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Approche intergroupe des croyances conspirationnistes : Une stratégie de gestion de l'identité sociale ? Conceptualisation, déterminants et conséquences

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THÈSE DE DOCTORAT

Approche intergroupe des croyances conspirationnistes : une stratégie de gestion de l'identité sociale ?

Conceptualisation, déterminants et conséquences

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du grade de docteur en Psychologie
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Approche intergroupe des croyances conspirationnistes : une stratégie de gestion de l'identité sociale ?

Conceptualisation, déterminants et conséquences

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Résumé

La recherche en psychologie sociale sur l'adhésion aux théories du complot connaît un intérêt croissant. Cependant, les processus et les conséquences intergroupes de ces croyances restent peu étudiés. Dans cette thèse, nous défendons l'idée que les croyances conspirationnistes peuvent être conceptualisées comme des stratégies de gestion de l'identité sociale. Ce processus identitaire serait particulièrement à l'œuvre dans le cas d'une forme d'identification sociale défensive, le narcissisme collectif, en permettant d'attribuer les faiblesses de l'endogroupe aux actions secrètes et malintentionnées d'exogroupes. En outre, une victimisation exacerbée de l'endogroupe motiverait l'adhésion à ces croyances. Nous avons enfin cherché à identifier certaines des conséquences sociétales de ces croyances conspirationnistes motivées au niveau intergroupe.

Dans un premier chapitre, nous montrons que les croyances conspirationnistes à propos d'exogroupes sont un prédicteur important du rejet de la vaccination sur le COVID-19. Dans un deuxième chapitre, nous examinons les conséquences négatives des croyances conspirationnistes au niveau environnemental, et leur rôle médiateur de la relation entre narcissisme national et rejet de la science sur le climat. Dans un troisième chapitre, nous étendons l'étude des conséquences négatives de ces croyances intergroupes aux discriminations envers les migrants, et nous testons les liens de causalité entre narcissisme national, perception de menace intergroupe, croyances conspirationnistes, et discriminations. Dans un quatrième chapitre, nous testons dans le contexte de crises sanitaires l'idée qu'une perception exacerbée de la victimisation de l'endogroupe légitimerait le recours aux croyances conspirationnistes. Dans un cinquième et dernier chapitre, nous cherchons à répliquer nos hypothèses en contexte écologique (supportérisme lors de tournois internationaux de football). Nous présentons une analyse de contenus de tweets émis lors de la Coupe du monde de la FIFA 2018, ainsi que le matériel d'une étude longitudinale menée lors de l'Euro 2020. Ce travail souligne l'intérêt d'une approche intergroupe des croyances conspirationnistes ainsi que de leurs spécificités.

Mots clés : croyances conspirationnistes, identité sociale, narcissisme collectif, menace intergroupe, victimisation exclusive, crise sanitaire, changement climatique, discrimination envers les migrants, supportérisme

Abstract

There is a growing interest in social psychology in the study of beliefs in conspiracy theories. However, intergroup processes and consequences of these beliefs remain under-investigated. In this thesis, we argue that conspiracy beliefs can be conceptualized as social identity management strategies. We propose that this identity process is particularly at work in the case of collective narcissism (i.e., a defensive form of social identification), by attributing factors that threaten the ingroup image to the hidden and malicious actions of outgroups. Furthermore, we propose that an inflated perception of one's ingroup victimhood motivates conspiracy beliefs. We tested the hypothesis of this process and its societal consequences through several studies. Lastly, we sought to identify some of the societal consequences of these conspiracy beliefs motivated at intergroup level.

In the first chapter, we showed that conspiracy beliefs targeting outgroups are important predictors of the rejection of COVID-19 vaccination. In a second chapter, we proposed that conspiracy beliefs motivated at intergroup level have environmental consequences, mediating the relationship between national narcissism and the rejection of climate science. In a third chapter, we extended the study of the negative consequences of these defensive beliefs to prejudice against immigrants, testing the causal paths between national narcissism, perceived intergroup threat, conspiracy beliefs, and prejudice. In a fourth chapter, we tested in the context of public-health crises the idea that an inflated perception of one's ingroup victimhood would legitimise conspiracy beliefs. In a fifth chapter, we aimed to replicate our main hypotheses in an ecological context (sport fandom at international football tournaments). We present a content analysis of tweets from the 2018 FIFA World Cup, as well as material from a longitudinal study conducted during Euro 2020. This work supports the relevance of an intergroup approach to conspiracy beliefs.

Keywords: conspiracy theories, social identity, collective narcissism, intergroup threat, health crisis, climate change, migrant prejudice, sport fandom

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Votre force m'accompagne au quotidien et votre mémoire est éternelle*

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Pour terminer, ou plutôt avant de commencer, je résumerai mon expérience en thèse par les mots d'un sage :

« Io so poco

Ma penso tanto

Ma so poco, molto poco »

Gigi d'Agostino, *L'Uomo Sapiente*

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Avant-propos

« Coronavirus: American biological warfare against Russia and China », titre d'un article publié par Zvezda, un organe de presse Russe.

« Do you remember the North Korean leader promised a Christmas present for America, back in December? Could it be they got together with China, and this is that present? », Jerry Falwell Jr., ancien président de l'Université de Lynchburg, sur la pandémie de COVID-19.

« It might be US army who brought the epidemic to Wuhan », Zhao Lijian, diplomate Chinois.

« The coronavirus was inoculated by the gringos », Elvis Méndez, membre de l'assemblée constituante Vénézuélienne, déclarant que le virus à l'origine de la pandémie de COVID-19 est d'une arme biologique américaine visant à affaiblir l'Amérique Latine

« We know who is behind this whole plandemic », manifestant Polonais accusant les Juifs d'avoir planifié la pandémie de COVID-19 pour affaiblir l'économie Polonaise.

« Qatar is Corona », hashtag lancé par le journaliste Jordanien Noura al-Moteari accusant le Qatar d'avoir organisé et financé la pandémie de COVID-19.

"#CoronaJihad", hashtag populaire en Inde, accusant les Musulmans d'être des « corona-djihadistes » à l'origine de la diffusion du virus responsable de la pandémie de COVID-19.

« Zionist elements developed a deadlier strain of coronavirus against Iran », Press TV, Chaîne d'information Iranienne.

« Iran bears direct responsibility for the outbreak of corona infection », déclaration du conseil des ministres d'Arabie Saoudite.

« U.S. President Donald Trump targeted the city with coronavirus to damage its culture and honor », déclaration de l'imam de la prière du vendredi de la ville de Qom, Iran.

« A foreign virus », Donal Trump à propos de la pandémie de COVID-19.

