance of the experiences; PE: Positive emotions; NE: Negative emotions.

¹ A case was excluded when no variation ($t_{n+1} - t_n = 0$ for all change scores) was shown within an individual dataset among 3 of the 5 items of interest (i.e., CF, EF, EA, PE, and NE).

² For the occurrence per type of correlation, the calculation of the percentages is based on the total of included cases, the excluded cases are omitted (i.e., % occurrence = $n \text{ occurrence} / (\text{total } n [35] - \text{excluded } n) * 100$).

10.2.3. Between-individual linear mixed models between identity processes and emotional experiences

The entire LMM fitted for the relations between emotional experiences and the micro-level identity processes improved significantly when we added the random effects of subjects as well as the random effects of the variables (differences from $\chi^2(df = 2) = 15.07$; $p < .001$; to $\chi^2(df = 2) = 126.37$; $p < .001$). Therefore, the best model computed the fixed effects of the variables and the random effects of subjects and variables to predict the levels of micro-identity processes

(see Table 7).

Levels of the commitment to fit (CF) process were not predicted by higher or lower levels of domain related experiences (DRE), importance of these experiences (IED), nor the intensity of negative (NE) emotions (from $\beta = 0.005$, $t(29.06) = 0.068$, $p > .05$, Conditional $R^2 = 0.737$, Marginal $R^2 = 0$; to $\beta = 0.041$, $t(27.22) = 0.741$, $p > .05$, Conditional $R^2 = 0.701$, Marginal $R^2 = 0.002$). However, the intensity of positive emotions (PE) almost positively predicted levels of commitment to fit ($\beta = 0.186$, $t(31.67) = 1.958$, $p = .059$, Conditional $R^2 = 0.783$, Marginal $R^2 = 0.032$). Levels of the exploration of fit (EF) process were significantly predicted by higher levels of domain related experiences ($\beta = 0.164$, $t(27.37) = 2.969$, $p = 0.006$, Conditional $R^2 = 0.584$, Marginal $R^2 = 0.028$), importance of these experiences ($\beta = 0.287$, $t(22.09) = 3.975$, $p < 0.001$, Conditional $R^2 = 0.648$, Marginal $R^2 = 0.08$), and the intensity of positive emotions ($\beta = 0.18$, $t(32.54) = 2.141$, $p = 0.04$, Conditional $R^2 = 0.647$, Marginal $R^2 = 0.032$). Higher intensity of negative emotions almost predicted levels of exploration of fit ($\beta = 0.135$, $t(26.18) = 1.88$, $p = 0.07$, Conditional $R^2 = 0.62$, Marginal $R^2 = 0.019$). Moreover, higher intensity of both positive and negative emotions significantly predicted levels of exploration of alternatives (PE: $\beta = 0.172$, $t(29.59) = 2.05$, $p < 0.05$, Conditional $R^2 = 0.729$, Marginal $R^2 = 0.026$, NE : $\beta = 0.211$, $t(28.35) = 3.294$, $p = 0.003$, Conditional $R^2 = 0.707$, Marginal $R^2 = 0.045$). Higher domain-related experiences almost predicted levels of exploration of alternatives ($\beta = 0.11$, $t(25.32) = 1.909$, $p = 0.07$, Conditional $R^2 = 0.679$, Marginal $R^2 = 0.012$). Levels of the importance of the experiences in the domain did not predict levels of exploration of alternatives ($\beta = 0.08$, $t(18.94) = 1.213$, $p > .05$, Conditional $R^2 = 0.68$, Marginal $R^2 = 0.006$).

Table 7.

Between-individual linear mixed model in the romantic relationships domain.

Fixed effects	<i>Commitment to fit</i>			Exploration of fit			<i>Exploration of alternatives</i>		
	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>
DRE	0.041	0.06	0.465	0.165	0.06	0.006**	0.111	0.06	0.068
IED	-0.033	0.06	0.586	0.287	0.07	0.001***	0.079	0.07	0.24
PE	0.186	0.1	0.059	0.18	0.08	0.04*	0.172	0.08	0.049*
NE	-0.004	0.07	0.946	0.135	0.07	0.07	0.212	0.06	0.003**
Random effects	Variance	SD	<i>Cor</i>	Variance	SD	<i>Cor</i>	Variance	SD	<i>Cor</i>
DRE	0.06	0.24		0.05	0.22		0.06	0.25	
Participants	0.63	.8	-0.4	0.49	0.7	-0.02	0.63	0.79	-0.24
IED	0.07	0.26		0.1	0.32		0.07	0.28	
Participants	0.7	0.83	-0.2	0.48	0.7	-0.1	0.63	0.79	0.12
PE	0.24	0.49		0.16	0.4		0.16	0.4	
Participants	0.57	0.76	-0.19	0.46	0.68	0.01	0.62	0.79	0.11
NE	0.12	0.34		0.11	0.33		0.08	0.29	
Participants	0.62	0.79	-0.43	0.48	0.69	-0.31	0.58	0.76	-0.02

Note. SE: standard error; Cor: correlation; CF: Commitment to fit; EF: Exploration of fit; EA: Exploration of alternatives; DRE: Domain-related experiences; IED: importance of the experiences; PE: Positive emotions; NE: Negative emotions.

10.3. Discussion of the second objective

The second objective of this thesis was to look at how micro-level identity processes and emotional experiences were related to each other at a daily level, in both the educational and the romantic relationships domains. To answer the first hypothesis related to this objective (H5), we performed intra-individual correlations to explore and characterize the links between micro-level identity processes and different aspects of daily social media emotional experiences. To answer the second hypothesis related to this objective (H6), we performed linear mixed models to highlight the extent to which different indicators of daily social media emotional experiences could predict the levels of micro-level identity processes.

10.3.1. Within-individual correlations between micro-level identity processes and

indicators of social media emotional experiences (H5)

Using a within-individual approach, results showed a large heterogeneity in relations between micro-level identity processes within individuals, as we expected. Strong convergences were found among the two domains in the relations between micro-level identity processes. Overall, identity processes were related in accordance with the relations between their correspondences at a macro-level in both domains (Zimmermann et al., 2015). More specifically, the commitment to fit was negatively related to both the exploration of fit and the exploration of alternatives. Further, the micro-level of identity exploration processes showed strong positive relations among a large majority of individuals, as expected. The relations between the commitment to fit and positive emotions were more frequently positive among the two domains investigated. These first results are in line with those of van der Gaag et al.'s (2016) study, which showed a large heterogeneity in the results of correlations between micro-level identity processes, as well as strong positive links between exploration processes, and negative links between commitment to fit and these same exploration processes.

Besides these convergences, the relations between micro-level identity processes and the different indicators used to assess social media emotional experiences showed specificities in each domain. In the romantic relationships domain, for the vast majority of individuals, positive relations were found between all of the four indicators of social media emotional experiences (i.e., domain-related experiences, the importance of these experiences, the intensity of positive and negative emotions from these experiences) and both exploration processes, translating of a strong relation between the emotional experiences lived in social media and their evaluation of identity the same day. For the commitment to fit process, the presence and the importance of social media emotional experiences were more negatively correlated, while the positive and negative emotions of these experiences did not reach a clear majority in the direction of their relation. In the educational domain, the relation between exploration processes and each indicator of social media emotional experiences hardly reached the same distinct majority of directional

relations among individuals. On the contrary, the relation between the commitment to fit process and the indicators of emotional experiences in the educational domain were mainly positive. From these results, it would seem that individuals who tend to use social media more heavily in relation to their studies are those who are most adjusted to their identity commitment in this domain. Also, individuals do not seem to mainly seek to reevaluate their commitment through the use of social media (supported by the highly heterogeneous links between the different indicators of the emotional experiences and both exploration processes). For the romantic relationships domain, it seems that the opposite is true. We found that the presence of emotional experiences related to romantic relationships, as well as their importance to individuals, were negatively related to the extent to which individuals felt adjusted to their commitment in this domain. In other words, it seems that individuals who are more adjusted to their commitment to romantic relationships tend to experience fewer social media events related to the romantic relationships domain. Moreover, individuals seem to mainly seek to reevaluate their commitment in the romantic relationships domain through the use of social media. This is supported by the predominantly positive relations found between the different variables of the daily measures of social media emotional experiences and the two identity exploration processes, but also by the fact that the majority of emotional experiences indicators significantly predict the values of micro-level identity exploration processes.

Among the four indicators of daily social media emotional experiences, positive and negative emotions were rarely distinguished from each other in the relations they have with micro-level identity processes. Indeed, the results showed, in majority, that the direction of the relations between the emotional valences and the micro-level identity processes were either joint (e.g., majority of positive occurrences between the two types of emotions and the same identity process), or distinguished by the difficulty of one of the relations to reach a majority of positive or negative occurrences (e.g., for the same identity process, majority of positive occurrences with the positive emotions, and a non-distinct directionality with the negative emotions). Thus, the

links between the micro-level identity processes and emotional experiences seem to be difficult to determine based on the intensity of positive and negative emotional valence. To get a better understanding of these links, it should be necessary to consider what causes the positive or negative emotion (i.e., the nature of the experience) and the extent to which it confirms or not the commitments made (i.e., the feeling of being adjusted or not adjusted to the current commitments). For an individual who is involved in a romantic relationship, the occurrence of a new romantic encounter will perhaps trigger emotions with a positive valence for the self. Yet, regarding the adjustment to the commitments already made, this emotional experience will undoubtedly trigger a feeling of not being adjusted to what this individual is living in his or her romantic relationships. Still, the results found in the within- individual relations between the presence of domain-related emotional experiences as well as the importance of these experiences and the micro-level identity processes, in both domains assessed, allow assuming that social media are a context through which individuals can experiment daily identity-relevant emotional experiences.

10.3.2. The predictive value of daily social media emotional experiences on micro-identity processes levels (H6)

A between-individual approach was used to assess the predictive value of daily social media emotional experiences on micro-identity processes levels. In the educational domain, the presence of domain-related experiences, the importance of these experiences, and the intensity of positive or negative emotions that emerge from these experiences, did not predict the levels of any micro-level identity processes. In a similar way, in the romantic relationships domain, none of the four indicators significantly predicted levels of the commitment to fit process. However, except for negative emotions that almost reached the significance level, every indicator used to assess daily social media emotional experiences significantly and positively predicted levels of exploration of fit process in the romantic relationships domain. The higher the levels of these two indicators, the higher the levels of exploration of fit on the same day. Also, intensity of positive

as well as negative emotions from the social media experiences positively predicted levels of exploration of alternatives. The presence of domain-related experiences almost reached the significance level. These results may translate how social media emotional experiences in romantic relationships domain can be part of the identity reevaluation of the commitment on a day-to-day basis, whether they convey positive or negative emotions.

Finally, the results of this second objective showed that, at a within-individual level, individuals tended to have experiences related to education when their adjustment to commitments in this domain was strong, but that these experiences were not significant predictors of the exploration of the adjustment to these commitments. In contrast, for the romantic relationships domain, at a within-individual level, individuals tended to experiment less important social media emotional experiences if they were more adjusted to their commitments. Still, these results must be qualified. On the one hand, the majority of the participants were single at the time of the procedure. By the fact that social media facilitate the search for a romantic partner and the discovery of different ways of living romantic relationships (Ulanova, 2020), it was easier to observe a greater tendency for them to have emotional experiences related to a reevaluation cycle of commitments. On the other hand, participants were all engaged in higher education. Thus, it was easier to observe individuals reporting emotional experiences related to their commitment to these studies, and fewer individuals presenting experiences related to a process of reevaluation of commitments.

10.4. Limitations of the second objective

The limitations of everyday exploratory activity in social media related to the education domain (reported by the heterogeneous links between emotional experiences and micro-identity processes) question the extent to which the individual can experience events related to education in this context. Furthermore, these limitations also question the way we understand and conceptualize the temporalities through which change can take place in this identity domain. Specifically, Klimstra et al. (2010) found relevant results regarding the dynamic between

exploration and commitment at a day-to-day level, but only in the interpersonal domain and encountered difficulties to highlight such dynamic in the ideological one. Given our results and considering the multiple domains through which the individual is continuously changing and building a sense of self-sameness and continuity, it might be that the fluctuations and variability of identity processes are tailored to time-scales that are dependent upon the identity domain's ability to change. While an interpersonal domain such as romantic relationships may be able to change in the course of minutes or days (Klimstra et al., 2010), an ideological one, such as education, may only be able to vary and fluctuate over the course of weeks or months (van der Gaag et al., 2017). Thus, further investigations are needed to address the question of the role of emotional experiences by assessing experiences in other contexts that may be more suitable to explore the adjustment to the commitments made in the domain of education; but also by looking at how identity fluctuates along different temporalities among the same life domains.

The results related to the second objective hardly account for distinct effects of positive and negative emotions. Indeed, none of the relations between identity processes and emotions nor the predicted effect of emotions on identity processes showed separate main directional relations. The same issue was highlighted in van der Gaag et al.'s (2017) study. Assessing the importance of emotions as well as the extent to which positive and negative emotions are strong seems to minimize the complexity of the emotional experience, and the emotions themselves. Accordingly, scholars have argued that rather than the valence of emotions, the extent to which they are adjusted to one's commitments might be a more relevant measure of their potential influence (van der Gaag et al., 2017). Thus, our 3rd objective exceeds these limitations by proposing a sufficiently relevant measure of emotional experiences, in order to gain a better understanding of how this major aspect of an experience can influence the evaluation and the reevaluation of the adjustment to one's commitment.

11. Method of Study 2

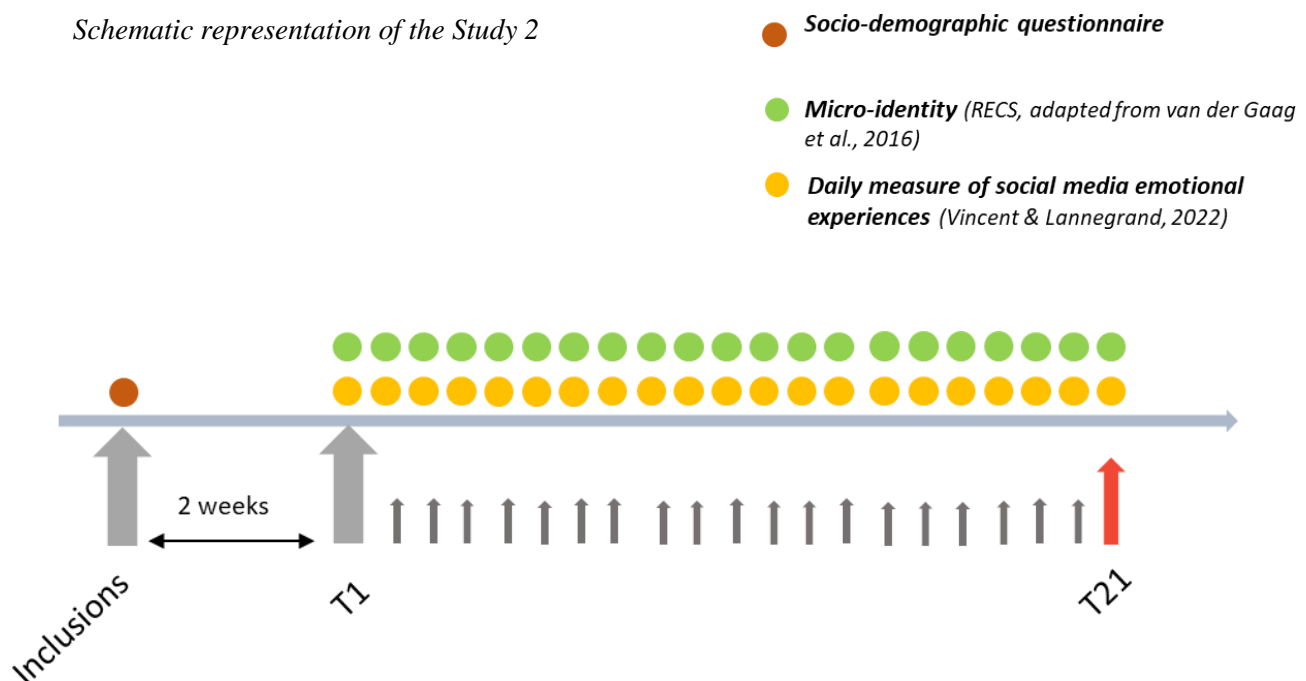
11.1. Procedure

11.1.1. Study Design

To understand the daily dynamics of identity, and the incidence of social media emotional experiences outcomes on these dynamics, the 2nd study followed a three-week procedure (Fig 4.) during which participants had to report each day on different measures presented below. Every day at 6:00 pm, the participants received an e-mail containing a link leading to the LimeSurvey questionnaire in which they could answer the study questions. Individuals were specifically asked to respond to the measurement tools regarding the previous 24 hours. At recruitment, two weeks before the procedure, participants were asked to complete an initial socio-demographic measure. This procedure was conducted in compliance with the University of Bordeaux ethics committee approval.

Fig. 4

Schematic representation of the Study 2



11.1.2. Recruitment

We used the same method to recruit participants as in the first study. Thus, information about the recruitment can be found in the Method section of Study 1 (p. 91).

11.1.3. Data Anonymization

For data anonymization, we also used the same procedure as during the first study (see data anonymization in the Method section of Study 1, p. 91).

11.2. Participants

Among all the emerging adult students from the University of Bordeaux that were asked to participate via their university mailbox ($N = 529$), 332 agreed to participate in the study. For this second study, we excluded from analyses (a posteriori) individuals from the initial sample ($N = 332$) according to two criteria: either (1) if they did not show any variations in more than 3 variables (i.e., among the five following variables: commitment to fit, exploration of fit, exploration of alternatives, agreement with commitments, disagreements with commitments) in both identity domains, or (2) if they did not complete enough measurement reports (minimum $n_{\text{report}} = 15$, maximum $n_{\text{report}} = 21$). No individuals were excluded because they reported the same levels for three of the five variables assessed in both domains during the procedure period (i.e., 21 days). However, 254 individuals (76.51%) were excluded because they completed fewer than the fifteen measurement reports required. In sum, 254 individuals did not meet the criteria for our analyses, leaving 78 participants. The participants from the final sample of our second study ($N = 78$) were aged from 18 to 28 years old (85.9% women, 12.82% men, 1.28% non-binary) who were enrolled in freshman ($n = 15$; 19.23%), sophomore ($n = 14$; 17.95%), third year ($n = 18$; 23.08%), fourth ($n = 16$; 20.51%), fifth year ($n = 14$; 17.95%), or first year PhD student ($n = 1$).

11.3. Measures

Regarding the tools constituting the procedure of this second study, we used, as in the first study, the RECS of van der Gaag et al. (2016), and a measure of social media emotional experiences that differs from that used in Study 1. In the previous measure related to daily social media emotional experiences used in Study 1, two items were measuring the intensity of both the positive and negative valence of the emotions from daily social media experiences. In this second study, these measures were replaced by the assessment of the perceived feeling of agreement and

disagreement that arise from everyday social media emotional experiences. Having already addressed the RECS earlier in the manuscript (see section Method of Study 1, p. 91), we only address the specific adaptation of the daily measure of emotional experiences from Study 1 to Study 2 in the sub-section below.

11.3.1. Daily measures of social media emotional experiences: Assessing congruency with commitments

Notably based on recent results provided in the literature (van der Gaag et al., 2017; Vleioras & Bosma, 2005, Kunnen, 2006) but also on the results found in the second objective of our first study (Vincent & Lannegrand, 2022), we adapted the measure related to daily social media emotional experiences in order to more accurately assess the extent to which these experiences were perceived by individuals as congruent or incongruent with their commitment. To do so, we first kept the questions about (1) the extent to which experiences lived in social media (“today”) were related to both identity domains assessed, and (2) the perceived importance of the experiences. Considering the emotional aspects of the everyday experiences and their relations with identity at a micro-level, the latest empirical results showed a great heterogeneity in the relations between emotional valences and micro-level identity processes (Vincent & Lannegrand, 2022). Moreover, these results also highlighted great difficulties in dissociating the effects of these emotional valences on micro-level of identity. To understand more accurately the role of emotional experiences on identity functioning, many researchers have suggested to focus on the extent to which these experiences are perceived by individuals as congruent or incongruent with their commitments, rather than only assessing the intensity of different emotional valence provoked by real-time experiences (van der Gaag et al., 2016; Vincent & Lannegrand, 2022). Using these specific indicators (i.e., the perceived agreement and disagreement from emotional experiences) can help capturing the incidence of more complex outcomes of emotional experiences. Thus, we adapted this measure by keeping the indices of emotional valence (i.e., positive and negative), and by adding a measure of individuals' perceived agreement and

disagreement from the emotional experiences (Appendix2). Participants had to report about their perceived feelings of agreement and disagreement each day on a VAS ranging from 0 (Not at all) to 100 (Extremely) in the same way as in Study1 for both valence of emotions from social media experiences.

Three dimensions composed the measure: Experiences, Accord, and Conflict. The first dimension (i.e., Experiences) was composed of two items. The first item provided information about the extent to which individuals experienced events related to the identity domain investigated (i.e., domain related experiences, DRE: “Today (the last 24h), to what extent your experiences in social media have been related to what you are currently experiencing in your romantic relationship(s)/studies?”). The second item in this dimension gave information about the extent to which individuals perceived these domain related social media experiences as important for them (i.e., importance of the experiences in the domain, IED: “Today (the last 24h), how important were these experiences to what you are currently experiencing in your romantic relationship(s)/studies?”). The second dimension (i.e., Accord), referred to the extent to which individuals encountered congruent emotional experiences with the commitments made in-context (here, the social media). This dimension combined the third and fourth questions of the measure. The third item assessed the intensity of positive valence of emotions from daily social media experiences (i.e., positive emotions, PE: “Today (the last 24h), did you feel positive about these experiences related to what you are currently experiencing in your romantic relationship(s)/studies?”). The fourth item assessed the perceived feeling of agreement with the commitments that arises from daily social media experiences (i.e., agreement with commitments, AGR: “Today (the last 24h), to what extent have these experiences confirmed your commitment to what you are currently experiencing in your romantic relationship(s)/studies?”). The last dimension (i.e., Conflict) referred to the extent to which individuals have experienced incongruent information with the commitments made in the social media, and was composed of the fifth and sixth items. The fifth item provided information about the intensity of negative valence of

emotions from daily social media experiences (i.e., negative emotions, NE: “Today (the last 24h), did you feel negative about these experiences related to what you are currently experiencing in your romantic relationship(s)/studies?”). The sixth and last item measured the perceived feeling of disagreement with the commitments that arises from daily social media emotional experiences (i.e., disagreement with commitments, DGR: “Today (the last 24h), to what extent these experiences have negated your commitment to what you are currently experiencing in your romantic relationship(s)/studies?”).

A confirmatory factor analysis (CFA) was conducted to assess the fit of the model to the data. For the educational domain, the model showed a good fit to the data ($\chi^2 (6) = 52.936$ $p < 0.001$; CFI = 0.99, RMSEA = 0.073, SRMR = 0.017). Similarly, in the romantic relationships domain, the model was well fitted to the data ($\chi^2 (6) = 69$ $p < 0.001$; CFI = 0.995, RMSEA = 0.052, SRMR = 0.015). We used the package *lavaan* (Rosseel, 2012), using *R* (R Core Team, 2020).

11.4. Analyses plan

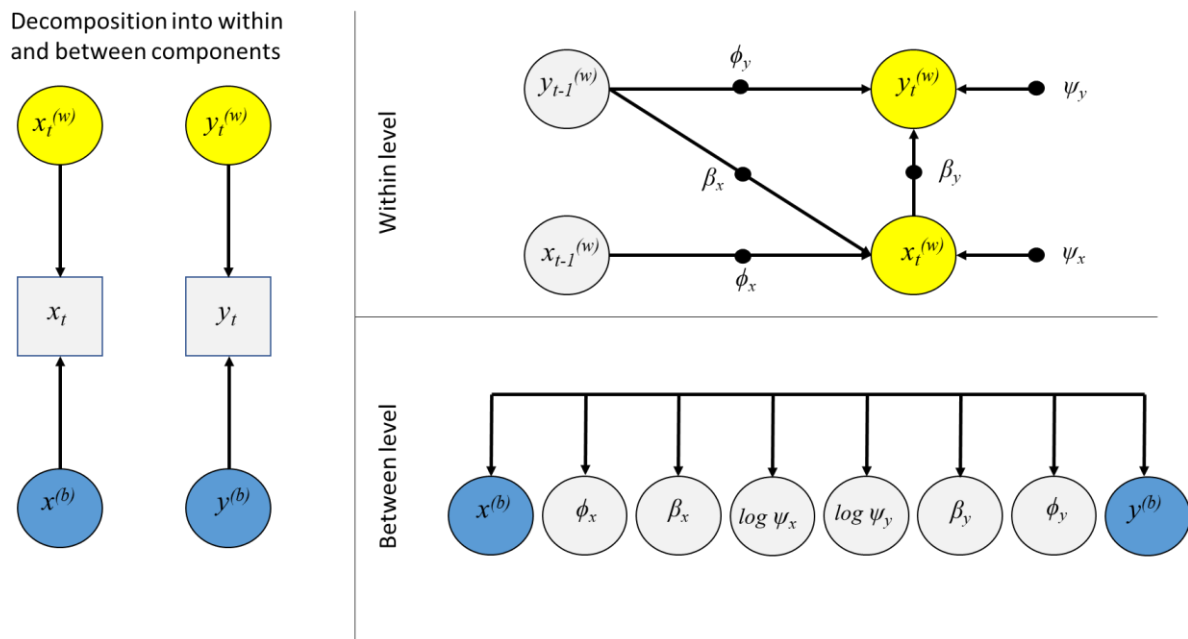
11.4.2. 3rd objective analyses: assessing the daily dynamic of identity

The third objective was attempt using, for both identity domain, Dynamic Structural Equation Modeling (DSEM, Asparouhov et al., 2018). DSEM is a framework for analyzing intensive longitudinal data helped with three modeling technics: single case time series modeling, multilevel modeling, and structural equation modeling. First, DSEM mainly relies on N=1 time series modeling, and account for the dynamic (or lagged) relations within data. Second, this single case individual time series modeling is associated with a *multilevel* modeling technique that allow the analysis of multiple N=1 models simultaneously, and to account for quantitative between-individual differences. Finally, more in-depth analyses of the quantitative differences in the data can be conducted helped by the *structural equation modeling* feature. Only the first two features were necessary to conduct the analyses for Objective 3, leading to dynamic multilevel analyses (or dynamic multilevel modeling).

Each of the daily relationships between the variables constituting the dynamic system of identity at the micro level (i.e., commitment to fit, exploration of fit, exploration of alternatives, agreement with commitments, and disagreement with commitments) was analyzed using a dynamic model that accounts for within-individual variance and between-individual differences. To further explain and illustrate these recent analysis models, let's take the example of the dynamic relation between the commitment to fit (y) and the exploration of alternatives processes (x). Both observed variables at time t and for the individual i , the commitment to fit (y_{it}) and the exploration of alternatives (x_{it}), are decomposed into two parts: the person mean (i.e., $y_i^{(b)}$ and $x_i^{(b)}$), that can be compared to other individuals, and a temporal deviation from that mean (i.e., $y_i^{(w)}$ and $x_i^{(w)}$) that account for the within-individual part. This decomposition is presented on the left side of the Figure 5. The temporal deviation from the individual mean (i.e., the within-individual part) is modeled using a time series model to account for dynamic relations between the commitment to fit and the exploration of alternatives within each person overtime. Additionally, the person mean is used to account for between-individual differences and is further modeled at the between-individual level.

Fig. 5

Schematic representation of the dynamic multilevel model used.



Dynamic multilevel models allow to test for various characteristics of the daily dynamic relations between variables helped with time series and multilevel analyses. Time series analyses are nowadays a major resource for studying the intra-individual variability and the structure of fluctuations in developmental processes (Gates & Molenaar, 2012; van der Krieke et al., 2015). These analyses offer the possibility of assessing how variables are related over time, using several indices (Fig 5). First, the dynamic concurrent association between two variables refers to the extent to which a variable predicts the other at time t (β_y), and vice versa. It is important to note that although the two variables are measured at the same time, there is an implicit lagged relation between them. Considering, for example, the regression of the exploration of alternatives on commitment to fit the same day. While the measure of the exploration of alternatives is about the current lag, the measure of the commitment to fit corresponds to the interval between the previous lag and the current lag (Asparouhov et al., 2018). Second, the stability paths (or autoregressive parameter), provide information about the extent to which a variable is stable over time (ϕ_y and ϕ_x). The latter is known using a dynamic regression of the variable at time t on itself

at time $t+1$. Lastly, the cross-lagged relations between the variables give information about how a variable y at time t predict the variable x at time $t+1$ (β_x). Thus, for a single pairwise relation between, for example, the commitment to fit (CF) and the exploration of alternatives (EA), we conducted the analysis twice: one time with CF as the y variable and EA as the x variable, and another time with EA as the y variable and CF as the x variable, to have access to every parameter of interest.

During the analysis, the data were standardized for each person separately. This means that the results can be interpreted in terms of effect sizes (Asparouhov et al., 2018). In the model used to analyze our data, slopes and residual variances were allowed to be random. At a within-individual level, the model allowed for regression parameters and residual variances to be specific for each individual. This means that every individual has their own value for these parameters. These individual random effects are represented by black circles in the intra-individual level model at the top of Figure 5. At the between-individual level, these parameters become latent variables represented by white circles (corresponding to the black circles at the within-individual level). The between-individual model encompassed eight random effects (i.e., two means, four regression parameters, and two residual variances). All these effects were allowed to correlate with each other (represented by arrows at the between-level). The random residual variances at the within-level were log transformed to ensure that the individual variances were never negative (Asparouhov et al., 2018). Thus, the equation of the model used can be expressed at the within level as:

$$\begin{aligned} y_{it}^{(w)} &= \phi_{yi}y_{it-1}^{(w)} + \beta_{yi}x_{it}^{(w)} + \zeta_{yit} \\ x_{it}^{(w)} &= \phi_{xi}x_{it-1}^{(w)} + \beta_{xi}y_{it}^{(w)} + \zeta_{xit} \end{aligned}$$

Equation 1. Expression the within-level part of the dynamic multilevel model used

and at a between level as:

$$\begin{aligned}
y_i^{(b)} &= \gamma_{y0} + u_{y0i} \\
x_i^{(b)} &= \gamma_{x0} + u_{x0i} \\
\phi_{yi} &= \gamma_{y1} + u_{y1i} \\
\phi_{xi} &= \gamma_{x1} + u_{x1i} \\
\beta_{yi} &= \gamma_{y2} + u_{y2i} \\
\beta_{xi} &= \gamma_{x2} + u_{x2i} \\
\log(\psi_{yi}) &= \gamma_{y3} + u_{y3i} \\
\log(\psi_{xi}) &= \gamma_{x3} + u_{x3i}
\end{aligned}$$

Equation 2. Expression the between-level part of the dynamic multilevel model used

Where the γ ' are the between-level average effects and the u 's are the within-individual means' deviations.

To sum up, the dynamic multilevel model used for analyzing the daily dynamics of identity among the participants has provided information about the dynamic concurrent association, the stability paths, as well as the cross-lagged relations between the variables. All these analyses were conducted using Mplus 8.1 (Muthén and Muthén 1998–2017).

11.4.3. Constructing open to change and not open to change groups

Beyond understanding the daily dynamics of identity and social media emotional experiences in a general population, the aim of the third objective was also to understand these dynamics in specific groups of individuals. These groups were identified to represent two states of the dynamic system of identity: a state in a period of high openness to change and experience, and a state in a period of low openness to change, or even resistance to change. To assign individuals to one of these groups, we calculated the openness to change scores for each individual. These openness to change scores were calculated using the means of commitment to fit, exploration of fit, and exploration of alternatives reported during the procedure (and following the same calculation presented in the Method of study 1, p. 91). Then we divided the sample into three

groups according to these scores using percentiles. Finally, we selected the group of individuals with the lowest 30% openness to change scores (i.e., representing individuals open to change), and the group of individuals with the highest 30% openness to change scores (i.e., representing individuals who were not open to change). We conducted the same procedure for both the educational and romantic relationships domains. The descriptive statistics of these different groups are presented in the section “Descriptive analyses” below (p.146).

11.4.4. Missing data in intensive longitudinal design

Intensive longitudinal data are often subject to missing data between different observation times. This can lead to problems of interpretation of the results when modelling time series of individuals, and therefore when trying to highlight dynamic relationships (or lagged relationships) since the observation points are not necessarily equally spaced in time. Indeed, an important characteristic of lagged relations is that the effect size of the relation differs according to the time interval between two observations. While auto-regressive effects tend to decrease with the increase of time interval between two observation points, cross-lagged relations can be zero, increase or decrease depending on the increasing or decreasing time interval between two time points (Asparouhov et al., 2018 This is known as the "lag problem" (Gollob & Reichardt, 1987). DSEM takes this problem into account thanks to the implementation in Mplus of the TINTERVAL function (Asparouhov et al., 2018; Hamaker & Wichers, 2017; Muthen & Muthen, 1998–2017) which allows to indicate the time interval between observations (in our study 24h). This function inserts rows without results in place of the missing observations. For example, in our study, there were 21 measurement times each separated by one day. If an individual responded at time 1 and then resumed the procedure at time 3 without responding at time 2, then Mplus add an observation line at time 2 which is treated as missing data. Thus, the analyses of the lagged relationships are not done according to different time intervals (e.g., the analysis of the lagged relationship between time 1 and time 3, and the analysis of the lagged relationship between time 3 and time 4, et), but according to a constant interval (i.e., from time t to time $t+1$).

12. Descriptive statistics of Study 2

Throughout this chapter we present the descriptive and correlational statistics between the variables measured during the second study on the final sample ($N = 78$). First, we present the descriptive statistics related to the two understudy domains and put them in perspective with each other. Second, we report the correlations between the different variables of our study by domain. Finally, we look at the descriptive and correlational statistics for each group created to meet objective 3. That is, we focus on the two groups identified in each domain: the group of individuals open to change and the group of individuals who are not open to change in the educational and in the romantic relationships domains. As in the first study, our data did not follow a normal distribution. Therefore, Spearman correlations (ρ) were conducted for analyzing relations between variables in both domains (Appendix 3), and Mann-Whitney U tests were conducted to account for significant differences in levels of the different variables between domains (Appendix 3). The tables reporting the results of the Shapiro-Wilk test for normality can be found in Appendix 3 for the educational domain, and for the romantic relationships domain.

12.1. Socio-demographic descriptive statistics

They were studying psychology ($n = 41, 52.56\%$), law ($n = 11, 14.1\%$), computer science ($n = 3, 3.85\%$), nursing ($n = 3, 3.85\%$), public health ($n = 3, 3.85\%$), biology ($n = 2, 2.56\%$), sociology ($n = 2, 2.56\%$), mathematics ($n = 2, 2.56\%$), educational sciences ($n = 2, 2.56\%$), oceanographic ($n = 2, 2.56\%$), anthropology ($n = 2, 2.56\%$), and 2 of them were on a single study path (engineering, oenology, and chemical, $n = 3, 3.85\%$). None of the participants changed study path during the procedure. Regarding the situation of the participants' romantic relationship at the beginning of the study, 38 reported being single (48.72%), 32 reported being in a relationship (41.03%), 6 reported having one or more romantic relationships (7.69%), and 2 reported having another type of romantic relationship (2.56%). During the procedure, three

participants reported a change in her romantic relationship situation (3.84%). The first one switched from being in a relationship to single. The second one reported multiple changes in her romantic relationship situation. Between the enrollment (two weeks prior to the start of the procedure) and the first day of the procedure, she reported having change her situation regarding her romantic relationships: she switched from being single to being in a relationship. She also reported a change during the procedure: she switched from being in a relationship at the start of the procedure to being single again during the assessment period. The third one encountered multiple changes during the procedure: she reported being single at the start of the procedure, then changing to “another” type of situation that she qualified as “in research”. Later in the procedure, she reported a new change in her situation: she reported having “another” type of romantic relationships situation qualified as “abandon”, then, the next day, as “back to research”. She finally reported during the last 4 days being single.

12.2. Descriptive statistics among all participants in both domains

On average, individuals spent almost 60 min per day using social media ($M = 6.94$, $SD = 3.65$). Among all participants, it appeared that none of the levels of the variables measured in the procedure differed between the educational domain and the romantic relationships domain. The only significant difference found was the one concerning the levels of commitment to fit. Mean levels of commitment to fit in the educational domain was $M = 72.1$ ($SD = 21.6$), and $M = 55.8$ ($SD = 28$) in the romantic relationships domain. A Mann-Whitney U test indicated that the difference between the medians in the educational domain ($Mdn = 74.2$) and the romantic relationships domain ($Mdn = 52.4$) was significantly different, $U (N_{education} = 78, N_{romantic} = 78) = 1974, p < .001$.

12.3. Correlational statistics among all participants in both domains

12.3.1. Educational domain

Many significant relations were found in the educational domain (Appendix 4). Time spent in social media per day (TSSM) was positively correlated with agreement with commitments

(AGR, $r_s = .238$, $p < .05$). Experiences related to the educational domain (DRE) was positively correlated with almost all understudy variables (at $p < .001$) except for the relation with exploration of alternatives (EA, $r_s = 0.07$, $p = .611$) and commitment to fit (CF, $r_s = -0.085$, $p = .537$). The importance of experiences related to the educational domain (IED) was positively correlated with the same variables as DRE (at $p < .001$). Indeed, IED was positively related to positive emotions (PE, $r_s = 0.812$, $p < .001$), negative emotions (NE, $r_s = 0.466$, $p < .001$), agreement with commitments (AGR, $r_s = 0.796$, $p < .001$), disagreement with commitments (DGR, $r_s = 0.592$, $p < .001$), and exploration of fit (EF, $r_s = 0.371$, $p < .001$). Also, as DRE, IED was not significantly related to EA ($r_s = 0.12$, $p = .383$) and CF ($r_s = -0.035$, $p = .799$). PE was positively correlated with NE ($r_s = .392$), agreement with commitments ($r_s = .894$), and disagreement with commitments ($r_s = .454$), all at $p < .001$. Negative emotion intensity (NE) was also positively correlated with AGR ($r_s = 0.322$, $p < .05$), DGR ($r_s = 0.696$, $p < .001$), EF ($r_s = 0.373$, $p < .001$), and exploration of alternatives ($r_s = 0.28$, $p < .05$). NE was negatively correlated with commitment to fit ($r_s = -0.23$, $p < .05$). AGR was also positively correlated with both DGR ($r_s = .494$, $p < .001$) and CF ($r_s = .248$, $p < .05$). DGR was positively correlated with both exploration processes: EF ($r_s = 0.417$, $p < .001$) and EA ($r_s = 0.372$, $p < .001$). Finally, both exploration processes were positively correlated to each other ($r_s = 0.741$, $p < .001$), and both negatively correlated to CF (EF: $r_s = -0.441$, $p < .001$; EA: $r_s = -0.394$, $p < .001$).