Ces différents extraits¹ présentent des explications alternatives des origines et de la diffusion du virus du SARS-CoV-2 et de la pandémie de COVID-19. Ces explications alternatives sont communément appelées des *théories du complot*. Nous avons sélectionné et rapporté ici certaines théories du complot sur le COVID-19 présentant une forte dimension *intergroupe*. En effet, ces théories du complot sont toutes structurées suivant la forme « mon groupe (l'endogroupe) est victime des actions secrètes et malveillantes (la pandémie de COVID-19) d'un autre groupe (l'exogroupe) ».

La recherche en psychologie sociale et politique s'est saisie depuis quelques années de l'étude de l'adhésion aux théories du complot. Or, malgré cet intérêt grandissant, la dimension intergroupe de ce phénomène reste peu étudiée. Ainsi, ce travail de thèse s'intéresse aux processus intergroupes en lien aux croyances conspirationnistes. Plus particulièrement, nous nous intéressons aux motivations à maintenir une identité sociale positive en nous posant la question de recherche suivante : les croyances conspirationnistes peuvent-elles être qualifiées de stratégies de gestion de l'identité sociale ?

Nous adressons cette question dans le cadre d'une thèse par article, structurée autour de cinq articles empiriques et de deux études supplémentaires. Ces parties empiriques sont précédées par une introduction générale et suivies d'une discussion générale. Certains points de l'introduction générale sont peu développés car abordés plus en détail dans le cadre des parties théoriques des articles. Afin d'améliorer la lisibilité de ce manuscrit, nous avons rédigé l'introduction et la discussion générale en français, mais les transitions et les études supplémentaires en anglais, dans la continuité des 5 articles présentés dans leurs versions originales (i.e., en anglais).

¹ Nous avons décidé de présenter ces citations dans leurs versions originales, en anglais. Afin d'alléger le texte, nous rapportons les traductions françaises de ces citations ainsi que les sources d'où elles sont tirées en annexe H.

Ces articles sont articulés autour de grands sujets de société, qui peuvent être qualifiées de *crises* : crises sanitaires, climatiques, migratoires. Ainsi, nous avons essayé de développer notre réflexion au contact de ces différentes lignes de recherche, en documentant notamment les conséquences potentiellement délétères de ce fait social. Nous mobilisons enfin le contexte du supportérisme footballistique afin de répliquer en contexte écologique les principales hypothèses testées dans ce travail.

Nous souhaitons aux lectrices et aux lecteurs une agréable lecture.

Introduction générale

Définition et terminologie

Avant de développer la définition et la terminologie que nous utiliserons dans ce travail sur l'adhésion aux théories du complot, il convient de différencier ces croyances des *complots*. Nous conceptualisons les théories du complot selon la définition proposée par Douglas et al. (2019), c'est-à-dire, comme des affirmations de complot qui pourraient être vraies ou non. Par contraste, un complot est une chaîne causale d'évènements avérés par des *autorités épistémiques* (i.e., le réseau distribué des collecteurs et testeurs des *affirmations* de connaissances [« the distributed network of knowledge claim gatherers and testers »] Levy, 2007, p. 187), comme par exemple des journalistes ou des experts en sécurité.

Définition

De nombreuses définitions des théories du complot ont été proposées (Butter & Knight, 2020). Il est à noter que les définitions utilisées dans les parties théoriques des différents articles constituant cette thèse ont elles-mêmes évolué. Dans les deux premiers articles présentés (Chapitres 2 et 3), suivant Douglas et al. (2019), nous définissons les théories du complot comme des tentatives d'expliquer les causes ultimes de contextes et d'évènements socio-politiques d'importance par des allégations de complot secrets menés par

deux ou plusieurs acteurs puissants (« attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by two or more powerful actors », p.4). Dans les trois articles suivants (Chapitres 4, 5, 6), nous avons décidé d'adopter une définition dérivée de Zonis et Joseph (1994), en définissant les théories du complot comme des accusations que des exogroupes malveillants complotent en secret contre l'endogroupe afin d'accomplir un objectif néfaste. En effet, cette définition comporte selon nous plusieurs avantages (ou évite plusieurs écueils).

Tout d'abord, elle ne préjuge pas du caractère *puissant* de l'exogroupe accusé de conspirer. Comme souligné par Nera et al. (2021 ; voir également Wagner-Egger & Bangerter, 2007), les théories du complot peuvent viser des exogroupes perçus comme puissants (théories du complot *ascendantes*) ou non (théories du complot *descendantes*). Aussi, bien que la qualité « malveillante » de l'exogroupe nous semble être une condition nécessaire pour qualifier une théorie du complot (nous ne nous intéressons pas dans ce travail aux théories du complot « vertueuses », e.g., le père Noël ; Douglas et al., 2019), il nous semble réducteur de limiter cette catégorisation aux exogroupes perçus comme « puissants », en excluant les « minorités » pourtant centrales dans nombre de ces croyances (Moscovici, 1987).

Ensuite, cette définition explicite la dimension *intergroupe* des théories du complot. En effet, la plupart des théories du complot seraient intrinsèquement intergroupes car mettant en scène un endogroupe menacé en secret par un exogroupe malfaisant (Biddlestone et al., 2020 ; Van Prooijen & Van Lange, 2014), que cet exogroupe soit réel ou fictif (voir Moscovici, 1987). Considérant cette structure des théories du complot ainsi que l'approche intergroupe de ces croyances étudiée dans ce travail, nous estimons qu'explicitement la nature intergroupe des théories du complot, comme dans la terminologie « intergroup conspiracy

theories » ([théories du complot intergroupe] e.g., Jolley et al., 2020), est redondant. Nous précisons plus en détail la terminologie utilisée dans ce travail dans la section ci-après.

Terminologie

Au-delà de notre choix de définition des théories du complot, il convient de fixer et de justifier la terminologie qui sera utilisée tout au long de ce travail pour parler du rapport de croyance à ces récits explicatifs. Dans les articles empiriques composant le cœur de ce travail, nous faisons le choix de parler principalement de *croyances conspirationnistes (conspiracy beliefs)* plutôt que d'*adhésion* ou de *croyance aux théories du complot (endorsement of/beliefs in conspiracy theories)*. Ces termes sont parfois utilisés dans la littérature de manière interchangeable. Cependant, dans cette thèse nous nous intéressons à une certaine forme de croyances conspirationnistes que nous supposons être éphémères et localisées car motivées par le besoin de faire face à la survenue de menaces intergroupes. Dès lors, la dénomination de croyance conspirationniste nous semble plus adaptée à notre propos que celle d'adhésion aux théories du complot. En effet, cette dernière dénomination nous semble être connotée aux *prominent conspiracy theories* (Swami et al., 2011), que nous proposons de traduire par les *grandes théories du complot* (e.g., théories du complot sur l'assassinat de JFK ou l'accident de Lady Diana).

Ces grandes théories du complot sont notamment mesurées à l'aide d'échelles de mesure dites d'inventaires, mesurant l'adhésion à des théories du complot connues mais faisant référence à des événements disparates (e.g., *Belief in Conspiracy Theories Inventory*, BCTI, Swami et al., 2011). Or, la portée de la diffusion et la longévité de ces grandes théories du complot nous semblent sans commune mesure avec les croyances conspirationnistes que nous étudions dans ce travail. Dès lors, ces grandes théories du complot, qui infusent souvent jusque dans la culture populaire (Coady, 2003), sont, a priori, assez peu pertinentes dans la perspective du présent travail. Aussi, nous tâcherons de favoriser la délimitation de notre objet

d'étude (i.e., les croyances conspirationnistes motivées au niveau intergroupe), en évitant dans la mesure du possible d'y faire référence par les termes de croyance ou d'adhésion aux théories du complot. Nous réserverons ces dénominations pour qualifier de manière générale le *champ* d'étude de l'adhésion aux théories du complot et son objet de recherche.

Ce choix terminologique est en accord avec la proposition de Douglas et al. (2019) d'utiliser le terme de croyance conspirationniste pour parler de l'adhésion à une théorie du complot spécifique. De même, nous utiliserons le terme de *théorie du complot* pour qualifier une forme de récit explicatif opposée à la version officielle d'un évènement (Keeley, 1999), sans pour autant qualifier le rapport de croyance à celui-ci. De plus, nous utiliserons à de nombreuses reprises le terme de croyances conspirationnistes *spécifiques* (i.e., à un contexte), par contraste avec ce qui s'apparenterait à des croyances conspirationnistes *génériques* telles que capturées par exemple par les inventaires de type BCTI (Swami et al., 2011) ou les mesures de mentalité conspirationniste de type *Conspiracy Mentality Questionnaire* (CMQ ; Bruder, 2014). Nous résumons la terminologie utilisée dans le tableau 1. Nous développons plus en avant cette distinction dans la section suivante en procédant à un aperçu de l'état actuel de la littérature générale en psychologie sociale et politique sur l'adhésion aux théories du complot.

Tableau 1

Résumé de la terminologie utilisée

Terme	Emploi
Théorie du complot	Récit opposé à la version officielle des évènements, accusant des exogroupes malveillants de comploter en secret contre l'endogroupe afin d'accomplir un objectif néfaste.

Grandes théories du complot	Théories du complot fortement durables dans l'espace et le temps
Adhésion aux théories du complot, croyances conspirationnistes génériques	Rapport de croyance générique aux grandes théories du complot. Par extension, qualifie l'objet d'étude du champ en psychologie sociale et politique.
Croyances conspirationnistes, croyances conspirationnistes spécifiques, adhésion aux théories du complot spécifiques	Rapport de croyance aux théories du complot spécifiques à un contexte.

Vue d'ensemble de l'état actuel de la littérature en psychologie sociale et politique sur l'adhésion aux théories du complot

La littérature sur l'adhésion aux théories du complot pourrait être qualifiée de littérature *jeune*. Certaines contributions pionnières sont relativement anciennes, à l'image de l'article d'Hofstadter (1964), ainsi que de quelques productions théoriques (Moscovici, 1987 ; Popper, 1963/2002) et empiriques (Abalakina-Paap, 1999 ; Goertzel, 1994 ; McCauley & Jacques, 1979). Cependant, il semblerait que le champ d'étude de l'adhésion aux théories du complot ait pleinement émergé à la fin des années 2000, avant de prendre de l'importance au milieu des années 2010 (Douglas et al., 2019), et d'exploser avec la pandémie de COVID-19. En effet, 25% des articles du champ auraient été publiés en 2020 (K. Sassenberg, communication personnelle, 08 juillet 2021), ce qui témoigne à la fois du nouvel engouement pour le sujet, mais aussi, de la difficulté de rendre compte de manière exhaustive de l'état actuel de la recherche. Aussi, nous n'allons présenter ici qu'une partie restreinte de cette littérature, que nous avons catégorisée arbitrairement suivant six approches : l'approche conséquentielle, l'approche dispositionnelle, l'approche culturelle, l'approche politique et idéologique, l'approche motivationnelle et enfin l'approche intergroupe. Ce choix dans

l'ordre de présentation de ces approches est basé sur deux critères : présenter dans un premier temps les travaux sur l'adhésion aux théories du complot en tant que prédicteurs (i.e., étude des conséquences de l'adhésion aux théories du complot), puis dans un second temps les travaux sur les prédicteurs de l'adhésion aux théories du complot. Dans ce second temps, nous procédons d'un niveau proximal jusqu'à un niveau distal, en partant des études portant sur une approche strictement inter-individuelle du phénomène avant de présenter les travaux s'insérant dans une approche intergroupe, qui constituera le cadre de ce travail. Le lecteur désirant une vision plus détaillée de la littérature générale sur l'adhésion aux théories du complot pourra se rapporter à l'une des nombreuses synthèses de la littérature récemment publiées sous formes d'articles (Douglas et al., 2019 ; Goreis & Voraceck, 2019 ; Van Prooijen & Douglas, 2018) ou d'ouvrage de référence (Butter & Knight, 2020).

Approche conséquentielle

L'approche *conséquentielle* porte sur l'étude des conséquences de l'adhésion aux théories du complot. La nature conséquentielle de l'adhésion aux théories du complot est une caractéristique constitutive de ces croyances telles qu'étudiées en psychologie sociale et politiques (Van Prooijen & Douglas, 2018), et constitue une justification centrale à l'étude de ce phénomène (Douglas & Sutton, 2018). En effet, la documentation des conséquences délétères de ces croyances a permis de légitimer et d'encourager la recherche sur le sujet.

En ce sens, les travaux de Jolley et collaborateurs (e.g., Jolley & Douglas, 2014a, 2014b), en démontrant expérimentalement les conséquences sociétales de l'exposition à des théories du complot, ont marqué un tournant dans la littérature. Par exemple, l'exposition à des théories du complot sur la vaccination diminue les intentions de vaccination d'un enfant fictif (Jolley & Douglas., 2014a ; voir également Chapitre 2) et l'exposition à de grandes théories du complot diminue les intentions de s'engager dans des comportements politiques (e.g., comportement de vote ; Jolley & Douglas, 2014b, étude 1). Des études similaires ont

montré que l'exposition à des théories du complot sur le changement climatique diminue les intentions de comportements pro-environnementaux, tels que les intentions de réduire son empreinte carbone (Jolley & Douglas, 2014b, étude 2) ou les intentions de signer une pétition de lutte contre le changement climatique (Van der Linden, 2015 ; voir également Chapitre 3). Une récente étude montre que l'exposition à de grandes théories du complot augmente les intentions de recourir à des infractions de droit commun (e.g., cacher les défauts d'un article revendu d'occasion ; Jolley et al., 2019, étude 2).