12.3.2. Romantic relationships domain

We found a several number of significant relations between the mean levels of the variables in the romantic relationships domain. Time spent in social media per day was positively correlated with domain-related experiences (DRE, $r_s = .223$, $p < .05$) and both agreement (AGR, $r_s = .317$, $p < .01$) and disagreement with commitments (DGR, $r_s = .237$, $p < .05$). Domain related experiences were positively related to almost all variables (from $r_s = 0.363$, $p < .01$, to $r_s = 0.951$, $p < .001$) except to commitment to fit. Similarly, the importance of these domain-related

experiences (IED) was positively related to all variables under study (from $r_s = 0.310, p < .01$, to $r_s = 0.773, p < .001$). The intensity of positive emotions (PE) was positively correlated with all variables (from $r_s = 0.354, p < .01$, to $r_s = 0.822, p < .001$) except the two exploration processes. The intensity of negative emotions (NE) was positively related to AGR and DGR, but also with both exploration processes (from $r_s = 0.41$ to $r_s = 0.836, p < .001$). Agreement with commitments was also positively correlated with both DGR and CF ($r_s = 0.412, p < .001$). DGR was also positively correlated with EF ($r_s = 0.482, p < .001$) and exploration of alternatives ($r_s = 0.552, p < .001$). Finally, EF was positively correlated with EA ($r_s = 0.754, p < .001$), and EA was negatively correlated with CF ($r_s = -0.442, p < .001$).

12.4. Descriptive and correlational statistics among the open to change and not open to change groups in the educational domain

Participants in the open to change group ($N = 23$) reported using social media to the tune of approximately less than an hour per day ($M = 6.81, SD = 3.36$), whereas participants who were not open to change ($N = 26$) reported using social media almost 70 min per day ($M = 7.95, SD = 3.79$). The results showed that the two groups differed in their levels of IED ($U = 200, p < .05$), NE ($U = 190, p < .05$), DGR ($U = 201, p < .05$), EF ($U = 26, p < .001$), EA ($U = 2, p < .001$), and CF ($U = 57, p < .001$). Only the levels of DRE ($U = 201, p = .05$), PE ($U = 284, p = 0.773$), AGR ($U = 265, p = 0.509$), and time spent in social media ($U = 254, p = 0.373$) did not differ significantly. The summary of the Mann-Whitney U tests are reported in the Appendix 3.

Concerning the open to change group, results of the correlations (Appendix 4) showed DRE to be significantly and positively related to IED, PE, NE, and AGR (from $r_s = 0.505, p < .05$, to $r_s = 0.944, p < .001$), and almost significantly related to DGR ($r_s = 0.505, p = 0.07$), and EA ($r_s = -0.393, p = 0.064$). Results also showed IED to be positively related to PE, NE, AGR and DGR (from $r_s = 0.458, p < .05$, to $r_s = 0.87, p < .001$). The intensity of positive emotional valence was positively related to NE, AGR, and DGR (from $r_s = 0.435, p < .05$, to $r_s = 0.897, p < .001$). Further, NE was significantly related to AGR ($r_s = 0.665, p < .001$) and DGR ($r_s = 0.938, p < .001$).

.001). Agreement with commitments was positively related to DGR ($r_s = 0.549, p < .01$). Exploration of fit was almost significantly related to DGR ($r_s = 0.374, p = 0.08$). Finally, both EF ($r_s = 0.484, p < .05$) and EA ($r_s = 0.515, p < .05$) were negatively related to OC, and CF was negatively related to OC ($r_s = -0.697, p < .001$).

Concerning the group of individuals who were not open to change, results of the correlations (Appendix 4) showed DRE to be positively related to IED, PE, and AGR (from $r_s = 0.692, p < .001$, to $r_s = 0.881, p < .001$), and almost significantly related to TSSM ($r_s = 0.347, p = 0.083$). Unlike the group open to change, DRE was not significantly related to NE ($r_s = -0.227, p = 0.264$). The importance of domain related experiences was positively related to PE ($r_s = 0.769, p < 0.001$) and AGR ($r_s = 0.789, p < .001$), and almost significantly related to DGR ($r_s = 0.358, p = 0.073$) and TSS ($r_s = 0.347, p = 0.083$). Unlike the group open to change, IED was not significantly related to NE ($r_s = -0.04, p = 0.847$). Moreover, PE was positively related to AGR ($r_s = 0.861, p < .001$). In contrast to the group open to change, PE was not significantly related to NE ($r_s = 0.08, p = 0.698$) and DGR ($r_s = 0.223, p = 0.274$). Results also showed NE to be positively related to DGR ($r_s = 0.513, p < .01$), and almost significantly related to EF ($r_s = 0.366, p = 0.066$). Additionally, NE was not significantly related to AGR ($r_s = 0.028, p = 0.894$) unlike the open to change group. Results showed AGR to be almost significantly related to DGR ($r_s = 0.341, p = 0.089$). Exploration of fit was positively related to EA ($r_s = 0.629, p < .001$) and OC ($r_s = 0.672, p < .001$), and was almost significantly related to CF ($r_s = -0.333, p = 0.097$). Finally, EA was positively related to OC ($r_s = 0.411, p < .05$), and CF was positively related to OC ($r_s = -0.887, p < .001$).

12.5. Descriptive and correlational statistics among the open to change and not open to change groups in the romantic relationships domain

The average time spent in social media for the open to change group ($N = 25$) was almost 70 minutes per day ($M = 7.64, SD = 4.14$), and the average for the group of individuals who were not open to change ($N = 25$) was just over 60 minutes per day ($M = 7.12, SD = 3.46$). Regarding

the means of the different variables reported by the two specific groups, we found some differences (Appendix 4.4.). Our results showed that the two groups only differed in their levels of NE ($U = 117, p < .001$), DGR ($U = 88.5, p < .001$), EF ($U = 19, p < .001$), EA ($U = 0, p < .001$), and CF ($U = 34, p < .001$).

Considering the group of individuals open to change, results of the correlations (Appendix 4.4.) showed DRE to be positively related to IED, PE, NE, and AGR (from $r_s = 0.493, p < .05$, to $r_s = 0.939, p < .001$). Results also showed IED to be positively related to PE, NE, AGR and DGR (from $r_s = 0.499, p < .05$, to $r_s = 0.662, p < .001$). The intensity of positive emotional valence was positively related to AGR ($r_s = 0.625, p < .001$). The intensity of negative emotional valence was positively related to AGR, DGR and TSSM (from $r_s = 0.422, p < .05$, to $r_s = 0.807, p < .001$). Agreement with commitments was positively related to DGR ($r_s = 0.583, p < .01$) and CF ($r_s = 0.406, p < .05$). Disagreement with commitments was positively related to TSSM ($r_s = 0.463, p < .01$) and OC ($r_s = 0.432, p < .05$). Exploration of fit ($r_s = 0.546, p < .01$) and EA were positively related to OC ($r_s = 0.655, p < .001$). Finally, CF was negatively related to OC ($r_s = -0.622, p < .001$).

With regard to the group of individuals who were not open to change, our results (Appendix 4) showed that DRE was positively related to IED, PE, NE, and AGR (from $r_s = 0.424, p < .05$, to $r_s = 0.922, p < .001$), but also positively related to CF ($r_s = 0.662, p < .001$), unlike the group of individuals open to change. Additionally, DRE was almost significantly related to TSSM ($r_s = 0.384, p = 0.059$). Our results showed that IED was positively related to PE, NE, AGR, and DGR (from $r_s = 0.414, p < .05$, to $r_s = 0.918, p < .001$). Moreover, IED was also positively related to CF ($r_s = 0.458, p < .05$), in contrast to the open to change group. Considering PE, results highlighted that it was positively related to AGR ($r_s = 0.935, p < .001$). Furthermore, PE was also positively related to NE ($r_s = 0.47, p < .05$) and CF ($r_s = 0.554, p < .01$), and negatively related to OC ($r_s = -0.415, p < .05$) unlike the open to change group of participants. The intensity of positive

emotional valence was almost significantly related to DGR ($r_s = 0.389, p = 0.054$). The intensity of negative emotional valence was positively related to AGR ($r_s = 0.607, p < .001$) and DGR ($r_s = 0.704, p < .001$). Agreement with commitments was positively related to both DGR ($r_s = 0.506, p < .01$) and CF ($r_s = 0.408, p < .05$), and was almost significantly related to TSSM ($r_s = 0.378, p = 0.063$). Disagreement with commitments was positively related to TSSM ($r_s = 0.444, p < .05$), and almost significantly related to ($r_s = 0.364, p = 0.073$). Exploration of fit was positively related to EA ($r_s = 0.738, p < .001$) and OC ($r_s = 0.519, p < .01$). Finally, EA was positively related to OC ($r_s = 0.504, p < .05$), while CF was negatively related to OC ($r_s = -0.716, p < .001$).

13. Results of the 3rd objective: Understanding daily dynamics of identity and social media emotional experiences

For this third objective, we assessed how identity functioning processes and outcomes of social media emotional experiences operated at the daily level within persons using a DSEM approach. For each identity domain, we present the results of the daily within-person dynamic cross-lagged model (1) for the general population, then (2) for the group of individuals open to change, and finally (3) for the group of individuals who were not open to change. Also, for each group open and not open to change, we present specific results of the dynamic relations between each micro-level of identity process and the indicators social media experiences (i.e., domain related experiences and the importance of these experiences).

13.1. Results for the third objective in the educational domain

13.1.1. Results of micro-level identity processes and social media emotional experiences dynamics across all participants in the educational domain

Standardized results of daily within-person dynamic cross-lagged models for identity and outcomes of social media emotional experiences in the educational domain revealed significant effects of dynamic concurrent associations for all relations between the variables assessed (Fig. 6). Specifically, results of average dynamic concurrent associations across individuals showed that an increase in commitment to fit (CF) a day predicted a decrease in exploration of fit (EF: $\beta = -0.166$; $p < .001$), exploration of alternatives (EA: $\beta = -0.151$; $p < .001$), disagreement with commitments (DGR: $\beta = -0.073$; $p < .01$), and an increase in agreement with commitments (AGR: $\beta = 0.151$; $p < .001$) the same day. In the other way around, an increase in EF ($\beta = -0.173$; $p < .001$), EA ($\beta = -0.166$; $p < .001$), and DGR ($\beta = -0.113$; $p < .001$) predicted a decrease of CF, while an increase in AGR ($\beta = 0.107$; $p < .001$) predicted an increase in CF. Further, when individuals showed an increase in EF, they reported more EA ($\beta = 0.509$; $p <$

.001), DGR ($\beta = 0.109$; $p < .001$), and AGR ($\beta = 0.07$; $p < .01$). And vice versa, an increase in EA ($\beta = 0.499$; $p < .001$), and DGR ($\beta = 0.121$; $p < .001$) predicted an increase in EF, and an increase in AGR ($\beta = 0.05$; $p = .033$) almost significantly predicted an increase in EF the same day. Considering EA, when emerging adults showed an increase in EA, they reported more DGR ($\beta = 0.123$; $p < .001$), and AGR ($\beta = 0.054$; $p < .05$). And vice versa, increasing DGR ($\beta = 0.12$; $p < .001$) predicted increasing EA, and increasing AGR ($\beta = 0.044$; $p = .034$) tended to predict increasing EA. Finally, an increase in DGR predicted an increase in AGR ($\beta = 0.183$; $p < .001$), as well as vice versa ($\beta = 0.204$; $p < .001$).

Concerning the stability paths, on average, all the auto-regressions' estimates were significantly positive. Results showed that the more stable process was CF ($M\phi = 0.234$, $p < .001$), followed by EA ($M\phi = 0.199$, $p < .001$) and EF ($M\phi = 0.163$, $.002 < p < .001$).

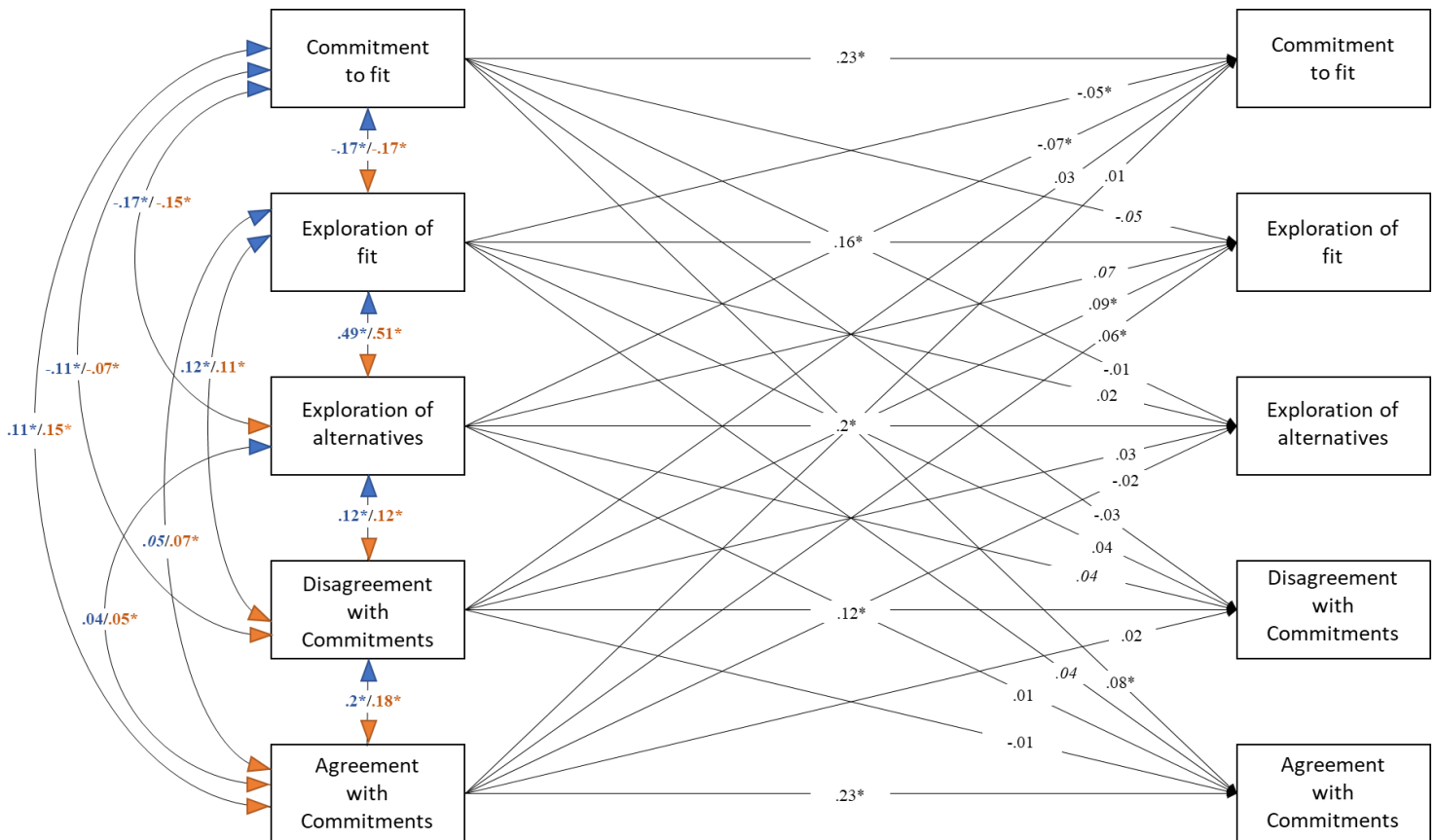
Considering the outcomes of social media emotional experiences, AGR ($M\phi = 0.227$, $p < .001$) was the most stable, followed by DGR ($M\phi = 0.122$, $.021 < p < .001$).

Finally, only few significant cross-lagged effects were found in our sample which still account for a daily identity dynamic. Indeed, an increase in levels of EF ($\beta = -0.052$; $p < .05$) and EA ($\beta = -0.72$; $p < .01$) significantly predicted a decrease in levels of CF. Also, increasing CF a day significantly predicted increasing AGR the next day ($\beta = 0.079$; $p < .01$). Some relations were also found tendential. Increased levels of CF tended to predict lower levels of EF the next day ($\beta = 0.054$; $p = 0.06$), and increased levels of EA a day tended to predict higher levels of EF the day after ($\beta = 0.072$; $p = 0.026$). An increase in levels of EA also tended to predict higher levels of DGR the next day ($\beta = 0.042$; $p = 0.086$). Finally, an increase in levels of EF a day tended to predict an increase in levels of AGR the day after ($\beta = 0.042$; $p = 0.071$).

All the standardized within-person concurrent associations, stability paths, and cross-lagged effects for the general population in the educational domain are presented in Fig. 6.

Fig. 6

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the educational domain across all participants.



Note. The blue and orange arrows represent dynamic regressions from one variable to another. As an example: between commitment to fit and exploration of fit, the blue arrow combined with the blue estimate means that increasing exploration of fit on one day predicts decreasing commitment to fit on the same day ($\beta = -0.17$). The orange arrow combined with the orange estimate represent the opposite relation. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

13.1.2. Results of micro-level identity processes and social media emotional experiences dynamics across open to change participants in the educational domain

For the open to change participants, results revealed that micro-level identity processes

significantly predicted levels of domain related experiences (DRE) the same day, except for the commitment to fit process. Specifically, increase in EF predicted increase in DRE ($\beta = 0.203$; $p < .001$), and increase in EA also predicted increase in DRE ($\beta = 0.108$; $p < .05$). However, none of the micro-level identity processes on one day significantly predicted levels of DRE the day after. All identity processes significantly predicted levels of the importance of domain related experiences (IED) at time t : CF negatively predicted levels of IED ($\beta = 0.103$; $p < .05$), EF positively predicted levels of IED ($\beta = 0.238$; $p < .001$), and in the same way, EA positively predicted levels of IED ($\beta = 0.13$; $p < .01$). Moreover, none of the micro-level identity processes significantly predicted levels of IED at time $t+1$. These results are presented in Table 8.

Table 8.

Average standardized results of daily within-individual dynamic relations between micro-level identity processes and social media experiences for open to change participants in the educational domain.

Fixed effects	SMU	Predictions from t to t				Predictions from t to $t+1$			
		β	Lower	Upper	p	β	Lower	Upper	p
CF	DRE	0.062	-0.04	0.165	.116	0.013	-0.085	0.115	.407
EF		0.203	0.11	0.285	0*	0.019	-0.078	0.119	.36
EA		0.108	0.011	0.203	.014*	0.044	-0.051	0.146	.18
CF	IED	0.103	0.009	0.196	.016*	0.01	-0.101	0.119	.431
EF		0.238	0.146	0.32	0*	0.042	-0.061	0.144	.233
EA		0.13	0.034	0.222	.004*	-0.007	-0.108	-0.101	.445

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DRE: domain-related experiences; IED: importance of the experiences. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

Results of average dynamic concurrent associations for the open to change group (Fig. 7) showed that an increase in CF predicted an increase in AGR ($\beta = 0.296$; $p < .001$) the same day and vice versa ($\beta = 0.222$; $p < .001$). Increasing CF also tended to predict decreasing DGR ($\beta = -0.083$; $p = .058$), but not the other way around. Further, results showed that an increase in EF predicted a decrease in CF ($\beta = -0.104$; $p < .01$), and an increase in EA tended to predict a

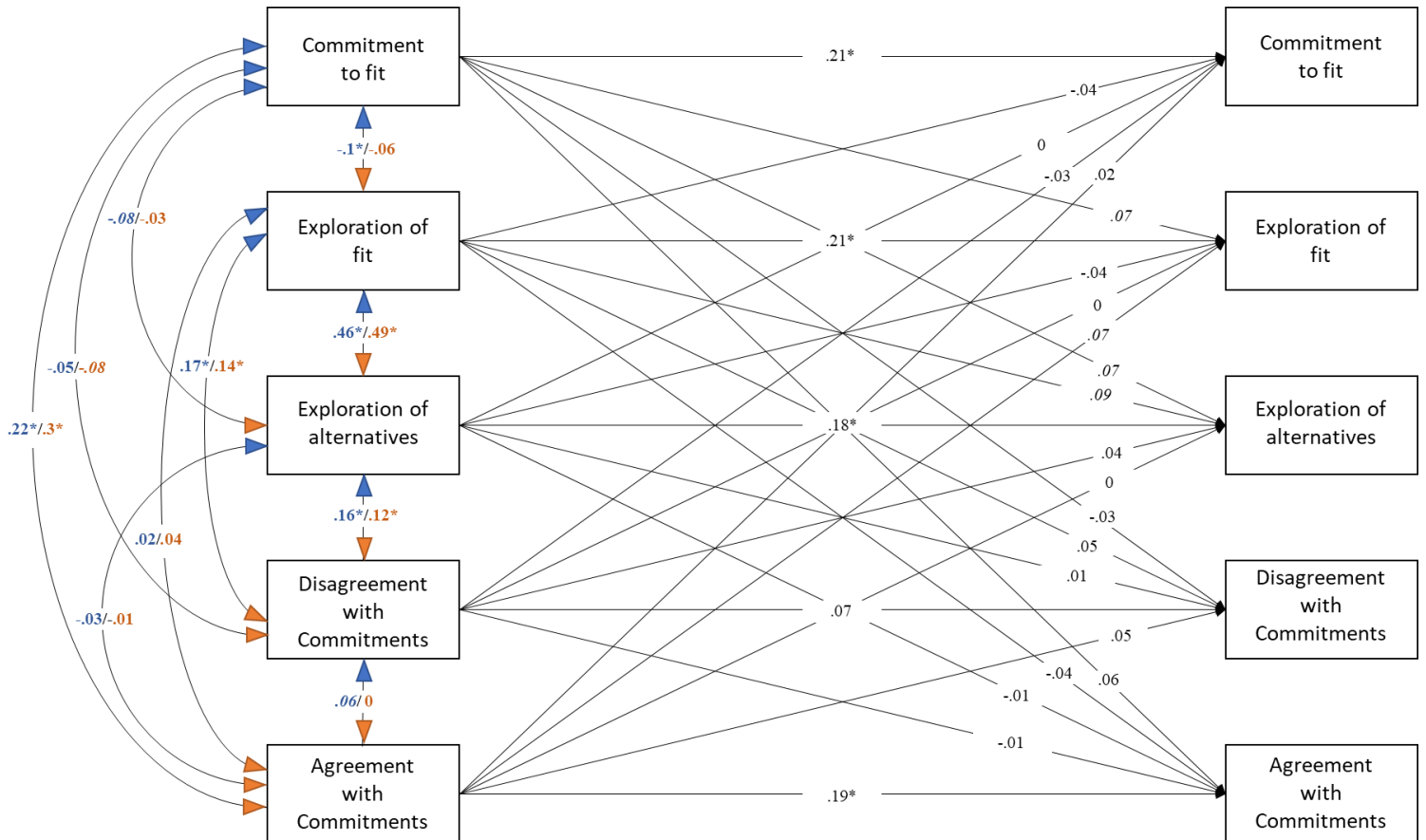
decrease in CF ($\beta = -0.078$; $p = .051$). Increasing EF predicted increasing EA one day ($\beta = 0.493$; $p < .001$), and vice versa ($\beta = 0.46$; $p < .001$). Also, an increase in EF predicted an increase in DGR the same day ($\beta = 0.136$; $p < .01$), and vice versa ($\beta = 0.173$; $p < .001$). Increasing EA also predicted increasing DGR the same day ($\beta = 0.121$; $p < .01$), and vice versa ($\beta = 0.16$; $p < .001$). Finally, the relations between agreement with commitments and processes of exploration were not significant, as such as the concurrent associations with disagreement with commitments. The p-values and estimates are displayed in Appendix 4.

Significant results were found for the average autoregressive parameters of all the variables except for the disagreement with commitments ($M\phi = 0.07$; $.412 < p < .061$). For the rest of the stability paths, results showed that autoregressive parameters were lower than stability paths found across all the individuals, except for EF. Among the three micro-level identity processes, the greatest average stability was found for CF ($M\phi = 0.213$; $.002 < p < .001$) and exploration of fit ($M\phi = 0.211$; $p < .001$), and the least stable process was EA ($M\phi = 0.184$; $.004 < p < 0$). Considering the outcomes of social media emotional experiences, results showed that the levels of AGR one day significantly predicted levels of AGR the day after ($M\phi = 0.193$; $.002 < p < .001$).

Results for the average daily within dynamic cross-lagged relations showed no significant effects of either the micro-level identity processes or the outcomes of daily social media emotional experiences. However, the results still showed several tendencies, and considering the small number of people in the group, these results are still indicative of a significant relation. Thus, it appeared that an increase in CF one day tended to predict an increase in EF ($\beta = 0.074$; between $p = .082$) and in the level of EA ($\beta = -0.07$; $p = .083$) the day after. Moreover, increasing EF on a day tended to predict increasing EA the next day ($\beta = 0.087$; $p = 0.073$). Finally, results showed that an increase in AGR predicted an increase in EF the day after ($\beta = 0.072$; $p = .082$).

Fig. 7

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the educational domain across open to change participants.



Note. The blue and orange arrows represent dynamic regressions from one variable to another. As an example: between commitment to fit and exploration of fit, the blue arrow combined with the blue estimate means that increasing exploration of fit on one day predicts decreasing commitment to fit on the same day ($\beta = -0.1$). The orange arrow combined with the orange estimate represent the opposite relation. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

13.1.3. Results of micro-level identity processes and social media emotional experiences dynamics across participants who were not open to change in the educational domain

First, dynamic regressions from DSEM models, displayed in Table 9, showed significant predictive relations between the micro-level of identity exploration processes and the extent to which participants of this group experienced domain related experiences (DRE) at time t . Indeed, both an increase in EF ($\beta = 0.199$; $p < .001$), and EA ($Estimate = 0.211$; $p <$

.001) predicted an increase in DRE. The same day, CF did not significantly predict levels of DRE. However, increasing CF predicted decreasing DRE the next day ($\beta = -0.118$; $p < .01$). Increasing EA on a day almost significantly predicted increasing DRE the next day ($\beta = 0.095$; $p = .047$). As for DRE, micro-level of identity exploration processes did significantly predict levels of importance of social media experiences (IED). As such, levels of EF ($\beta = 0.159$; $p < .001$) and EA ($\beta = 0.225$; $p < .001$) predicted levels of IED the same day. Increasing levels of CF almost significantly predicted decreasing levels of IED the same day ($\beta = -0.07$; $p = .079$). Finally, all micro-level identity processes significantly predicted levels of IED from one day to the next. Indeed, an increase in CF ($\beta = -0.132$; $p < .01$) predicted a decrease in IED, while an increase in EF ($\beta = 0.106$; $p < .01$), and EA ($\beta = 0.158$; $p < .001$) predicted an increase in IED the next day.

Table 9.

Average standardized results of daily within-individual dynamic relations between micro-level identity processes and social media experiences for participants who were not open to change in the educational domain.

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		β	Lower	Upper	Sig	β	Lower	Upper	Sig
CF	DRE	0.013	-0.089	0.109	.405	-0.118	-0.206	-0.026	.007
EF		0.199	0.105	0.292	0*	0.005	-0.087	0.091	.454
EA		0.211	0.104	0.322	0*	0.095	-0.2	0.239	<i>.047</i>
CF	IED	-0.07	-0.0168	0.029	<i>.079</i>	-0.132	-0.228	-0.029	.005*
EF		0.159	0.062	0.247	.001*	0.106	0.025	0.187	.004*
EA		0.225	0.095	0.326	0*	0.158	0.047	0.254	.001*

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DRE: domain-related experiences; IED: importance of the experiences. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

Considering the dynamic concurrent associations, on one day an increase in CF predicted a decrease in EF negatively related to EF ($\beta = -0.175$; $p < .001$) and vice versa ($\beta = -$

0.117; $p < .01$). Similarly, when individuals showed an increase in CF one day, they reported a decrease in EA ($\beta = -0.186$; $p < .001$). And vice versa, an increase in EA predicted a decrease in CF the same day ($\beta = -0.249$; $p < .001$). Increasing CF almost predicted increasing AGR the same day ($\beta = 0.066$; $p = .079$), but not the other way around. When emerging adults' showed an increase in EF, they reported an increase in EA the same day ($\beta = 0.53$; $p < .001$), and vice versa ($\beta = 0.46$; $p < .001$). Further, an increase in EF predicted an increase in AGR ($\beta = 0.094$; $p < .05$) but not vice versa. Results showed that an increase in EA tended to predict an increase in DGR ($\beta = 0.064$; $p = .074$), as well as the other way around ($\beta = 0.082$; $p = .038$). When individuals' exploration of alternatives increased one day, they reported more AGR the same day ($\beta = 0.093$; $p = .03$), but not vice versa.

Stability paths showed important differences with the group of individuals open to change. In the group not very open to change, the more stable micro-level identity process was EA ($M\phi = 0.16$; $.005 < p < .001$), followed by CF ($M\phi = 0.142$; $.045 < p < .001$). Results showed that EF was not significantly stable overtime ($M\phi = 0.067$; $.405 < p < .041$). Concerning the outcomes of social media emotional experiences, results showed that AGR was the most stable ($M\phi = 0.234$; $p < .001$), and DGR was the least stable ($M\phi = 0.16$; $.09 < p < .001$).

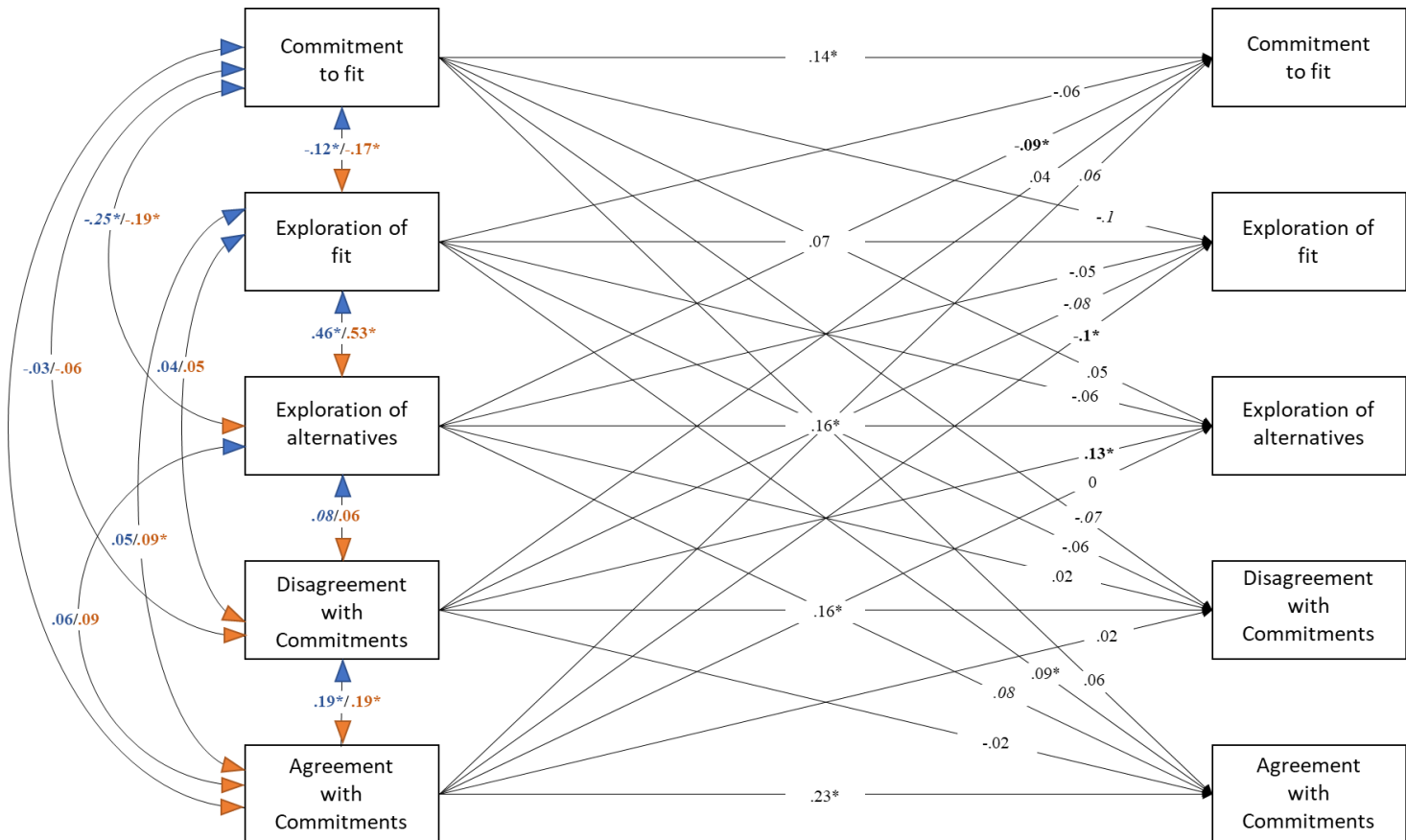
For the results of the within-individual daily dynamics of identity and social media emotional experiences (Fig. 8), results showed that an increase in CF did not significantly predicted levels of other variables the next day. However, an increase in CF almost predicted a decrease in both EF ($\beta = -0.1$; $p = .026$), and DGR ($\beta = -0.074$; $p = .045$) the day after. Increasing EF a day predicted increasing AGR the next day ($\beta = 0.094$; $p < .05$). Also, increasing EA predicted decreasing CF ($\beta = -0.094$; $p < .01$) and tended to predict increasing AGR ($\beta = 0.08$; $p = .064$) one day after. Concerning the outcomes of social media emotional experiences, results showed that an increase in DGR a day predicted an increase in EA ($\beta = 0.125$; $p < .05$) and tended to predict a decrease in EF ($\beta = -0.078$; $p = .06$) the next day.

Finally, increasing AGR predicted decreasing EF the day after ($\beta = -0.102$; $p < .05$).

Increasing AGR also tended to predict increasing in CF the next day ($\beta = 0.062$; $p = .06$).

Fig. 8

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the educational domain across participants who were not open to change



Note. The blue and orange arrows represent dynamic regressions from one variable to another. As an example: between commitment to fit and exploration of fit, the blue arrow combined with the blue estimate means that increasing exploration of fit on one day predicts decreasing commitment to fit on the same day ($\beta = -0.12$). The orange arrow combined with the orange estimate represent the opposite relation. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

13.2. Results for the third objective in the romantic relationships domain

13.2.1. Results of micro-level identity processes and social media emotional experiences dynamics across all participants in the romantic relationships domain

Standardized results of daily within-person dynamic cross-lagged models for identity and outcomes of social media emotional experiences in the romantic relationships domain

revealed significant effects of dynamic concurrent associations for all relations between the variables assessed (Fig. 9). Specifically, results of average dynamic concurrent associations across individuals showed that increasing CF a day predicted decreasing EF ($\beta = -0.136$; $p < .001$), EA ($\beta = -0.122$; $p < .001$), DGR ($\beta = -0.092$; $p < .001$) and increasing AGR ($\beta = 0.059$; $p < .01$) the same day. In the other way around, increasing EF ($\beta = -0.114$; $p < .001$), EA ($\beta = -0.132$; $p < .001$), and DGR ($\beta = -0.089$; $p < .001$) on a day predicted decreasing CF the same day, while increasing AGR a day ($\beta = 0.091$; $p < .001$) predicted increasing CF the same day. Further, when emerging adults showed an increase in EF, they reported more EA ($\beta = 0.523$; $p < .001$), DGR ($\beta = 0.17$; $p < .001$), and AGR ($\beta = 0.091$; $p < .001$) on one day. And vice versa, an increase in EA ($\beta = 0.541$; $p < .001$), DGR ($\beta = 0.124$; $p < .001$), and AGR ($\beta = 0.103$; $p < .001$) predicted an increase in EF the same day. Considering EA, when individuals showed an increase in EA, they reported more DGR ($\beta = 0.157$; $p < .001$), and tended to report more AGR ($\beta = 0.054$; $p = .025$). And vice versa, increasing DGR ($\beta = 0.149$; $p < .001$), and AGR ($\beta = 0.066$; $p < .05$) predicted increasing EA the same day. Finally, an increase in DGR predicted an increase in AGR ($\beta = 0.247$; $p < .001$), as well as vice versa ($\beta = 0.266$; $p < .001$).

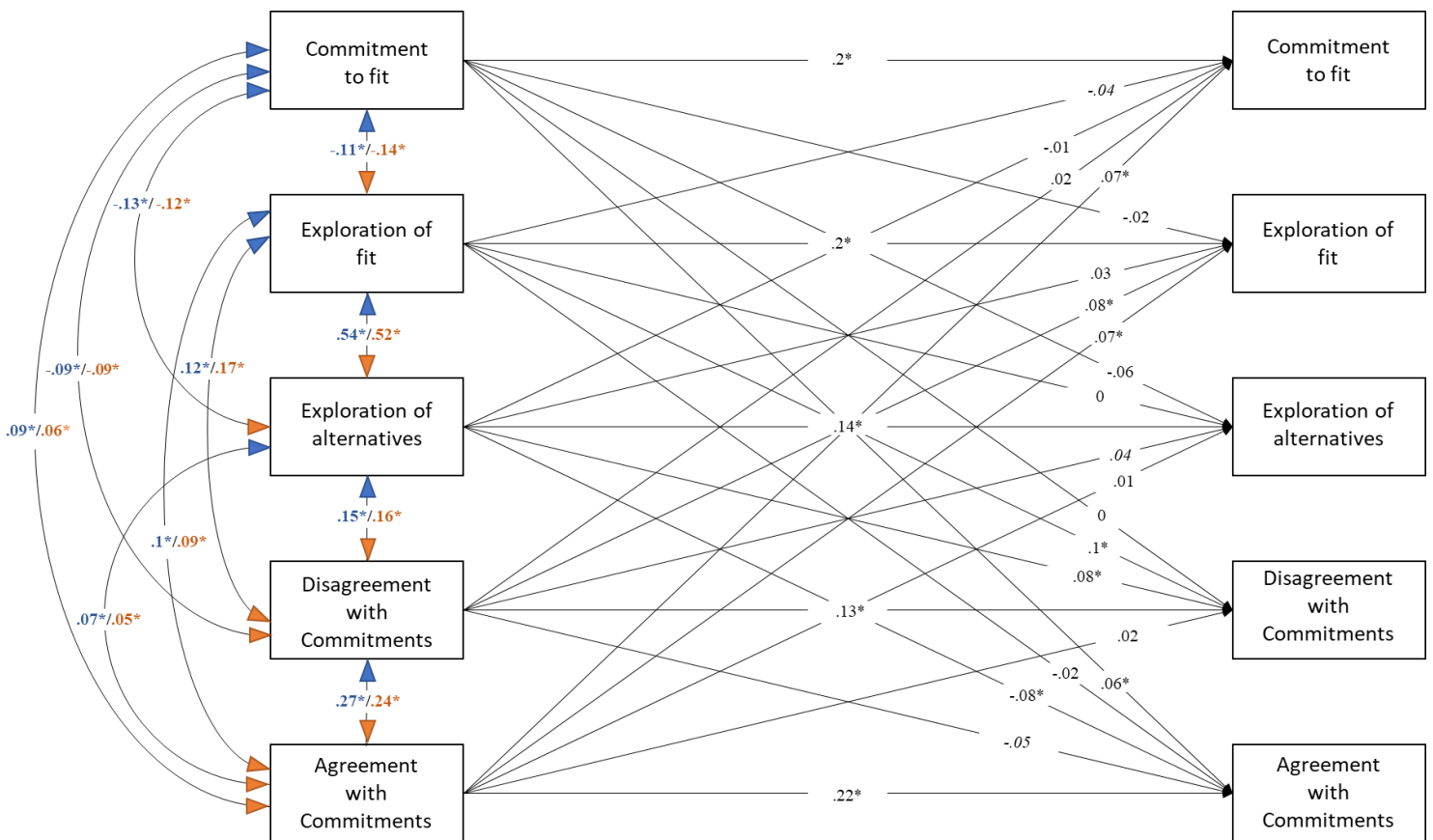
Concerning stability paths across the five variables under study, we found all autoregressive effects to be significant. Among the different micro-level identity processes, our results revealed a higher stability of EF ($M\phi = 0.204$; $p < .001$) and CF ($M\phi = 0.195$; $p < .001$) compared to EA ($M\phi = 0.142$; $.009 < p < .001$). Participants reported having experienced AGR more consistently ($M\phi = 0.219$; $p < .001$) than disagreement ($M\phi = 0.129$; $.003 < p < .001$).