Une ligne de recherche peu étoffée mais prometteuse suggère que l'adhésion aux théories du complot *organisationnelles* (i.e., dans le milieu du travail en entreprise) soit également en lien à des conséquences délétères, telles que le désengagement organisationnel (Van Prooijen & de Vries, 2016) ou les intentions de turn-over (Douglas & Leite, 2017, étude 1). Douglas et Leite (2017, étude 3) ont par ailleurs montré que l'exposition à des théories du complot organisationnelles (induites par un scénario fictif) augmente les intentions de turn-over, et diminue l'engagement organisationnel et la satisfaction au travail. Enfin, l'exposition à des théories du complot « intergroupe » (i.e., mettant en scène un exogroupe nommé) augmente les intentions de préjudice envers cet exogroupe (Jolley et al., 2020 ; voir également Chapitre 4).

Dans la présente thèse, notre démarche s'inscrit dans la lignée de cette approche conséquentielle. Nous avons opérationnalisé nos études empiriques dans le cadre d'enjeux sociétaux d'importance (e.g., intentions de vaccination en contexte pandémique, attitudes envers la science sur le climat), afin de poursuivre la documentation des conséquences potentielles des croyances conspirationnistes.

Approche dispositionnelle

Dans son article fondateur, Richard Hofstadter (1964) emprunte un terme de psychiatrie, la *pensée paranoïde*, pour qualifier la tendance des mouvements politiques

Etatsuniens à adhérer à des théories du complot. Bien que récusant la pathologisation de la tendance à adhérer aux théories du complot, d'autres travaux ont entrepris d'identifier des traits psychopathologiques associés à ces croyances (e.g., Dagnall et al., 2015 ; voir également la revue systématique de Goreis & Voracek, 2019). Par exemple, Swami et al. (2016) rapportent des corrélations entre la BCTI (*Belief in Conspiracy Theories Inventory*, BCTI, Swami et al., 2011) et un certain nombre de mesures de troubles de la personnalité psychiatriques référencés dans le *Manuel diagnostique et statistique des troubles mentaux* DSM-5. Dans une méta-analyse, Imhoff et Lamberty (2018) rapportent également une relation positive entre l'adhésion aux théories du complot et la paranoïa. Cependant, ils différencient ces deux construits notamment en ce que les théories du complot impliquent une suspicion que des groupes malveillants agissent en secret contre d'autres groupes (ou la société), alors que la paranoïa implique une suspicion généralisée de tous contre soi.

L'approche psychopathologique de l'étude de l'adhésion aux théories du complot est cependant limitée par le constat, relativement partagé dans la communauté scientifique, que la pathologisation de suffit pas à qualifier la magnitude de ce fait social (Oliver & Wood, 2014 ; Wilson & Rose, 2014 ; Butter & Knight, 2015). Afin de convaincre que l'adhésion aux théories du complot, et les conséquences associées, touchent un large pan de la population, cet argumentaire de dépathologisation du phénomène a été largement déployé dans les récents articles théoriques (e.g., Douglas & Sutton, 2018 ; Van Prooijen & Douglas, 2018). Ce mouvement a d'ailleurs pu conduire certains psychologues cliniciens à se sentir mis à la marge du champ (Troubé, 2020). Il est intéressant de noter que le rejet de la pathologisation semble avoir conduit à d'importants efforts pour mettre à jour des explications dispositionnelles (i.e., mobilisant des différences au niveau inter-individuel) mais non-pathologisantes (e.g., Wood et Douglas, 2018). Certaines de ces lignes de recherche, parmi les plus influentes dans le champ, et visant à identifier des prédicteurs « stables » de l'adhésion

aux théories du complot, illustrent selon nous la complexité et les limites de l'étude strictement dispositionnelle de ce phénomène social.

En ce sens, la ligne de recherche visant à identifier les traits de personnalité du *Big Five* (voir McCrae & Costa, 2008) corrélés à l'adhésion aux théories du complot est indicative. Plusieurs recherches ont rapporté des relations positives entre l'adhésion aux théories du complot et le facteur « ouverture à l'expérience » (Swami et al., 2010, 2011), et des relations parfois négatives (Galliford & Furnham, 2017 ; Swami et al., 2011), parfois positives (Swami et al., 2010 ; Swami & Furnham, 2012) avec le facteur « agréabilité ». Une méta-analyse réalisée sur treize études a par la suite conclu à une absence de relation significative entre ces facteurs et l'adhésion aux théories du complot (Goreis & Voraek, 2019). Cependant, loin d'être abandonnée, cette ligne de recherche a continué d'être alimentée par de récents travaux (e.g., Bowes et al., 2020), notamment dans le cadre de la pandémie de COVID-19 (e.g., Lazarevic et al., 2021). La robustesse de cette tendance semble témoigner de la tentation de faire de l'adhésion aux théories du complot un problème purement inter-individuel, en lien à des prédicteurs stable, et ce malgré le constat que nombre de ces variables n'ont qu'une faible valeur explicative de ce phénomène (Furnham, 2013).

Une autre ligne de recherche à un niveau dispositionnel a connu une forte popularité, non sans controverse : l'hypothèse du système de croyance monologique. L'hypothèse de l'organisation de l'adhésion aux théories du complot sous la forme d'un système de croyance monologique est probablement tout à la fois le résultat le plus répliqué et le plus discuté du champ. Cette proposition a été formulée pour la première fois par Goertzel (1994) et tient sur un constat extrêmement simple : le meilleur prédicteur de l'adhésion à une théorie du complot est l'adhésion à une autre théorie du complot². Suivant cette proposition, l'adhésion aux

² Au sens strict, la monologicalité selon Goertzel implique également que les théories du complot se renforcent mutuellement entre elles. Cependant, cette approche de la monologicalité a été largement critiquée (Sutton & Douglas, 2014 ; 2020)

théories du complot serait organisée suivant un système de croyances interconnectées, faisant de l'adhésion à une théorie du complot un prédicteur stable et robuste de l'adhésion à une autre théorie du complot (Sutton & Douglas, 2014). Il a même été proposé que ce système de croyance monologique puisse inclure l'adhésion à des théories du complot en apparence contradictoires (e.g., l'adhésion à la théorie du complot qui prétend que Ben Laden est toujours vivant est corrélée positivement à l'adhésion et à la théorie du complot qui prétend que Ben Laden était déjà mort lorsque les États-Unis ont attaqué sa propriété au Pakistan ; Wood et al., 2012). Les conclusions de cette étude ont cependant été largement critiquées. En effet, Hagen (2018) défend que Wood et al. (2012) n'ont pas mesuré l'adhésion mais le niveau de crédibilité accordé aux deux théories du complot contradictoires. Autrement dit, adhérer à ces théories du complot contradictoires serait en fait comparable à envisager qu'un trousseau de clés égaré puisse se trouver sur la porte d'entrée ou sur la commode (Basham, 2017, cité par Hagen, 2018).