Among the twenty dynamic cross-lagged relations of our models, six were significant. First, an increase in CF predicted higher AGR the day after ($\beta = 0.06$; $p < .05$). And vice versa, an increase in AGR a day predicted an increase in CF the day after ($\beta = 0.071$; $p < .001$). Increasing levels of both AGR ($\beta = 0.07$; $p < .01$) and DGR ($\beta = 0.082$; $p < .001$) predicted higher EF the next day. Further, increasing EF ($\beta = 0.102$; $p < .001$) and EA ($\beta = 0.08$; $p < .05$)

predicted increasing DGR the day after. Lastly, an increase in EA predicted a decrease in AGR the day after ($\beta = -0.08$; $p < .01$).

Fig. 9

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the romantic relationships domain across all participants



Note. The blue and orange arrows represent dynamic regressions from one variable to another. As an example: between commitment to fit and exploration of fit, the blue arrow combined with the blue estimate means that increasing exploration of fit on one day predicts decreasing commitment to fit on the same day ($\beta = -0.11$). The orange arrow combined with the orange estimate represent the opposite relation. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$)

13.2.2. Results of micro-level identity processes and social media emotional experiences dynamics across open to change participants in the romantic relationships domain

In the open to change group, results of the daily within-person cross-lagged regressions (Table 12) showed that an increase in EF ($\beta = 0.186$; $p < .001$) and EA ($\beta = 0.17$; $p < .001$) predicted higher levels of DRE the same day. None of the micro-level identity processes a day

significantly predicted DRE the day after. As for DRE, increasing both EF ($\beta = 0.166$; $p < .001$) and EA ($\beta = 0.234$; $p < .001$) predicted increasing IED the same day. The commitment to fit did not significantly predict levels of IED the same day. Considering the relations from t to $t+1$, none of the micro-level identity processes significantly predicted levels of IED.

Table 10

. Average standardized results of daily within-individual dynamic relations between micro-level identity processes and social media experiences for open to change participants in the romantic relationships domain.

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		β	Lower	Upper	Sig	β	Lower	Upper	Sig
CF	DRE	-0.039	-0.135	0.059	.22	-0.033	-0.141	0.072	.26
EF		0.186	0.097	0.277	0*	0.06	-0.048	0.168	.123
EA		0.17	0.082	0.259	0*	0.03	-0.072	0.137	.299
CF	IED	-0.02	-0.542	0.459	.468	-0.058	-0.397	0.248	.345
EF		0.166	0.073	0.261	0*	0.051	-0.045	0.147	.149
EA		0.234	0.141	0.323	0*	0.032	-0.069	0.129	.268

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DRE: domain-related experiences; IED: importance of the experiences. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

Concerning the dynamic concurrent associations (Appendix 4), results showed that when emerging adults' commitment to fit increased one day, they reported less exploration of fit ($\beta = -0.124$; $p < .01$), and vice versa ($\beta = -0.15$; $p = .001$). Also, when individuals commitment to fit increased, they tended to report less exploration of alternatives the same day ($\beta = -0.084$; $p = .03$). In the other way around, increasing EA predicted decreasing CF the same day ($\beta = -0.091$; $p < .05$). Further, an increase in CF one day tended to predict a decrease in DGR ($\beta = -0.098$; $p = .025$), as well as vice versa ($\beta = -0.079$; $p = .049$). When emerging adults' commitment to fit increased, they reported more agreement with commitments the same day ($\beta = 0.133$; $p < .01$). In the other way around, when individual's perceived agreement with commitments increased, they reported more commitment to fit the same day ($\beta = 0.144$; $p <$

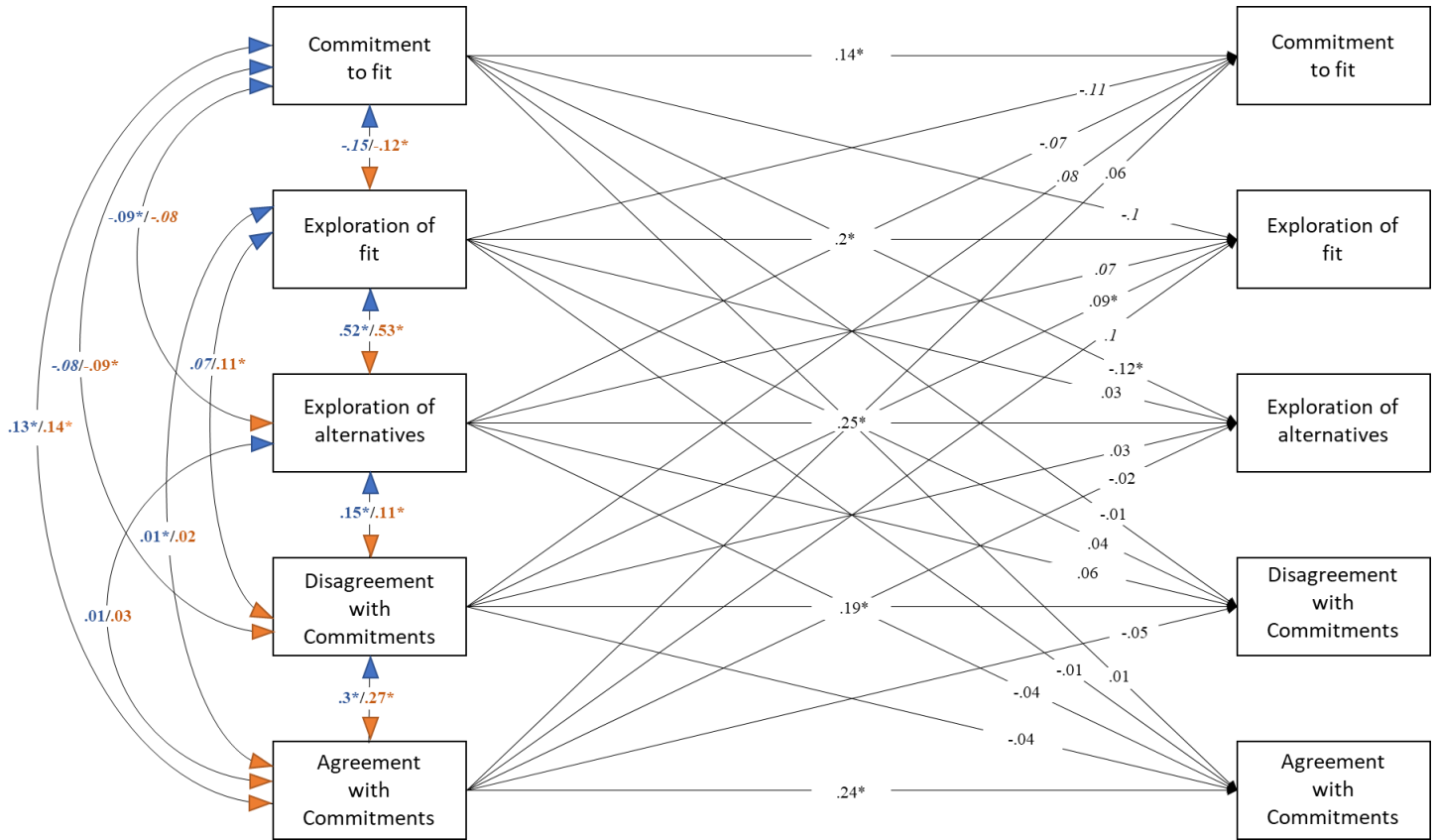
.01). On one day, increasing EF predicted increasing EA ($\beta = 0.528$; $p < .001$), and vice versa ($\beta = 0.524$; $p < .001$). Moreover, an increase in EF predicted an increase in DGR ($\beta = 0.114$; $p < .05$), and not the other way around. An increase in EA predicted an increase in DGR the same day ($\beta = 0.172$; $p < .001$), as well as vice versa ($\beta = 0.151$; $p < .01$). Finally, increasing DGR predicted increasing AGR ($\beta = 0.279$; $p < .001$). And vice versa, increasing AGR predicted increasing DGR ($\beta = 0.303$; $p < .001$).

The entire autoregressive parameters of the models were significant. First, for the micro-level identity processes, EA showed the highest stability ($M\phi = 0.246$; $.002 < p < .001$), followed by EF ($M\phi = 0.195$; $.031 < p < .001$), and finally CF ($M\phi = 0.142$; $.019 < p < .001$). Results showed that AGR was most consistent ($M\phi = 0.244$; $p < .001$) than DGR ($M\phi = 0.186$; $.01 < p < .001$).

Among the twenty cross-lagged relations, two were found significant and seven were found tendential. Concerning the significant relations, increasing CF on a day predicted decreasing EA the day after ($\beta = -0.12$; $p < .05$). Further, an increase in DGR predicted higher levels of EF the next day ($\beta = 0.09$; $p < .01$). Concerning the tendential relations, an increase in EF on a day almost significantly predicted a decrease in CF the day after ($\beta = -0.11$; $p = 0.014$). Similarly, increasing EA tended to predict lower levels of CF the following day ($\beta = -0.074$; $p = 0.069$). Conversely, increasing levels of DGR on a day tended to predict increasing CF the day after ($\beta = 0.084$; $p = 0.047$). Additionally, an increase in CF at time t tended to predict lower levels of EF at time $t+1$ ($\beta = -0.096$; $p = 0.029$). Further, increase in both EA ($\beta = -0.071$; $p = .031$) and AGR ($\beta = -0.096$; $p = 0.027$) on a day tended to predict higher levels of EF the day after.

Fig. 10

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the romantic relationships domain across open to change participants



Note. The blue and orange arrows represent dynamic regressions from one variable to another. As an example: between commitment to fit and exploration of fit, the blue arrow combined with the blue estimate means that increasing exploration of fit on one day predicts decreasing commitment to fit on the same day ($\beta = -0.15$). The orange arrow combined with the orange estimate represent the opposite relation. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

13.2.3. Results of micro-level identity processes and social media emotional experiences dynamics across participants who were not open to change in the romantic relationships domain

Findings for the participants who were not open to change (Table 11) showed first that only EF significantly predicted DRE the same day. Indeed, increasing EF predicted higher DRE the same day ($\beta = 0.18$; $p < .001$). An increase in EA tended to significantly predict an increase

in DRE ($\beta = 0.093$; $p = .037$). None of the micro-level identity processes a day significantly predicted DRE the day after. Considering IED, an increase in both EF ($\beta = 0.127$; $p < .01$) and EA ($\beta = 0.142$; $p < .01$) on a day predicted higher IED the same day. As for DRE, none of the micro-level identity processes on a given day significantly predicted IED the day after.

Table 11.

Average standardized results of daily within-individual dynamic relations between micro-level identity processes and social media experiences for participants who were not open to change in the romantic relationships domain.

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		Estimate	Lower	Upper	Sig	Estimate (SD)	Lower	Upper	Sig
CF	DRE	-0.084	-0.184	0.011	<i>.041</i>	-0.005	-0.11	0.095	.474
EF		0.18	0.075	0.288	0*	-0.037	-0.139	0.068	.25
EA		0.093	-0.011	0.197	<i>.037</i>	0.027	-0.067	0.123	.294
CF	IED	-0.02	-0.118	0.08	.355	-0.051	-0.154	0.047	.147
EF		0.127	0.025	0.221	.01*	-0.018	-0.113	0.08	.354
EA		0.142	0.041	0.234	.005*	-0.041	-0.14	0.054	.182

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DRE: domain-related experiences; IED: importance of the experiences. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below .1). The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

Results of dynamic concurrent associations (Fig. 11) showed that when individuals' commitment to fit increased a day, they reported less exploration of fit the same day ($\beta = -0.193$; $p < .001$), as well as vice versa ($\beta = -0.191$; $p = .001$). Similarly, when emerging adults' commitment to fit increased, they reported less exploration of alternatives the same day ($\beta = -0.179$; $p < .001$), and the other way around ($\beta = -0.164$; $p < .001$). On one day, an increase in CF predicted a decrease in DGR ($\beta = -0.132$; $p < .01$), but not vice versa. Moreover, an increase in EF on a day predicted an increase in EA the same day ($\beta = 0.489$; $p < .001$). In the other way around, an increase in EA predicted an increase in EF ($\beta = 0.453$; $p < .001$). When individuals' exploration of fit increased, they reported more disagreement with commitments ($\beta = 0.215$; p

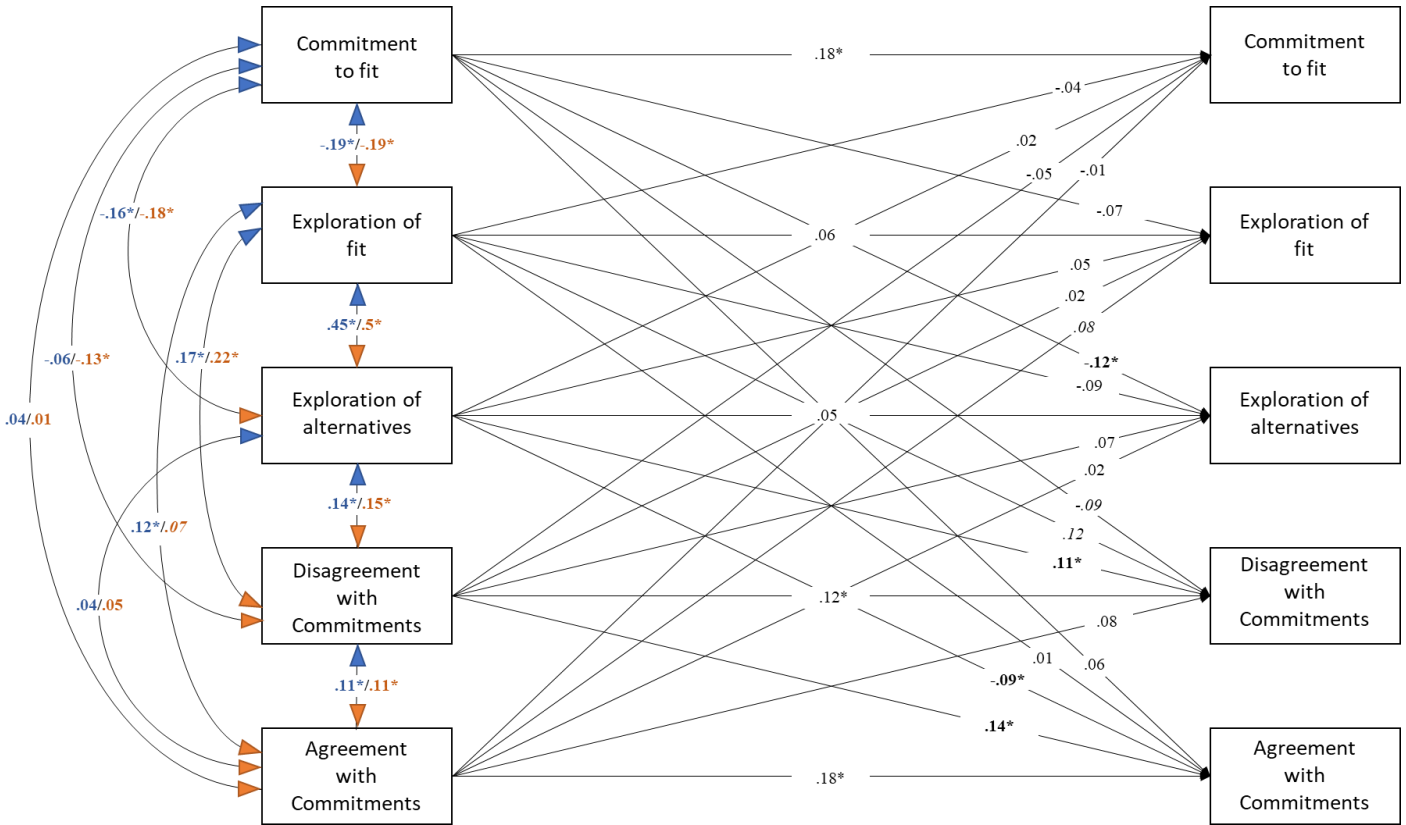
< .001), and vice versa ($\beta = 0.165$; $p = .001$). Increasing EF a day tended to predict increasing AGR ($\beta = 0.073$; $p = .082$). In the other way around, increasing AGR predicted increasing EF the same day ($\beta = 0.115$; $p < .01$). Further, an increase in EA predicted an increase in DGR ($\beta = 0.148$; $p < .01$), as well as vice versa ($\beta = 0.143$; $p < .01$). Finally, increasing DGR predicted increasing AGR the same day ($\beta = 0.108$; $p < .01$), and the other way around ($\beta = 0.108$; $p < .01$).

Concerning first the micro-level identity processes, our results revealed that CF was the only micro-level identity process that showed significant autoregressive effect overtime ($M\phi = 0.182$; $.002 < p < .001$). Indeed, neither EF ($M\phi = 0.062$; $.339 < p < .056$) or EA ($M\phi = 0.045$; $.414 < p < .041$) showed significant autoregressive effect overtime. Moreover, individuals reported having encountered more consistently AGR ($M\phi = 0.175$; $.036 < p < .001$), than DGR ($M\phi = 0.116$; $.061 < p < .001$).

Considering daily within-individuals cross-lagged relations, four relations were significant, and four relations were found tendential. Regarding the significant relations first, an increase in CF a day predicted a decrease in EA the day after ($\beta = -0.124$; $p < .05$). Further, an increase EA on a day predicted an increase in DGR ($\beta = 0.107$; $p < .05$) and a decrease in AGR ($\beta = -0.092$; $p < .05$) the day after. Finally, increasing DGR predicted increasing AGR the following ($\beta = 0.136$; $p < .05$). Concerning the tendential relations, increased AGR tended to predict increased EF ($\beta = 0.127$; $p = .068$). Further, while an increase in CF a day tended to predict a decrease in DGR the day after ($\beta = -0.094$; $p = .037$), increased EF tended to predict increased DGR the next day ($\beta = 0.124$; $p = .036$). Lastly, increasing AGR on one day tended to predict increasing DGR the day after ($\beta = 0.081$; $p = .085$).

Fig. 11

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the romantic relationships domain across participants who were not open to change



Note. The blue and orange arrows represent dynamic regressions from one variable to another. As an example: between commitment to fit and exploration of fit, the blue arrow combined with the blue estimate means that increasing exploration of fit on one day predicts decreasing commitment to fit on the same day ($\beta = -0.19$). The orange arrow combined with the orange estimate represent the opposite relation. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below $p = .1$).

13.3. Discussion of the results for the third objective

Due to the important complexity of the results, for each domain, we first explain in detail our findings about the daily dynamics of identity across all individuals and present their contribution to the understanding of daily identity functioning. Second, we compare the daily dynamics of identity between the specific groups (i.e., open to change and not open to change). Descriptions of the findings for each system are done according to three elements: (1) we

present the way in which identity processes and outcomes of social media emotional experiences work together on the same day (dynamic concurrent associations); (2) we deal with the stability of micro-level identity processes and the consistency of perceived social media outcomes experienced over time (autoregressive effects); and (3) we discuss the way these variables work together over time (cross-lagged relations). For each domain separately, the three aspects of the micro-level of identity dynamic are detailed with respect to the general population (**H7**, **H8**, and **H9**), then with respect to the group of individuals open to change (**H10**), and finally with respect to the group of individuals who were not open to change (**H11**). In addition, for each specific group of individuals (i.e., open to change and not open to change), we discuss upstream of the three aspects (i.e., dynamic concurrent associations, autoregressive effects, and cross-lagged relations) the extent to which micro-level identity processes affect the encounter of experiences in social media related to the domain in question, and the importance of these experiences. Finally, we discuss our findings from a more general point of view dealing with the similarities as well as the differences between the identity domains investigated across all individuals and across specific groups of individuals.

13.3.1. Discussion of the daily dynamics of identity in the educational domain

13.3.1.1. Functioning of micro-level of identity across participants

The same day, results of the dynamic concurrent associations showed that an increase in individuals acts of exploration (directed towards the fit or other alternatives to their commitments) and in the perception of conflicting information from social media made them feel less adjusted to their commitments the same day. These results are in line with the findings of van der Gaag et al.'s (2016) micro-level study, which showed that the relations between commitment to fit and both exploratory processes were mostly negative. In contrast, these results are only partially consistent with Becht et al.'s (2021) micro-level study on adolescents, which showed that the concurrent association between commitment and in-depth exploration was positive, and negative with reconsideration in the educational domain. Moreover, these

results are consistent with those of Kunnen (2006) who highlighted that conflicting information is a driver of identity change. Conversely, on average, an increase in individuals' perceived agreement from daily social media emotional experiences made them feel more adjusted to their commitments, and vice versa. Similarly, van der Gaag et al. (2017) found positive emotions to have a reinforcing effect on commitment to fit overtime. Our results also highlighted the positive dynamic concurrent associations between the micro-level identity exploration processes and the outcomes of social media emotional experiences the same day. This last finding may translate how real-time emotions and experiences are important in the expression of identity at the micro-level (Lichtwarck-Aschoff et al., 2008), and specifically those arising from contexts that are significant to individuals (Bosma & Kunnen, 2008) such as social media for emerging adults.

Across all individuals, the micro-level identity processes were stable over time with however nuances between processes. While the extent to which individuals felt adjusted to their commitments seemed quite stable, the exploration of other alternatives was less stable, and the exploration of fit was the most fluctuant process out of all. Considering the perceived outcomes of social media emotional experiences, participants tended to perceive more consistent degree of agreement towards their commitments than disagreement. These results differ from those of Becht et al. (2021) obtained among adolescents, who found a greater stability of reconsideration, then commitment, and finally in-depth exploration. Considering the difference in population, these results still seem consistent in that educational commitments are more important at emerging adulthood than at adolescence (Arnett, 2015). Also, our participants' mean levels of commitment to fit in the educational domain were relatively high ($M_{CF} = 72.1$), while mean levels of exploration processes were relatively low ($M_{EF} = 23.16$; $M_{EA} = 22.29$). In this sense, it is not surprising to observe a greater stability in the sense of fit to commitments for a group of individuals feeling highly adjusted to their commitments on average. This finally

reflects the idea that systems strongly attracted by a specific state (here a strong sense of adjustment) tend to return to this state (Kunnen & van Geert, 2012).

Average day to day dynamics of identity revealed two important findings regarding evaluation as well as reevaluation of commitments mechanisms across individuals. First, it appeared that both types of exploration had a daily basis influence on how individuals felt adjusted to their commitments. In fact, individuals have reported on average that their self-inquiring thoughts and their search for alternative activities on a given day led them to feel less adjusted to their commitments the day after. These results are in line with those of van der Gaag et al. (2017) who found exploration to have a rather negative incidence on commitment to fit overtime. Considering the exploration of alternatives, the results are in line with those found in Becht et al. (2021) and Klimstra et al. (2010) studies: more alternatives seeking behaviors lead to weaker commitments the next day. However, our findings are opposite to those of Becht et al. (2021) considering the exploration of fit. They found that an increase of in-depth exploration at a micro-level led to an increase in commitment at the micro-level the next day. Still, a negative relation between exploration of fit and commitment to fit was found by van der Gaag et al. (2016). As highlighted by Zimmermann et al. (2015) and discussed by van der Gaag (2017), in-depth exploration is subject to a dual effect sometimes promoting commitments, sometimes decreasing them. Again, like the results related to Objective 1, there seems to be a difference in the measures used to assess this process, and thus, how it is conceptualized. A section of the general discussion specifically addresses this point and proposes a response to fulfill this gap.

*13.3.1.2. Functioning of micro-level identity processes in a specific population:
open to change individuals in the educational domain*

For the group of open to change individuals, having rather moderate to high levels of exploration of fit ($M_{EF} = 46.9$; $SD = 18$), exploration of alternatives ($M_{EA} = 46.4$; $SD = 20$),

commitment to fit ($M_{CF} = 59.6$; $SD = 22.2$), agreement with commitments ($M_{AGR} = 35.6$; $SD = 20.1$), and disagreement with commitments ($M_{DGR} = 23.2$; $SD = 18.7$), results of the dynamic regressions showed that, on the same day, an increase in acts of exploration led individuals to encounter more experiences related to their education in social media, and to perceive these experiences as more important. These results are in line with those found by Danias-Uraga (2022) who have highlighted that individuals in identity moratorium were among the most frequent social media users, and for whom the use of social media was the most intense in terms of self-presentation. The individuals in identity moratorium were also the most emotionally attached to social media, and for whom social media were the most integrated in daily routines and social life. Furthermore, in our results, it seemed that an increase in the sense of adjustment to commitments led to an increase of the importance of identity-related experiences in social media. This finding may reflect how individuals in a period of doubt tend to favor behaviors and perception of information that reinforce their adjustment (Bosma & Kunnen, 2001). Additionally, because social media promotes academic learning and sense of usefulness (Alalwan, 2022), it may be that individuals in a period of doubt attribute a great deal of importance to social media experiences related to the educational domain to reinforce their adjustment to their commitments.

Considering the dynamic concurrent associations, results showed that the micro-level identity processes as well as the outcomes of social media emotional experiences worked in the same way as we previously highlighted: when the evaluation of the fit to the commitments, the reevaluation of commitments, as well as the extent to which individuals perceive disagreement from online emotional experiences increased a day, feelings of being adjusted to one's commitments decreased in consequence. However, an increase in the sense of fit to one's commitments one day did not predict a clear decrease in these three variables. Findings also bring evidence for a strong positive dynamic concurrent association between the perceived agreement from social media emotional experiences and the sense of fit to one's educational

commitments. Our results also account for the tight relations between both forms of identity exploration and perceived disagreements from social media emotional experiences: the more individuals explored alternatives and self-adjustment to their commitments, the more they seemed to have deleterious emotional experiences in social media, and vice versa. As the results found across all participants, the results of the dynamic concurrent associations between all variables are mostly in line with the existing literature (Becht et al., 2021; van der Gaag et al., 2016; van der Gaag et al., 2017) with, however, the same nuance encountered for the relation between in-depth exploration and commitment (Becht et al., 2021; Zimmermann et al., 2015). Also, our results suggest that even when open to change individuals feel more adjusted to their commitments on one day, their exploratory behaviors but also their perception of conflictual information from social media contexts do not clearly decrease. Thus, it appears that emerging adults in a period of greater doubt about their commitments have difficulty assimilating perceived incongruent information on a day, as suggested by Bosma and Kunnen (2001). Still, the strong dynamic concurrent associations found between the commitment to fit and the perceived agreement reinforce the idea suggested above that congruent social media emotional experiences have a strong positive incidence on how individuals in a period of doubt feel about their educational commitments.

Considering the stability paths, our results showed that commitment to fit and exploration of fit were the most stable over time, followed by the exploration of alternatives. These results do not support the findings of Becht et al. (2021) who found commitment and in-depth exploration to be the most stable processes overtime across adolescents. At emerging adulthood, despite greater openness to change and lower commitment to fit than the average population, the sense of fit appears to be substantially stable. This may reflect the fact that the educational domain is particularly rigid to change, as expected of a closed domain (Kroger, 2007; Meeus et al., 1999). Regarding the results of social media emotional experiences, agreement with commitment was found to be the only type of outcomes that was significantly

consistent over time. Indeed, disagreement with commitments has been found very inconsistent over time.

Concerning the day-to-day dynamics between micro-level identity processes and social media emotional experiences, no significant relations were found in the results for most individuals. In the same way as Klimstra et al. (2010), it seems difficult to highlight a daily dynamic of identity in the educational domain. As for the results of the autoregressive relations, these difficulties may also support the idea that changes in so-called closed domains are rarer and need more time and conflicting information to emerge (Kroger, 2007; Meeus et al., 1999; van der Gaag et al., 2017). Considering the rigid nature of the educational domain, these results may also suggest that individuals in period of doubt tend to strongly assimilate conflicting information, while collecting information that is congruent with their commitments (Bosma & Kunnen, 2001).

13.3.1.3. Functioning of micro-level identity processes in a specific population: individuals who were not open to change

Individuals with the lowest openness to change showed very low levels of both the exploration of fit ($M_{EF} = 5.1$; $SD = 3.97$) and the exploration of alternatives ($M_{EA} = 2.77$; $SD = 2.68$), and a very high level of commitment to fit ($M_{CF} = 90.2$; $SD = 9.03$) on average, and encountered more agreement ($M_{AGR} = 41$; $SD = 24.3$) than disagreement ($M_{DGR} = 12.8$; $SD = 17.5$) from social media emotional experiences during the study period. Concerning the relations between the micro-level identity processes and the indicators of social media experiences, an increase in acts of exploration (directed towards the fit or other alternatives to commitments) led individuals to encounter more social media experiences related to their education on average. Further, an increase in the same acts of exploration on a day predicted an increase in the perceived importance of social media emotional experiences the same day, and the day after. These results suggest that despite strong commitments for individuals in this

group, identity exploration is nevertheless linked to daily social media experiences. These results also support the idea that individuals encounter many important experiences related to their identity in social media (Danias-Uraga, 2022), and that these online platforms are used to respond to short-term needs (Greitemeyer et al., 2014; Ostic et al., 2021). Also, when individuals reported an increase in commitment to fit a day, they reported a decrease in the encounter of identity-relevant social media experiences the day after. Additionally, an increase in the sense of being adjusted to commitments on a day tended to lead to a decrease in the perceived importance of social media emotional experiences the same day, and significantly led to a decrease of the perceived importance of these experiences the day after. These relations may account for the inclination of identity-relevant social media experiences to be less useful for individuals sense of fit to their educational commitments when they are already strongly adjusted to these commitments. Thus, this would reflect the way in which individuals with low openness to change and high stability are less responsive to information from the environment (Bosma & Kunnen, 2001).

On a given day, identity functioning of individuals who were not open to change presented some significant dynamic concurrent associations. On average, an increase in commitment to fit on one day predicted less acts of exploration the same day. Vice versa, an increase in acts of exploration led individuals to feel less adjusted to their commitments the same day. These results are consistent with the literature of van der Gaag et al. (2016) who found the same associations in the educational domain on a weekly basis. However, even if acts of exploration were rare among individuals who were not open to change, our results indicated that individuals' sense of fit was affected by these acts of exploration the same day. Similarly as open to change individuals, an increase in the perception of conflicting information did not affect the commitment to fit the same day, suggesting a latent low sensitivity to conflicting information about the educational domain. Our results showed that an increase in the feeling of fit to commitments led to a decrease of exploration behaviors the same day. In addition, an increase

in acts of exploration led individuals to report increased perception of congruent information the same day. These results suggest that individuals' daily educational identity state shapes both the implementation of exploration behaviors and perceptions of information in real-time (Bosma & Kunne, 2001; Kunnen & van Geert, 2012). Also, the two exploratory processes had a positive dynamic concurrent association on the same day. Similarly, as to the group of all individuals, these relations between the two exploration processes differed from those found by Becht et al. (2021).

Unlike the group of all individuals, commitment to fit was not the most stable identity process over time. Exploration of alternatives was the most stable identity process followed by commitment to fit. The results for exploration of fit did not show significant autoregressive relations, meaning that the process was particularly unstable. In fact, looking at the overall levels of the three processes in this group (presented above), the results of the regressive paths showed that the process of exploring alternatives remained very low over time, and that acts of exploration directed towards the fit to commitments were on average very low over time with, however, a lot of variation around these average levels. The commitment to fit was very high on average over the week. However, individuals still experienced fluctuations in their sense of being adjusted to their commitments. Also, individuals perceived more agreement than disagreement with their commitment, and more consistently over time. Taken together the results corroborate the idea that individuals in a period of low openness to change tend to be very attracted to the same states of the system, as in this case, very weak behaviors of exploration of alternatives and substantially high level of commitment to fit over time (Bosma & Kunnen, 2001; Kunnen & van Geert, 2012).

Results of the cross-lagged relations showed that an increase in feelings of adjustment to one's commitments a day tended to predict a decrease in reflections on self-adjustment the day after. Increased commitment to fit a day also tended to predict decreased perception of

conflicting information from social media emotional experiences the day after. Both results highlight how the strong feelings of adjustment reduce conflicting real-time behaviors and information that can threaten the commitments (Bosma & Kunnen, 2001). In addition to these results, increased perception of congruent information reinforced the fit to one's commitments and decreased the implementation of exploration behaviors. This highlights a cycle of maintaining and strengthening adjustment to commitments supported by positive social media emotional experiences, which is in line with the findings of van der Gaag et al. (2017) who showed that positive emotions strengthened adjustment to commitments over time. Also, increasing perceived disagreement in social media predicted an increase in alternative seeking behaviors and tended overwhelmingly to decrease next-day exploration of fit. Finally, an increase in exploration of alternatives predicted a decrease in adjustment to commitments. To understand these results, it is also necessary to take into account the average levels of the variables in this group, the dynamic associations of these variables, as well as their levels of fluctuation over time. Considering this, conflicting information and acts of exploration do have an impact from one day to the next on the sense of fit of individuals (which fluctuates particularly). However, the general expression of identity at the micro-level (strong feelings of fit and very few exploratory acts) seems to allow individuals to diminish these different threats as they arise (i.e., dynamic concurrent associations).

Furthermore, some results suggest a particular operating characteristic of the everyday identity system. First, an increase in exploration of fit on one day tended to lead to a decrease in exploration of alternatives, a decrease in the perception of conflict, and an increase in the perception of congruent information on the next. Increased exploration of fit one day also predicted decreased feelings of adjustment to commitments the next day. Second, in a similar manner, an increase in exploration of alternatives one day led to a decrease in exploration of fit and a decrease in the perceived conflict from social media. The increase in exploration of fit also tended to a decrease in the sense of adjustment to commitments the next day. Third, an

increase in perceived disagreement on one day led to a decrease in exploration of fit, while still predicting an increase in exploration of alternatives the next day. Taken together, these results suggest that the perception of a threat to educational commitments (i.e., the implementation of commitment evaluation behavior, and/or the perception of conflicting information regarding this domain) would lead the system to immediately decrease the threat. In other words, this would suggest that individuals at the onset of even a weak conflict would function in such a way that they would try to resolve the conflict very quickly. Again, the personal and societal difficulties associated with changes in commitment to closed domains appear to be manifested in the functioning of the identity in real time (Meeus et al., 1999).

13.3.1.4. Discussion on the results of the two specific groups open and not open to change in the educational domain

In the educational domain, the relations between the micro-level identity processes and the indicators of social media experiences were similar between the two groups for the most part except for one relation. Indeed, for both types of systems, increasing both exploration processes led to encounter more identity-relevant experiences in the social media and to perceive them as more important. In contrast, the systems' results differed with respect to the effect of commitment to fit on indicators of social media experiences. For the group open to change, the results showed that the increase in commitment to fit on a day led individuals to perceive social media experiences as more important, while for individuals who were not open to change, the increase in adjustment to commitments led individuals to perceive social media experiences as less important. These differences in the results corroborate Alalwan's (2022) recent findings. He found that students with high levels of involvement and perceived usefulness (i.e., what he translates as a "good mindset", p. 9785) who used social media for academic purposes learned better and experienced more happiness. Furthermore, because of the special emphasis on success in higher education (Moulin, 2012) and the rigidity to change induced by the closed nature of ideological domain (Kroger, 2007; Meeus et al., 1999), there would be a greater need

in the educational domain to assimilate conflicting information and to perceive information congruent with commitments as more important (Bosma & Kunnen, 2001). Taken together, this suggests that the increased sense of fit to commitments one day leads the individual to perceive more importance on the positive academic experiences taking place in social media (e.g., opportunities for exchange, cooperation, and coworking sessions with other students), particularly in a period of doubt about one's educational commitments.

Considering the dynamic concurrent associations, results differentiated the two types of systems under study. The open and not open to change systems differed in three ways: (1) their sensitivity to conflicting information, (2) the dynamic relations between the fit to the commitments and the perceived congruent information in social media, and (3) their ability to quickly assimilate perceived threats into commitments. Results suggest first that individuals in a period of relative doubt about their educational commitments are particularly sensitive to the increased perception of incongruent emotional experiences which decrease their adjustment to commitments and increase acts of both explorations directed to the fit and to other alternatives the same day. However, open to change individuals strongly value congruent information which reinforce their adjustment on the same day while individuals who are not open to change do not exhibit this sensitivity. It may be that the latter individuals did not report mechanisms for maintaining or reinforcing commitments over a day based on the perceived congruent information because of their already high levels of commitments. Finally, our results suggest that individuals open to change have difficulties to assimilate conflicting information in such a short temporality as a day. On the contrary, individuals who are not open to change seem to quickly assimilate threats after their perception, revealing a process of assimilation on one day. All of these findings highlight that openness to change does distinguish individuals in terms of their sensitivity to information from the environment, and their tendency to assimilate conflicting information more or less strongly on a day, as suggested by Bosma and Kunnen

(2001). Furthermore, our results highlight the major importance of congruent information for reinforcing feelings of fit to one's commitments in the educational domain as suggested by the results of Van der Gaag et al. (2017), specifically for individuals in a period of doubt. Lastly, our results suggest that the two groups differ in their sensitivity to emotional experiences both in their average level and in their effects on the adjustment of individuals to daily life. However, the two groups differ in their sensitivity to exploratory acts only in their general levels and not in their effects on daily adjustment.

Regarding the autoregressive parameters, results showed that individuals who were open to change tended to have particularly stable levels of micro identity processes. Commitment to fit was the most stable process together with exploration of fit followed by exploration of alternatives. That is, individuals in the open to change group had moderate levels of commitment to fit, exploration of fit, and exploration of alternatives that were quite stable over time. In contrast, individuals who were less open to change had more stable levels of exploration of alternatives, then commitment to fit, and very unstable levels of exploration of fit. On average, these individuals had very high levels of commitment to fit and very low levels of exploration of alternatives that were stable over time, and very low levels of exploration of fit that fluctuated greatly over time. These autoregressive patterns paint an initial picture of a dynamic identity system in the educational domain that is particularly stable regardless of the degree to which individuals are open to change, as expected from a closed domain (Kroger, 2007; Meeus et al., 1999). In addition, while both groups of individuals experienced more stable and important agreement from experiences in social media than feelings of disagreement with commitments, only the open to change group reported not experiencing consistent levels of disagreement with commitments. Considering the difficulties associated with identity change in the educational domain, these latter results may reflect the idea that individuals tend to strongly assimilate conflicting information about their commitments in this domain (Bosma &

Kunnen, 2001). Indeed, this could explain the large fluctuations in levels of perceived disagreement from experiences in social media despite the significantly greater perception of such information in the group of individuals open to change. As individuals cannot assimilate all conflicting information, levels of perceived disagreement with commitments would fluctuate greatly.