La proposition du système de croyance monologique a donné lieu à plusieurs échelles de mesures visant à capter la *mentalité conspirationniste* (terme initialement introduit par Moscovici, 1987). Notons que le terme de mentalité conspirationniste ne fait pas l'unanimité et que cette notion est parfois nommée *vision du monde conspirationniste* (*conspiracist worldview* ; e.g., Franks et al., 2017), l'*idéation conspirationniste* (*conspiracy ideation* ; e.g., Brotherton et al., 2013), l'*état d'esprit conspirationniste* (*conspiracy mindset* ; e.g., Sutton & Douglas, 2020a), la *prédisposition conspirationniste* (*conspiratorial predispositions* ; e.g., Edelson et al., 2017), ou encore la *pensée conspirationniste* (*conspiracy thinking* ; e.g., Stojanov et al., 2019). Ces différentes formulations renvoient toutes à la même idée : celle que l'adhésion aux théories du complot, si elle est organisée en système, devrait pouvoir être mesurée de manière « générique », c'est-à-dire en interrogeant des traits conspirationnistes *abstrait*s (Sutton & Douglas, 2020a). Par exemple, l'item 15 de la *Generic Conspiracist*

Beliefs Scale (GCBS, Brotherton et al., 2013, traduction française par Lantian et al., 2016) : « Beaucoup d'informations importantes sont délibérément dissimulées au public pour préserver des intérêts personnels » mesure une forme de perception conspirationniste, par contraste aux inventaires mesurant l'adhésion à de grandes théories du complot (ou à des croyances conspirationnistes spécifiques). Tout au long de ce travail nous avons utilisé à plusieurs reprises une autre mesure de la mentalité conspirationniste, la *Conspiracy Mentality Scale* (CMQ ; Bruder et al., 2013). Cette échelle, bien qu'ayant été psychométriquement critiquée (tout comme la GCBS ; voir Swami et al., 2017³), comporte l'avantage d'être une mesure courte (5 items), disponible en Français (voir Lantian et al., 2016), et largement utilisée dans le champ. Nous mobilisons cette échelle dans plusieurs des articles présentés dans ce travail, notamment afin de confronter nos hypothèses sur les facteurs contextuels et intergroupes à un indicateur d'une tendance plus stable à adhérer aux théories du complot. Avant de détailler l'état de la littérature sur l'approche intergroupe, nous présentons succinctement deux autres approches abordant l'adhésion aux théories du complot à un niveau collectif sans pour autant mobiliser les processus intergroupes de manière centrale.

Approche politique et idéologique

La psychologie politique s'est également saisie de l'étude des prédicteurs de l'adhésion aux théories du complot, notamment à l'aune des conséquences de ces croyances sur la défiance vis-à-vis des acteurs politiques et des institutions (Albertson & Guiler, 2020 ; Einstein & Glick, 2013 ; Kim & Cao, 2016), du désengagement de la vie citoyenne et du processus démocratique (Ardèvol-Abreu et al., 2020 ; Jolley et al., 2014b ; Uscinski & Parent, 2014) et de la montée des mouvements dits *populistes* (Castanho Silva et al., 2017 ; Hameleers, 2021 ; Van Prooijen, 2018). Il est à noter que le désengagement de la vie

³ Notons que Swami et al. (2017) conclut à une faiblesse psychométrique des principales échelles de mesure génériques et spécifiques de l'adhésion aux théories du complot, sauf de celle qu'il a lui-même conçue.

démocratique traditionnelle et la défiance envers les institutions provoquées par l'adhésion aux théories du complot semblent également aller de pair avec un engagement dans des formes d'expressions politiques alternatives (Franks et al., 2017), voire extrêmes et illégales (Imhoff et al., 2020). Nous détaillons ci-après de manière sommaire quelques facteurs au niveau des contextes et des affiliations politiques en lien à l'adhésion aux théories du complot.

L'adhésion aux théories du complot semble plus importante au niveau des deux *extrêmes* du continuum politique, formant une relation curvilinéaire (Enders & Uscinski, 2021 ; Krouwel et al., 2017 ; Nera et al., 2021 ; Van Prooijen et al., 2015). Cette proposition nuance de précédents résultats en faveur d'une prévalence de l'adhésion aux théories du complot au niveau de l'orientation politique de droite (e.g., telle que captée par la mesure d'autoritarisme de droite ; Imhoff & Bruder, 2014).

Un autre résultat robuste est la démonstration que les théories du complot sont pour les *perdants* (*Conspiracy theories are for losers* ; Uscinski & Parent, 2014). Derrière ce titre provocateur se cache la démonstration qu'aux Etats-Unis le niveau d'adhésion à certaines théories du complot est plus élevé chez les partisans qui ont *perdu* les élections que chez ceux qui les ont gagnées, tel que décrit par le *winner-loser gap* (Dahlberg & Linde, 2017). Cependant, au-delà de l'effet contextuel, il semblerait que la sensibilité envers certaines théories du complot spécifiques soit profondément ancrée dans les identités partisans, suivant le contour des rivalités entre groupes partisans et établissant des marqueurs de reconnaissance pour leurs membres (Smallpage et al., 2017). Aussi, la relation curvilinéaire entre adhésion aux théories du complot et extrémisme politique se retrouverait uniquement dans le cas de théories du complot spécifiquement partisans (e.g., accusant les opposants politiques) et en lien à l'identification politique (Enders & Uscinski, 2021).