Results of the day-to-day dynamic of identity showed some differences between individuals open to change and individuals who were not open to change. First, while for individuals open to change, increasing adjustment to commitment tended to lead to an increase in acts of exploration the day after, individuals who were not open to change reported on average that increasing their adjustment led to a decrease in acts of exploration. Thus, individuals in a period of doubt seem to explore their fit and various alternatives to their commitments regardless of their adjustment. In fact, it seems that the inherent rigidity of the educational domain is expressed in a lower sensitivity to conflicting information in the environment, but also in the difficulty of moving out of a stable state (in this case, a rather important exploration). Second, despite very low levels of exploration processes, the general functioning of the most rigid systems showed evidence for a possible cycle of maintenance of commitments. In fact, results showed that an increase in acts of exploration one day the system tended to reduce the perception of conflicting information the next day and to favor the perception of information congruent with commitments. This supports the idea that individuals who are not open to change assimilate the information that threaten their commitments (Bosma & Kunnen, 2001). Moreover, increasing perceived agreement with commitments led to a strong decrease in exploration of fit, and tended to increase feelings of adjustment to commitments. This reinforcing effect of commitment through positive emotions was also highlighted by van der Gaag et al. (2017). Taken together, these results tended to highlight the latent rigidity of the educational domain. Also, these results showed that educational commitments are not

completely rigid and insensitive to change. As suggested by van der Gaag et al. (2017), educational domain commitments likely require a particularly large and intense amount of conflicting information to change substantially.

13.3.2. Results of the daily dynamics of identity in the romantic relationships domain

13.3.2.1. Functioning of the micro-level identity processes across all individuals in the romantic relationships domain

The same day, an increase in the extent to which individuals probed how they were adjusted to their commitments or search for different alternatives made them feel less adjusted their commitments in the romantic relationships domain, and vice versa. These findings are consistent with those of van der Gaag et al.'s (2016) who showed a negative relation between commitment to fit and both exploration processes overtime. However, these results are partially consistent with those of Becht et al. (2021). Our results showed the same concurrent associations as Becht et al. (2021) regarding the relation between the commitment and the reconsideration processes at the micro-level. However, in-depth exploration had the opposite relation with commitment and reconsideration in our study. Further, when individuals perceived more conflicting information from social media a day, they felt less adjusted to their commitments the same day, and vice versa. This is in line with the results of Kunnen (2006) who found conflict to be a driver of identity change. Also, when individuals perceived more agreement from social media on a day, they felt more adjusted to their commitments the same day and vice versa. Van der Gaag et al. (2016, 2017) found the same relations between positive emotions and commitment to fit overtime in the educational domain and stated that these emotions are a mean to reinforce individuals' adjustment to commitments. In this sense, it seems that congruent emotional experiences from social media are also a mean to strengthen the commitments for individuals in the romantic relationships domain. Finally, our results showed strong positive dynamic concurrent associations between micro-level identity

exploration processes and the two outcomes of social media emotional experiences. As for the educational domain this may reflect how experiences in social media contexts are valuable for individuals and for the expression of identity at a micro-level (Bosma & Kunnen, 2008; Lichtwarck-Aschoff et al., 2008).

Our findings bring evidence for a general substantial stability of the micro-level identity processes and of the outcomes of social media emotional experiences overtime. Across all participants, feelings of adjustment to one's commitments in the romantic relationships domain was the most stable state together with the exploration of fit. The last micro-level identity process, the exploration of alternatives, was the less stable process. Considering the perceived outcomes of social media emotional experiences, participants tended to perceive more consistent degree of agreement towards their commitments than disagreement. These results are inconsistent with Becht et al.'s (2021) study that found that reconsideration was the most stable process, followed by commitment and in-depth exploration.

Daily dynamics of identity in the romantic relationships domain was driven by multiple forces. Indeed, many relations between variables on a day-to-day basis were significant for identity at a micro-level. The more individuals experienced agreement with commitments through social media emotional experiences a day, the more they tended to feel adjustment to their commitments the day after. Vice versa, the more important the sense of fit to one's commitments a day was, the more individuals tended to perceived agreement from social media the day after. This is in line with van der Gaag et al.'s (2017) study that showed positive emotions to increase commitment to fit over time. Moreover, we found that the act of exploring alternatives to commitments on a given day tended to make individuals more inclined to experience higher disagreement and lower agreement with their commitments from social media experiences the day after. This may represent the way in which the implementation of exploratory behaviors directed toward the search for various alternatives affects the general

tendency of the system to be sensitive to conflictual experiences and to be less likely to perceive experiences congruent with commitments over the course of days, increasing in real time the openness to change of the system (Bosma & Kunnen, 2001). Besides, results showed that the perception of both agreement and disagreement with commitments from social media emotional experiences a day positively affected the extent to which, on average, individuals explored their fit to their commitments the next day. This supports the idea that social media are a context conveying identity-relevant and meaningful information for emerging adults regarding their romantic relationships (Dantias-Uraga, 2022; Michikyan, 2020), and that emotional experiences are part of a daily dynamic of commitment evaluation (Bosma & Kunnen, 2001; Kunnen, 2006, Lichtwarck-Aschoff et al., 2008; van der Gaag et al., 2017, Vleioras & Bosma, 2005).

13.3.2.2. Functioning of micro-level of identity in a specific population: open to change individuals in the romantic relationships domain

For individuals open to change, it seemed that the more they explored their fit to their commitments or other alternatives to these commitments on a day, the more they encountered domain related experiences, and the more important these experiences were for them. However, neither the encounter nor the importance of identity-related experiences was explained by exploratory behaviors or feelings of adjustment to commitment the day before. These results are further evidence that social media convey a great deal of important identity-related information (Michikyan, 2020), and that these online platforms are used to meet immediate and specific needs of individuals (Greitemeyer et al., 2014; Ostic et al., 2021). As such, these results support again the findings of Dantias-Uraga's (2021) study that showed an intense use of social media, and an important integration of those media in everyday lives in adolescence and emerging adulthood.

Results of the dynamic concurrent associations showed that micro-level identity processes and social media emotional experiences outcomes were related as expected. In this

respect, the evaluation of the fit to the commitments, the search for other alternatives, as well as the extent to which individuals perceived disagreement from online emotional experiences, negatively predicted the extent to which individuals were feeling adjusted to their commitments the same day. And vice versa, increasing sense of fit on a day predicted less exploration of fit, alternatives, and the perception of incongruent the same day. These findings are in line with those found in van der Gaag et al.'s (2016) study, regarding the links between exploration processes and commitment to fit at a micro level, and partially in line with those of Becht et al. (2021) that suggested conversely that in-depth exploration was positively related to commitment. Additionally, these results corroborate the idea that conflicting information are a driver of identity change, as found by Kunnen (2006), and suggested by Bosma and Kunnen (2001). Further, an increase in the perception of accord from social media emotional experiences predicted a greater fit to the commitments, and vice versa. These results support the findings of van der Gaag et al.'s (2017) study about the relation between positive emotion and commitment to fit overtime in the educational domain. The search for alternatives had a positive dynamic concurrent association with the exploration of fit which is in line with the results of van der Gaag et al. (2016) and contrary to the results found by Becht et al. (2021). The perceived disagreement from social media emotional experiences had a positive concurrent association with the exploration of alternatives and tended to have a positive dynamic concurrent association with the exploration of fit. These last results support the idea that open to change individuals are particularly sensitive to emotional experiences outcomes (Bosma & Kunnen, 2001). Moreover, our results suggests that conflictual information has a similar effect as exploration processes on individual commitment (Bosma & Kunnen, 2001; Kunnen, 2006, van der Gaag et al., 2016; van der Gaag et al., 2017; Vleioras & Bosma, 2005).

Findings for the stability paths showed some differences compared to the general group results. While across all individuals commitment to fit was the most stable process overtime,

followed by the exploration of fit, and then the exploration of alternatives, the results for the open to change group show that the exploration of alternatives was the most stable process, followed by the exploration of fit, and finally the commitment to fit process. This means that individuals in a period of doubt regarding their commitments in the romantic relationships domain tended to have more fluctuant feelings of being adjusted than the overall population. They also tended to have more consistent activities of alternative exploration to commitments and tended to keep more constant and more numerous exploratory behaviors directed towards the fit to their commitments than individuals not in a period of openness to change. Thus, considering their average levels in the different micro-level identity processes, individuals open to change in the romantic relationships domain presented high levels of exploration of alternatives that were very stable over time, high levels of exploration of fit that were slightly less stable, and very low levels of unstable commitment. These results may reflect the general idea that individuals in a period of openness to change are in a constant reevaluation of their commitments (Bosma & Kunnen, 2001). This is also closer to what Becht et al. (2021) found among adolescents, highlighting a high consistency of the in-depth exploration overtime. Regarding the stability of feelings of agreement and disagreement from social media emotional experiences, the participants open to change experienced more consistent feelings of agreement from social media experiences than disagreement.

Daily dynamics between micro-level identity processes and social media emotional experiences provided evidence for a commitment evaluation-reevaluation cycle. To start with, increased feelings of fit to commitments one day predicted weaker exploration of fit behaviors and alternatives the next day. Vice versa, greater exploration of fit and alternatives behaviors one day tended to predict lower levels of commitment the next day. These results are in line with previous findings in the literature that have highlighted a daily dynamic between the reconsideration process and the commitment process at a micro-level in the interpersonal domain (Becht et al., 2021; Klimstra et al., 2010). However, these results are also in contrast

with Becht et al.'s (2021) study that showed commitment on a day to positively predict the in-depth exploration the day after. These differences in effects of in-depth exploration at a micro-level are discussed in a specific section in the general discussion. Further, individuals who were open to change showed, on average, substantial sensitivity to information in their environment, as suggested by Bosma and Kunnen (2001). This important sensitivity is reflected in the dynamic relations between these two outcomes (i.e., perceived agreement and disagreement) and both exploration of fit and commitment to fit. First, as outcomes from emotional experiences in social media increased over time, individuals questioned their fit to their commitments. Regarding disagreement with commitments, our results are in line with those of Kunnen (2006) who showed that negative emotions are a driver of identity change. Indeed, although the results of this group open to change did not show a direct negative effect of perceived disagreement on commitments, our results did highlight an increase in commitment evaluation behaviors following an increase in perceived conflicting information. With respect to agreement with commitments, one tentative explanation would be that the individuals particularly invested in identity exploration behaviors in social media (as suggested by the relations between exploration processes and both DRE and IED) also perceive information that is consistent with their commitments. However, being in an important period of reevaluation of their commitments, this positive information would have less impact on adjustment evaluation behaviors (particularly important in this group of individuals). Second, increasing outcomes of emotional experiences on a day predicted increasing commitment to fit. These results are particularly in line with those of van der Gaag et al. (2017) who focused on the functioning of identity on a weekly basis in the educational domain. Regarding the positive effect of perceived disagreement from social media emotional experiences on commitments, van der Gaag et al. (2017) found that negative emotions tended to guide change in commitments, and more overwhelmingly to reinforce commitments. As the authors suggested, this is likely a reflection of strong assimilation of conflicting information on the part of individuals. Our results also

showed that an increase in perceived agreement one day led to an increase in the sense of fit to the commitments. These latter results are in line with those of van der Gaag et al. (2017) in the educational domain, who showed that positive emotions enhanced feelings of adjustment to commitments over time.

*13.3.2.3. Functioning of micro-level of identity in a specific population:
individuals who were not open to change in the romantic
relationships domain*

On the same day, identity exploratory behaviors within individuals who were not in an openness to change period in the romantic relationships domain, tended to be positively related to the encounter of domain related experiences as such as their importance. Findings also showed that feelings of adjustment to one's commitments tended to negatively predict the encounter of identity-relevant social media experiences. This may suggest that individuals with substantially stable romantic relationships commitments have less interest in having experiences related to their commitments, as social media are strongly related to finding romantic partners in different ways (e.g., Stevens & Morris, 2007; Subrahmanyam et al., 2006; Wu et al., 2010). However, no increase or decrease in a micro-level identity process on one day seemed to explain the encounter or importance of identity-related experiences the next day in the romantic relationships domain. Again, these findings support the idea that important identity-related social media experiences are mainly encountered during the same day, answering short-term identity needs (Greitemeyer et al., 2014; Ostic et al., 2021).

Results of the dynamic concurrent associations in the romantic relationships domain showed that individuals' feelings of adjustment negatively predicted acts of exploration in their different forms on a day. And the other way around, increasing acts of exploration led to a decrease in the sense of fit. These results are in line with the findings of van der Gaag et al. (2016) who found negative relations between commitment to fit and exploration processes in

within-individual correlations overtime. Similarly, Becht et al. (2021) put forward similar concurrent associations between commitment and reconsideration at the micro-level. Again, the links found between in-depth exploration and commitment are at odds with the results found by Becht et al. (2021). In contrast with open to change individuals, increased perceptions of conflicting information did not lead to a lower sense of fit, and vice versa. These results seem to account for a lower sensitivity to conflicting experiences of systems who are not open to change, as suggested by Bosma and Kunnen (2001). Still, despite their substantially low level of exploration on average, individuals sense of fit to their commitments was negatively affected by the implementation of exploratory acts, as individuals open to change. Further, our results account again for the tight relations between both forms of identity exploration and perceived disagreements from social media emotional experiences. When individuals reported an increase in acts of exploration (both directed towards the fit and other alternatives), they reported a greater perception of deleterious emotional experiences in social media, and vice versa. Finally, an increase in both acts of exploration predicted each other the same day. These results are consistent with Kunnen (2006) and van der Gaag et al. (2016) as all three variables are negatively related to commitments.

Among all the variables, the stability of the micro-level identity processes and outcomes of emotional experiences in social media differed from individuals that were open to change. While the two exploration processes were not significantly stable overtime, feelings of adjustment of this group showed high stability overtime. In conjunction with the average levels of micro-level identity processes (i.e., high levels of commitment to fit, and low levels of exploration processes), the results of the autoregressive parameters indicate that individuals who were not open to change had high and stable levels of commitment to fit over time, and low levels of exploration processes with very little stability over time. These results are in line with the expected direction since it reflects how systems who are not open to change at a time are strongly attracted and tend to return quickly to general patterns of functioning, here strong

feelings of commitments and low levels of exploration of the fit or alternatives to the commitments made (Kunnen & van Geert, 2012). Moreover, the perceived agreement with commitments from social media emotional experiences was the most consistent outcome through time, and the one with the highest levels on average. This last result highlighted the fact that individuals who are not open to change at a time tend to value information congruent with their commitments (Bosma & Kunnen, 2001).

Daily dynamics between micro-level identity processes and social media emotional experiences showed numerous significant day-to-day relations. First, the results showed that increased feelings of commitment to fit one day predicted lower exploration of alternatives, tendentially lower exploration of fit, and tendentially lower perceptions of conflict from emotional experiences the next day. These initial results are consistent with the findings of Becht et al. (2021) and Klimstra et al. (2010), who highlighted that increased engagement one day predicted lower levels of reconsideration the next. Regarding the dynamic link between adjustment to commitments and perceived disagreement, the results support the idea that the state of a system (here, in a low openness to change period) shapes perceptions of information from the environment (Bosma & Kunnen, 2001; Kunnen & van Geert, 2012). Second, results showed significant relations between the exploration on a day and the outcomes of social media emotional experiences across individuals who were not open to change the day after. In fact, exploration, either directed towards the self-adjustment to commitments or towards the consideration of other alternatives, tended to lead individuals to perceive more conflicting experiences the day after. The fact that the implementation of exploratory behaviors led to experiences that were more in conflict with commitments underlines the open nature of the romantic relationships domain, and thus, its openness to change and latent experiences despite strong commitments (Becht et al., 2016; Becht et al., 2021). Conversely, the increase in exploration of alternatives one day predicted a decrease in perceived agreement in social media

experiences. This also supports the idea that identity functioning in interpersonal domain is more sensitive to real-time information, as expected from an open domain (Kroger, 2007; Klimstra et al., 2010; Meeus et al., 1999). In fact, the results of the dynamic relations between identity processes and emotional experience outcomes for the group of individuals with low openness to change suggest that micro-level identity functioning in the romantic relationships domain is particularly dependent on the real-time state, behaviors, and perturbations of the system, and perhaps even less dependent on general higher-order characteristics and patterns of the system (i.e., the macro or latent identity state) than a closed-domain related identity system.

13.3.2.4. Discussion on the two specific groups open and not open to change in the romantic relationships domain results

In the romantic relationships domain, the relations between the micro-level identity processes and the indicators of social media experiences (i.e., the encounter of domain related experiences and the perceived importance of these experiences) were all similar. Indeed, both exploration processes led to encountering significantly more identity-relevant experiences in the social media and to perceiving them as more important. This lack of difference may suggest that individuals tend to explore their commitments in their romantic relationships in a normative way, that is, regardless of their state of openness to experience and change.

The daily dynamics of identity and outcomes of social media emotional experiences across individuals and in the two specific groups (i.e., open to change and not open to change) were quite in line with the expected functioning of identity in the romantic relationships domain. Based on the results of daily dynamics of identity for the two distinct groups, it seemed that individuals in a period of change and individuals in a period of stable commitments were very similar in some characteristics and differed in others.

Considering the dynamic concurrent associations, individuals who were open and not open to change differed in two ways: (1) their sensitivity to conflicting social media

experiences, and (2) their sensitivity to congruent social media experiences. First, results suggest first that individuals open to change are particularly sensitive to the increased perception of incongruent information from social media which decrease their adjustment to commitments and increase acts of both explorations directed to the fit and to other alternatives the same day. On the contrary, the sense of fit of individuals who were not open to change on one day was not significantly affected by the perception of conflictual information the same day. These first differences are very much in line with the work of Bosma and Kunnen (2001) suggesting that more open to change individuals are more sensitive to information from the environment. Second, open to change emerging adults strongly valued the congruent information which reinforce their adjustment on the same day, and vice versa. Conversely, individuals who were not open to change did not exhibit this sensitivity. It may be that the latter individuals did not report mechanisms for maintaining or reinforcing commitments over a day based on the perceived congruent information because of their already high levels of commitments. All of these findings highlight that openness to change distinguishes individuals in terms of their sensitivity to information from the environment as suggested by Bosma and Kunnen (2001).

Furthermore, our results outline the role of congruent information for reinforcing feelings of fit to one's romantic relationships commitments when individuals encounter a period of doubt. These results are in line with the findings of van der Gaag et al. (2017) in the educational domain, who found positive emotions to drive the reinforcement of commitments overtime. To sum up, our results suggest that the two groups differ in their sensitivity to emotional experiences both in their average levels (see section Descriptive statistics of Study 2, p. 146) and in their effects on the adjustment of individuals to daily life. However, the two groups showed differences in their overall levels of exploration but not in acts of exploration's effect on their adjustment at a daily level.

Concerning the stability of the different systems, as expected, systems who were not open to change were mostly driven on average by high and stable levels of commitment to fit and presented lower and highly fluctuating levels of both exploration processes. On the contrary, open to change systems exhibited low and fluctuating levels of commitment to fit and were mostly governed by high and stable levels of exploration processes. These results of stability levels clearly differentiating the two types of systems affirm the general role of openness to change in the functioning of everyday identity (Bosma & Kunnen, 2001). In addition, the two types of systems also differed with respect to the levels and stability of perceived agreement and disagreement from social media emotional experiences over time. Indeed, the group of individuals open to change presented particularly stable and higher levels of perceived disagreement than the other group, but also more stable levels of perceived agreement over time. These results also support the idea that open to change individuals are particularly sensitive to emotional experiences outcomes, and further, that a system's latent state of openness to change shapes the real-time experiences and perceptions of individuals (Bosma & Kunnen, 2001; Kunnen & van Geert, 2012).

Regarding the daily dynamics between the understudy variables, the two types of systems showed rather consistent differences and some similarities. First, for the group open to change, all variables in the dynamic system of identity one day tended to predict the feeling of adjustment to commitment the next day. While an increase in exploration processes one day predicted lower levels of commitment to fit the next day, an increase in perceived agreement and perceived conflict predicted higher levels of commitment to fit. Conversely, no variable predicted, even trend-wise, changes in levels of commitment to fit for the group of individuals who were not open to change. These results between the two groups of individuals underline the presence of a cycle of evaluation of the commitments in the system representing the individuals open to the changes contrary to the individuals who were not open to the change. Beyond the direction of the effect, they also underline the important sensitivity of the

individuals open to change compared to the individuals of the other group. The results also showed that commitment to fit, exploration of alternatives and both outcomes from social media emotional experiences on one day tended to predict levels of exploration of fit the next day. While an increase in commitment predicted a decrease in exploration of fit, an increase in the levels of the other three variables predicted higher levels of exploration of fit the next day. In the group of individuals who were not open to change, only an increase in perceived agreement one day led to an increase in the level of exploration of fit the next day. These significant differences again point to the presence of a day-to-day commitment evaluation cycle for individuals open to change and not for individuals who were not open to change. These differences in the functioning of the two types of systems are related to Bosma and Kunnen's (2001) conceptualizations of identity as a dynamic system. For individuals who are open to change in the romantic relationships domain, a cycle of formation of new commitments, evaluation of commitments, as well as an important incidence of the outcomes of emotional experiences in these cycles were noted. In contrast, the results also showed significant and tendential cross-lagged dynamic relations for the group of individuals who were not open to change only. Indeed, the increase in both exploratory processes one day led to an increase in conflicting information with commitments the next. In addition, an increase in the exploration of alternatives led to the perception of less information in agreement with the commitments. In this sense, for individuals who were not open to change, identity functioning depicted a tendency for individuals to perceive information from the environment differently as a result of the sudden onset (given the low levels of these processes and their large fluctuations) of exploratory behaviors. Thus, the particularly changeable nature of an interpersonal domain seemed to manifest despite the period of significant stability in individuals' engagements with that identity domain.

13.4. Similarities and differences between educational and romantic relationships domains

13.4.1. Similarities and differences regarding indicators of social media experiences

In both identity domains, the micro-level identity predicted similarly levels of the indicators of social media experiences (i.e., domain related experiences and importance of these experiences). In fact, individuals seemed particularly likely to encounter identity-relevant and important experiences on the same day, whether they were open to change, when they showed an increase in acts of exploration both directed towards the fit or other alternatives to commitments. As previously discussed, these results are consistent with the findings of Danias-Uraga (2022). Indeed, they found that individuals in moratorium, were mainly part of the profile reflected by a very high use and integration of social media in the daily lives with multiple types of self-presentation. Another similarity found was between the two groups of individuals who were not open to change. Individuals reported that increasing their sense of fit one day caused them to encounter fewer identity-relevant experiences the same day (in romantic relationships) or the next day (in education). As previously suggested, these relations may account for the inclination of identity-relevant social media experiences to be less useful for individuals with a high sense of fit. Thus, this may also reflect the way in which individuals with low openness to change and high stability are less responsive to information from the environment (Bosma & Kunnen, 2001). The results also showed a major difference between domains. Specifically, individuals who were not open to educational change were the only group to show a majority of significant effects of identity processes from one day to the next. These results are perfectly related to the identity functioning of these individuals on a daily basis. Indeed, individuals who are not open to change have a strong tendency to value congruent experiences from social media in the educational domain one day when they feel a threat to their commitments the day before.

13.4.2. Similarities between domains in the micro-level identity dynamics across all participants

Strong convergences were found among the two domains regarding the dynamic relations between the micro-level identity processes and the outcomes of social media emotional experiences across all participants. An important point of convergence is the way the different variables were linked on the same day. Across all participants, we found similar relations, particularly regarding how individuals' perceived adjustment to their commitments was related to the other variables. An increase in both exploration processes and perceived disagreement from emotional experiences predicted lower feeling of adjustment to commitments and vice versa, while an increase in the perceived agreement from these experiences predicted stronger feelings of fit to the commitments, and vice versa. These results are in line with recent research that has looked at this link at the micro level as previously mentioned in the discussion section of both domains (Becht et al., 2021; Kunnen, 2006, van der Gaag et al., 2016, van der Gaag et al., 2017). However, as detailed earlier in this chapter, our results concerning the links between in-depth exploration at the micro-level and both the commitment and the reconsideration processes at the micro-level were at odds with the findings of Becht et al. (2021). These differences may be explained by developmental differences between adolescence and emerging adulthood, and by the nature of in-depth exploration in the measures used. First, as adolescence is a developmental period that is more affected by major identity issues and governed by intense exploration of self, values, and ideals, it is commonly understood that they intensely explore the commitments they make to assess their relevance and maintain them overtime (Becht et al., 2021). Second, it is important to note that the very nature of in-depth exploration measured by the single item U-MICS (Klimstra et al., 2010) and the RECS (van der Gaag et al., 2016) differs. This is discussed in a specific section in the general discussion. Finally, in both domains, our results demonstrated strong links between the exploration processes and the outcomes of social media emotional experiences. As previously stated, this may reflect how emotions and real time experiences are major features of identity at a micro-level, but also how social media are embedded in emerging adults' daily lives and

respond to concerns about one's identity at this period.

13.4.3. Differences between domains in the micro-level identity dynamics across all participants

Whether it is regarding the stability or the day-to-day dynamics of the systems elements, important differences appeared between the educational and romantic relationships domains. First, across all participants, the results showed a greater stability of variables for the educational domain. The results also highlighted that the order of the processes in terms of stability was not the same: while for the educational domain, the commitment to fit was the most stable process, followed by the exploration of alternatives and then the exploration of fit, in the romantic relationships domain the commitment to fit and the exploration of fit were the most stable while the exploration of alternatives was the most fluctuating.

The day-to-day functioning of identity also appeared to differ between the two domains across all participants. For the educational domain, we noted that the increase in exploratory processes on one day had a negative impact on the way individuals felt adjusted to their commitments. This dynamic is not present in the romantic relationships domain. For the rest of the day-to-day dynamic relations, we no longer found any significant relations in the educational domain, while the results for the romantic relationships domain showed just such other significant relations. For example, we found a negative impact of exploration processes on the feeling of agreement encountered by the individual in social media the next day. In addition, we found a positive effect of the exploration of alternatives on the perceived disagreement by the individual from these same online experiences the day after.

Furthermore, while in the romantic relationships domain the perceived feelings of agreement and disagreement from social media emotional experiences tended to increase the reflections and questioning related to the adjustment of individuals to their commitments, it was not the case for the educational domain. These results support the idea put forward by Vleioras

and Bosma (2005) that emotional experiences are as important in understanding identity change as exploratory processes. It also highlights that sensitivity to emotional experiences is generally a function of openness to change and experience (Berzonsky & Sullivan, 1992; Bosma & Kunnen, 2001;) because these results were only found in the domain of romantic relationships which is open to change compared to closed domains like education (Kroger, 2007; Meeus et al., 1999)

Indeed, these differences between domains emphasized that the educational and romantic relationships domains are different in nature. The way in which the identity dynamic of the educational domain operates seems to present individuals who are more stable and less affected by the outcomes of emotional experiences as expected for closed domains (Meeus et al., 1999). However, on average, individuals' adjustment to their commitments were affected by the implementation of exploratory behaviors directed towards both the adjustment and to other alternatives to their commitments. As expected from an open-ended identity domain, individuals showed on average that they were less stable in their feeling of adjustment to their commitments, and that they were particularly affected by the outcomes of emotional experiences in social media. Therefore, all these results indicate that the outcomes of emotional experiences are more important in a re-evaluation cycle of commitments in the romantic relationships domain, while the micro exploration processes are more important for the re-evaluation of commitments in the educational domain. This supports the idea that closed domains are more rigid and require a process specifically directed at re-evaluating them so that commitments can change, whereas open domains are more flexible and open to change, making them more sensitive and responsive to information from the environment (Becht et al., 2016; Becht et al., 2021; Branje et al., 2007; Klimstra et al., 2010; Meeus et al., 2019).

13.4.4. Discussing the functioning of the micro-level identity dynamics in both domains across specific groups

In this section we first deal with particularly notable characteristics between groups open

to change in the two domains, and then with groups of individuals who were not open to change. Then we summarize the major specificities of each domain, with regard to the functioning of systems open and not open to change.

In the functioning of open to change systems, two notable differences should be noted. First, whereas in the educational domain, an increase in the perception of conflicting information on one day did not lead to a majority decrease in commitment adjustment, the opposite was true in the romantic relationships domain. This highlights the more general sensitivity of individuals to conflicting information that relates to their romantic relationships, as opposed to conflicting information specific to the educational domain. Obviously, this is consistent with the literature, in that ideological domains are inherently less open to change than interpersonal domains. Second, the two domains differed in their functioning from day to day. Whereas in the educational domain the increase in feeling adjusted to commitments tended on average to increase acts of exploration (directed toward adjustment or other alternatives to commitments), the reverse was true in the romantic relationships domain. These results reflect the different rigidity of the two identity domains. Indeed, it seems that in the educational domain, individuals have more difficulty emerging from their state of intense exploration even when conflicting information towards this state appears. Whereas in the romantic relationships domain, it seems that individuals tend to fluctuate more around different states and to be sensitive to changes in daily adjustment. These suggestions are also supported by the very stable nature of the sense of adjustment to commitments of individuals open to change in the educational domain. Still, it was found that individuals who are open to change (whether in education or romantic relationships) are highly sensitive to increased acts exploration on one day.

Considering the groups of individuals who were not open to change, two operating characteristics were particularly interesting. The first one was a similarity in functioning that

underscores the hermetic to change state of these systems, and the second was a particularly notable difference as it underscores the two opposite functioning of these systems when commitments are threatened. Similarly, when individuals' feelings of adjustment increase one day, systems that are not open to change tended to perceive less incongruent information and more congruent with commitments, reflecting the expected functioning of identity in a period of stable commitments (Bosma & Kunnen, 2001). Regarding their difference, in the educational domain, when increasing exploratory behaviors one day the results suggest that the system tended to reduce the perception of conflicting information the next day and to favor the perception of information congruent with commitments. Conversely, in the romantic relationships domain, when increasing exploratory behaviors one day, the results suggested that the system tended to increase perceptions of conflicting information and reduce congruent information. These results seem to underline once again that the open or closed nature of a domain induces, in reaction to a threat, a day-to-day functioning that tends more easily towards assimilation for a closed domain, and accommodation for an open domain (Bosma & Kunnen, 2001; Kroger, 2007; Meeus et al., 1999). Thus, upon the perception of a threat (primarily as a result of identity exploration in our data), individuals tend to maintain the strength and reinforce their educational commitments, while they tend to reevaluate and requestion the value of their romantic relational commitments.

In the educational domain, what stands out first is the latent rigidity of identity in its daily functioning. This rigidity was particularly evident in the results of the open-to-change group and was reflected in the high and stable overall levels of adjustment to commitments, the strong perception of agreement from emotional experiences in social media, the low sensitivity to conflictual information, and the difficulties to change from one state to another. In fact, our results would imply that individuals in periods of doubt and dissonance regarding their commitments would function in real time in such a way as to quickly reduce this sense of misfit

by assimilating incongruent information and giving more importance to congruent information the same day. Specifically, the very strong positive dynamic concurrent associations between the sense of fit to commitments and the perceived agreement from social media emotional experiences (i.e., the largest relation found in the results after those between the two exploration processes) could be attributed to a search to maintain substantially high and stable levels of commitment each day, one step at a time, to decrease doubt. However, despite this function of maintaining the fit in the face of same-day doubts, the effect of congruent information would appear to be unable to increase these individuals' adjustment to commitments over time as evidenced by the weak effect of congruent information on levels of commitment to fit across days. This seems even more evident since the commitment to fit levels of individuals who were not open to change tended to increase after the perception of information more congruent with their commitment the day before on average. Obviously, this latent rigidity in everyday life underscores the educational domain's resistance to change when potentially threatened but does not mean that individuals' adjustment to their commitments cannot be affected by conflicting information on a daily basis. Indeed, the results for the group of individuals who did not report being in a period of doubt suggest that adjustment to educational commitments is affected indirectly by the results of emotional experiences (whether they are congruent or incongruent with one's commitments) and directly by the implementation of identity exploration behaviors in daily life. Thus, these results seem to imply that the identity system would specifically rigidify during periods of doubt to ward off immediate threats to closed domain commitments, thus making changes more time consuming, but would still be sensitive to conflicting daily experiences to some degree.

As discussed above, identity in the romantic relationships domain appears to be less rigid and more sensitive to environmental information than the educational domain, and how system's latent state of openness to change can shape the real-time experiences and perceptions

of individuals. In the open-to-change group system, this tendency to be particularly sensitive was reflected in the high instability of feelings of adjustment to commitments, the high and stable levels of perceived agreement and disagreement from emotional experiences in social media, and the presence of cycles of evaluation and re-evaluation of commitments. In fact, the results of the open to change group suggest that individuals in a period of doubt and reconsideration of their commitments evaluate and re-evaluate their adjustments to their commitments daily based on both the results of explorations and outcomes of emotional experiences in real-time. In the other direction, the conduct of exploratory behaviors and the way in which individuals feel agreement or disagreement with their commitments are a function of individuals' adjustment to their commitments from day to day. This latter relation is also true in the group of individuals who are not open to change. Indeed, despite the absence of a significant evaluation or re-evaluation cycle of commitments, the results of the daily identity dynamics show a general tendency for individuals to perceive emotional experiences differently depending on the implementation of exploration behaviors from one day to the next. Together, these broad characteristics of the two types of systems would seem to indicate two functioning. First, as discussed above this would seem to indicate that the two types of systems differ in the presence of a day-to-day commitment evaluation and reevaluation cycle, depending on the openness to change of individuals. Second, these results suggest that regardless of individuals' latent openness to change, identity in this domain functions in such a way that the propensity of the system to be affected by experiences and emotions changes in real time. This is particularly in contrast to the educational domain's openness to change, which appears to be unable to vary over time as a function of real-time experiences and even seems to be closer to a stable higher-order parameter.

The discussion of the dense results of Study 2 brings its share of answers but also its share of questions related to the functioning of identity and the role of emotional experiences

lived in social media on its expression in real time. In the next section (i.e., general discussion), we focus on answering these questions by linking our three objectives, or at least providing new answers. We will also discuss the more general problems of understanding the nature of identity, but also the implications of our results for its understanding.

14. General discussion

The overall goal of this thesis was to contribute to the advancement of the fundamental understanding of identity development in context, specifically in emerging adulthood. Identity development has its source in the past experiences, character, values, possessions, and desires to become, but is continually altered by the real-time experiences in proximal contexts. Thus, we questioned the role of daily emotional experiences in the day-to-day dynamic of emerging adults' identity. To answer this question, and based on the shortcomings found in the literature, we conducted three objectives. The first objective was to explore the top-down relation between macro-level of identity and both micro-level of identity and social media emotional experiences. The second objective was to characterize the links between micro-level identity processes and social media emotional experiences. The third and last objective was to understand the daily dynamics of identity and social media emotional experiences. Previously, we have discussed the results of the two studies in detail and separately for each objectives. In this general discussion, we join the three objectives to identify the overall contribution of this manuscript in terms of understanding identity and the role of emotional experiences in social media on its development. In the first part, we present the general contributions of this dissertation regarding the dynamic system of identity. In the second and third parts, we discuss the contribution of our results specifically for each life domain (starting with the educational one). In the fourth part, we address issues regarding exploration processes. The fifth part addresses issues regarding the different measures of emotional experiences used in this research. Finally, in the sixth and seventh parts, we discuss the implications, limits, and strengths of our study, as well as the research perspectives that our results suggest.

14.1. Contribution of findings to the understanding of identity development

The results of our two studies contribute to the solidification of conceptualizations

regarding identity, but also to the understanding of how identity works in real time and the role of social media emotional experiences on its functioning. They suggest that the dynamic system of identity is self-organizing in such a way that the general identity state of individuals shapes the functioning of identity in everyday life and the individual's relation to experiences in real time (Bosma & Kunnen, 2001; Kunnen & van Geert, 2012). That is, the extent to which individuals feel adjusted to their commitments and reconsider other alternatives on a daily basis is a function of their commitments' strength and their overall desire to construct new commitments, as suggest by the results of Study 1 (Objective 1).

Micro-level identity processes are related in the same way as their macro-level counterparts. Although these links are particularly heterogeneous within-individuals (e.g., van der Gaag et al., 2016), our results from the various lenses also show an important heterogeneity but also highlight strong general trends in line with the literature. For example, individuals' sense of fit to their commitments is negatively related to exploratory-oriented behaviors in everyday life, as suggested by the results of Study 1 (Objective 2) and Study 2. One of the salient findings of Study 2 indicates that the daily acts of exploration of any kind on a day have a stronger impact on the sense of fit the same day than the day after. This is the case regardless of whether these daily based explorations are implemented for educational or romantic relationships purposes, and regardless of whether individuals are in a period of openness to change or not. These findings highlight the importance of observing the developmental process of identity within a daily temporality.

Beyond strengthening the knowledge about the links between micro-level identity processes, this dissertation helps clarify the links between social media emotional experiences and identity at a micro-level. Overall, our results suggest that individuals use social media intensely and have meaningful experiences related to their identity in both the educational and romantic relationships domains every day. The encounter or importance of these experiences

are neither related to a specific general identity state of individuals (i.e., macro-level of identity), nor lead to a specific expression of identity on a daily basis (i.e., do not predict micro-level processes), but are strongly related to the implementation of daily identity exploration behaviors according to both results of Study 1 (Objective 2) and Study 2. **This highlights the importance of social media for emerging adults in moments of evaluation and re-evaluation of their commitments as suggested in the literature (Dantias-Uraga, 2022; Ostic et al., 2021).**

As already suggested in the literature, both identity domains have daily cycles of maintaining and evaluating commitments (Becht et al., 2021; Klimstra et al., 2010). However, our results provide new insights about the daily identity dynamic and how real time emotional experiences affect its functioning in emerging adulthood. First, social media emotional experiences are part of the evaluation and reevaluation of commitment cycles. Although the role of conflicting emotional experiences has been linked to change in commitments (Kunnen, 2006; van der Gaag et al., 2017; Vleioras & Bosma, 2005), sometimes supplanting the role of identity exploration processes, our results highlight the mechanisms by which this is expressed on a daily basis. Results of Study 2 show that perceived conflictual information from social media in everyday life leads more toward acts of exploration regarding the commitments, rather than directly decreasing feelings of adjustment to those commitments. Results of Study 1 (Objective 1) show the same positive links between reconsideration and perceived negative emotions from social media. This may reflect the idea that changing commitments is difficult and requires, depending on their strength, a lot of conflicting information that gradually erodes the sense of fit (Bosma & Kunnen, 2001). Second, the results of Study 1 (Objective 2) highlight a strong positive link between commitment to fit and positive emotions. Similarly, the results of Study 2 show a specific dynamic of maintenance and reinforcement of the commitments through the perception of congruent information from social media on a daily basis. This dynamic relation is of major importance on a day-to-day basis for emerging adults, and

especially for those in periods of doubt about their commitments. This was also suggested by van der Gaag et al.'s (2017) results on positive emotions. Although these results refer to the daily dynamics of identity across individuals and domains, the daily functioning of the educational and relational identity showed substantial differences.

14.2. Contribution of findings to the understanding of identity development in the educational domain

As a whole, identity in the educational domain seems not very sensitive to social media conflicting emotional experiences but rather show a strong sensitivity to congruent information. The results of Study 1 (Objective 1) show that emerging adults' identity state does not shape emotional experiences in social media on a daily basis. However, findings of Objective 2 show a strong positive relation between commitment to fit and social media positive emotional experiences. Similarly, the dynamic concurrent association between feelings of adjustment to commitments and agreement from social media is substantially positive, as shown in the results of Study 2.

The daily functioning of educational identity reflects a strong attraction of individuals toward maintaining a stable identity state. To tend towards change, it seems that a lot of strong conflicting information is necessary even for individuals who are in a more open to experience period. In fact, another important finding of our study indicates that, on average, individuals open to change exhibit more rigidity than individuals who are not open to change. This rigidity is expressed in their low sensitivity to conflicting emotional experiences and acts of exploration (implemented the same day or one day before). As previously suggested, individuals closer to change in educational commitments seem to strongly assimilate threats to commitments to maintain them. In addition, individuals open to change in this domain show the strongest positive dynamic concurrent association among the different groups, which supports our argument. On the contrary, individuals who are more strongly committed are sensitive to daily

conflicting experiences. However, many threat reduction mechanisms come into play from one day to the next in the daily identity functioning of individuals who are not open to change.

Even though conflicting emotional experiences in social media are well perceived by individuals, it may not be strong or relevant enough for individuals to drive change in educational commitments. This idea is supported by the significant difference between the average levels of perceived disagreement between the educational and romantic relationships domains. For example, while a feeling of incompetence experienced as a result of a course would have a great deal of impact on feelings of fit to commitments, a similar conflicting experience felt during a collaborative social media session may have less impact. Thus, conflicting social media experiences may not be significant enough to drive change in educational commitments, but congruent experiences are significant enough to reinforce commitments (Alalwan, 2022). Finally, from the point of view of long-term identity development, our results imply that the accommodation of the identity system in the educational domain does take place over longer time scale compared to more open domains, as suggested by several authors (Kroger, 2007; Meeus et al., 1999).

14.3. Contribution of findings to the understanding of identity development in the romantic relationships domain

Identity in the romantic relationships domain seems more easily changeable and sensitive to emotional experiences than the educational one, as suggested by multiple results of this research work. This is reflected in the meaningful connections between individuals' identity states and the intensity of the two emotional valences from everyday experiences in social media. This is also evidenced by the predominantly positive relations found between micro-level exploration processes and the intensity of the two emotional valences from experiences in social media. The changeable and sensitive nature of the romantic relationships domain are also apparent in the identity functioning of individuals on a daily basis. Indeed, whether they are

open to change or not, the functioning of systems tends less towards assimilation than in the educational domain. In addition, this nature is reflected in the clear cycles of evaluation and re-evaluation of daily commitments that operate at the within-individual level.

Moreover, information from social media seems prevalent for identity in general and even more so when a feeling of doubt emerges about one's identity. In this sense, the openness to social media experiences of individuals seems to be a function of both the general identity state at the macro-level and the fluctuations of openness at a micro-level. That is, the state of reconsideration of commitments at a macro-level shapes the perception of negative emotions from social media in real time, and, for open to change individuals specifically, an increase in openness to change one day makes individuals more sensitive to conflict and less receptive to agreement from social media experiences the next. Thus, from a developmental perspective, our results suggest that the accommodation in the romantic relationships domain may take place over a daily time scale, compared to the educational one. Lastly, our results imply that conflicting and congruent emotional experiences in social media have an incidence on commitment evaluation and re-evaluation cycles in that they directly affect the development of exploratory behaviors and are affected in turn by these processes.

14.4. Addressing in-depth exploration processes issues

Considering the results of this study and those found in the literature, it is undeniable that the process of in-depth exploration is subject to different conceptualizations. Following the results of Study 1 (Objective 1), the process of in-depth exploration is conceptualized both as a process reflecting behaviors oriented towards a general interest of commitments whether at the macro-level (Crocetti et al., 2008; Luyckx et al., 2008) and at the micro-level (Klimstra et al., 2010), and both as a process reflecting reflective behaviors about self-adjustment to commitments at the macro-level (Luyckx et al., 2008) and the micro-level (van der Gaag et al., 2016). Van der Gaag (2017) proposed paying more attention to the outcomes of

exploration than to the act of exploration itself, even suggesting that the outcome of an act of exploration would mediate the relation between any exploration processes and the commitments. Based on the findings from Objectives 2 (i.e., the significant heterogeneity in the relationships between identity processes and emotional valence intensity) and 3 (i.e., the observed dynamic relationships between exploration processes and emotional experience outcomes differing in the two domains), but also the difficulties encountered in distinguishing the two forms of exploration at the micro level, we can propose some suggestions. Following van der Gaag (2017), we suggest that experiences following an act of exploration do mediate the relation between these processes and the sense of fit to one's commitments. In addition, we suggest that the nature of the exploratory act (i.e., whether it is a search for alternatives, an exploration of adjustment, or a behavior of careful consideration of commitments) is also driven by the outcomes of the upstream emotional experiences, and the individual state of openness to change. These dynamic relations would thus generate different effects on commitments.

14.5. Addressing emotional experiences issues

In accordance with the results of Study 1 (Objective 2), we made the choice in Study 2 not to measure the intensity of the perceived emotional valences from social media experiences, but to assess the perceived disagreement and agreement arising from these emotional experiences. Based on the results obtained from the factor analysis performed on the data of the second procedure (reported in the Descriptive statistics of Study 2 section), but also regarding the results of Study 2, measuring conflict and agreement rather than emotional valence seems a better method to account for the extent to which emotional experiences affect identity in everyday life. Indeed, in the factor analysis, the outcomes of social media experiences (i.e., perceived disagreement and agreement) saturated more strongly than the emotional valences, reflecting a better ability to explain factor variance (i.e., Conflict). In addition, in the results of Study 2, there were different effects of outcomes in almost all relations with commitment to fit and exploration of alternatives. However, it appears that outcomes had

mostly similar relations with exploration of fit on the same day and had the same effect on exploration of fit the next day. In contrast, the increase in both exploration processes on one day led to a different increase or decrease in outcomes the next day. A line of thought is that individuals perceive congruent and incongruent experiences every day in social media that promote reflection towards daily adjustment, but that the perception of the outcomes of these experiences are shaped by the results of prior explorations. This may refer to how the state of a system guides the individual's perceptions over time (Kunnen & van Geert, 2012).

14.6. Scientific implications

The use of both variable-centered and person-centered approaches allowed us to draw conclusions about the general links between identity and emotional experiences, and to identify patterns of individual functioning that were more accurate and closer to the psychological reality of each individual. Using these two approaches, this research respects the ergodic property of developmental processes in that it takes care to distinguish the results that can be attributed to a general trend in the functioning of the variables from those that are of the order of the functioning of the individuals, and even of the individual in his or her singularity (Barbot & Perchee, 2014). In this sense, these approaches allowed us to identify different identity functioning between individuals who were in periods of significant openness to change and others who were not, and to highlight significant heterogeneity in the links between identity processes and everyday emotional experiences. Thus, our results underscore the need to conduct person-centered studies when looking at identity construction (i.e., whether in its development over long periods of time, or in its real-time functioning), as previously suggested in the literature (Kunnen, 2012).

Another important scientific implication of our research is the consideration of two different domains of identity. Education and romantic relationships are both critical domains for emerging adults' psychosocial development and for the gradual integration of adult roles in society. In this sense, one of the major contributions to identity research is the identification

of real-time identity functioning specific to each domain. These empirical results shed lights on the mechanisms at work and the temporalities underlying the development and maintenance of commitments in each of the domains, and precisely grasping the role of emotional experiences lived in social media for the functioning of identity in everyday life. These differences in terms of functioning, temporality of change, and relations to emotional experiences in real time underscore the need to consider identity domains separately, as suggested by many researchers (e.g., Luyckx et al., 2016; Vosylis et al., 2017).

Our findings in each of these domains suggest that the issue of temporalities of change should be integrated into the way identity is conceived and the mechanisms underlying its development, but also into the conduct of research. From a theoretical point of view, this refers to the differences in rigidity of change already mentioned in the literature by many authors (Berzonsky, 1990; Bosma & Kunnen, 2001; Kroger, 2007; Meeus, 1999). While ideological domains are particularly rigid to change, interpersonal domains are easier to vary and change. In view of the dynamic system of identity's self-organization, this also suggests that individuals are subject to real-time reevaluation of their commitments, and thus, that change can only be observed according to specific temporalities. While it is relatively easy to observe variations in identity on a daily basis in romantic relationships, variations in the educational domain would be more easily observable on a weekly or monthly basis. In light of Bosma and Kunnen's (2001) model, our results also suggest that threats to identity commitments in the educational domain must be more numerous and intense than in the romantic relationships domain to cause the system to change. It is therefore necessary for future research into the mechanisms underlying identity change to be aware of the temporalities in which change can be observed for each domain, as suggested by dynamical systems theory and fractal scale theory (De Ruiter et al., 2014; Kunnen, 2012; van Geert, 1994; Wijnants et al., 2009.)

One of the key points of this research was the consideration of openness to change.

Bosma and Kunnen (2001) have suggested that this feature of the identity dynamic system is an essential key to understanding how identity works and how it changes over time. We thus chose to consider the extent to which this openness to change differentiated individuals in terms of their identity functioning. As expected, this methodological choice made it possible to highlight the expression of the latent rigidity of closed and open domains. Moreover, it allowed us to understand how emotional experiences can partly drive identity change, but also how their perception is altered by the functioning of the systems in real time. Thus, our results suggest that empirically considering openness to change is essential to understand the specific role of emotional experiences on identity development.

Finally, our findings provide some strong scientific implications for the specific role of social media for identity in each domain. First, individuals seem particularly affected by positive emotions and congruent information that come from emotional experiences related to the educational domain. Furthermore, social media use related to this domain appears to be strongly related to feeling adjusted to everyday commitments and seeking reinforcement of those commitments. Almost conversely, it seems that individuals are more affected by conflicting information that comes from social media related to their romantic relationship. In addition, the use of social networks and the impact of the emotional experiences that take place there seem to be more related to acts of exploration and identity states close to the reconsideration of commitments. Coupled with the immense possibilities offered by social media in terms of functionality and interpersonal connection, our findings highlight the need to consider the specific role played by social media in the lives of emerging adults and in their identity development.

14.7. Practical implications

In terms of practical implications, our findings suggest two lines of action. The first axis is related to the results found in the educational domain. The propensity of social media to

promote positive information that is meaningful for individuals' identity adjustment is an interesting line of practical applications. Considering this, it would be interesting to develop more social media programs to increase academic skills, and make them more accessible to young adults in times of educational uncertainty. For example, as suggested by the results of Alalwan (2022), setting up workshops in which more expert peers can tutor struggling students, or connecting professors with their students through social media, are significant levers of action for the well-being and sense of competence of emerging adults. These platforms are particularly easy to manipulate for emerging adults. It would also be interesting to propose to professionals from the academic world who meet students in difficulty to encourage exchanges and lectures via these online media.

The second axis is related to the results found in the area of romantic relationships. Conflicting emotional experiences with commitments appear to have a detrimental impact on individuals' adjustment. Unfortunately, it appears that emerging adults engage heavily in exploratory activities in these media when they are in periods of doubt. To promote the well-being of these individuals regarding their romantic relationships, prevention campaigns on this topic would be necessary. Specifically, it is a matter of warning emerging adults about the propensity of information from social media to erode their commitment to their romantic relationships. Finally, it is mainly a matter for practicing psychologists who meet young adults with romantic relationship difficulties and who are at risk of developing related psychosocial problems, to warn them about the potential conflictual information they may find there. For example, it is necessary to identify identity-related behaviors that are at risk for these individuals such as seeking self-worth validation through heightened use of social media dating, or the risk of engaging in a multitude of one-night stands that can create identity confusion in emerging adulthood (Arnett, 2015; Sumter et al., 2017).

14.8. Limitations, strengths, and suggestions for future research

In the discussions of our first two objectives, we raised several limitations, some of which were not overcome by the achievement of Objective 3. The study of the relationship between structures of different orders in a system is a major key to understand the course of a developmental process (Kunnen & van Geert, 2012). Despite an analysis of the top-down relationship between the macro and micro levels of identity, the design of Study 1 did not allow for the observation of a bottom-up relationship of the dynamic system of identity. Studies such as Becht et al. (2021) and van der Gaag et al. (2017) provide compelling results regarding the role of micro-level identity functioning on long-term identity development. However, there are still grey areas regarding, for example, the extent to which openness to change and its variations can predict change in long-term identity commitments. Another grey area remains to be clarified concerning the context from which the information comes. It seems that negative information from social media is not significant enough to drive change in the educational domain. An interesting line of research would be to compare the weights of conflicting information coming from each context on the expression of identity in real time in order to detect which contexts are more likely to lead to a change of path or a dropout for example. This could lead to prevention targeted on the warning and the accompaniment around the information coming from these contexts.

Although this research is among the first to address the expression of identity on a daily basis and the role of emotional experiences on its functioning, the findings should be considered in light of the following limitations. The implementation of two different procedures makes it difficult to put into clear perspective the identity state observed at the macro-level during the first study and the functioning observed at the micro-level during the second study. To overcome this problem, it would be necessary to conduct a longitudinal study over several months collecting macro identity states at several stages and simultaneously collecting daily identity expression and emotional experience outcomes. Moreover, the measurement of

emotional experiences is not the same between the first and second studies, which may require caution in linking the results of the two studies. In addition, the small number of participants also prevents us from drawing definite conclusions about the general functioning of the identity. In fact, the conduct of our first study was subject to significant attrition and led to a very small sample. The intensive longitudinal design spanning several months led many participants to disengage from the study. This procedure also led to a lot of missing data, which forced us to conduct less dynamic and complex statistics, and thus to have models with more random error. It is therefore also necessary to take the results with restraint because these limitations question the representativeness of the results.

Despite these limitations, this dissertation represents a major advance in understanding how identity works in everyday life and how social media emotional experiences play a role in its functioning. Specifically, it offers first a precise vision of how identity operates in the two major domains of emerging adults' development. Second, it provides further insight into the distinct role of congruent and incongruent emotional experiences on identity. Third, this study provides a new approach regarding the role of emotional experiences, in that it measures contextualized emotional experiences. In this sense, it makes it possible to account for the potential impact of experiences lived in a prevalent context for emerging adults: social media. Fourth, this study is also innovative in that it considers openness to change as a characteristic that can both distinguish individuals from one another and explain the dynamics of the identity system encountered at the intra-individual level.

From a methodological and statistical point of view, the strengths of this study are numerous. First, one of them lies in the implementation of two intensive longitudinal procedures. Despite the significant attrition it faced, the intensive longitudinal design of this study provided valuable data for analyzing variations in identity on a daily basis. Second, the conduct of recent statistics developed to analyze time series has made it possible to account for

intrinsic characteristics of a developmental process such as non-linearity, and thus to account for complex mechanisms underlying identity development. Finally, the continuous consideration of the non-ergodic nature of identity throughout the dissertation offers a proper perspective on the results of this thesis.

This research work brings interesting research perspectives. First, since the domains seem to change according to temporalities specific to societal, cultural, and personal aspects, it would be interesting for future research to question the temporalities of change specific to each identity domain relevant for the individual. Second, future research should be interested in identifying the online activities that most promote identity commitments and those that are most deleterious in both domains. Finally, as the individual is constantly interacting with different contexts, future research should consider the impact of different proximal life contexts on the real-time expression of identity.

Conclusion

The purpose of this research was to understand the role of social media emotional experiences in identity construction through its daily functioning in the educational and romantic relationships domains in emerging adulthood. Using both variable- and person-centered approaches, our findings show a great heterogeneity in the links between identity and emotional experiences but still allowed us to identify strong trends. They highlight that social media are contexts of identity development that convey information relevant and important to emerging adults' identity development in both educational and romantic relationships domains. The results also show that social media emotional experiences are linked to acts of identity exploration, taking part in some cycle of evaluation and re-evaluation of commitments in the romantic relationships domain, and at the same time promote the maintenance and reinforcement of commitments, especially in the educational domain. This research also highlights the diversity of identity functioning in daily life according to individuals' openness to change and experiences. In addition, the perception of congruent and incongruent information affects the expression of identity on a daily basis which in turn shapes the perception of this information experienced in social media. Finally, these different findings bring important knowledge for the understanding of identity as a complex dynamic system, particularly regarding its daily dynamic in major identity domains, as well as the role of contextualized emotional experiences on its functioning in real time. Future research should look at the temporalities of change in the different identity domains, and qualitatively investigate which experiences in social media favor the maintenance of commitments, and which ones provoke identity doubts on a daily basis. Furthermore, future research should extend the findings of this study by investigating the role of emotional experiences from other life contexts on identity functioning in real time.

References

- Adams, G. R., Bennion, L., and Huh, K. (1989). *Objective measure of ego identity status: A reference manual*. Available from Gerald Adams, Department of Family Studies, University of Guelph, Guelph, Canada.
- Adams, G. R., & Fitch, S. A. (1982). Ego stage and identity status development: A cross-sequential analysis. *Journal of Personality and Social Psychology*, 43(3), 574-583.
<https://doi.org/10.1037/0022-3514.43.3.574>
- Alalwan, N. (2022). Actual use of social media for engagement to enhance students' learning. *Education and Information Technologies*, 27(7), 9767-9789. <https://doi.org/10.1007/s10639-022-11014-7>
- Archer, S. L. (1985). Identity and the choice of social roles. *New Directions for Child and Adolescent Development*, 1985(30), 79-99. <https://doi.org/10.1002/cd.23219853007>
- Archer, S. L. (1989). Gender differences in identity development: Issues of process, domain and timing. *Journal of Adolescence*, 12(2), 117-138. [https://doi.org/10.1016/0140-1971\(89\)90003-1](https://doi.org/10.1016/0140-1971(89)90003-1)
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480. <https://doi.org/10.1037/0003-066X.55.5.469>
- Arnett, J. J. (2007). Emerging adulthood: What is it, and What is it good for? *Child Development Perspectives*, 1(2), 68-73. <https://doi.org/10.1111/j.1750-8606.2007.00016.x>
- Arnett, J. J. (2014). *Emerging adulthood: The winding road from the late teens through the twenties*. Oxford University Press.
<https://doi.org/10.1093/acprof:oso/9780199929382.001.0001>
- Asparouhov, T., Hamaker, E. L., & MuthEn, B. (2018). Dynamic structural equation models.

structural equation modeling: A Multidisciplinary Journal, 25(3), 359-388.

<https://doi.org/10.1080/10705511.2017.1406803>

- Baker, Z. G., Krieger, H., & LeRoy, A. S. (2016). Fear of missing out: Relationships with depression, mindfulness, and physical symptoms. *Translational Issues in Psychological Science*, 2(3), 275-282. <https://doi.org/10.1037/tps0000075>
- Bano, S., Cisheng, W., Khan, A. N., & Khan, N. A. (2019). WhatsApp use and student's psychological well-being: Role of social capital and social integration. *Children and Youth Services Review*, 103, 200-208. <https://doi.org/10.1016/j.childyouth.2019.06.002>
- Barbot, B., & Perchee, C. (2015). New Directions for the study of within-individual variability in development: The power of "N = 1". *New Directions for Child and Adolescent Development*, 2015(147), 57-67. <https://doi.org/10.1002/cad.20085>
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1). <https://doi.org/10.18637/jss.v067.i01>
- Baumeister R. F., Twenge J. M. (2003). The social self. In Millon T., Lerner M. J. (Eds.), *Handbook of psychology: Personality and social psychology* (Vol. 5, pp. 327–352). John Wiley. <https://doi.org/10.1002/0471264385.wei0514>
- Becht, A. I., Branje, S. J. T., Vollebergh, W. A. M., Maciejewski, D. F., van Lier, P. A. C., Koot, H. M., Denissen, J. J. A., & Meeus, W. H. J. (2016). Assessment of identity during adolescence using daily diary methods: Measurement invariance across time and sex. *Psychological Assessment*, 28(6), 660-672. <https://doi.org/10.1037/pas0000204>
- Becht, A. I., Nelemans, S. A., Branje, S. J. T., Vollebergh, W. A. M., & Meeus, W. H. J. (2021). Daily identity dynamics in adolescence shaping identity in emerging adulthood: An 11-year longitudinal study on continuity in development. *Journal of Youth and Adolescence*, 50(8), 1616-1633. <https://doi.org/10.1007/s10964-020-01370-3>
- Berzonsky, M. D. (1985). Diffusion within Marcia's identity-status paradigm: Does it foreshadow academic problems? *Journal of Youth and Adolescence*, 14(6), 527-538.

<https://doi.org/10.1007/BF02139525>

Berzonsky, M. D. (1990). Self-construction over the life span: A process perspective on identity formation. *Advances in Personal Construct Psychology, 1*, 155–186

Berzonsky, M. D., & Adams, G. R. (1999). Reevaluating the identity status paradigm: Still useful after 35 years. *Developmental Review, 19*(4), 557-590.

<https://doi.org/10.1006/drev.1999.0495>

Berzonsky, M. D., & Sullivan, C. (1992). Social-cognitive aspects of identity style: Need for cognition, experiential openness, and introspection. *Journal of Adolescent Research, 7*(2), 140-155. <https://doi.org/10.1177/074355489272002>

Bisson, M. A., & Levine, T. R. (2009). Negotiating a friends with benefits relationship. *Archives of Sexual Behavior, 38*(1), 66-73. <https://doi.org/10.1007/s10508-007-9211-2>

Błachnio, A., Przepiorka, A., & Pantic, I. (2016). Association between Facebook addiction, self-esteem and life satisfaction: A cross-sectional study. *Computers in Human Behavior, 55*, 701-705. <https://doi.org/10.1016/j.chb.2015.10.026>

Błachnio, A., Przepiorka, A., & Rudnicka, P. (2013). Psychological determinants of using Facebook: A research review. *International Journal of Human-Computer Interaction, 29*(11), 775-787. <https://doi.org/10.1080/10447318.2013.780868>

Bosma, h. A. (1985). Identity development in adolescence. Coping with commitments. Groningen: University of Groningen

Bosma, H. A., & Kunnen, E. S. (2001). Determinants and mechanisms in ego identity development: A review and synthesis. *Developmental Review, 21*(1), 39-66.

<https://doi.org/10.1006/drev.2000.0514>

Bosma, H. A., & Kunnen, E. S. (2008). Identity-in-context is not yet identity development-in-context. *Journal of Adolescence, 31*(2), 281-289.

<https://doi.org/10.1016/j.adolescence.2008.03.001>

Branje, S., de Moor, E. L., Spitzer, J., & Becht, A. I. (2021). Dynamics of identity development in

adolescence: A decade in review. *Journal of Research on Adolescence*, 31(4), 908-927.

<https://doi.org/10.1111/jora.12678>

Branje, S. J. T., Frijns, T., Finkenauer, C., Engels, R., & Meeus, W. (2007). You are my best friend: Commitment and stability in adolescents' same-sex friendships. *Personal Relationships*, 14(4), 587-603. <https://doi.org/10.1111/j.1475-6811.2007.00173.x>

Brioux, K., Villatte, A., & Oubrayrie-Roussel, N. (2019). Perspectives temporelles passées et indécision vocationnelle chez des étudiants postsecondaires en transition vers l'âge adulte. *L'Orientation scolaire et professionnelle*, 48/1, 105-125. <https://doi.org/10.4000/osp.10140>

Brown, B. B. (1999). 'You're going out with who?': Peer group influences on adolescent romantic relationships. In: Furman W, Brown BB, Feiring C (Eds.). *The Development of Romantic Relationships in Adolescence*. (pp. 291–329). New York: Cambridge University Press.

Carlsson, J., Wängqvist, M., & FrisEn, A. (2016). Life on hold: Staying in identity diffusion in the late twenties. *Journal of Adolescence*, 47(1), 220-229.

<https://doi.org/10.1016/j.adolescence.2015.10.023>

Chen, H.-T., & Li, X. (2017). The contribution of mobile social media to social capital and psychological well-being: Examining the role of communicative use, friending and self-disclosure. *Computers in Human Behavior*, 75, 958-965.

<https://doi.org/10.1016/j.chb.2017.06.011>

Cohen, P., Kasen, S., Chen, H., Hartmark, C., & Gordon, K. (2003). Variations in patterns of developmental transmissions in the emerging adulthood period. *Developmental Psychology*, 39(4), 657-669. <https://doi.org/10.1037/0012-1649.39.4.657>

Cramer, P. (2004). Identity change in adulthood: The contribution of defense mechanisms and life experiences. *Journal of Research in Personality*, 38(3), 280-316.

[https://doi.org/10.1016/S0092-6566\(03\)00070-9](https://doi.org/10.1016/S0092-6566(03)00070-9)

Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of*

Adolescence, 31(2), 207-222. <https://doi.org/10.1016/j.adolescence.2007.09.002>

Crocetti, E., Scignaro, M., Sica, L. S., & Magrin, M. E. (2012). Correlates of identity configurations: Three studies with adolescent and emerging adult cohorts. *Journal of Youth and Adolescence*, 41(6), 732-748. <https://doi.org/10.1007/s10964-011-9702-2>

Danias-Uraga, M. (2022) « *Qui suis-je 2.0 ?* » : *Une étude longitudinale des usages numériques, de la construction identitaire et de l'ajustement psychologique d'adolescents et de jeunes adultes français*. (Doctoral dissertation, Université de Bordeaux). Retrieved from <https://hal.science/tel-03696938/>

Dean, R. T., & Dunsmuir, W. T. M. (2016a). Dangers and uses of cross-correlation in analyzing time series in perception, performance, movement, and neuroscience: The importance of constructing transfer function autoregressive models. *Behavior Research Methods*, 48(2), 783-802. <https://doi.org/10.3758/s13428-015-0611-2>

Dean, R. T., & Dunsmuir, W. T. M. (2016b). Dangers and uses of cross-correlation in analyzing time series in perception, performance, movement, and neuroscience: The importance of constructing transfer function autoregressive models. *Behavior Research Methods*, 48(2), 783-802. <https://doi.org/10.3758/s13428-015-0611-2>

Den Hartigh, R. J. R., Cox, R. F. A., Gernigon, C., Van Yperen, N. W., & Van Geert, P. L. C. (2015). Pink noise in rowing ergometer performance and the role of skill level. *Motor Control*, 19(4), 355-369. <https://doi.org/10.1123/mc.2014-0071>

Den Hartigh, R. J. R., Cox, R. F. A., & Van Geert, P. L. C. (2017). Complex versus complicated models of cognition. In L. Magnani & T. Bertolotti (Eds.), *Springer Handbook of Model-Based Science* (p. 657-669). Springer International Publishing. https://doi.org/10.1007/978-3-319-30526-4_30

De Ruiter, N. M. P., Den Hartigh, R. J. R., Cox, R. F. A., Van Geert, P. L. C., & Kunnen, E. S. (2015). The temporal structure of state self-esteem variability during parent–adolescent interactions: More than random fluctuations. *Self and Identity*, 14(3), 314-333.

<https://doi.org/10.1080/15298868.2014.994026>

Diehl, M., Hooker, K., & Sliwinski, M. J. (Eds.). (2015). *Handbook of intraindividual variability across the life-span*. Routledge, Taylor & Francis Group.

Dyk, P. A. H., & Adams, G. R. (1987). The association between identity development and intimacy during adolescence: A theoretical treatise. *Journal of Adolescent Research*, 2(3), 223-235. <https://doi.org/10.1177/074355488723004>

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “friends:” Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143-1168. <https://doi.org/10.1111/j.1083-6101.2007.00367.x>

Ellison, N. B., Steinfield, C., & Lampe, C. (2011). Connection strategies : Social capital implications of Facebook-enabled communication practices. *New Media & Society*, 13(6), 873-892. <https://doi.org/10.1177/1461444810385389>

Erikson, E. H. (1950). *Childhood and society*. New York: Norton.

Erikson, E. H. (1956). The problem of ego identity. *Journal of the American Psychoanalytic Association*, 4,56–121. <https://doi.org/10.1177/000306515600400104>

Erikson, E. H. (1963). *Childhood and society* (2nd Ed.). New York: Norton.

Erikson, E. H. (1968). *Identity: Youth and crisis*. Norton.

Ferguson, C. J., Kaye, L. K., Branley-Bell, D., Markey, P., Ivory, J. D., Klisanin, D., Elson, M., Smyth, M., Hogg, J. L., McDonnell, D., Nichols, D., Siddiqui, S., Gregerson, M., & Wilson, J. (2022). Like this meta-analysis: Screen media and mental health. *Professional Psychology: Research and Practice*, 53(2), 205-214. <https://doi.org/10.1037/pro0000426>

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117-140. <https://doi.org/10.1177/001872675400700202>

Furman, W., Brown, B. B., & Feiring, C. (Eds.). (1999). *The development of romantic relationships in adolescence* (1st Ed.). Cambridge University Press.

<https://doi.org/10.1017/CBO9781316182185>

Galland, O. (1990). Un nouvel âge de la vie. *Revue Française de Sociologie*, 31(4), 529.

<https://doi.org/10.2307/3322402>

Gates, K. M., & Molenaar, P. C. M. (2012). Group search algorithm recovers effective connectivity maps for individuals in homogeneous and heterogeneous samples. *NeuroImage*, 63(1), 310-319. <https://doi.org/10.1016/j.neuroimage.2012.06.026>

Gmelin, J.-O. H., & Kunnen, E. S. (2021). Iterative micro-identity content analysis: Studying identity development within and across real-time interactions. *Identity*, 21(4), 324-340.

<https://doi.org/10.1080/15283488.2021.1973474>

Gonzalez Aviles, T., Finn, C., & Neyer, F. J. (2021). Patterns of romantic relationship experiences and psychosocial adjustment from adolescence to young adulthood. *Journal of Youth and Adolescence*, 50(3), 550-562. <https://doi.org/10.1007/s10964-020-01350-7>

Greitemeyer, T., Mügge, D. O., & Bollermann, I. (2014). Having responsive Facebook friends affects the satisfaction of psychological needs more than having many Facebook friends. *Basic and Applied Social Psychology*, 36(3), 252-258.

<https://doi.org/10.1080/01973533.2014.900619>

Gross, E. F., Juvonen, J., & Gable, S. L. (2002). Internet use and well-being in adolescence. *Journal of Social Issues*, 58(1), 75-90. <https://doi.org/10.1111/1540-4560.00249>

Grotevant, H. D. (1987). Toward a process model of identity formation. *Journal of Adolescent Research*, 2(3), 203-222. <https://doi.org/10.1177/074355488723003>

Grotevant, H. D., Thorbecke, W., & Meyer, M. L. (1982). An extension of Marcia's identity status interview into the interpersonal domain. *Journal of Youth and Adolescence*, 11(1), 33-47.

<https://doi.org/10.1007/BF01537815>

Hamaker, E. L., & Wichers, M. (2017). No time like the present: Discovering the hidden dynamics in intensive longitudinal data. *Current Directions in Psychological Science*, 26(1), 10-15.

<https://doi.org/10.1177/0963721416666518>

- Heffer, T., Good, M., Daly, O., MacDonell, E., & Willoughby, T. (2019). The longitudinal association between social-media use and depressive symptoms among adolescents and young adults: An empirical reply to Twenge et al. (2018). *Clinical Psychological Science*, 7(3), 462-470. <https://doi.org/10.1177/2167702618812727>
- Henig, R. M., & Henig, S. (2013). *Twentysomething: Why do young adults seem stuck?* Plume.
- Hollenstein, T. (2007). State space grids: Analyzing dynamics across development. *International Journal of Behavioral Development*, 31(4), 384-396.
<https://doi.org/10.1177/0165025407077765>
- Howe, M. L., & Lewis, M. D. (2005). The importance of dynamic systems approaches for understanding development. *Developmental Review*, 25(3-4), 247-251.
<https://doi.org/10.1016/j.dr.2005.09.002>
- Hyndman, R., Athanasopoulos, G., Bergmeir, C., Caceres, G., Chhay, L., O'Hara-Wild, M., Petropoulos, F., Razbash, S., Wang, E., & Yasmeeen, F. (2021). forecast: Forecasting functions for time series and linear models. R Package Version, 8.15.
<https://pkg.robjhyndman.com/forecast/>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Huang, C. (2017). Time spent on social network sites and psychological well-being : A meta-analysis. *Cyberpsychology, Behavior, and Social Networking*, 20(6), 346-354.
<https://doi.org/10.1089/cyber.2016.0758>
- James, W. (1890/1950). *The principles of psychology*. Dover.
- Jebb, A. T., Tay, L., Wang, W., & Huang, Q. (2015). Time series analysis for psychological research : Examining and forecasting change. *Frontiers in Psychology*, 6.
<https://doi.org/10.3389/fpsyg.2015.00727>
- Jellab, A. (2011). La socialisation universitaire des Etudiants : Une expérience scolaire à l'Epreuve

- du projet d'apprendre et des projets d'avenir. *Recherches sociologiques et anthropologiques*, 42(2), 115-142. <https://doi.org/10.4000/rsa.732>
- Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research*, 44(3), 486-507. <https://doi.org/10.1177/0049124114543236>
- Kielhofner, G. (2008). *Model of human occupation: Theory and application* (4th ed). Lippincott Williams & Wilkins.
- Klimstra, T. A., Kuppens, P., Luyckx, K., Branje, S., Hale, W. W., Oosterwegel, A., Koot, H. M., & Meeus, W. H. J. (2016). Daily dynamics of adolescent mood and identity. *Journal of Research on Adolescence*, 26(3), 459-473. <https://doi.org/10.1111/jora.12205>
- Klimstra, T. A., Luyckx, K., Hale, W. A., Frijns, T., van Lier, P. A. C., & Meeus, W. H. J. (2010). Short-term fluctuations in identity: Introducing a micro-level approach to identity formation. *Journal of Personality and Social Psychology*, 99(1), 191-202. <https://doi.org/10.1037/a0019584>
- Klimstra, T. A., & van Doeselaar, L. (2017). Identity formation in adolescence and young adulthood. In *Personality Development Across the Lifespan* (p. 293-308). Elsevier. <https://doi.org/10.1016/B978-0-12-804674-6.00018-1>
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York, NY: The Guilford Press.
- Kovess-Masfety, V., Leray, E., Denis, L., Husky, M., Pitrou, I., & Bodeau-Livinec, F. (2016). Mental health of college students and their non-college-attending peers: Results from a large French cross-sectional survey. *BMC Psychology*, 4(1), 20. <https://doi.org/10.1186/s40359-016-0124-5>
- Kraut, R., Brynin, M., & Kiesler, S. (2006). *Computers, Phones, and the Internet Domesticating Information Technology*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195312805.001.0001>

- Kroger, J. (2000). Ego identity status research in the new millennium. *International Journal of Behavioral Development*, 24(2), 145-148. <https://doi.org/10.1080/016502500383250>
- Kroger, J. (2007). *Identity development: Adolescence through adulthood* (2nd ed). Sage Publications.
- Kroger, J., & Marcia, J. E. (2011). The identity statuses: Origins, meanings, and interpretations. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of Identity Theory and Research* (p. 31-53). Springer New York. https://doi.org/10.1007/978-1-4419-7988-9_2
- Kroger, J., Martinussen, M., & Marcia, J. E. (2010). Identity status change during adolescence and young adulthood: A meta-analysis. *Journal of Adolescence*, 33(5), 683-698. <https://doi.org/10.1016/j.adolescence.2009.11.002>
- Kunnen, E. S. (2006). Are conflicts the motor in identity change? *Identity*, 6(2), 169-186. https://doi.org/10.1207/s1532706xid0602_3
- Kunnen, E. S. (Ed.). (2012). *A dynamic systems approach to adolescent development*. Psychology Press.
- Kunnen, S., & van Geert, P. (2012). General characteristics of a dynamic systems approach. In S. Kunnen (Ed.), *A dynamic systems approach to adolescent development* (pp. 15–34). Psychology Press.
- Kunnen, E. S., Sappa, V., van Geert, P. L. C., & Bonica, L. (2008). The shapes of commitment development in emerging adulthood. *Journal of Adult Development*, 15(3-4), 113-131. <https://doi.org/10.1007/s10804-008-9042-y>
- Labrague, L. J. (2014). Facebook use and adolescents' emotional states of depression, anxiety, and stress. *Health Science Journal*, 8(1), 80-89. ISSN: 11087366
- Lanz, M., & Tagliabue, S. (2007). Do I really need someone in order to become an adult? Romantic relationships during emerging adulthood in Italy. *Journal of Adolescent Research*, 22(5), 531-549. <https://doi.org/10.1177/0743558407306713>
- Levinson, D. J. (1977). The mid-life transition: A period in adult psychosocial development.

Psychiatry, 40(2), 99-112. <https://doi.org/10.1080/00332747.1977.11023925>

Lichtwarck-Aschoff, A., Kunnen, S. E., & van Geert, P. L. C. (2009). Here we go again: A dynamic systems perspective on emotional rigidity across parent–adolescent conflicts.

Developmental Psychology, 45(5), 1364-1375. <https://doi.org/10.1037/a0016713>

Lichtwarck-Aschoff, A., van Geert, P., Bosma, H., & Kunnen, S. (2008). Time and identity: A framework for research and theory formation. *Developmental Review*, 28(3), 370-400.

<https://doi.org/10.1016/j.dr.2008.04.001>

Luyckx, K., Goossens, L., Soenens, B., & Beyers, W. (2006). Unpacking commitment and exploration: Preliminary validation of an integrative model of late adolescent identity formation. *Journal of Adolescence*, 29(3), 361-378.

<https://doi.org/10.1016/j.adolescence.2005.03.008>

Luyckx, K., Klimstra, T. A., Duriez, B., Petegem, S. V., Beyers, W., Teppers, E., & Goossens, L. (2013). Personal identity processes and self-esteem: Temporal sequences in high school and college students. *Journal of Research in Personality*, 47(2), 159-170.

<https://doi.org/10.1016/j.jrp.2012.10.005>

Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality*, 42(1), 58-82.

<https://doi.org/10.1016/j.jrp.2007.04.004>

Luyckx, K., Seiffge-Krenke, I., Schwartz, S. J., Crocetti, E., & Klimstra, T. A. (2014a). Identity configurations across love and work in emerging adults in romantic relationships. *Journal of Applied Developmental Psychology*, 35(3), 192-203.