Cependant, l'affiliation partisane ne suffit pas à qualifier l'adhésion aux théories du complot en lien à la politique. Par exemple, Edelson et al. (2017) ont montré à travers une

étude longitudinale que l'adhésion aux théories du complot à propos de fraude électorale est à la fois partisane (motivée au niveau d'une appartenance groupale et idéologique ; voir également Miller et al., 2016) mais est également largement prédite par la mentalité conspirationniste. Ces résultats ont été en partie corroborés par Enders et al. (2020), qui ont observé que l'affiliation partisane est le meilleur prédicteur des théories du complot *birther* (i.e., arguant que Barack Obama n'aurait pas la nationalité Etatsunienne et ne serait donc pas éligible à la présidence), alors que la mentalité conspirationniste est le meilleur prédicteur des théories du complot *truther* (i.e., arguant que le gouvernement Etatsunien serait partie prenante dans la conduite des attentats du 11 septembre 2001). Il ressort de ces études que la mentalité conspirationniste doit être différenciée de l'adhésion à des théories du complot spécifiques, et s'en trouve être un bon prédicteur, constat sur lequel se base une partie du présent travail.

Comme illustré par Enders et al. (2020), l'étude de l'adhésion aux théories du complot en psychologie politique a en partie procédé en prolongeant certaines des principales lignes de recherches développées en psychologie sociale. Comme mentionné précédemment, la mentalité conspirationniste a été particulièrement utilisée pour théoriser une forme d'idéologie politique conspirationniste (Imhoff & Bruder, 2014). Il a également été suggéré que l'adhésion aux théories du complot politique s'inscrive dans le système de croyance monologique, en étant corrélée à d'autres théories du complot spécifiques comme les théories du complot médicales (Galliford & Furnham, 2017).

Une autre notion importante dans l'étude de l'adhésion aux théories du complot en psychologie sociale a été utilisée dans l'approche politique de ce phénomène : le sentiment de manque de contrôle. Un certain nombre d'études ont montré qu'une induction expérimentale d'un sentiment de manque de contrôle personnel augmente l'adhésion aux théories du complot (Van Prooijen & Acker, 2015 ; Whitson & Galinsky, 2008 ; voir également Chapitre

4). Cet effet a été par la suite répliqué dans l'étude de l'effet d'évènements politiques sur l'augmentation de l'adhésion aux théories du complot. Par exemple, Stojanov et al. (2021b) ont observé qu'un évènement politique (le référendum sur le changement de nom de la Macédoine) conduit à une augmentation durable de l'adhésion aux théories du complot chez les individus se sentant privés de contrôle (les opposants au changement de nom). De même, les opposants à l'annexion de la Crimée adhéraient plus fortement aux théories du complot sur cet évènement (Chayinska et Minescu, 2018). Bien que différents, ces deux contextes culturels ont ainsi été le théâtre d'une augmentation de l'adhésion à des théories du complot spécifiques et motivées au niveau idéologique et groupal. Ces constatations participent à l'intérêt récent pour les différences et similitudes interculturelles dans les croyances conspirationnistes.

Approche culturelle

Les croyances conspirationnistes sont supposément *universelles* (Van Prooijen & Douglas, 2018 ; Van Prooijen & Van Vugt, 2018), c'est-à-dire qu'elles ne sont pas limitées à une zone géographique ou à une époque. De fait, ces croyances ont été documentées auprès de populations non WEIRD (Western, Educated, Industrialized, Rich and Democratic [occidentale, éduquée, industrialisée, riche et démocratique]). Par exemple, plusieurs études sur l'adhésion aux théories du complot se sont basées sur des échantillons en Asie (e.g., Swami, 2012), au Moyen-Orient (e.g., Sallam et al., 2021), en Afrique (e.g., Olatunji et al., 2020) ou encore en Amérique du Sud (e.g., Carey et al., 2020).

D'autres travaux se sont attachés à établir des différences en termes de valeurs culturelles (Hofstede, 1984). Par exemple, il a été montré que la masculinité (i.e., la recherche de la réussite personnelle et matérielle) et le collectivisme (i.e., la valorisation de l'appartenance à des groupes dans une société) sont des prédicteurs robustes de l'adhésion aux théories du complot (Adam-Troian et al., 2020). Ces résultats semblent être nuancés par Van

Prooijen et Song (2021), qui ont montré que l'effet du collectivisme sur l'adhésion aux théories du complot est en partie expliqué par deux marqueurs de conflits intergroupes, le narcissisme collectif et la perception de menace intergroupe. Ainsi, ce ne serait pas tant le type de valeur culturelle qui serait prédicteur de l'adhésion aux théories du complot, mais bien les motivations intergroupes sous-jacentes.

Si l'adhésion aux théories du complot n'est pas l'apanage d'un *lieu*, un certain nombre de propositions parlent d'une certaine forme de contemporanéité, figurant une *ère du complotisme* (Peltier, 2016), ce qui contredirait la caractérisation universelle de ce phénomène. Par exemple, une idée relativement répandue dans les médias d'opinion (e.g., Cabiten et al., 2021) et qui transparaît parfois dans le champ (e.g., McGee, 2011) serait qu'internet et les médias sociaux aient un impact sur l'adhésion aux théories du complot, qui atteindraient plus facilement leur audience grâce à ces modes de diffusion (pour une discussion de cet argument, voir Uscinski et al., 2021). Un certain nombre d'études à fort impact présentent des corrélations entre l'adhésion aux théories du complot et l'utilisation des médias sociaux (e.g., Allington et al., 2020). Cependant, la corrélation entre utilisation des médias sociaux et croyances conspirationnistes serait contingente de la mentalité conspirationniste (Enders et al., 2021). Il a même été récemment suggéré que l'utilisation active des médias sociaux atténuerait l'effet négatif des croyances conspirationnistes sur la confiance envers les institutions (Mari et al., 2021). Aussi, bien que contribuant à la diffusion des théories du complot auprès d'une large audience, l'utilisation des médias sociaux ne serait donc pas suffisante pour qualifier la *flambée* contemporaine de théories du complot si souvent décrite.

Ces croyances seraient-elles plus généralement le fruit de la modernité, portées par exemple par le sentiment d'*insécurité existentielle* de notre époque (Aupers, 2012) ? L'étude d'Uscinski et Parent (2014) tend également à infirmer cette proposition. Sur la base d'une

analyse du courrier envoyé à plusieurs grands journaux quotidiens américains, ils ont montré que la fréquence de *courrier* conspirationniste est relativement stable entre 1897 et 2010, avec un pic dans les années 1950-1960 (qui pourrait être qualifié de véritable *âge d'or* des théories du complot). Il est à noter que les auteurs notent des pics de courrier conspirationniste au moment des périodes de crise (e.g., guerres, crises économiques). Le présent travail procède de ce constat en envisageant l'étude des croyances conspirationnistes à l'aune de périodes de crises perçues en tant que menace pour le soi (social) et pour l'endogroupe.