<https://doi.org/10.1016/j.appdev.2014.03.007>

Luyckx, K., Seiffge-Krenke, I., Schwartz, S. J., Crocetti, E., & Klimstra, T. A. (2014b). Identity configurations across love and work in emerging adults in romantic relationships. *Journal of*

Applied Developmental Psychology, 35(3), 192-203.

<https://doi.org/10.1016/j.appdev.2014.03.007>

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology*, 3(5), 551-558. <https://doi.org/10.1037/h0023281>

Marcia, J. E. (1976). Identity six years after: A follow-up study. *Journal of Youth and Adolescence*, 5(2), 145-160. <https://doi.org/10.1007/BF01537490>

Marcia, J. E. (1993). The ego identity status approach to ego identity. In J. E. Marcia, A. S. Waterman, D. R. Matteson, S. L. Archer, & J. L. Orlofsky, *Ego Identity* (p. 3-21). Springer New York. https://doi.org/10.1007/978-1-4613-8330-7_1

McLean, K. C., Syed, M., & Shucard, H. (2016). Bringing identity content to the fore: Links to identity development processes. *Emerging Adulthood*, 4(5), 356-364.

<https://doi.org/10.1177/2167696815626820>

McLean, K. C., & Syed, M. U. (Eds.). (2015). *The Oxford handbook of identity development*. Oxford University Press.

McLean, K. C., Syed, M., Yoder, A., & Greenhoot, A. F. (2016). The role of domain content in understanding identity development processes. *Journal of Research on Adolescence*, 26(1), 60-75. <https://doi.org/10.1111/jora.12169>

Meeus, W. (2018). The identity status continuum revisited: A comparison of longitudinal findings with Marcia's model and dual cycle models. *European Psychologist*, 23(4), 289-299.

<https://doi.org/10.1027/1016-9040/a000339>

Meeus, W., Iedema, J., Helsen, M., & Vollebergh, W. (1999). Patterns of adolescent identity development: Review of literature and longitudinal analysis. *Developmental Review*, 19(4), 419-461. <https://doi.org/10.1006/drev.1999.0483>

Meier, A., & Allen, G. (2009). Romantic relationships from adolescence to young adulthood: Evidence from the national longitudinal study of adolescent health. *The Sociological Quarterly*, 50(2), 308-335. <https://doi.org/10.1111/j.1533-8525.2009.01142.x>

- Meijers, F., & Lengelle, R. (2012). Narratives at work: The development of career identity. *British Journal of Guidance & Counselling*, 40(2), 157-176.
<https://doi.org/10.1080/03069885.2012.665159>
- Michikyan, M. (2020). Linking online self-presentation to identity coherence, identity confusion, and social anxiety in emerging adulthood. *British Journal of Developmental Psychology*, 38(4), 543-565. <https://doi.org/10.1111/bjdp.12337>
- Michikyan, M., Dennis, J., & Subrahmanyam, K. (2015). Can you guess who I am? Real, ideal, and false self-presentation on Facebook among emerging adults. *Emerging Adulthood*, 3(1), 55-64. <https://doi.org/10.1177/2167696814532442>
- Miller, M. D., & Ferris, D. G. (1993). Measurement of subjective phenomena in primary care research: The Visual Analogue Scale. *Family Practice Research Journal*, 13(1), 15-24.
- Molenaar, P. C. M. (2004). A manifesto on psychology as idiographic science: Bringing the person back into scientific psychology, this time forever. *Measurement: Interdisciplinary Research & Perspective*, 2(4), 201-218. https://doi.org/10.1207/s15366359mea0204_1
- Molenaar, P. C. M., & Campbell, C. G. (2009). The new person-specific paradigm in psychology. *Current Directions in Psychological Science*, 18(2), 112-117. <https://doi.org/10.1111/j.1467-8721.2009.01619.x>
- Montgomery, M. J., & Ct, J. E. (2006). College as a transition to adulthood. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell Handbook of Adolescence* (p. 149-172). Blackwell Publishing Ltd. <https://doi.org/10.1002/9780470756607.ch8>
- Moulin, S. (2012). L'Emergence de l'âge adulte: De l'impact des référentiels institutionnels en France et au Québec. *Sociologies*. <https://doi.org/10.4000/sociologies.3841>
- Müller, W., & Gangl, M. (Eds.). (2003). *Transitions from education to work in Europe: The integration of youth into EU labour markets*. Oxford University Press.
- MuthEn, L. K., & MuthEn, B. (1998-2017). *Mplus User's Guide*. Los Angeles, CA: MuthEn &

MuthEn.

- Negru-Subtirica, O., Pop, E. I., & Crocetti, E. (2017). A longitudinal integration of identity styles and educational identity processes in adolescence. *Developmental Psychology, 53*(11), 2127-2138. <https://doi.org/10.1037/dev0000325>
- Ostic, D., Qalati, S. A., Barbosa, B., Shah, S. M. M., Galvan Vela, E., Herzallah, A. M., & Liu, F. (2021). Effects of social media use on psychological well-being: A mediated model. *Frontiers in Psychology, 12*, 678-766. <https://doi.org/10.3389/fpsyg.2021.678766>
- Owen, J., & Fincham, F. D. (2011). Effects of gender and psychosocial factors on “friends with benefits” relationships among young adults. *Archives of Sexual Behavior, 40*(2), 311-320. <https://doi.org/10.1007/s10508-010-9611-6>
- Paul, E. L., McManus, B., & Hayes, A. (2000). “Hookups”: Characteristics and correlates of college students’ spontaneous and anonymous sexual experiences. *Journal of Sex Research, 37*(1), 76-88. <https://doi.org/10.1080/00224490009552023>
- Paul, E. L., Wenzel, A., & Harvey, J. (2008). Hookups: A facilitator or a barrier to relationship initiation and intimacy development? In S. Sprecher, A. Wenzel, & J. Harvey (Eds.), *Handbook of relationship initiation* (pp. 375–390). Psychology Press
- Peck, S. C. (2018). Revisiting Erikson’s neglected concepts of ego-identity and self-identity: Hidden persuaders in the twilight zones of awareness. *Archives of Psychology, 2*(1), 1-25. ISSN: 2573-790
- Phinney, J. S., & Tarver, S. (1988). Ethnic identity search and commitment in black and white eighth graders. *The Journal of Early Adolescence, 8*(3), 265-277. <https://doi.org/10.1177/0272431688083004>
- Piaget, J., & Inhelder, B. (1998). *La genèse des structures logiques élémentaires : Classification et sériations*. Delachaux et Niestlé.
- Prensky, M. (2001). Digital natives, digital immigrants Part 1. *On the Horizon, 9*(5), 1-6. <https://doi.org/10.1108/10748120110424816>

- Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841-1848. <https://doi.org/10.1016/j.chb.2013.02.014>
- Putnam, R. D. (1995). Tuning in, tuning out: The strange disappearance of social capital in America. *PS: Political Science and Politics*, 28(4), 664. <https://doi.org/10.2307/420517>
- Putnam, R. D. (2001). *Bowling alone: The collapse and revival of American community* (1. Touchstone ed). Simon & Schuster [u.a.].
- R Core Team (2020). *R: A Language and environment for statistical computing. (Version 4.0)* [Computer software]. <https://cran.r-project.org>. (R packages retrieved from MRAN snapshot 2020-08-24)
- Schubach, E., Zimmermann, J., Noack, P., & Neyer, F. J. (2017). Short forms of the Utrecht-Management of Identity Commitments Scale (U-MICS) with the domains of job, romantic relationship, and region. *Journal of Adolescence*, 54(1), 104-109. <https://doi.org/10.1016/j.adolescence.2016.11.012>
- Schwartz, S. J. (2001). The evolution of Eriksonian and, neo-Eriksonian identity theory and research: A review and integration. *Identity*, 1(1), 7-58. <https://doi.org/10.1207/S1532706XSCHWARTZ>
- Schwartz, S. J., Zamboanga, B. L., Luyckx, K., Meca, A., & Ritchie, R. A. (2013). Identity in emerging adulthood: Reviewing the field and looking forward. *Emerging Adulthood*, 1(2), 96-113. <https://doi.org/10.1177/2167696813479781>
- Seiffge-Krenke, I. (2003). Testing theories of romantic development from adolescence to young adulthood: Evidence of a developmental sequence. *International Journal of Behavioral Development*, 27(6), 519-531. <https://doi.org/10.1080/01650250344000145>
- Sherlock, M., & Wagstaff, D. L. (2019). Exploring the relationship between frequency of Instagram use, exposure to idealized images, and psychological well-being in women. *Psychology of Popular Media Culture*, 8(4), 482-490. <https://doi.org/10.1037/ppm0000182>

- Shirai, T., & Kunnen, E. S. (2020). The relation between commitment and a balanced time orientation in adulthood: Differences between and within individuals. *Identity, 20*(2), 132-142. <https://doi.org/10.1080/15283488.2020.1747468>
- Shirai, T., Nakamura, T., & Katsuma, K. (2016). Identity development in relation to time beliefs in emerging adulthood: A long-term longitudinal study. *Identity, 16*(1), 45-58. <https://doi.org/10.1080/15283488.2015.1121817>
- Shulman, S., & Connolly, J. (2013). The challenge of romantic relationships in emerging adulthood: Reconceptualization of the field. *Emerging Adulthood, 1*(1), 27-39. <https://doi.org/10.1177/2167696812467330>
- Skhirtladze, N., Javakhishvili, N., Schwartz, S. J., Beyers, W., & Luyckx, K. (2016). Identity processes and statuses in post-Soviet Georgia: Exploration processes operate differently. *Journal of Adolescence, 47*(1), 197-209. <https://doi.org/10.1016/j.adolescence.2015.08.006>
- Skorikov, V. B., & Vondracek, F. W. (2011). Occupational identity. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of Identity Theory and Research* (p. 693-714). Springer New York. https://doi.org/10.1007/978-1-4419-7988-9_29
- Slugoski, B. R., Marcia, J. E., & Koopman, R. F. (1984). Cognitive and social interactional characteristics of ego identity statuses in college males. *Journal of Personality and Social Psychology, 47*(3), 646-661. <https://doi.org/10.1037/0022-3514.47.3.646>
- Smahel, D., & Subrahmanyam, K. (2007). "Any girls want to chat press 911": Partner selection in monitored and unmonitored teen chat rooms. *CyberPsychology & Behavior, 10*(3), 346-353. <https://doi.org/10.1089/cpb.2006.9945>
- Spieler, D. H., & Schumacher, E. (Eds.). (2020). *New methods in cognitive psychology*. Routledge.
- Spitzer, E. G., Crosby, E. S., & Witte, T. K. (2023). Looking through a filtered lens: Negative social comparison on social media and suicidal ideation among young adults. *Psychology of Popular Media, 12*(1), 69-76. <https://doi.org/10.1037/ppm0000380>
- Stephen, J., Fraser, E., & Marcia, J. E. (1992). Moratorium-achievement (Mama) cycles in lifespan

- identity development: Value orientations and reasoning system correlates. *Journal of Adolescence*, 15(3), 283-300. [https://doi.org/10.1016/0140-1971\(92\)90031-Y](https://doi.org/10.1016/0140-1971(92)90031-Y)
- Stevens, S. B., & Morris, T. L. (2007). College dating and social anxiety: Using the internet as a means of connecting to others. *CyberPsychology & Behavior*, 10(5), 680-688. <https://doi.org/10.1089/cpb.2007.9970>
- Subrahmanyam, K., & Šmahel, D. (2011). Constructing identity online: Identity exploration and self-presentation. In K. Subrahmanyam & D. Smahel, *Digital Youth* (p. 59-80). Springer New York. https://doi.org/10.1007/978-1-4419-6278-2_4
- Subrahmanyam, K., & Smahel, D. (2011). *Digital Youth*. Springer New York. <https://doi.org/10.1007/978-1-4419-6278-2>
- Subrahmanyam, K., Smahel, D., & Greenfield, P. (2006). Connecting developmental constructions to the internet: Identity presentation and sexual exploration in online teen chat rooms. *Developmental Psychology*, 42(3), 395-406. <https://doi.org/10.1037/0012-1649.42.3.395>
- Sumter, S. R., Vandenbosch, L., & Ligtenberg, L. (2017). Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder. *Telematics and Informatics*, 34(1), 67-78. <https://doi.org/10.1016/j.tele.2016.04.009>
- Tamura, H., Nishida, T., Tsuji, A., & Sakakibara, H. (2017). Association between excessive use of mobile phone and insomnia and depression among Japanese adolescents. *International Journal of Environmental Research and Public Health*, 14(7), 701. <https://doi.org/10.3390/ijerph14070701>
- Thelen, E. (1992). Development as a dynamic system. *Current Directions in Psychological Science*, 1(6), 189-193. <https://doi.org/10.1111/1467-8721.ep10770402>
- Trible, H. B. (2015). *Emerging adulthood: Defining the life stage and its developmental tasks* (Doctoral dissertation, James Madison university). Retrieved from <https://commons.lib.jmu.edu/edspec201019/2/>
- Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2018). Increases in depressive

symptoms, suicide-related outcomes, and suicide rates among U.S. adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science*, 6(1), 3-17.

<https://doi.org/10.1177/2167702617723376>

Tynes, B., Reynolds, L., & Greenfield, P. M. (2004). Adolescence, race, and ethnicity on the Internet: A comparison of discourse in monitored vs. unmonitored chat rooms. *Journal of Applied Developmental Psychology*, 25(6), 667-684.

<https://doi.org/10.1016/j.appdev.2004.09.003>

Ulanova, E. L. (2020). *The influence of social media on modern romantic relationships: A literary analysis of new media studies*. <https://doi.org/10.13140/RG.2.2.10704.74247>

van der Gaag, M. A. E., Albers, C. J., & Kunnen, E. S. (2017). Micro-level mechanisms of identity development: The role of emotional experiences in commitment development. *Developmental Psychology*, 53(11), 2205-2217. <https://doi.org/10.1037/dev0000336>

van der Gaag, M. A. E., de Ruiter, N. M. P., & Kunnen, E. S. (2016). Micro-level processes of identity development: Intra-individual relations between commitment and exploration. *Journal of Adolescence*, 47, 38-47. <https://doi.org/10.1016/j.adolescence.2015.11.007>

van der Krieke, L., Blaauw, F. J., Emerencia, A. C., Schenk, H. M., Slaets, J. P. J., Bos, E. H., de Jonge, P., & Jeronimus, B. F. (2017). Temporal dynamics of health and well-being: A crowdsourcing approach to momentary assessments and automated generation of personalized feedback. *Psychosomatic Medicine*, 79(2), 213-223.

<https://doi.org/10.1097/PSY.0000000000000378>

van de Velde, C. (2008). *Devenir adulte : Sociologie comparée de la jeunesse en Europe* [Becoming an adult: Comparative sociology of youth in Europe] (1st ed.). Paris, France: Presses universitaires de France.

van Geert, P. (1994). *Dynamic systems of development: Change between complexity and chaos*. Harvester Wheatsheaf.

van Hoof, A. (1999). The identity status field re-reviewed: An update of unresolved and neglected

issues with a view on some alternative approaches. *Developmental Review*, 19(4), 497-556.

<https://doi.org/10.1006/drev.1999.0484>

Vautier, S. (2011). Measuring change with multiple visual analog scales: Application to tense arousal. *European Journal of Psychological Assessment*, 27(2), 111-120.

<https://doi.org/10.1027/1015-5759/a000051>

Vincent, Y., & Lannegrand, L. (2022). The role of social media emotional experiences in identity construction : Exploring links between micro-identity processes. *Identity*, 22(1), 65-81.

<https://doi.org/10.1080/15283488.2021.2012181>

Vleioras, G., & Bosma, H. A. (2005). Predicting change in relational identity commitments :

Exploration and emotions. *Identity*, 5(1), 35-56. https://doi.org/10.1207/s1532706xid0501_3

Vosylis, R., Erentaitė, R., & Crocetti, E. (2018). Global versus domain-specific identity processes :

Which domains are more relevant for emerging adults? *Emerging Adulthood*, 6(1), 32-41.

<https://doi.org/10.1177/2167696817694698>

Wang, J.-L., Jackson, L. A., Gaskin, J., & Wang, H.-Z. (2014). The effects of Social Networking Site (SNS) use on college students' friendship and well-being. *Computers in Human Behavior*, 37, 229-236.

<https://doi.org/10.1016/j.chb.2014.04.051>

Waterman, A. S. (1982). Identity development from adolescence to adulthood: An extension of theory and a review of research. *Developmental Psychology*, 18(3), 341-358.

<https://doi.org/10.1037/0012-1649.18.3.341>

WeareSocial & Hootsuite (2022, January). *Digital 2022 Global Overview Report*. Retrieved from

<https://wearesocial.com/fr/blog/2022/01/digital-2022-une-nouvelle-annee-de-croissance-exceptionnelle/>

Weisstein, E. W. (2007). *Concise encyclopedia of mathematics CD-ROM* (2. ed). Chapman & Hall/CRC.

Wijnants, M. L. (2014). A review of theoretical perspectives in cognitive science on the presence of 1 / f scaling in coordinated physiological and cognitive processes. *Journal of Nonlinear*

Dynamics, 2014, 1-17. <https://doi.org/10.1155/2014/962043>

Wijnants, M. L., Bosman, A. M. T., Hasselman, F., Cox, R. F. A., & Van Orden, G. C. (2009). 1/f scaling in movement time changes with practice in precision aiming. *Nonlinear Dynamics, Psychology, and Life Sciences*, 13(1), 79-98.

Wu, J.-H., Wang, S.-C., & Tsai, H.-H. (2010). Falling in love with online games: The uses and gratifications perspective. *Computers in Human Behavior*, 26(6), 1862-1871.

<https://doi.org/10.1016/j.chb.2010.07.033>

Yan, Z. (Ed.). (2012). *Encyclopedia of Cyber Behavior*: IGI Global. <https://doi.org/10.4018/978-1-4666-0315-8>

Zhang, X. and Wang, C.M. (2014) Reasonableness of the minimum wage in Shanghai—An empirical analysis based on the angle of minimum wage earners. *Northeast Economic Management*, 10, 12-16.

Zealley, A. K., & Aitken, R. C. (1969). Measurement of mood. *Proceedings of the Royal Society of Medicine*, 62(10), 993-996.

Zimmermann, G., Lannegrand-Willems, L., Safont-Mottay, C., & Cannard, C. (2015). Testing new identity models and processes in French-speaking adolescents and emerging adults students. *Journal of Youth and Adolescence*, 44(1), 127-141. [https://doi.org/10.1007/s10964-013-0005-](https://doi.org/10.1007/s10964-013-0005-7)

[7](https://doi.org/10.1007/s10964-013-0005-7)

Zimmermann, G., Mahaim, E. B., Mantzouranis, G., Genoud, P. A., & Crocetti, E. (2012). Brief report: The Identity Style Inventory (ISI-3) and the Utrecht-Management of Identity Commitments Scale (U-MICS): Factor structure, reliability, and convergent validity in French-speaking university students. *Journal of Adolescence*, 35(2), 461-465.

<https://doi.org/10.1016/j.adolescence.2010.11.013>

Appendices

Appendix 1: Consent information statements for Study 1 and Study 2	247
Appendix 2: Measurement tools	248
1. Utrecht Management of Identity Commitment Scale short version	248
1. Repeated Exploration and Commitment Scale adapted	251
2. Daily measures of social media emotional experiences (Study 1)	252
3. Daily measures of social media emotional experiences: Assessing congruency with commitments (Study 2)	254
Appendix 3: Descriptive statistics and correlational analyses Study 1	256
1. Educational domain	256
2. Romantic relationships domain	258
3. Mann-Whitney U tests between Education and Romantic relationships domain	261
Appendix 4: Descriptive statistics and correlational analyses Study 2	262
1. Descriptive statistics and correlational analyses across individuals in the educational domain	262
2. Descriptive statistics and correlational analyses across individuals open to change and individuals who were not open to change in the educational domain	265
3. Descriptive statistics and correlational analyses across individuals in the romantic relationships domain	271
4. Descriptive statistics and correlational analyses across individuals open to change and individuals who were not open to change in the romantic relationships domain	273
5. Mann-Whitney U tests between the educational and romantic relationships domain	278
6. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the educational domain	279
7. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the romantic relationships domain	283
Appendix 5: Published manuscript	287

Appendix 1: Consent information statements for Study 1 and Study 2

N° d'Etude : _____

Exemplaire à conserver

université
de BORDEAUX



Laboratoire de Psychologie,
EA 4139

<https://labpsy.u-bordeaux.fr/>

Date : _____

Nom du participant :

Responsable de la recherche :

Thème de la recherche:

Consentement éclairé

Cette recherche est menée par et s'inscrit dans le cadre des travaux du Laboratoire de Psychologie EA 4139. Vos données sont collectées dans le but de

Vos données seront conservées par le responsable de traitement dans un lieu sécurisé et pourront être utilisées dans le cadre de recherches ultérieures. Le responsable de traitement s'engage à ne pas transmettre vos données à des tiers non habilités à travailler sur cette recherche.

Elle respecte les principes fixés par le code de déontologie des Psychologues ainsi que ceux de la CNIL (Commission Nationale de l'Informatique et des Libertés), du RGPD (Règlement Général sur la Protection des Données), du CPP (Comité de Protection des Personnes), et de l'ARS (Agence Régionale de Santé).

* les responsables de la recherche vous garantissent la confidentialité des résultats,

* vous avez le droit de vous retirer de cette recherche quand vous le souhaitez,

* vous avez le droit de connaître les résultats généraux de l'étude lorsqu'ils seront disponibles,

* votre participation repose sur le volontariat et nécessite la signature de ce consentement éclairé.

Le _____
Signature de l'investigateur

Signature du participant

Appendix 2: Measurement tools

1. Utrecht Management of Identity Commitment Scale short version

*Pour chaque affirmation, veuillez indiquer à l'aide du curseur ce qui, selon-vous, correspond le mieux à votre opinion.

Ce que j'étudie m'offre des garanties de stabilité dans la vie	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Ce que j'étudie me donne confiance en moi	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Ce que j'étudie m'offre des garanties pour l'avenir	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je m'intéresse vraiment à comprendre la valeur de ce que j'étudie	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je réfléchis souvent à ce que j'étudie	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je parle souvent avec d'autres personnes de ce que j'étudie	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je pense souvent qu'il serait préférable d'étudier des choses différentes	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je pense souvent qu'étudier des choses différentes rendrait ma vie plus intéressante	Tout à fait faux	<input type="range"/>	Tout à fait vrai
En fait, je cherche à étudier des choses différentes	Tout à fait faux	<input type="range"/>	Tout à fait vrai

*Pour chaque affirmation, veuillez indiquer à l'aide du curseur ce qui, selon-vous, correspond le mieux à votre opinion.

La relation avec mon/ma partenaire m'offre des garanties de stabilité dans la vie	Tout à fait faux	<input type="range"/>	Tout à fait vrai
La relation avec mon/ma partenaire me donne confiance en moi	Tout à fait faux	<input type="range"/>	Tout à fait vrai
La relation avec mon/ma partenaire m'offre des garanties pour l'avenir	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je m'intéresse vraiment à comprendre la valeur de la relation que j'ai avec mon/ma partenaire	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je cherche souvent à savoir ce que les autres pensent de mon/ma partenaire	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je parle souvent avec d'autres personnes de la relation que j'ai avec mon/ma partenaire	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je pense souvent qu'il serait préférable de trouver un(e) autre partenaire	Tout à fait faux	<input type="range"/>	Tout à fait vrai
Je pense souvent qu'avoir une autre personne comme partenaire rendrait ma vie plus intéressante	Tout à fait faux	<input type="range"/>	Tout à fait vrai
En fait, je suis à la recherche d'un nouveau/ d'une nouvelle partenaire	Tout à fait faux	<input type="range"/>	Tout à fait vrai

📌 N.B.: Par « partenaire », nous voulons dire quelqu'un avec qui vous entretenez une relation "amoureuse" (quelle que soit la longueur de cette relation et le degré d'investissement dans cette relation).

1. Repeated Exploration and Commitment Scale adapted

*Aujourd'hui (les dernières 24h),

... vous êtes-vous demandé si vos études actuelles vous convenaient ?	Pas du tout	<input type="range"/>	Enormément
... avez-vous envisagé d'autres possibilités que vos études actuelles ?	Pas du tout	<input type="range"/>	Enormément
... avez-vous le sentiment que vos études actuelles vous correspondent ?	Pas du tout	<input type="range"/>	Enormément

*Aujourd'hui (les dernières 24h),

... vous êtes-vous demandé si ce que vous vivez dans vos relations amoureuses vous convenait ?	Pas du tout	<input type="range"/>	Enormément
... avez-vous envisagé d'autres possibilités que ce que vous vivez dans vos relations amoureuses ?	Pas du tout	<input type="range"/>	Enormément
... avez-vous le sentiment que ce que vous vivez dans vos relations amoureuses vous correspond ?	Pas du tout	<input type="range"/>	Enormément

📌 N.B.: Par "relation amoureuse", nous entendons toute relation vécue à travers le prisme de la romance, indépendamment de la durée de cette relation, de son intensité ou du degré d'engagement dans cette relation.

2. Daily measures of social media emotional experiences (Study 1)

*Durant les dernières 24h, combien de temps avez-vous utilisé les réseaux sociaux ?

Veillez choisir ... ▾

*Aujourd'hui (les dernières 24h),...

... dans quelle mesure vos expériences dans les réseaux sociaux ont-été en lien avec votre/vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

... dans quelle mesure ces expériences ont eu de l'importance pour votre/vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

... avez-vous ressenti comme positives ces expériences liées à votre/vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

... avez-vous ressenti comme négatives ces expériences liées à vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

*Aujourd'hui (les dernières 24h),...

... dans quelle mesure vos expériences dans les réseaux sociaux ont-été en lien avec vos études actuelles ?

Pas du tout



Énormément

... dans quelle mesure ces expériences ont eu de l'importance pour vos études ?

Pas du tout



Énormément

... avez-vous ressenti comme positives ces expériences liées à vos études ?

Pas du tout



Énormément

... avez-vous ressenti comme négatives ces expériences liées à vos études ?

Pas du tout



Énormément

3. Daily measures of social media emotional experiences: Assessing congruency with commitments (Study 2)

*Durant les dernières 24h, combien de temps avez-vous utilisé les réseaux sociaux ?

Veillez choisir ... ▾

*Aujourd'hui (les dernières 24h),...

... dans quelle mesure vos expériences dans les réseaux sociaux ont-été en lien avec votre/vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

... dans quelle mesure ces expériences ont eu de l'importance pour votre/vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

... avez-vous ressenti comme positives ces expériences liées à votre/vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

... avez-vous ressenti comme négatives ces expériences liées à vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

... dans quelle mesure ces expériences ont confirmé votre engagement dans votre/vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

... dans quelle mesure ces expériences ont infirmé votre engagement dans votre/vos relation(s) amoureuse(s) ?

Pas du tout



Énormément

*Aujourd'hui (les dernières 24h),...

... dans quelle mesure vos expériences dans les réseaux sociaux ont-été en lien avec vos études actuelles ?

Pas du tout



Énormément

... dans quelle mesure ces expériences ont eu de l'importance pour vos études ?

Pas du tout



Énormément

... avez-vous ressenti comme positives ces expériences liées à vos études ?

Pas du tout



Énormément

... avez-vous ressenti comme négatives ces expériences liées à vos études ?

Pas du tout



Énormément

... dans quelle mesure ces expériences ont confirmé votre engagement dans vos études ?

Pas du tout



Énormément

... dans quelle mesure ces expériences ont infirmé votre engagement dans vos études ?

Pas du tout



Énormément

Appendix 3: Descriptive statistics and correlational analyses Study 1

1. Educational domain

Table 12

Descriptives statistics in the educational domain

	TSSM	DRE	IED	PE	NE	EF	EA	CF	EXP	REC	COM	OC
Mean	7.93	29.2	24.6	39.4	22.4	29.2	26.4	61.3	59.0	30.8	56.4	44.4
Median	8.00	27.3	22.5	43.5	21.8	26.3	18.8	62.7	62.4	29.8	59.8	45.6
Standard deviation	3.48	20.3	19.4	23.1	17.9	22.5	24.1	25.4	20.8	21.9	23.3	11.2
Minimum	1.78	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.111	0.00	0.00	20.6
Maximum	13.0	76.1	90.7	87.3	86.1	89.3	99.0	100	94.8	68.3	100	67.8

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media; OC: Openness to change.

Table 13

Correlations between macro-level identity processes, micro-level identity processes and indicators of social media emotional experiences in the educational domain

	DRE	IED	PE	NE	EF	EA	CF	EXP	REC	COM	OC	TSSM
DRE	—											
IED	0.872 ***	—										
PE	0.500 ***	0.502 ***	—									
NE	0.177	0.131	0.168	—								
EF	0.065	0.086	0.113	0.154	—							
EA	0.010	-0.034	-0.042	0.232	0.661 ***	—						
CF	0.113	0.232	0.188	-0.019	-0.230	-0.498 ***	—					
EXP	0.348 **	0.403 ***	0.124	0.088	0.073	0.006	0.366 **	—				
REC	0.158	0.189	-0.005	0.278 *	0.197	0.456 ***	-0.290 *	0.167	—			
COM	0.049	0.115	0.159	-0.133	0.014	-0.281 *	0.600 ***	0.600 ***	-0.290 *	—		
OC	0.213	0.206	-0.043	0.314 **	0.157	0.452 ***	-0.342 **	0.256 *	0.913 ***	-0.432 ***	—	
TSSM	-0.006	0.064	0.333	-0.046	-0.366 *	-0.356 *	0.303	-0.300	-0.207	-0.111	-0.247	—

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media; OC: openness to change. * $p < .05$, ** $p < .01$, *** $p < .001$

2. Romantic relationships domain

Table 14

Descriptives statistics in the romantic relationships domain

	DRE	IMP	PE	NE	EF	EA	CF	EXP	REC	COM	OC	TSSM
N	35	35	35	35	35	35	35	35	35	35	35	35
Mean	22.1	17.1	38.8	20.1	28.6	26.0	53.9	45.1	24.4	48.6	40.3	7.93
Median	18.9	12.4	43.9	17.6	26.0	19.1	53.1	49.0	18.4	49.5	38.1	8.00
Standard deviation	18.8	17.8	25.3	16.8	24.4	23.7	27.2	18.4	22.3	25.9	11.7	3.48
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.111	0.00	0.00	20.6	1.78
Maximum	76.1	90.7	87.3	66.4	89.3	81.3	100	76.9	63.1	92.0	63.6	13.0

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media; OC: Openness to change.

Table 15

Correlations between macro-level identity processes, micro-level identity processes and indicators of social media emotional experiences in the romantic relationships domain

	DRE	IMP	PE	NE	EF	EA	CF	EXP	REC	COM	OC	TSSM
DRE	—											
IMP	0.782 ***	—										
PE	0.635 ***	0.672 ***	—									
NE	0.150	0.122	0.241	—								
EF	0.169	0.385 *	0.331	0.077	—							
EA	0.035	0.107	0.084	0.065	0.577 ***	—						
CF	0.144	0.180	0.278	0.051	-0.071	-0.557 ***	—					
EXP	0.082	0.108	0.128	-0.030	0.020	0.008	0.313	—				
REC	-0.034	0.026	0.058	0.423 *	0.237	0.590 ***	-0.414 *	-0.052	—			
COM	-0.029	-0.005	0.087	-0.187	-0.065	-0.396 *	0.676 ***	0.706 ***	-0.497 **	—		
OC	0.012	0.052	0.023	0.388 *	0.181	0.639 ***	-0.555 ***	-0.004	0.931 ***	-0.600 ***	—	
TSSM	0.262	0.090	0.237	0.157	0.051	-0.038	-0.059	-0.181	0.161	-0.175	0.112	—

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media; OC: openness to change. * $p < .05$, ** $p < .01$, *** $p < .001$

3. Mann-Whitney U tests between Education and Romantic relationships domain

Table 16

Mann-Whitney U tests between the educational and romantic relationships domain

Variables	Test	Statistic	p	Mean difference	95% Confidence Interval	
					Lower	Upper
DRE	Mann-Whitney U	345	0.001	16.37	5.61	26.8
IED	Mann-Whitney U	294	< .001	16.74	6.95	25.3
PE	Mann-Whitney U	583	0.729	1.89	-9.56	14.3
NE	Mann-Whitney U	524	0.301	3.92	-3.22	12.3
EF	Mann-Whitney U	561	0.549	2.78	-8.06	11.7
EA	Mann-Whitney U	612	1.000	4.44e-6	-9.29	10.5
CF	Mann-Whitney U	409	0.017	16.17	2.62	29.1
EXP	Mann-Whitney U	118	< .001	27.83	19.44	33.8
REC	Mann-Whitney U	387	0.008	12.56	3.94	25.2
COM	Mann-Whitney U	395	0.011	15.61	4.22	26.7
OC	Mann-Whitney U	374	0.005	8.35	2.94	14.1

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media

Appendix 4: Descriptive statistics and correlational analyses Study 2

1. Descriptive statistics and correlational analyses across individuals in the educational domain

Table 17
Descriptives statistics in the educational domain across all individuals

	DRE	IED	PE	NE	AGR	DGR	EF	EA	CF
N	78	78	78	78	78	78	78	78	78
Mean	29.9	27.5	39.0	19.9	35.6	17.9	23.2	22.3	72.1
Median	28.6	26.0	41.6	14.1	40.9	10.6	13.3	11.0	74.2
Standard deviation	22.5	22.5	23.0	17.9	23.2	18.9	22.5	25.3	21.6
Minimum	0.00	0.00	0.286	0.00	0.0714	0.00	0.00	0.00	0.0714
Maximum	91.6	94.3	93.0	60.4	97.8	84.3	100	99.0	100

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: times spent in the social media

Table 18

Correlations between micro-level identity processes and indicators of social media emotional experiences across all individuals in the educational domain

		DRE	IED	PE	NE	AGR	DGR	EF	EA	CF	TSSM
DRE	Spearman's rho	—									
IED	Spearman's rho	0.932 ***	—								
PE	Spearman's rho	0.777 ***	0.812 ***	—							
NE	Spearman's rho	0.364 **	0.466 ***	0.392 ***	—						
AGR	Spearman's rho	0.750 ***	0.796 ***	0.894 ***	0.322 **	—					
DGR	Spearman's rho	0.456 ***	0.592 ***	0.454 ***	0.696 ***	0.494 ***	—				
EF	Spearman's rho	0.373 ***	0.371 ***	0.145	0.373 ***	0.138	0.417 ***	—			
EA	Spearman's rho	0.149	0.199	-0.039	0.280 *	-0.039	0.372 ***	0.741 ***	—		
CF	Spearman's rho	-0.094	-0.075	0.161	-0.230 *	0.248 *	-0.121	-0.441 ***	-0.394 ***	—	
TSSM	Spearman's rho	0.090	0.137	0.197	0.040	0.238 *	0.094	-0.139	-0.066	0.126	—

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media; OC: openness to change. * $p < .05$, ** $p < .01$, *** $p < .001$

2. Descriptive statistics and correlational analyses across individuals open to change and individuals who were not open to change in the educational domain

Table 19

Descriptives statistics in the educational domain across individuals open to change and individuals who were not open to change

	Groups	DRE	IED	PE	NE	AGR	DGR	EF	EA	CF	TSSM
N	1	23	23	23	23	23	23	23	23	23	23
	2	26	26	26	26	26	26	26	26	26	26
Mean	1	39.2	36.0	38.4	26.6	35.6	23.2	46.9	46.4	59.6	6.81
	2	25.3	22.9	42.7	14.9	41.0	12.8	5.10	2.77	90.2	7.95
Median	1	43.9	35.5	41.7	24.4	42.3	18.3	49.4	48.6	58.7	7.19
	2	16.6	12.8	42.9	10.3	43.4	6.65	4.98	2.19	92.8	7.32
Standard deviation	1	21.8	22.7	20.6	19.5	20.1	18.7	18.0	20.0	22.2	3.36
	2	20.6	19.9	23.5	14.3	24.3	17.5	3.97	2.68	9.03	3.79
Minimum	1	0.00	0.143	0.286	0.143	0.0714	0.00	0.357	9.00	0.0714	1.53
	2	2.56	1.00	3.63	0.00	0.684	0.00	0.00	0.00	67.4	1.00
Maximum	1	69.7	75.8	69.5	58.2	62.1	57.0	70.0	96.5	98.6	13.0
	2	67.6	70.5	93.0	44.3	97.8	77.2	13.8	9.21	99.8	13.0
Shapiro-Wilk W	1	0.935	0.951	0.928	0.928	0.915	0.927	0.916	0.973	0.960	0.964
	2	0.884	0.883	0.965	0.861	0.975	0.716	0.47	0.859	0.871	0.935
Shapiro-Wilk p	1	0.137	0.305	0.098	0.098	0.052	0.093	0.055	0.75	0.462	0.542
	2	0.007	0.007	0.504	0.002	0.758	0.001	0.195	0.002	0.004	0.101

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media

Table 20

Correlations between micro-level identity processes and indicators of social media emotional experiences across individuals open to change in the educational domain

		DRE	IED	PE	NE	AGR	DGR	EF	EA	CF	TSSM	OC
DRE	Spearman's rho	—										
IED	Spearman's rho	0.944 ***	—									
PE	Spearman's rho	0.783 ***	0.785 ***	—								
NE	Spearman's rho	0.505 *	0.582 **	0.495 *	—							
AGR	Spearman's rho	0.836 ***	0.870 ***	0.897 ***	0.665 ***	—						
DGR	Spearman's rho	0.386	0.458 *	0.435 *	0.938 ***	0.549 **	—					
EF	Spearman's rho	0.010	0.104	0.196	0.287	0.159	0.374	—				
EA	Spearman's rho	-0.393	-0.322	-0.231	-0.277	-0.204	-0.161	-0.003	—			
CF	Spearman's rho	0.266	0.157	0.171	0.054	0.227	-0.097	-0.216	0.013	—		
TSSM	Spearman's rho	-0.103	0.000	0.116	-0.107	0.126	-0.201	-0.186	0.199	0.188	—	
OC	Spearman's rho	-0.235	-0.111	-0.079	-0.074	-0.127	0.106	0.484 *	0.515 *	-0.697 ***	-0.124	—

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media; OC: openness to change. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 21

Correlations between micro-level identity processes and indicators of social media emotional experiences across individuals who were not open to change in the educational domain

		DRE	IED	PE	NE	AGR	DGR	EF	EA	CF	TSSM	OC
DRE	Spearman's rho	—										
IED	Spearman's rho	0.881 ***	—									
PE	Spearman's rho	0.692 ***	0.769 ***	—								
NE	Spearman's rho	-0.227	-0.040	0.080	—							
AGR	Spearman's rho	0.694 ***	0.789 ***	0.861 ***	0.028	—						
DGR	Spearman's rho	0.104	0.358	0.223	0.513 **	0.341	—					
EF	Spearman's rho	-0.222	-0.297	-0.244	0.366	-0.109	0.132	—				
EA	Spearman's rho	-0.281	-0.204	-0.133	0.326	0.029	0.240	0.629 ***	—			
CF	Spearman's rho	-0.143	-0.062	0.099	-0.215	0.058	0.031	-0.333	-0.131	—		
TSSM	Spearman's rho	0.347	0.346	0.249	0.022	0.273	0.257	-0.017	0.070	0.130	—	
OC	Spearman's rho	-0.032	-0.119	-0.229	0.281	-0.121	0.034	0.672 ***	0.411 *	-0.887 ***	-0.134	—

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media; OC: openness to change. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 22

Results of Mann-Whitney U tests between individuals open to change and individuals who were not open to change in the educational domains.

Variables	Test	Statistic	p	Mean difference	95% Confidence Interval	
					Lower	Upper
DRE	Mann-Whitney U	201.00	0.050	16.77	-0.6458	28.934
IED	Mann-Whitney U	200.00	0.048	13.98	0.0500	26.800
PE	Mann-Whitney U	284.00	0.773	-2.02	-15.9375	10.970
NE	Mann-Whitney U	190.00	0.029	10.44	0.5262	22.526
AGR	Mann-Whitney U	265.50	0.509	-3.51	-17.2857	8.857
DGR	Mann-Whitney U	194.00	0.036	10.72	0.2375	21.585
EF	Mann-Whitney U	26.00	<.001	45.24	38.4711	51.381
EA	Mann-Whitney U	2.00	<.001	46.20	33.1228	51.853
CF	Mann-Whitney U	57.00	<.001	-31.97	-39.2180	-19.897
TSSM	Mann-Whitney U	254.00	0.373	-1.34	-3.5317	1.000

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media.

3. Descriptive statistics and correlational analyses across individuals in the romantic relationships domain

Table 23

Descriptives statistics between micro-level identity processes and indicators of social media emotional experiences across all individuals in the romantic relationships domain

	DRE	IED	PE	NE	AGR	DGR	EF	EA	CF
N	78	78	78	78	78	78	78	78	78
Mean	25.2	25.0	35.5	21.1	30.2	18.8	29.0	26.1	55.8
Median	20.0	22.1	39.2	13.6	28.6	12.2	23.9	23.1	52.4
Standard deviation	23.6	23.4	26.8	20.2	24.0	18.8	25.0	23.0	28.0
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.700
Maximum	89.2	89.2	96.3	84.9	98.2	77.6	99.6	95.0	100

DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: times spent in the social media

Table 24

Correlations between micro-level identity processes and indicators of social media emotional experiences across all individuals in the romantic relationships domain

		DRE	IED	PE	NE	AGR	DGR	EF	EA	CF	TSSM
DRE	Spearman's rho	—									
IED	Spearman's rho	0.951 ***	—								
PE	Spearman's rho	0.769 ***	0.773 ***	—							
NE	Spearman's rho	0.380 ***	0.359 **	0.373 ***	—						
AGR	Spearman's rho	0.745 ***	0.753 ***	0.822 ***	0.424 ***	—					
DGR	Spearman's rho	0.441 ***	0.438 ***	0.354 **	0.836 ***	0.480 ***	—				
EF	Spearman's rho	0.450 ***	0.393 ***	0.113	0.410 ***	0.214	0.482 ***	—			
EA	Spearman's rho	0.363 **	0.310 **	0.039	0.451 ***	0.088	0.552 ***	0.754 ***	—		
CF	Spearman's rho	0.178	0.187	0.389 ***	-0.150	0.412 ***	-0.208	-0.196	-0.442 ***	—	
TSSM	Spearman's rho	0.223 *	0.222	0.151	0.172	0.317 **	0.237 *	0.045	0.083	0.003	—

Note.. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: times spent in the social media. * p < .05, ** p < .01, *** p < .001

4. Descriptive statistics and correlational analyses across individuals open to change and individuals who were not open to change in the romantic relationships domain

Table 25

Descriptives statistics between micro-level identity processes and indicators of social media emotional experiences across individuals open to change in the romantic relationships domain

	ID	DRE	IED	PE	NE	AGR	DGR	EF	EA	CF	TSSM
N	1	25	25	25	25	25	25	25	25	25	25
	2	25	25	25	25	25	25	25	25	25	25
Mean	1	32.0	29.8	34.2	32.4	27.5	30.2	49.7	50.1	37.5	7.64
	2	25.4	26.9	42.9	9.94	37.4	8.42	9.92	5.81	82.5	7.12
Median	1	34.6	31.7	38.7	32.0	26.0	27.4	47.7	46.8	36.9	7.19
	2	13.9	19.0	50.2	3.52	35.6	2.95	6.48	3.48	89.4	6.47
Standard deviation	1	19.8	17.4	20.1	21.2	15.3	19.2	18.6	16.2	19.4	4.14
	2	25.5	26.1	33.2	13.9	28.5	11.4	10.7	6.18	16.8	3.46
Minimum	1	0.235	0.0588	0.0588	0.0588	0.0588	0.118	17.2	22.0	5.10	1.53
	2	0.105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.6	2.14
Maximum	1	69.0	54.6	74.4	84.9	50.3	77.6	93.9	95.0	80.7	13.0
	2	68.6	69.2	96.3	50.7	98.2	46.0	44.5	20.8	98.9	13.0
Shapiro-Wilk W	1	0.953	0.937	0.966	0.962	0.946	0.967	0.970	0.913	0.970	0.888
	2	0.830	0.834	0.900	0.720	0.938	0.735	0.828	0.824	0.808	0.930
Shapiro-Wilk p	1	0.292	0.127	0.536	0.458	0.208	0.563	0.639	0.036	0.640	0.010
	2	<.001	<.001	0.018	<.001	0.136	<.001	<.001	<.001	<.001	0.089

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spend in social media

Table 26

Correlations between micro-level identity processes and indicators of social media emotional experiences across individuals open to change in the romantic relationships domain.

		DRE	IED	PE	NE	AGR	DGR	EF	EA	CF	TSSM	OC
DRE	Spearman's rho	—										
IED	Spearman's rho	0.939 ***	—									
PE	Spearman's rho	0.706 ***	0.637 ***	—								
NE	Spearman's rho	0.493 *	0.499 *	0.330	—							
AGR	Spearman's rho	0.676 ***	0.662 ***	0.625 **	0.598 **	—						
DGR	Spearman's rho	0.618 **	0.627 **	0.321	0.807 ***	0.583 **	—					
EF	Spearman's rho	0.297	0.291	-0.099	0.291	0.335	0.248	—				
EA	Spearman's rho	0.227	0.266	0.075	-0.012	0.173	0.324	0.335	—			
CF	Spearman's rho	0.202	0.222	0.311	-0.112	0.404 *	-0.153	0.002	-0.198	—		
TSSM	Spearman's rho	0.185	0.149	0.037	0.422 *	0.166	0.463 *	0.045	-0.122	-0.070	—	
OC	Spearman's rho	0.181	0.181	-0.085	0.242	0.103	0.432 *	0.546 **	0.655 ***	-0.622 **	0.000	—

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 27

Correlations between micro-level identity processes and indicators of social media emotional experiences across individuals who were not open to change in the romantic relationships domain.

		DRE	IED	PE	NE	AGR	DGR	EF	EA	CF	TSSM	OC
DRE	Spearman's rho	—										
IED	Spearman's rho	0.922 ***	—									
PE	Spearman's rho	0.912 ***	0.918 ***	—								
NE	Spearman's rho	0.424 *	0.537 **	0.470 *	—							
AGR	Spearman's rho	0.884 ***	0.916 ***	0.935 ***	0.607 **	—						
DGR	Spearman's rho	0.326	0.414 *	0.389	0.704 ***	0.506 **	—					
EF	Spearman's rho	0.186	0.199	0.053	0.288	0.115	0.282	—				
EA	Spearman's rho	0.111	0.071	0.023	0.257	0.057	0.364	0.738 ***	—			
CF	Spearman's rho	0.483 *	0.458 *	0.544 **	0.245	0.408 *	0.021	0.025	0.088	—		
TSSM	Spearman's rho	0.384	0.243	0.298	0.345	0.378	0.444 *	0.129	0.232	0.000	—	
OC	Spearman's rho	-0.323	0.325	0.415 *	0.133	0.321	0.120	0.519 **	0.504 *	0.716 ***	0.049	—

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 28

Results of Mann-Whitney U tests between individuals open to change and individuals who were not open to change in the romantic relationships domains.

Variables	Test	Statistic	<i>p</i>	Mean difference	95% Confidence Interval	
					Lower	Upper
DRE	Mann-Whitney U	258.0	0.298	6.053	-5.08	23.71
IED	Mann-Whitney U	281.5	0.554	4.195	-10.23	20.87
PE	Mann-Whitney U	256.0	0.280	-9.905	-27.84	8.38
NE	Mann-Whitney U	117.0	< .001	25.664	11.16	32.62
AGR	Mann-Whitney U	251.0	0.239	-8.928	-24.32	5.75
DGR	Mann-Whitney U	88.5	< .001	21.688	11.55	29.69
EF	Mann-Whitney U	19.0	< .001	40.607	32.89	47.00
EA	Mann-Whitney U	0.0	< .001	41.750	37.65	47.53
CF	Mann-Whitney U	34.0	< .001	-44.780	-57.34	-36.05
TSSM	Mann-Whitney U	288.5	0.648	0.524	-1.73	2.85

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments; TSSM: time spent in social media.

5. Mann-Whitney U tests between the educational and romantic relationships domain

Table 29

Results of Mann-Whitney U tests between the educational and the romantic relationships domains

Variables	Test	Statistic	p	Mean difference	95% Confidence Interval	
					Lower	Upper
DRE	Mann-Whitney U	2564	0.090	4.215	-0.667	11.19
IED	Mann-Whitney U	2718	0.252	2.615	-2.605	8.54
PE	Mann-Whitney U	2722	0.257	3.573	-3.247	11.54
NE	Mann-Whitney U	3003	0.890	0.148	-4.737	4.24
AGR	Mann-Whitney U	2581	0.103	5.311	-1.000	13.54
DGR	Mann-Whitney U	2947	0.738	-0.560	-4.753	3.09
EF	Mann-Whitney U	2702	0.228	-3.527	-11.518	1.93
EA	Mann-Whitney U	2688	0.210	-2.993	-10.400	1.26
CF	Mann-Whitney U	1974	<.001	16.855	7.995	26.42

Note. DRE: domain-related experiences; IED: importance of the experiences; PE: positive emotions; NE: negative emotions; CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments.

6. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the educational domain

Table 30

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across all individuals in the educational domain

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		β	Lower	Upper	Sig	β	Lower	Upper	Sig
CF	CF	–	–	–	–	0.234	–	–	0*
EF		-0.173	-0.222	-0.12	0*	-0.052	-0.106	0	.024*
EA		-0.166	-0.215	-0.117	0*	-0.072	-0.121	-0.02	.004*
DGR		-0.113	-0.163	-0.066	0*	0.034	-0.021	0.082	.105
AGR		0.107	0.056	0.158	0*	0.008	-0.034	0.051	.359
CF	EF	-0.166	-0.22	-0.113	0*	-0.054	-0.12	0.016	.06
EF		–	–	–	–	0.163	–	–	.002* < p < 0*
EA		0.499	0.46	0.535	0*	0.072	-0.002	0.142	.026
DGR		0.121	0.07	0.173	0*	0.022	-0.041	0.074	.233
AGR		0.05	-0.003	0.105	.033	-0.014	-0.073	0.04	.308
CF	EA	-0.151	-0.203	-0.098	0*	-0.009	-0.083	0.054	.395
EF		0.509	0.466	0.547	0*	0.024	-0.05	0.1	.251
EA		–	–	–	–	0.199	–	–	0*
DGR		0.12	0.073	0.17	0*	0.022	-0.031	0.076	.213
AGR		0.044	-0.004	0.095	.034	-0.023	-0.071	0.024	.174
CF	DGR	-0.073	-0.133	-0.018	.004*	-0.036	-0.095	0.024	.167
EF		0.109	0.055	0.163	0*	0.007	-0.049	0.06	.403
EA		0.123	0.067	0.183	0*	0.042	-0.016	0.1	.086
DGR		–	–	–	–	0.122	–	–	.021* < p < 0*
AGR		0.204	0.154	0.257	0*	0.015	-0.043	0.077	.306
CF	AGR	0.151	0.185	0.331	0*	0.079	0.021	0.142	.004*
EF		0.07	0.012	0.123	.009*	0.042	-0.016	0.099	.071
EA		0.054	0.004	0.102	.018*	0.011	-0.039	0.066	.336
DGR		0.183	0.143	0.224	0*	-0.012	-0.069	0.045	.338
AGR		–	–	–	–	0.227	–	–	0*

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below .1).

Table 31

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across individuals who were

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		Estimate (SD)	Lower	Upper	Sig	Estimate (SD)	Lower	Upper	Sig
CF	CF	–	–	–	–	0.142	–	–	.045* < p < 0*
EF		-0.117	-0.209	-0.024	.007*	-0.098	-0.199	0.001	.026
EA		-0.249	-0.335	-0.156	0*	-0.094	-0.173	-0.013	.009*
DGR		-0.032	-0.125	0.057	.248	0.044	-0.025	0.109	.11
AGR		0.061	-0.053	0.165	.145	0.062	-0.016	0.134	.06
CF	EF	-0.175	-0.258	-0.087	0*	-0.098	-0.199	0.001	.026
EF		–	–	–	–	0.067	–	–	<i>.405 < p < .041</i>
EA		0.46	0.38	0.537	0*	-0.049	-0.208	0.103	.287
DGR		0.044	-0.047	0.134	.172	-0.078	-0.173	0.018	.06
AGR		0.045	-0.049	0.148	.177	-0.102	-0.188	-0.008	.017*
CF	EA	-0.186	-0.271	-0.091	0*	0.054	-0.077	0.194	.232
EF		0.53	0.452	0.598	0*	-0.064	-0.233	0.084	.203
EA		–	–	–	–	0.16	–	–	.005* < p < 0*
DGR		0.082	-0.011	0.173	.038	0.125	0.012	0.228	.012*
AGR		0.064	-0.032	0.161	.104	0	-0.113	0.137	.5
CF	DGR	-0.058	-0.148	0.029	.103	-0.074	-0.16	0.01	.045
EF		0.054	-0.036	0.141	.114	-0.056	-0.155	0.044	.145
EA		0.064	-0.024	0.157	.074	0.019	-0.064	0.109	.321
DGR		–	–	–	–	0.16	–	–	<i>.09 < p < 0*</i>
AGR		0.19	0.088	0.28	0*	0.021	-0.081	0.124	.347
CF	AGR	0.066	-0.024	0.157	.079	0.057	-0.057	0.152	.166
EF		0.094	0.001	0.185	.024*	0.094	0.007	0.176	.016*
EA		0.093	-0.004	0.196	.03	0.08	-0.024	0.175	.064
DGR		0.186	0.094	0.25	0*	-0.02	-0.134	0.101	.382
AGR		–	–	–	–	0.234	–	–	0*

not open to change in the educational domain.

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below .1).

Table 32

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across individuals open to change in the educational domain.

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		Estimate (SD)	Lower	Upper	Sig	Estimate (SD)	Lower	Upper	Sig
CF	CF	–	–	–	–	0.213	–	–	.002* < p < 0*
EF		-0.104	-0.195	-0.013	.014*	-0.044	-0.139	0.051	.198
EA		-0.078	-0.171	0.014	<i>.051</i>	0.001	-0.093	0.091	.491
DGR		-0.048	-0.133	0.039	<i>.146</i>	-0.031	-0.133	0.078	.278
AGR		0.222	0.135	0.308	0*	0.22	-0.088	0.140	.344
CF	EF	-0.057	-0.155	0.035	<i>.104</i>	0.074	-0.03	0.173	<i>.082</i>
EF		–	–	–	–	0.211	–	–	.001* < p < 0*
EA		0.46	0.373	0.54	0*	-0.037	-0.145	0.075	.264
DGR		0.173	0.074	0.27	0*	0.001	-0.087	0.096	.495
AGR		0.018	-0.08	0.121	<i>.359</i>	0.072	-0.028	0.166	<i>.082</i>
CF	EA	-0.025	-0.118	0.056	<i>.281</i>	-0.07	-0.033	0.162	<i>.083</i>
EF		0.493	0.419	0.567	0*	0.087	-0.028	0.2	<i>.073</i>
EA		–	–	–	–	0.184	–	–	.004* < p < 0*
DGR		0.16	0.069	0.24	0*	0.036	-0.07	0.135	.247
AGR		-0.027	0.119	0.065	<i>.296</i>	-0.004	-0.102	0.093	.461
CF	DGR	-0.083	-0.179	0.02	<i>.058</i>	-0.026	-0.147	0.096	.345
EF		0.136	0.031	0.232	.003*	0.054	-0.048	0.156	.145
EA		0.121	0.02	0.225	.01*	0.006	-0.096	0.103	.46
DGR		–	–	–	–	0.07	–	–	<i>.412</i> < p < <i>.061</i>
AGR		0.061	-0.029	0.146	<i>.091</i>	0.048	-0.09	0.198	.269
CF	AGR	0.296	0.188	0.394	0*	0.058	-0.052	0.175	.152
EF		0.038	-0.054	0.131	<i>.209</i>	-0.039	-0.135	0.054	.206
EA		-0.013	-0.11	0.08	<i>.398</i>	-0.008	-0.108	0.093	.44
DGR		-0.001	-0.088	0.082	<i>.153</i>	-0.014	-0.113	0.099	.38
AGR		–	–	–	–	0.193	–	–	.002* < p < 0*

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below .1).

7. Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics in the romantic relationships domain

Table 33

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across all individuals in the romantic relationships domain.

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		β	Lower	Upper	Sig	β	Lower	Upper	Sig
CF	CF	–	–	–	–	0.195	–	–	0*
EF		-0.114	-0.163	-0.065	0*	-0.037	-0.085	0.015	.081
EA		-0.132	-0.181	-0.081	0*	-0.014	-0.066	0.041	.313
DGR		-0.089	-0.144	-0.034	0*	0.015	-0.034	0.064	.283
AGR		0.091	0.043	0.14	.001*	0.071	0.02	0.124	.001*
CF	EF	-0.136	-0.185	-0.084	0*	-0.017	-0.086	0.045	.282
EF		–	–	–	–	0.204	–	–	0*
EA		0.541	0.505	0.576	0*	0.034	-0.044	0.123	.199
DGR		0.124	0.075	0.171	0*	0.082	0.029	0.132	.001*
AGR		0.103	0.057	0.156	.001*	0.07	0.021	0.123	.004*
CF	EA	-0.122	-0.171	-0.072	0*	-0.057	-0.118	0.005	.036
EF		0.523	0.486	0.559	0*	0.003	-0.092	0.115	.476
EA		–	–	–	–	0.142	–	–	.009* < p < 0*
DGR		0.149	0.098	0.202	0*	0.039	-0.014	0.094	.083
AGR		0.066	0.01	0.124	.011*	0.011	-0.042	0.068	.333
CF	DGR	-0.092	-0.146	-0.039	0*	-0.003	-0.061	0.06	.47
EF		0.17	0.108	0.23	0*	0.102	0.048	0.155	0*
EA		0.157	0.109	0.211	0*	0.08	0.014	0.141	.011*
DGR		–	–	–	–	0.129	–	–	.003* < p < 0*
AGR		0.266	0.223	0.308	0*	0.019	-0.052	0.089	.306
CF	AGR	0.059	0.007	0.113	.01*	0.06	0.006	0.116	.015*
EF		0.091	0.034	0.143	.001*	-0.024	-0.08	0.033	.221
EA		0.054	0	0.108	.025	-0.08	-0.138	-0.023	.002*
DGR		0.247	0.208	0.285	0*	-0.053	-0.118	0.02	.063
AGR		–	–	–	–	0.219	–	–	0*

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below .1).

Table 34

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across individuals who were not open to change in the romantic relationships domain.

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		Estimate (SD)	Lower	Upper	Sig	Estimate (SD)	Lower	Upper	Sig
CF	CF	–	–	–	–	0.182	–	–	.002* < p < 0*
EF		-0.191	-0.289	-0.092	.001*	0.042	-0.044	0.135	.164
EA		-0.164	-0.257	-0.066	0*	0.015	-0.077	0.105	.374
DGR		-0.063	-0.167	0.035	.118	-0.052	-0.128	0.028	.102
AGR		0.038	-0.052	0.135	.214	-0.006	-0.094	0.077	.441
CF	EF	-0.193	-0.286	-0.098	0*	-0.074	-0.199	0.085	.169
EF		–	–	–	–	0.062	–	–	<i>.339 < p < .056</i>
EA		0.453	0.372	0.53	0*	0.052	-0.095	0.216	.255
DGR		0.165	0.065	0.269	.001*	0.019	-0.09	0.139	.375
AGR		0.115	0.018	0.204	.007*	0.081	-0.027	0.191	<i>.068</i>
CF	EA	-0.179	-0.271	-0.089	0*	-0.124	-0.235	-0.007	.02*
EF		0.489	0.407	0.562	0*	-0.098	-0.242	0.09	.138
EA		–	–	–	–	0.045	–	–	<i>.414 < p < .041</i>
DGR		0.143	0.044	0.248	.003*	0.067	-0.046	0.173	.115
AGR		0.035	-0.059	0.122	.24	0.024	-0.083	0.124	.322
CF	DGR	-0.132	-0.227	-0.035	.004*	-0.094	-0.189	0.008	<i>.037</i>
EF		0.215	0.113	0.319	0*	0.124	-0.013	0.244	<i>.036</i>
EA		0.148	0.043	0.251	.002*	0.107	0.006	0.212	.019*
DGR		–	–	–	–	0.116	–	–	<i>.061 < p < 0*</i>
AGR		0.108	0.013	0.213	.01*	0.081	-0.033	0.202	<i>.085</i>
CF	AGR	0.014	-0.085	0.112	.394	0.056	-0.046	0.153	.142
EF		0.073	-0.027	0.171	<i>.082</i>	0.006	-0.09	0.101	.453
EA		0.054	-0.04	0.148	.122	-0.092	-0.182	-0.003	.021*
DGR		0.108	0.019	0.197	.009*	0.136	0.023	.253	.012*
AGR		–	–	–	–	0.175	–	–	.036* < p < 0*

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below .1).

Table 35

Average standardized results of daily within-person cross-lagged models for micro-level identity processes and outcomes of social media emotional experiences dynamics across individuals who were not open to change in the romantic relationships domain.

Identity processes	SMU	Prediction from t to t				Prediction from t to $t+1$			
		Estimate (SD)	Lower	Upper	Sig	Estimate (SD)	Lower	Upper	Sig
CF	CF	–	–	–	–	0.142	–	–	.019* < p < 0*
EF		-0.15	-0.243	-0.06	.001	-0.106	-0.213	0	.014
EA		-0.091	-0.188	-0.002	.047*	-0.074	-0.18	0.025	.069
DGR		-0.079	-0.18	0.011	.049	0.084	-0.014	0.175	.047
AGR		0.144	0.039	0.240	.002*	0.056	-0.039	0.153	.123
CF	EF	-0.124	-0.226	-0.038	.002*	-0.096	-0.196	0.003	.029
EF		–	–	–	–	0.195	–	–	.031* < p < 0*
EA		0.524	0.453	0.59	0*	0.071	-0.012	0.351	.031
DGR		0.068	-0.027	0.16	.081	0.093	0.005	0.179	.02*
AGR		0.005	-0.087	0.098	.461	0.096	-0.001	0.192	.027
CF	EA	-0.084	-0.173	0.005	.03	-0.118	-0.213	-0.011	.017*
EF		0.528	0.452	0.596	0*	0.034	-0.131	0.19	.36
EA		–	–	–	–	0.246	–	–	.002* < p < 0*
DGR		0.151	0.06	0.243	.002*	0.034	-0.06	0.136	.252
AGR		0.005	-0.049	0.148	.163	0.019	-0.081	0.118	.357
CF	DGR	-0.098	-0.191	0	.025	-0.007	-0.102	0.098	.443
EF		0.114	0.008	0.217	.015*	0.042	-0.055	0.144	.187
EA		0.172	0.084	0.267	0*	0.063	-0.034	0.167	.105
DGR		–	–	–	–	0.186	–	–	.01* < p < 0*
AGR		0.303	0.231	0.374	0*	-0.052	-0.194	0.108	.273
CF	AGR	0.133	0.03	0.224	.005*	0.005	-0.09	0.109	.454
EF		0.024	-0.074	0.122	.324	0.009	-0.088	0.107	.431
EA		0.032	-0.062	0.127	.249	-0.041	-0.135	0.06	.203
DGR		0.279	0.209	0.351	0*	-0.037	-0.167	0.118	.296
AGR		–	–	–	–	0.244	–	–	0*

Note. CF: commitment to fit; EF: exploration of fit; EA: exploration of alternatives; DGR: disagreement with commitments; AGR: agreement with commitments. The bold values indicate significant relations, and the italic values indicate tendential relations (i.e., below .1).

Appendix 5: Published manuscript

Vincent, Y., & Lannegrand, L. (2022). The Role of Social Media Emotional Experiences in Identity Construction : Exploring Links between Micro-identity Processes. *Identity*, 22(1), 65-81. <https://doi.org/10.1080/15283488.2021.2012181>

Abstract

Identity can express itself at different time scales: while a whole year can have a major impact on commitment changes, daily identity relevant events pave the way for exploration of how the commitments fit to the self through real time emotional experiences. This study aimed at understanding how micro-identity processes were linked to each other and how daily social media emotional experiences could explain levels of micro-identity processes in two primary identity domains at emerging adulthood: the romantic relationships and the educational domains. Participants were emerging adult students aged from 18 to 24 (N = 35, 85.71% women). The study followed a fifteen-week protocol containing three measurement periods each consisting of seven daily measures. We observed a large heterogeneity in the relations between emotional experiences and micro-identity processes. Specifically, within-individual relations between emotional experiences and the identity exploration processes were mainly positive in the romantic relationships domain, while such a relation was found between the emotional experiences and the commitment process in the domain of education. Linear mixed models showed that different aspects of emotional experiences predicted higher levels of identity exploration in the romantic relationships domain only. Results of this study account for specific roles of social media emotional experiences in the romantic relationships domain and in the educational domain.

Introduction

Defining one's own identity is a fundamental psychosocial task in emerging adulthood. Identity has been defined as the possibility of changing and remaining the same person over time (Erikson, 1959, 1968;

Lichtwarck-Aschoff et al., 2008; Marcia, 1966). With regard to the two main components of identity defined by Marcia in 1966 (i.e., exploration and commitment), individuals are expected to move toward an achieved identity status, meaning that they tend to consolidate their commitments over the course of the time. However, most recent works have shown that identity commitments tend to change in many ways: they can be more or less rigid, and can also be stronger or weaker as time goes by (Crocetti et al., 2008; Klimstra et al., 2010; Luyckx et al., 2006; van der Gaag et al., 2017, 2016). Moreover, transitions between pluralities of identity states can be observed over a long time-scale covering years and decades (Kroger et al., 2010; Marcia, 2002). More specifically, it has been argued that different developmental trajectories may be encountered depending on the different identity domains, due to the importance that the individual may attribute to each domain of life (Luyckx et al., 2014). Among the numerous social challenges that the individual faces during the transition to adulthood, developing a professional career and a long-term romantic relationship are two major achievements in emerging adulthood. Therefore, the educational and the romantic relationships domains are likely to be among the two most salient domains for typical emerging adults (Vosylis et al., 2017).

During emerging adulthood, individuals tend to explore different alternatives to their commitments and try out multiple lifestyles during the transition to adulthood (Arnett, 2015). In order to understand how change can occur in the different identity-relevant areas over a long time-scale, we have to specifically focus on the mechanisms involved on a shorter time-scale (Kunnen, 2012). Yet, little is known about these mechanisms over the “micro-level time-scale” (Lichtwarck-Aschoff et al., 2008). Understanding relations between identity processes at a micro-level is thus an important line of research that needs particular attention for a precise understanding of how the expression of identity over a short time-scale works.

Micro-level of identity processes

Identity processes have recently been studied in terms of the micro-level of identity. The micro-level of identity characterizes the fluctuating and variable part of identity, one which is dependent on the context and which may change over the course of minutes, hours, or days. Somehow, at a micro-level, the nature of identity is more unconscious and closer to a feeling of adjustment, where in-depth reflections are not common phenomena (Lichtwarck-Aschoff et al., 2008). Thus, with regard to the fractal nature of identity

(i.e., that expresses itself through different time-scales), an important challenge is to operationalize the micro-level of identity processes. Based on major theories on the macro-level of identity (Crocetti et al., 2008; Luyckx et al., 2006), Van der Gaag et al. (2016) specified five micro-level processes of identity tailored to the time-scale along which they are measured (i.e., on a micro-level time-scale), and developed their operationalization. Two commitment processes and three exploration processes were defined as being part of the micro-level of identity dynamic: the commitment to fit (i.e., the extent to which individuals feel adjusted to their commitments), the commitment to choice (i.e., the commitment felt toward a concrete choice for a particular context), the exploration of fit (i.e., the extent to which individuals question their adjustment to commitments made), the exploration of alternatives (i.e., the extent to which individuals look for other alternatives to their commitments), and the exploration of self (i.e., an exploration directed to the self). However, the last exploration process (i.e., the exploration of self), which is important in the career domain, was specifically added and adapted to the study of the educational domain as assessed in van der Gaag et al. (2016). Also, at a micro-level, it has been argued that distinguishing between different commitment processes is less useful than distinguishing between different exploration processes (van der Gaag et al., 2016). Thus, in order to address a systematic measure of the micro-level of identity processes that can be adapted to different identity domains, the present study assessed the three micro-level of identity processes that correspond to the macro-level of identity processes in the three-dimensional model of Crocetti et al. (2008): the commitment to fit (i.e., the micro-level operationalization of the commitment process), the exploration of fit (i.e., the micro-level operationalization of the exploration in-depth process), and the exploration of alternatives (i.e., the micro-level operationalization of the reconsideration process).

Still, a difficulty remains in the differentiation between the processes at the micro-level and their equivalents at the macro-level. As mentioned above, the general idea is that micro-level processes differ from their macro-level counterparts in that they are primarily more unconscious. The commitment to fit process refers to the perceived feeling of adjustment to these choices, to the agreement or disagreement between the self and the commitments, translated by feelings of well-being or unhappiness in response to real-time events (Lichtwarck-Aschoff et al., 2008). In contrast, the macro-level commitment process tends to refer to the complex elaboration of a choice based on a broader consideration of the different selves – and desires of the self – and its inscription in a longer development – and the pursuit of an ideal self – (James, 1890/1950). Considering the exploration processes, the exploration of fit process is conceptualized as “the

act of actively investigating the fit between the chosen (e.g., educational or relational) context and the self,” whereas the exploration of alternatives process “is conceptualized as exploring alternative educational (or relational) directions” (Van der Gaag et al., 2016, p. 61). Although these micro-level processes are the conceptual equivalent of the macro-level processes in major theories operationalizing identity dynamic (Crocetti et al., 2008; Luyckx et al., 2006), the relations between micro-level of identity processes cannot be strictly derived from the well-known relations between their macro-level counterparts. In this respect, Shirai and Kunnen (2020) found large within-individual heterogeneity with regard to the balanced time orientation–commitment relation. In fact, large differences have specifically been highlighted in studies when scholars have looked at relations between identity processes at a within-individual level (Kunnen, 2006; Van der Gaag et al., 2016) because, as expected from psychological variables, they are non-ergodic (P. C. M. Molenaar & Ram, 2010). Ergodicity can be assumed when relations between variables at an inter-individual level are the same relations as those that can be assessed in each individual over time, and as argued by P. M. Molenaar and Campbell (2009), psychological variables as well as developmental processes are, by nature, non-ergodic. Yet, few studies have looked at the relations between the micro-level of identity processes at a within individual level and at a between individual level (e.g., Kunnen, 2006; Van der Gaag et al., 2016). The present study aims to take a step towards a better understanding of the relations between micro-level of identity processes.

The role of emotional experiences

In the last two decades, in the quest to understand these complex relations between the processes of identity, a specific focus has been placed on the substantial role of emotions in the micro-identity dynamic. Indeed, numerous theories have argued that identity-relevant emotional experiences, which arise from interactions between the individual and the context, are a core element in understanding changes in identity processes over a micro-level time-scale (e.g., Bosma & Kunnen, 2001; Grotevant, 1987; Kerpelman et al., 1997). Using a dynamic system approach, Bosma and Kunnen (2001) developed a model in which the change in one’s identity – and, therefore, one’s engagement along different pathways – is explained by a continuous mechanism of repeated reevaluations of individuals’ adjustment to their commitments. In this model, commitments are evaluated and reevaluated based on environmental

information from every context-individual transaction. While congruent information leads to a feeling of adjustment to one's commitments, and therefore to their reinforcement, incongruent information from the environment leads to a conflict, and thus to a feeling of being unadjusted to one's commitments. The emotional aspect of experiences seems to be an important element in understanding the micro-identity dynamic (Bosma & Kunnen, 2001; Klimstra et al., 2016; Kunnen, 2006; Van der Gaag et al., 2017; Vleioras & Bosma, 2005). Although the positive or negative valence of perceived emotions of environmental information leads to feelings of adjustment or maladjustment, the extent to which information is perceived as important is also a good indication of the impact of these emotional experiences (Kunnen, 2006). Taken together, these two aspects of emotional experiences are seen to have considerable weight on micro-identity processes, and their change over time (Van der Gaag et al., 2017). Moreover, emotions are seen to play an important role in commitment changes, thus challenging the primacy of exploration in such identity changes (Vleioras & Bosma, 2005).

Unfortunately, no consensus has been reached so far about the direction of specific emotions' effects on identity processes, in particular due to a great heterogeneity in the relations found between emotions and identity processes in both adolescents and young adults. At a macro-level, studies have especially focused on the role of negative emotions in commitment changes. As proposed by Bosma and Kunnen (2001), a conflict arising from a transaction between the individual and the context may weaken the commitments, and is thus a primary force in identity change. In line with this conceptualization, it has been shown that negative emotions can foster changes in identity commitments (Kunnen, 2006). Regarding the micro-level of identity, links between emotions and the identity dynamic are still unclear. Two important studies have examined the relationships between emotions IDENTITY 67 (or mood) and micro-level of identity processes in both educational and relational domains. The commitment process is negatively related to negative emotions in both domains (Klimstra et al., 2016), and positively related to positive emotions in the educational domain (Van der Gaag et al., 2017). Both exploration processes are positively related to negative emotions in the educational domain (Van der Gaag et al., 2017). The same relation was found in the relational domain only for the reconsideration process (Klimstra et al., 2016). Surprisingly, positive emotions are also strongly related to changes in commitment, and negative emotions have a positive role in commitment strength overtime in the educational domain (Van der Gaag et al., 2017). Following these last results, Van der Gaag et al. (2017) highlighted the role of the content of an experience, which is seen as more relevant than – or as relevant

as the valence of the emotion itself. As an example, “commitment may increase if the positive emotional experience supports the current commitment (e.g., good educational performance), but not if this positive experience supports a competing commitment (e.g., hanging out with friends)” (Van der Gaag et al., 2017, p. 94). Moreover, Bosma and Kunnen (2001) concluded that at a micro-level, there is a stronger relation between emotions and commitment than between exploration and commitment. Depending on the non-ergodic nature of emotions and identity processes, results from this empirical study assessed at a within-individual level, account – again – for the large heterogeneity of outcomes from the relation between emotional valence and identity processes (Kunnen, 2006; Van der Gaag et al., 2017; Vleioras & Bosma, 2005). Thus, research is needed to provide further empirical findings on the question of the relations between emotional experiences and micro-level of identity processes.

An adapted context for studying identity

Taking the model of Bosma and Kunnen (2001) as a highly relevant theoretical basis to study the microlevel of identity dynamic, choosing the context through which the individual lives emotional experiences is an essential step (Kunnen, 2012). For example, Kroger (2015) also suggested that more attention should be paid to the relation between the context and the individual since identity development is considered to differ according to the living contexts. Thus, to study relations between the target variables of the micro-identity dynamic (i.e., commitment to fit, exploration of fit, exploration of alternatives), and their relations with emotional experiences (i.e., their presence, their importance as well as the intensity of the positive and negative valence of the emotions that emerge from them), we had to assess experiences in a context that has specific characteristics. First, this context should be suitable for experiencing identity-relevant events. Second, the context from which we observe experiences would have to be one that allows explorations of both domains of identity assessed in this study (i.e., the educational and the romantic relationships domains). Finally, because we wanted to understand the relations between the processes of identity at a micro-level, the context should be suitable for daily exploration, allowing us to observe fluctuations and variability at this level. Therefore, among many other contexts, social media seem to have the right characteristics for a study of the micro-level of identity and its complexity. Online social media contexts allow individuals to have identity-relevant experiences and to perform self-exploration every day (Subrahmanyam et al., 2008), but also to interact with a plurality of individuals

that convey diverse life experiences, values, and references, as allowed by open living contexts (Kroger, 2015). These specific online contexts are in continuity with the off-line world and their numerous functionalities offer the individual the ability to create and co-create this online world (Subrahmanyam & Šmahel, 2011). Thus, social media are a pool for identity exploration in both the educational and the romantic relationships domains (Ahern et al., 2016; Sumter et al., 2017). Finally, social networking sites are included in the daily routine of most emerging adults, several times a day.

To sum up, links between the processes that are part of the micro-level of identity dynamic still need to be clarified in order to gain a clearer understanding of changes in identity states and pathways at emerging adulthood. Research on the development of identity needs further insights into the role of emotional experiences on micro-level of identity processes, and online social media provides a relevant context for studying this issue with emerging adults. This study intends to bring new empirical knowledge in order to clarify both the relations between micro-level of identity processes and the role of social media emotional experiences in identity construction.

The present study

This study focused on understanding how micro-level of identity processes are linked to each other and how multiple aspects of social media emotional experiences can explain micro-identity processes in two primary identity domains at emerging adulthood: the romantic relationships and educational domains. Because the variables under study are, by their nature, non-ergodic, and considering that their relations are non-linear, large within-individual differences were expected. With this in mind, we focused on exploring the relations between micro-level of identity processes (i.e., commitment to fit, exploration of fit, exploration of alternatives) and indicators of emotional experiences in social media (i.e., domain-related experiences, the importance of these experiences, the positive and the negative emotions from these experiences) at both a within-individual and a between-individual level. In fact, two objectives were pursued, each answering its own research question. Regarding each domain, our questions were, (1) “how are micro-identity processes and emotional experiences related to each other within individuals?” and (2) “do emotional experiences predict between-individual differences in levels of micro-identity processes?” Assessing the relations between micro-level of identity processes and emotional experiences in two domains allows the observation of the convergences as well as the specificities of each domain. To

answer these research questions, the present study consisted in the implementation of an intensive longitudinal protocol with young adults on the basis of their emotional experiences in social media.

(1) How micro-level of identity processes and emotional experiences are related to each other within-individuals?