Approche motivationnelle

La littérature sur l'adhésion aux théories du complot en psychologie sociale et politique était relativement éparse jusqu'à récemment, manquant d'un cadre théorique et interprétatif. En ce sens l'article de Douglas et al. (2017) nous marque une avancée⁴. Cette contribution théorique organise les connaissances actuelles et les recherches futures suivant trois grandes motivations (non-exclusives entre elles) à l'adhésion aux théories du complot : les motivations épistémiques, existentielles, et sociales.

Les motivations épistémiques renvoient à la recherche d'explications causales dans la compréhension du monde (Douglas et al., 2017). Les théories du complot proposent en effet des explications causales séduisantes car simplifiées, spéculatives et infalsifiables (Douglas et al., 2017). De nombreuses variables en lien à l'adhésion aux théories peuvent être classées dans cette catégorie de motivations. Par exemple, le besoin d'unicité (i.e., le besoin de se sentir différent d'autrui à travers la possession d'informations rares ; Lantian et al., 2017) a été causalement lié à l'adhésion aux théories du complot (Lantian et al., 2017) et indirectement à travers la mentalité conspirationniste lorsque la théorie du complot était présentée comme recevant un soutien minoritaire (Imhoff & Lamberty, 2017).

⁴ Notons néanmoins que cet article ne propose pas à proprement parler un cadre théorique intégratif, qui semble toujours faire défaut au champ (Goreis & Voracek, 2019).

Au-delà de la recherche d'information *rare*s, la recherche d'une information intuitive semble également en lien aux motivations épistémiques. En effet, le style de pensée *analytique* (i.e., raisonner sur nos intuitions, nos sensations et nos instincts et potentiellement les ignorer [« reasoning about and potentially overriding our intuitions, gut feelings, and instincts »], Pennycook et al., 2015, p. 425) est négativement corrélé à l'adhésion aux théories du complot (Stahl & Van Prooijen, 2018 ; Swami et al., 2014). De même, augmenter expérimentalement la pensée analytique réduit l'adhésion aux théories du complot (Swami et al., 2014). Ainsi, la pensée analytique réduirait l'adhésion aux théories du complot grâce à un traitement de l'information plus attentif. A l'inverse, la pensée *intuitive* conduirait à une plus forte adhésion aux théories du complot (Tomljenovic et al., 2020 ; Pytlik et al., 2020). La motivation à connaître son environnement conduirait à adhérer spontanément aux théories du complot, à moins qu'un effort analytique ne soit produit.

Les motivations existentielles renvoient à la recherche de sécurité et de contrôle dans son environnement. Comme précédemment développé, il a été proposé que l'adhésion aux théories du complot agisse en compensation d'un manque de contrôle personnel (Van Prooijen & Acker, 2015 ; Whitson & Galinsky, 2008). Les travaux récents de Stojanov et de ses collaborateurs nuancent cependant ces résultats. Notamment, le manque de contrôle semble plus fortement lié aux théories du complot spécifiques qu'à la mentalité conspirationniste (Stojanov & Halberstadt, 2020). Des résultats préliminaires suggèrent également que cette relation serait dépendante du contexte (*domain specific* ; Stojanov et al., 2021b), c'est-à-dire que le domaine dans lequel est éprouvé le manque de contrôle conduirait à une augmentation de l'adhésion aux théories du complot uniquement en lien à ce domaine.

D'autres lignes de recherche se situent à l'intersection de plusieurs motivations, qui doivent être conceptualisées comme poreuses entre elles. Par exemple, les travaux sur la relation entre le besoin de clôture cognitive et l'adhésion aux théories du complot (Leman &

Cinnirella, 2013 ; Marchlewska et al., 2018b) pourraient être catégorisés à la fois comme motivation épistémique et existentielle. En effet, le besoin de clôture cognitive vise à trouver des croyances claires sur la réalité (motivation épistémique), afin de réduire l'incertitude (motivation existentielle).

Les motivations sociales enfin, portent globalement sur le désir d'appartenance et de maintenir une bonne image de soi et du groupe. Comme discuté précédemment, l'appartenance partisane et la défaite à des élections sont par exemple de robustes prédicteurs de l'adhésion à certaines théories du complot spécifiques (Enders & Uscinski, 2021 ; Uscinski & Parent, 2014). De même, la perception des normes de l'endogroupe en termes de croyances conspirationnistes est un bon prédicteur des croyances conspirationnistes d'un individu (Cookson et al., 2021). L'appartenance à un groupe *impuissant* (*powerless*) est aussi un bon prédicteur, en attestent les études montrant que l'appartenance à la communauté Africaine Américaine est un prédicteur important de l'adhésion aux théories du complot à propos du gouvernement (Parsons et al., 1999) et de la transmission du VIH (Heller, 2015). Cette relation a été interprétée comme un marqueur de défiance vis-à-vis du système et du gouvernement (Simmons & Parsons, 2005), ou comme une rationalisation de la situation négative de l'endogroupe par l'attribution des causes de cette situation à des groupes malfaisants (Abalakina-Paap et al., 1999 ; Crocker et al., 1999). La mécanique d'attribution des responsabilités (*blame*) au cœur de cette dernière interprétation a par ailleurs été récemment reprise par Biddlestone et al. (2020) et Sternisko et al. (2020a) et constitue le socle de la réflexion de notre Chapitre 5. Il est intéressant de noter que ces recherches récusent déjà des explications pathologisantes et en termes de trait de personnalité (Crocker et al., 1999), et de caractéristiques démographiques (Parsons et al., 1999 ; Simmons & Parsons, 2005). Notons enfin que la motivation à faire face à l'impuissance de l'endogroupe ne recoupe pas uniquement des motivations sociales, mais également épistémiques (expliquer la

situation de l'endogroupe) et existentielles (faire face à l'incertitude éprouvée face à cette situation). Nous allons maintenant présenter les prémisses à l'origine de l'approche intergroupe, ainsi que certaines variables centrales à l'étude des motivations sociales aux croyances conspirationnistes.

L'approche intergroupe des croyances conspirationnistes

Propositions théoriques structurant l'approche intergroupe

Nous détaillons ici les bases théoriques de l'approche intergroupe que nous avons identifiées dans la littérature. Nous présentons dans un premier temps les contributions théoriques portant directement sur l'étude des croyances conspirationnistes suivant un ordre chronologique de publication (Kreko, 2015 ; Sternisko et al., 2020b ; Van Prooijen & Van Lange, 2014), avant de présenter d'autres bases théoriques de cette approche ne s'insérant pas pour autant dans le champ d'étude des croyances conspirationnistes (e.g., Stephan et al., 2016 ; Tajfel & Turner, 1979 ; Turner et al., 1987). Nous prenons également position théoriquement à plusieurs reprises lors de la présentation de ces travaux, en faisant référence à l'utilisation que nous faisons de ces propositions. Ce positionnement est cependant purement indicatif, l'ensemble de nos propositions théoriques étant résumé dans la section *Propositions théoriques*.