Based on the operationalization of the micro-level processes of identity by Van der Gaag et al. (2016), we assessed the strength of the relations between three micro-processes: the commitment to fit (CF), the exploration of fit (EF) and the exploration of alternatives (EA). We also assessed the directionality and strength of their relations with indicators of emotional experiences lived in social media. Even though we expected a large heterogeneity in the relations between emotional experiences and microlevel of identity processes within individuals, some assumptions could be formulated regarding both the educational and the romantic relationships domains. Regarding the relations between micro-level of identity processes, we assumed that both types of exploration would be positively correlated with each other and negatively correlated with the commitment to fit process. Regarding the relations between emotional experiences and the micro-level of identity processes, based on the consideration of the heterogeneous results encountered in the literature, we did not assume any directional effect.

(2) Do emotional experiences predict between-individual differences in levels of micro-identity processes?

First, we expected that higher levels of the presence and the importance of the experiences lived in social media in one domain would predict higher levels of both the exploration of fit and the exploration of alternatives processes levels in this domain. Second, both positive and negative emotions have been seen to have either a positive or a negative effect on commitment strength, and are expected to vary greatly within individuals (Kunnen, 2006; Van der Gaag et al., 2017; Vleioras & Bosma, 2005). However, at both a between-individual level and a within-individual level, negative emotions are mostly seen to have a negative effect on commitments (Kunnen, 2006). Additionally, according to Bosma and Kunnen's model (Bosma & Kunnen, 2001), negative emotional experiences lead to a decrease in commitment and an increase in exploration processes, while positive emotional experiences lead to an increase in commitment. Thus, the second aim of this study was also to explore

whether both positive and negative emotions had an effect on the levels of micro-identity processes. We hypothesized that negative emotions would positively predict the levels of the exploration processes and negatively the level of the commitment to fit process. Conversely, we assumed that positive emotions would positively predict the level of the commitment to fit process and negatively the levels of both exploration processes at a micro-level.

Method

Participants

Fifty emerging adult students from the University of Bordeaux, aged from 18 to 24, were asked to participate via their university mailbox. The final sample of our study included 35 participants (85.71% women, 14.29% men) who were enrolled in freshman ($n = 9$; 25.71%), sophomore ($n = 6$; 17.14%), third year ($n = 10$; 28.57%), fourth ($n = 6$; 17.14%), or fifth year ($n = 4$; 11.43%). They were studying psychology ($n = 16$, 45.71%), law ($n = 8$, 22.86%), biology ($n = 3$, 8.57%), sociology ($n = 2$, 5.71%), or computer science ($n = 2$, 5.71%), and 4 of them were on a single study path (engineering, economics, public health, and physics, $n = 4$, 11.43%). None of the participants changed study path during the protocol. Regarding the situation of the participants' romantic relationship at the beginning of the study, 20 reported being single (57.14%) and 15 reported being in a relationship (42.86%). During the protocol, 2 participants reported a change in their romantic relationship situation: they switched from being in a relationship to single (5.71%). Participants also reported the amount of time spent on social networks each day on a 13-modality scale ranging from 1 (0–10 min) to 13 (over 120 min). The average time spent per days for the entire sample is $M = 7.95$ ($SD = 4.33$), which corresponds approximately to 70 minutes per day. On average, women reported spending more time on social media ($M = 8.15$, $SD = 4.24$, a little over 70 minutes) than men ($M = 6.84$, $SD = 4.63$, just under an hour). Regarding social media use by age, participants who were 21-year-old reported spending the most time in social media per day ($M = 11.8$, $SD = 2.03$, just under 110 minutes).

Procedure

The study followed a fifteen-week protocol containing three measurement periods each consisting of seven daily measures. Between each measurement period, there were 4 weeks during which no assessment was performed. All along the measurement periods, at each point in time, the participants were asked to report

on the measures presented below. Every day at 6:00 p.m., the participants received an e-mail containing a link leading to the LimeSurvey questionnaire in which they could answer the study questions. They were specifically asked to respond to the measurement tools with regard to the previous 24 hours. Using the method of Van der Gaag et al. (2016), we excluded from the analyses individuals from the first sample ($N = 50$) according to two criteria: either (1) if they did not show any variations in more than 3 variables (i.e., among: commitment to fit, exploration of fit, exploration of alternatives, domain-related experiences, importance of these experiences, intensity of the positive and negative emotions), or (2) if they did not complete enough measurement reports (minimum $n_{report} = 15$, maximum $n_{report} = 21$). Five individuals were excluded because they reported the same levels for 3 of the 7 processes assessed during the protocol period (i.e., 21 days). Ten individuals (5%) were excluded because they completed fewer than the fifteen measurement reports required. In sum, fifteen individuals did not meet the criteria for our analyses, leaving 35 participants.

Measures

RECS in the domains of education and romantic relationships

The RECS-E (Repeated Exploration and Commitment Scale in the domain of Education) assesses processes of identity at the micro-level (Van der Gaag et al., 2016): the commitment to fit (CF), the exploration of fit (EF), and the exploration of alternatives (EA). The validity of the RECS-E was obtained using the convergent-construct validity method. Intra-individual correlations between constructs showed sufficient construct-convergent validity (Van der Gaag et al., 2016). However, we had to adapt this scale for two reasons. First, the RECS was initially built to assess the educational domain, so we had to adapt its content to the measure of the romantic relationships domain. Second, there is an important issue about the items used to assess identity in interpersonal domains in the RECS-E (van der Gaag et al., 2016) as well as in the U-MICS (Crocetti et al., 2008): they refer to a specific person, and therefore measure the quality of a specific relationship. Thus, we had to adapt the items to have a relevant measure for the romantic relationships domain.

To answer both issues, we first changed the part of the sentence specifying the investigated identity domain: “education” was changed into “romantic relationships.” Moreover, because the questionnaire administered was not only addressed to individuals who considered themselves to be in a stable relationship (as a couple) but also to participants who were in a more recent or even more ephemeral

romantic relationship, it was specified to the participants that by “romantic relationships” we meant any relationship experienced through the prism of romance, regardless of the duration of this relationship, its intensity, or the degree of commitment in this relationship. We therefore asked about stable and lasting relationships as well as the amorous meeting, the flirtation, the date, or the maintenance of a more flexible relationship. In addition, participants were asked to respond, not specifically to one or more romantic partners, but to “what they were currently experiencing in their romantic relationships.” Therefore, participants who did not consider themselves to be in a romantic relationship of any kind were free to answer the questions related to the romantic relationships domain by considering their current situation regarding their romantic relationships. As an example, we adapted the item “Do you feel that this romantic relationship suits you?” as follows: “Do you feel that what you are currently living in your romantic relationships suits you?”⁷

We also decided to change the original measurement scale (i.e., an ordinal Likert scale ranging from 0, not at all, to 6, very much) into a visual analogue scale (VAS) ranging from 0 (not at all) to 100 (very much). VAS is mostly used in clinical psychology research into pain and mental health (for a review, see Miller & Ferris, 1993). VAS has been found to be particularly well suited to investigating constructs that are, by their very nature, inaccessible to objective scrutiny, such as moods or feelings (Zealley & Aitken, 1969). Also, multiple uses of VAS over time allow the assessment of changes in variables within individuals (Vautier, 2011). Indeed, “the person may be viewed as her own stable gauge of the subjective phenomenon to be assessed. Thus, two ratings from the same person using the same device can be compared to each other, and their difference can be interpreted as a measurement of change” (Vautier, 2011, p. 12). Thus, because we studied the processes of identity over a time-scale that fosters change and variability (i.e., on a day-to-day basis), and because identity at a micro-level is conceptualized as a feeling of being adjusted to one’s commitment (Lichtwarck-Aschoff et al., 2008), we decided to use VAS, as it is highly relevant to our research object.

Daily measure of emotional experiences in the social media

Based on the methods of Vleioras and Bosma (2005) and Kunnen (2006), daily social media emotional experiences were assessed using a combination of questions about (1) the extent to which experiences lived in social media (“today”) were related to both identity domains assessed (i.e., domain-related experiences, DRE), (2) the perceived importance of these experiences (i.e., importance of the experiences

in the domain, IED), and (3–4) a measure of the intensity of both types of emotions felt (i.e., positive and negative, PE and NE), administered in this exact order. Each question was asked for both the educational and the romantic relationships domains. The first and second items focused on all emotional experiences lived in social media regarding each domain. The third and fourth items gave a measure of the intensity of the valence of the emotions related to the emotional experiences lived each day in social media. In the same way as the measurement scale used in the RECS participants had to report their emotional experiences each day on a VAS ranging from 0 (Not at all) to 100 (Extremely).

Analysis

Within-individual relations between variables

For the first objective, we used within-individual Spearman correlations (r_s) to address the relations between the processes involved in the micro-level of identity dynamic and the different indicators of social media emotional experiences (i.e., commitment to fit, exploration of fit, exploration of alternatives, domain-related experiences, importance of the experiences, positive and negative emotions). The use of intra-individual correlations to account for ergodicity is a common methodology in dynamic system research (Zhang & Wang, 2014). However, an important methodology issue pointed out by Shirai and Kunnen (2020) concerns the dependency between measurement points. We followed the procedure of Shirai and Kunnen (2020) in order to control for autocorrelation in each time series. First, we had no hypothesis that cyclical influences existed in our data. Therefore, we expected autocorrelation to decrease with increasing time lags. We performed Autoregressive Integrated Moving Average (ARIMA) models for each process time series within each individual. To start with, we modeled each process sequence with ARIMA model (0, 0, 0). Then, if we did find a significant autocorrelation, we increased the time lag with one step using ARIMA model (1, 0, 0), and performed the test again. If a significant autocorrelation appeared after testing the ARIMA model (1, 0, 0), we increased the time lag with another step using ARIMA model (2, 0, 0), and so on until no significant autocorrelation was found. Lastly, we prewhitened the time series with a significant autocorrelation to eliminate the autocorrelation. As explained by Shirai and Kunnen (2020), “prewhitening means that the raw time series were replaced by data generated by the ARIMA model that were sufficiently corrected for autocorrelation” (p. 6). We used residuals from fitted ARIMA models (i.e., the score after eliminating the autocorrelation) instead of raw data to compute the withinindividual

correlations (for a discussion on prewhitening, see Dean & Dunsmuir, 2016). We report the number of lags for each process within individuals in Table 1. We also used the classification approach adopted by Van der Gaag et al. (2016) to report the results of the correlations. To perform the ARIMA models we have used the package *forecast* (Hyndman et al., 2021) in R (R Core Team, 2020).

Table 1. ARIMA model lags for within-individual time-series

Time series	AR (0, 0, 0)	AR (1, 0, 0)	AR (2, 0, 0)	AR (3, 0, 0)
E – CF	11	12	7	5
E – EF	21	5	8	1
E – EA	18	4	12	1
E – DRE	15	16	4	0
E - IED	22	12	1	0
E – PE	17	14	4	0
E – NE	18	16	1	0
RR – CF	14	11	9	1
RR – EF	20	8	6	1
RR – EA	21	8	5	1
RR - DRE	20	13	1	1
RR - IED	22	12	1	0
RR - PE	18	16	1	0
RR - NE	15	19	1	0

ARIMA model lags for within-individual time-series. *Note.* **E:** Educational domain; **RR:** Romantic relationships domain; **CF:** Commitment to fit; **EF:** Exploration of fit; **EA:** Exploration of alternatives; **DRE:** Domain-related experiences; **IED:** importance of the experiences; **PE:** Positive emotions; **NE:** Negative emotions; **AR:** Auto-regressive

Predictive value of emotional experiences on micro-processes of identity between-individuals

The second objective was attempted using linear mixed models (LMM) to assess the predictive value of the presence of emotional experiences, the importance of these experiences and both the positive and negative emotional valence intensity, in levels of micro-identity processes. Mixed models are common regression analyses that explicitly account for the dependency among data points using random-effect parameters. As argued by Singmann and Kellen (2019), mixed models provide more accurate estimates of the effects, improved statistical power, and non-inflated Type I errors. Regarding our study design (i.e., repeated measures), the independence assumption was expected to be violated at an individual level as well as at group level. Thus, we applied mixed models to control for this independence between data

points. For both identity domains investigated, we analyzed the effect of the presence, the importance, and each intensity of the emotional valence of emotional experiences on each micro-identity process. To do so, we added each of the four variables of our daily measure of emotional experiences in social media as fixed effects in the model (without interaction term). Because emotions have been seen to have different effects on identity processes (Klimstra et al., 2016; Kunnen, 2006; Van der Gaag et al., 2017; Vleioras & Bosma, 2005), particularly at the within-individual level, we expected a large heterogeneity in our sample. Moreover, we added the participants and the four variables of the daily measure of emotional experiences as random effects. In this way, we estimated four models for each relation between a variable of the daily measure of emotional experiences and a micro-identity process: (1) a model with fixed effect without random effect, (2) a model with individuals as random effect, (3) a model with the variable of the measure of emotional experiences as random effect, and (4) a model where both the participants and the variable of the measure of emotional experiences were added as random effects. In a final step, we extracted the results from the most parsimonious and explanatory model. To perform the LMM we have used the package *lme4* (Bates et al., 2015) in *R* (R Core Team, 2020).

Results

First objective: micro-level of identity processes and emotions relations within-individuals

Among the two identity domains, the results from intra-individual correlations bring substantial evidence of a large heterogeneity, especially in the relations between micro-level of identity processes and the different indicators of daily social media emotional experiences.

Table 2. *Within-individual time series correlations in the educational domain.*

Type of correlation	M	SD	Min.	Max.	n% Excluded ¹	Occurrence n (%) per type of correlation ²		
						Negative	Negligible	Positive
CF – EF	-.1	.426	-.951	.85	1 (2.86%)	18 (52.94%)	7 (20.59%)	5 (14.70%)
CF – EA	-.176	.527	-.956	.985	2 (5.71%)	19 (57.58%)	3 (9.09%)	10 (30.3%)
EF – EA	.589	.292	-.081	1	2 (5.71%)	0 (0%)	2 (6.06%)	31 (78.79%)
CF – DRE	.056	.375	-.568	.77	1 (2.86%)	10 (29.41%)	8 (23.53%)	16 (47.06%)
CF – IED	.032	.38	-.885	.896	1 (2.86%)	12 (35.29%)	8 (23.53%)	14 (41.18%)
CF – PE	.114	.376	-.857	.916	1 (2.86%)	7 (20.59%)	10 (29.41%)	17 (50%)
CF – NE	.003	.386	-.951	.916	1 (2.86%)	11 (32.35%)	9 (26.47%)	14 (41.18%)
EF – DRE	.056	.421	-.945	.958	1 (2.86%)	14 (41.18%)	4 (11.76%)	16 (47.06%)
EF - IED	.054	.338	-.503	.893	2 (5.71%)	11 (33.33%)	10 (30.31%)	12 (36.36%)
EF – PE	.031	.325	-.753	.682	1 (2.86%)	13 (38.23%)	6 (17.65%)	15 (44.12%)
EF – NE	-.04	.368	-.846	.679	1 (2.86%)	14 (41.18%)	5 (14.7%)	15 (44.12%)
EA - DRE	.014	.356	-.723	.948	2 (5.71%)	13 (39.4%)	8 (24.24%)	12 (36.36%)
EA – IED	.097	.275	-.51	.588	3 (8.57%)	6 (18.75%)	12 (37.5%)	14 (43.75%)
EA – PE	-.05	.327	-.997	1	2 (5.71%)	9 (27.27%)	7 (21.21%)	17 (51.52%)
EA – NE	-.015	.388	-.846	.995	3 (8.57%)	13 (40.63%)	8 (25%)	11 (34.38%)

Note. **CF:** Commitment to fit; **EF:** Exploration of fit; **EA:** Exploration of alternatives; **DRE:** Domain-related experiences; **IED:** importance of the experiences; **PE:** Positive emotions; **NE:** Negative emotions.

¹ A case was excluded when no variation ($t_{n+1} - t_n = 0$ for all change scores) was shown within an individual dataset among 3 of the 5 items of interest (i.e., CF, EF, EA, PE, and NE).

² For the occurrence per type of correlation, the calculation of the percentages is based on the total of included cases, the excluded cases are omitted (i.e., % occurrence = $n \text{ occurrence} / (\text{total } n [35] - \text{excluded } n) * 100$).

Within-individual correlations in the domain of education

In general, the correlations between processes in the educational domain were widely spread from strong negative relations to strong positive relations. In this section, we report the main results for within-individual correlations (see Table 2). First, for the micro-level of identity processes, relations between commitment to fit (CF) and the two types of exploration were negative for 52.94% (exploration of fit) and 57.58% (exploration of alternatives) of individuals. The relations between the two types of

exploration at a micro-level were mainly positive (78.79%).

Second, for the relations between micro-level of identity processes and emotional experiences, commitment to fit was positively correlated with domain-related experiences (DRE, 47.06%), importance of the experiences in the domain (IED, 41.18%), positive emotions (PE, 50%), and negative emotions (NE, 41.18%). The correlations between the exploration of fit and the four variables of the daily measure of emotional experiences in social media have hardly reached a clear majority of positive occurrences (DRE: 47.06%, IED: 36.36%, PE: 44.12%, NE: 44.12%), and negative occurrences (DRE: 41.18%, IED: 33.33%, PE: 38.23%, NE: 41.18%). Exploration of alternatives was positively related to IED (43.75%) and PE (51.52%), negatively related to NE (40.63%) and equally distributed between positive (36.36%) and negative occurrences (39.4%) for DRE.

Within-individual correlations in the domain of romantic relationships

Similar to the educational domain, within-individual correlations for the romantic relationships domain showed that results varied broadly from one individual to another. In this section, we report the main results for within-individual correlations (see Table 3). Firstly, for the relations between the micro-level of identity processes, correlations between commitment to fit (CF) and exploration of fit (EF) were mostly negative (58.06%), as well as the relations between CF and the exploration of alternatives (EA, 65.63%). The relations between the two types of exploration at a micro-level were mainly positive (80%). The relations between CF and domain-related experiences (DRE) were negative (51.61%) as well as the relation between CF and the importance of the experiences in the domain (IED, 38.71%). Relations between CF and positive emotions (PE) were quite positive (48.4%), and no majority has emerged from the relations between CF and NE (45.16% for both positive and negative occurrences). Between EF and the four variables of the daily measure of emotional experiences, we found a clear majority of positive occurrences (DRE: 62.07%, IED: 62.07%, PE: 51.61%, NE: 48.4%). The same results were found between EA and DRE (58.62%), PE (61.29%), as well as NE (58.62%).

Table 3. Within-individual time series correlations in the romantic relationships domain.

Type of correlation:	M	SD	Min.	Max.	n% Excluded ¹	Occurrence n (%) per type of correlation ²		
						Negative	Negligible	Positive
CF – EF	-.0518	.474	-.709	1	4 (11.43%)	18 (58.06%)	3 (9.68%)	10 (32.26%)
CF – EA	-.152	.478	-.785	1	3 (8.57%)	20 (65.63%)	4 (12.5%)	8 (21.88%)
EF – EA	.449	.414	-.663	1	5 (14.29%)	4 (16.67%)	1 (3.33%)	25 (80%)
CF – DRE	-.048	.468	-.887	1	4 (11.43%)	16 (51.61%)	5 (16.13%)	10 (32.26%)
CF – IED	.013	.443	-.803	1	4 (11.43%)	12 (38.71%)	10 (32.26%)	9 (29.03%)
CF – PE	.137	.498	-.881	1	4 (11.43%)	8 (25.80%)	8 (25.80%)	15 (48.4%)
CF – NE	.074	.513	-.892	1	4 (11.43%)	14 (45.16%)	3 (9.68%)	14 (45.16%)
EF – DRE	.137	.327	-.595	1	6 (17.14%)	6 (20.69%)	5 (17.24%)	18 (62.07%)
EF – IED	.25	.379	-.528	1	6 (17.14%)	5 (17.24%)	6 (20.69%)	18 (62.07%)
EF – PE	.122	.432	-.528	1	4 (11.43%)	9 (29.03%)	8 (25.80%)	16 (51.61%)
EF – NE	.097	.427	-.528	1	4 (11.43%)	10 (32.26%)	6 (19.34%)	15 (48.4%)
EA – DRE	.151	.425	-.755	1	6 (17.14%)	9 (31.04%)	3 (10.34%)	17 (58.62%)
EA – IED	.114	.421	-.515	1	7 (20%)	11 (39.28%)	5 (17.86%)	12 (42.86%)
EA – PE	.205	.399	-.417	1	4 (11.43%)	8 (25.80%)	4 (12.91%)	19 (61.29%)
EA – NE	.214	.402	-.403	1	6 (17.14%)	7 (24.14%)	5 (17.24%)	17 (58.62%)

Note. **CF:** Commitment to fit; **EF:** Exploration of fit; **EA:** Exploration of alternatives; **DRE:** Domain-related experiences; **IED:** importance of the experiences; **PE:** Positive emotions; **NE:** Negative emotions.

¹ A case was excluded when no variation ($t_{n+1} - t_n = 0$ for all change scores) was shown within an individual dataset among 3 of the 5 items of interest (i.e., CF, EF, EA, PE, and NE).

² For the occurrence per type of correlation, the calculation of the percentages is based on the total of included cases, the excluded cases are omitted (i.e., % occurrence = $n \text{ occurrence} / (\text{total } n [35] - \text{excluded } n) * 100$).

Second objective: the predictive value of emotional experiences on micro-level of identity processes

Educational domain models

For all of the models fitted to the data for the relations between emotions experienced and the microlevel of identity processes, the addition of both the random effects of the subjects and the random effects of three of the four variables significantly improved the model (from $\chi^2(df = 2) = 10.51; p < .01$; to $\chi^2(df = 2) = 55.51; p < .001$). For the predictive value of negative valence on levels of the commitment to

fit process, the model including only the effects of the subjects as a random effects was the most parsimonious ($\chi^2(df = 2) = 0.539; p > .05$). The final model for the three other variables of the daily measure of emotional experiences in social media and each micro-level of identity process included the fixed effects of the variables, and the random effect of the subjects and the variable (see Table 4). Commitment to fit levels were not predicted by higher or lower levels of DRE (*Estimate* = -0.007, $t(34.83) = 0.374, p > .05$, Conditional $R_2 = 0.714$, Marginal $R_2 = 0$), IED (*Estimate* = -0.018, $t(34.85) = 0.348, p > .05$, Conditional $R_2 = 0.723$, Marginal $R_2 = 0$), PE (*Estimate* = 0.073, $t(24.99) = 1.229, p > .05$, Conditional $R_2 = 0.728$, Marginal $R_2 = 0.005$), or NE (*Estimate* = -0.004, $t(19.92) = -0.105, p > .05$, Conditional $R_2 = 0.698$, Marginal $R_2 = 0$). Similarly, neither DRE (*Estimate* = 0.033, $t(18.49) = 0.454, p > .05$, Conditional $R_2 = 0.531$, Marginal $R_2 = 0.001$), IED (*Estimate* = 0.029, $t(24.47) = 0.478, p > .05$, Conditional $R_2 = 0.491$, Marginal $R_2 = 0.001$), PE (*Estimate* = -0.0004, $t(29.93) = 0.006, p > .05$, Conditional $R_2 = 0.514$, Marginal $R_2 = 0$), nor NE (*Estimate* = 0.096, $t(14.46) = 1.066, p > .05$, Conditional $R_2 = 0.544$, Marginal $R_2 = 0.008$) predicted levels of the exploration of the fit process. Considering the exploration of alternatives, neither DRE (*Estimate* = 0.05, $t(24.82) = 0.536, p > .05$, Conditional $R_2 = 0.657$, Marginal $R_2 = 0.003$), IED (*Estimate* = 0.061, $t(27.80) = 0.740, p > .05$, Conditional $R_2 = 0.657$, Marginal $R_2 = 0.003$), PE (*Estimate* = 0.005, $t(32.22) = 0.071, p > .05$, Conditional $R_2 = 0.636$, Marginal $R_2 = 0$), nor NE (*Estimate* = 0.035, $t(16.48) = 0.369, p > .05$, Conditional $R_2 = 0.659$, Marginal $R_2 = 0.001$) predicted levels of this process.

Table 4. *Between-individual linear mixed model in the educational domain.*

Fixed effects	<i>Commitment to fit</i>			<i>Exploration of fit</i>			<i>Exploration of alternatives</i>		
	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>
DRE	-0.007	0.14	0.712	0.033	0.73	0.655	0.05	0.09	0.597
IED	-0.018	0.05	0.730	0.029	0.06	0.637	0.061	0.08	0.466
PE	0.073	0.06	0.230	0.0004	0.07	0.995	0.005	0.9	0.944
NE	-0.004	0.03	0.917	0.1	0.09	0.304	0.035	0.09	0.717
Random effects	Variance	SD	<i>Cor</i>	Variance	SD	<i>Cor</i>	Variance	SD	<i>Cor</i>
DRE	0.03	0.16		0.12	0.35		0.24	0.49	
Participants	0.68	0.82	-0.24	.045	0.67	-0.19	0.53	0.73	-0.04
IED	0.05	0.22		0.07	0.26		0.18	0.42	
Participants	0.65	0.8	0.09	0.44	0.66	-0.24	0.54	0.73	-0.14
PE	0.08	0.28		0.1	0.31		0.12	0.35	
Participants	0.63	0.79	-0.35	.044	0.66	-0.18	0.55	0.74	.08
NE	0.006	0.07		0.19	0.43		0.22	0.47	
Participants	0.68	0.82	-0.04	0.41	0.64	0.40	0.51	0.71	-0.16

Note. *SE:* standard error; *Cor:* correlation; *CF:* Commitment to fit; *EF:* Exploration of fit; *EA:* Exploration of alternatives; *DRE:* Domain-related experiences; *IED:* importance of the experiences; *PE:* Positive emotions; *NE:* Negative emotions.

Romantic relationships domain models

The entire LMM fitted for the relations between emotional experiences and the micro-level of identity processes improved significantly when we added the random effects of subjects as well as the random effects of the variables (differences from $\chi^2(df = 2) = 15.07; p < .001$; to $\chi^2(df = 2) = 126.37; p < .001$). Therefore, the best model computed the fixed effects of the variables and the random effects of subjects and variables to predict the levels of micro-identity processes (see Table 5). Levels of the commitment to fit process were not predicted by higher or lower levels of DRE (*Estimate* = 0.041, $t(27.22) = 0.741, p > .05$, Conditional $R_2 = 0.701$, Marginal $R_2 = 0.002$), IED (*Estimate* = 0.033, $t(27.29) = -0.551, p > .05$, Conditional $R_2 = 0.729$, Marginal $R_2 = 0.001$), PE (*Estimate* = 0.186, $t(31.67) = 1.958, p > .05$, Conditional $R_2 = 0.783$, Marginal $R_2 = 0.032$) or NE (*Estimate* = 0.005, $t(29.06) = 0.068, p > .05$, Conditional $R_2 = 0.737$, Marginal $R_2 = 0$). However, levels of the exploration of fit process were significantly predicted by higher levels of DRE (*Estimate* = 0.164, $t(27.37) = 2.969, p = .006$, Conditional $R_2 = 0.584$, Marginal $R_2 = 0.028$), IED (*Estimate* = 0.287, t

(22.09) = 3.975, $p < .001$, Conditional $R_2 = 0.648$, Marginal $R_2 = 0.08$), PE (*Estimate* = 0.18, $t(32.54) = 2.141$, $p = .04$, Conditional $R_2 = 0.647$, Marginal $R_2 = 0.032$). Higher negative emotions almost predicted levels of exploration of fit (*Estimate* = 0.135, $t(26.18) = 1.88$, $p = .07$, Conditional $R_2 = 0.62$, Marginal $R_2 = 0.019$). Moreover, higher positive and negative emotions significantly predicted levels of exploration of alternatives with high variances for the random effects of subjects and emotions (PE: *Estimate* = 0.172, $t(29.59) = 2.05$, $p < .05$, Conditional $R_2 = 0.729$, Marginal $R_2 = 0.026$, NE: *Estimate* = 0.211, $t(28.35) = 3.294$, $p = .003$, Conditional $R_2 = 0.707$, Marginal $R_2 = 0.045$). Higher domain-related experiences almost predicted levels of exploration of alternatives (*Estimate* = 0.11, $t(25.32) = 1.909$, $p = .07$, Conditional $R_2 = 0.679$, Marginal $R_2 = 0.012$). Levels of the importance of the experiences in the domain did not predict levels of exploration of alternatives (*Estimate* = 0.08, $t(18.94) = 1.213$, $p > .05$, Conditional $R_2 = 0.68$, Marginal $R_2 = 0.006$).

Table 5. Between-individual linear mixed model in the romantic relationships domain

Fixed effects	<i>Commitment to fit</i>			Exploration of fit			<i>Exploration of alternatives</i>		
	β	SE	p	β	SE	p	β	SE	p
DRE	0.041	0.06	0.465	0.165	0.06	0.006**	0.111	0.06	0.068
IED	-0.033	0.06	0.586	0.287	0.07	0.001***	0.079	0.07	0.24
PE	0.186	0.1	0.059	0.18	0.08	0.04*	0.172	0.08	0.049*
NE	-0.004	0.07	0.946	0.135	0.07	0.07	0.212	0.06	0.003**
Random effects	Variance	SD	<i>Cor</i>	Variance	SD	<i>Cor</i>	Variance	SD	<i>Cor</i>
DRE	0.06	0.24		0.05	0.22		0.06	0.25	
Participants	0.63	.8	-0.4	0.49	0.7	-0.02	0.63	0.79	-0.24
IED	0.07	0.26		0.1	0.32		0.07	0.28	
Participants	0.7	0.83	-0.2	0.48	0.7	-0.1	0.63	0.79	0.12
PE	0.24	0.49		0.16	0.4		0.16	0.4	
Participants	0.57	0.76	-0.19	0.46	0.68	0.01	0.62	0.79	0.11
NE	0.12	0.34		0.11	0.33		0.08	0.29	
Participants	0.62	0.79	-0.43	0.48	0.69	-0.31	0.58	0.76	-0.02

. *Note.* **SE:** standard error; **Cor:** correlation; **CF:** Commitment to fit; **EF:** Exploration of fit; **EA:** Exploration of alternatives; **DRE:** Domain-related experiences; **IED:** importance of the experiences; **PE:** Positive emotions; **NE:** Negative emotions

Discussion

Micro-level of identity processes and emotional experiences relations within-individuals

The first objective of our study was to look at how micro-level of identity processes and emotional experiences are related to each other in both the educational and the romantic relationships domains. Using a within-individual approach, a large heterogeneity in relations between micro-level of identity processes within individuals was observed, as we expected. Strong convergences were found among the two domains in the relations between micro-level of identity processes. Overall, identity processes were related in accordance with the well-known relations between their correspondences at a macrolevel in both domains. More specifically, the commitment to fit was negatively related to both the exploration of fit and the exploration of alternatives. Further, the micro-level of identity exploration processes showed strong positive relations among a large majority of individuals, as expected. The relations between the commitment to fit and positive emotions were more frequently positive among the two domains investigated.

Besides these convergences, the relations between micro-level of identity processes and the different indicators used to assess social media emotional experiences showed specificities in each domain. In the educational domain, the relation between exploration processes and each indicator of social media emotional experiences hardly reached the same distinct majority of directional relations among individuals. On the contrary, the relation between the commitment to fit process and the indicators of emotional experiences in the educational domain were mainly positive. From these results, it would seem that individuals who tend to use social media more heavily in relation to their studies are those who are most adjusted to their identity commitments in this domain. Also, individuals do not seem to mainly seek to reevaluate their commitments through the use of social media (supported by the highly heterogeneous links between the different indicators of the emotional experiences and both exploration processes). In the romantic relationships domain, for the vast majority of individuals, positive relations were found between all of the four indicators of social media emotional experiences (i.e., domain-related experiences, the importance of these experiences, positive emotions, and negative emotions from these experiences) and both exploration processes, suggesting of a strong relation between the emotional experiences lived in social media and the reevaluation of identity the same day. For the commitment to

fit process, the presence of emotional experiences related to romantic relationships, as well as their importance to individuals, were negatively related to the extent to which individuals felt adjusted to their commitments in this area. In other words, it seems that individuals who are more adjusted to their commitment to romantic relationships tend to experience fewer social media events related to the romantic relationships domain. From these results (and those found at a between-individual level), it seems that individuals mainly seek to reevaluate their commitments in the romantic relationships domain through the use of social media.

The role of social media emotional experiences in micro-level of identity processes between-individuals

For the second objective, a between-individual approach was used to assess the predictive value of daily emotional experiences in social media on micro-identity processes levels. In the educational domain, the presence of domain-related experiences, the importance of these experiences, the positive and negative emotions that emerge from these experiences, did not predict the levels of any microlevel of identity processes. In a similar way, in the romantic relationships domain, none of our four indicators significantly predicted levels of the commitment to fit process. However, except for negative emotions that almost reached the significance level, every indicator used to assess daily social media emotional experiences significantly predicted levels of exploration of fit process: the higher the levels of these indicators, the higher the levels of exploration of fit on the same day. Also, higher positive as well as negative emotions from the experiences in the social media predicted higher levels of exploration of alternatives. The presence of domain-related experiences almost reached the significance level. These results may indicate how social media emotional experiences in the domain of romantic relationships, whether they convey positive or negative emotions, can be part of the identity reevaluation of the commitment on a day-to-day basis.

Still, these results must be qualified. On the one hand, the majority of the participants were single at the time of the protocol. In addition, social media facilitate the search for a romantic partner and the discovery of different ways of living romantic relationships (Ulanova, 2020). Thus, it was easier to observe a greater tendency for the participants to have emotional experiences related to a cycle of reevaluation of commitments. On the other hand, participants were all engaged in higher education.

Therefore, it was easier to observe individuals reporting emotional experiences related to their commitment to these studies, and fewer individuals presenting experiences related to a process of reevaluation of commitments.

Strengths and limitations

The heterogeneous links found between emotional experiences and micro-identity processes in the educational domain may highlight significant limitations. First, as we discussed above, information from social media seems to mostly allow individuals to evaluate and reevaluate their commitments in interpersonal identity domains (e.g., romantic relationships and friendship). In this respect, if we want to measure the role of emotional experiences on identity functioning in the educational domain, it would be necessary to capture these experiences from a context conveying experiences relevant to this domain. Second, the temporalities through which identity is evaluated and reevaluated may not be the same regardless of the identity domain under study. Specifically, Klimstra et al. (2010) found relevant results on a plausible dynamic between exploration and commitment at a day-to-day level, but only in the interpersonal domain and not in the ideological one. Given our results, it might be that the fluctuations and variability of identity processes are tailored to time-scales that are dependent upon the identity domain's ability to change. While an interpersonal domain such as romantic relationships may be able to change in the course of minutes or days (Klimstra et al., 2010), an ideological one, such as education, may only be able to vary and fluctuate over the course of weeks or months (Van der Gaag et al., 2017). Thus, future research should address the question of the role of emotional experiences by assessing experiences in other contexts that may be more suitable to explore the adjustment to the commitments made in the domain of education. This future research should also look at how identity fluctuates along different temporalities among the same life domains.

Another important limitation of this study is the difficulty accounting for the specific effects of positive and negative emotions separately. Indeed, among the four indicators of daily social media emotional experiences, positive and negative emotions are rarely distinguished from each other in the relationships they have with micro-identity processes. The results show, in majority, that the direction of the relations between the emotional valences and the micro-identity processes are either joint (e.g., majority of positive occurrences between the two types of emotions and the same identity process), or

distinguished by the difficulty of one of the relations to reach a majority of positive or negative occurrences (e.g., for the same identity process, a majority of positive occurrences with the positive emotions, and a non-distinct directionality with the negative emotions). Assessing the importance of emotions as well as the extent to which positive and negative emotions are strong seems to minimize the complexity of the emotional experience, and the emotions themselves. The same issue was highlighted by Van der Gaag et al. (2017) study who argued that rather than the valence of emotions, the extent to which they are adjusted to one's commitments might be a more relevant measure of their potential influence. To get a better understanding of these links, it should be necessary to consider what causes the positive or negative emotion (i.e., the nature of the experience) and the extent to which it confirms or not the commitments made (i.e., the feeling of being adjusted or not adjusted to the current commitments). For an individual who is involved in a romantic relationship, the occurrence of a new romantic encounter will perhaps trigger emotions with a positive valence for the self. Yet, regarding the adjustment to the commitments already made, this emotional experience will undoubtedly trigger a feeling of not being adjusted to what this individual is currently living in the romantic relationships domain. Thus, further research should propose a sufficiently relevant measure of emotional experiences to assess the links between emotional experiences and micro-level of identity processes.

One of the main strengths of our study lies in the possibility of drawing conclusions with respect to ergodicity. Regarding the mechanisms of identity, our results demonstrate that the outcome of analysis from aggregated data cannot be strictly attributed to each individual in his singularity. The main result of this study shed light on this lack of ergodicity. Considering the romantic relationships domain, results at the between-individual level show that individuals who experience more important emotional events about this domain in the social media explore more their adjustment to their commitments and other alternatives. Indeed, at a within-individual level, we observed a major tendency for participants who live more important and more relevant emotional experiences to be in a reevaluation of commitments in romantic relationships. Yet, some participants with high levels of exploration report having fewer and lesser relevant emotional experiences in social media related to this domain. This is an example of a non-ergodic relation between variables: the results obtained at the between-individual level cannot be attributed to all the individuals in our sample. We can therefore conclude that participants in commitment reevaluation tend to have emotional experiences in

social media related to this reevaluation, but that this is only true for the majority, not for all. These somewhat contradictory results between the different levels of aggregation also mean that the way we understand and study this relationship between emotional experiences and microprocesses of identity may not be perfectly accurate – if it can be. Moving beyond the limitations discussed earlier in this section would allow for an even better understanding of this relationship across different levels of aggregation.

Second, taking more than one identity domain into account is an important strength. Because identity is conceptualized as a multi-dimensional construct, and because the individual can be more or less achieved in the multiple domains of life (Arnett, 2015), comparing how the micro-level of identity dynamic can express itself differently across domains is a major step toward a better understanding of the development of identity. Finally, dynamic system theorists have pointed out the importance as well as the difficulties of gathering such intensive longitudinal data (Kunnen, 2012). In this respect, this study overcomes these difficulties by following recent works on the micro-level of identity and its dynamic and by building an intensive day-to-day-based protocol.

Conclusion

As expected, the results of this study show a large heterogeneity of relations between micro-level of identity processes and emotional experiences in social media within individuals. The relations between micro-processes have been shown to follow a similar path to the well-known relations between their correspondences at a macro-level, for both the educational and the romantic relationships domains. For the domain of education, results at both a within-individual and a between-individual levels show a relatively weak incidence of social media emotional experiences on micro-level of identity processes. However, there is a tendency for individuals who are more adjusted to their commitments to have more frequent identity-relevant emotional experiences compared to others. In the romantic relationships domain, results at both a within-individual and a between-individual levels show a significant tendency for individuals to have more identity-relevant emotional experiences in social media when they are exploring their identity. Finally, this study demonstrates the highly heterogeneous nature of identity at a micro-level and brings new empirical findings and evidence on the role of emotional experiences in both the educational as well as the romantic relationships domains in identity at a micro-level.