Historiquement, la première contribution théorisant l'étude des processus intergroupes impliqués dans l'adhésion aux théories du complot est probablement le chapitre d'ouvrage de Van Prooijen et Van Lange (2014). A partir du constat que ces croyances intergroupes sont caractérisées par un raisonnement du type *nous contre eux* (« us versus them » ; Van Prooijen & Van Lange, 2014, p. 238), les auteurs supposent qu'une perception des délimitations intergroupes serait à l'œuvre dans les processus motivant l'adhésion aux théories du complot.

Le cœur de cette proposition théorique est que l'adhésion aux théories du complot peut être conceptualisée comme une perception de menace intergroupe (« it is theoretically

meaningful to conceptualize conspiracy beliefs in terms of perceived intergroup threat », Van Prooijen & Van Lange, 2014, p. 239). Une perception de menace intergroupe se produit lorsque les actions, croyances ou caractéristiques d'un groupe remettent en question la réalisation des objectifs ou le bien-être d'un autre groupe (« intergroup threat occurs when one group's actions, beliefs, or characteristics challenge the goal attainment or well-being of another group » ; Riek et al., 2006, p. 336). Dans le Chapitre 4 du présent travail, nous dévions de cette conceptualisation et nous faisons l'hypothèse que les théories du complot ne sont pas une simple perception de menace intergroupe, mais en sont la conséquence.

Van Prooijen et Van Lange (2014) avancent également que les croyances conspirationnistes seraient motivées par une perception de victimisation de l'endogroupe (« we will make the case that conspiracy beliefs are to some extent driven by a perception of the self as connected with the victimized or threatened citizens », [nous défendrons l'idée que les croyances conspirationnistes sont, dans une certaine mesure, motivées par la perception de soi comme étant liée aux citoyens victimisés ou menacés], p. 426). Dans le Chapitre 5 de cette thèse, nous opérationnalisons cette proposition et nous examinons la relation entre la victimisation collective et les croyances conspirationnistes. Dans la lignée de Van Prooijen & Van Lange (2014), d'autres propositions théoriques ont poursuivi la conceptualisation des croyances conspirationnistes à un niveau intergroupe, et notamment de leurs possibles fonctions pour les membres de l'endogroupe.

Dans un chapitre d'ouvrage, Kreko (2015), propose d'interpréter les croyances conspirationnistes comme des formes de *cognitions motivées collectives* (*collective motivated cognition*) au niveau de l'endogroupe. Cette dénomination renvoie à l'idée que les croyances conspirationnistes sont collectives en ce qu'elles émergent dans des groupes et reflètent des conflits intergroupes ; elles sont motivées car supposément en lien à des besoins frustrés (voir Douglas et al., 2017) ; et elles sont cognitives en ce qu'elles constituent des explications

idoines sur l'environnement social et politique. Les propositions théoriques formulées par Kreko (2015) portent principalement sur les fonctions supposées des croyances conspirationnistes à l'aune de l'appartenance à l'endogroupe. Nous ne détaillerons ici que celles dont il sera fait écho dans notre travail.

Alors que van Prooijen et van Lange (2014) assimilaient les croyances conspirationnistes à des perceptions de menaces intergroupes, Kreko (2015) propose que ces croyances soient un moyen de détecter des menaces intergroupes. Suivant cette conceptualisation, les croyances conspirationnistes sont antérieures à la perception de menace (proposition également formulée par Stephan & Renfro, 2002). Comme mentionné précédemment, nous conceptualisons et testons une causalité inverse (voir le Chapitre 4). Par ailleurs, dans le cadre de ce même Chapitre 4 nous testons également la proposition de Kreko (2015) selon laquelle les croyances conspirationnistes augmentent l'hostilité intergroupe en la justifiant. Kreko (2015) propose enfin que ces croyances servent à protéger et augmenter l'estime de soi collective, en blâmant des exogroupes pour les problèmes rencontrés par l'endogroupe. Nous nous saisissons de cette proposition dans le cadre de notre conceptualisation des croyances conspirationnistes comme des stratégies de gestion de l'identité sociale. Nous adressons tout particulièrement cette proposition dans le cadre du Chapitre 6.

Les deux contributions théoriques présentées ci-avant permettent une bonne assise de la conceptualisation des croyances conspirationnistes et de leurs fonctions au niveau intergroupe. Cependant, il nous semble que ces contributions théoriques ne permettent pas une bonne prise en compte de l'extrême diversité du contenu des théories du complot. Autrement dit, comment expliquer qu'un citoyen Français puisse avoir des croyances conspirationnistes qui ne concernent pas son endogroupe (e.g., le faux alunissage du programme Apollo) ?

Dans un récent article théorique, Sternisko et al. (2020b) adresse cette question en différenciant l'adhésion aux théories du complot suivant qu'elles *attirent* pour leurs qualités (i.e., étant alors motivées par un besoin d'unicité⁵) ou pour leur contenu (e.g., motivées par une appartenance à l'endogroupe). Cette dernière composante est liée par les auteurs aux motivations sociales à adhérer à des croyances conspirationnistes spécifiques car pertinentes dans un contexte intergroupe. Notons que cette proposition théorique nous paraît puissante car elle permet de théoriser conjointement le système de croyance monologique (attirait pour la qualité des théories du complot, motivations au niveau individuelle), et les fonctions identitaires des croyances conspirationnistes (attirait pour le contenu des théories du complot, motivations au niveau intergroupe). Notons enfin que les auteurs précisent que ces deux catégories sont non-exclusives entre elles, c'est-à-dire qu'il est possible d'envisager que pour un même individu, une théorie du complot soit attirante pour son contenu mais également pour ses qualités.

Les différentes contributions théoriques que nous avons présentées et qui structurent selon nous l'approche intergroupe (Kreko, 2015 ; Sternisko et al., 2020b ; Van Prooijen & Van Lange, 2014) se basent à un niveau plus ou moins explicite sur au moins deux corpus théoriques : l'Approche de l'identité sociale (Reicher et al., 2010) et la Théorie de la menace intergroupe (Stephan et al., 2016 ; Stephan & Stephan, 2017). Anciennement nommée Théorie de la menace intégrée (Stephan & Stephan, 2000), la Théorie de la menace intergroupe prédit que différents types de menaces perçues au niveau groupal (symbolique et réaliste dans la version la plus récente de cette théorie), ont différents antécédents et conséquences au niveau émotionnel et des relations intergroupes. Nous ne développerons pas

⁵ Entre autres exemple, la recherche de divertissement (voir van Prooijen et al., 2021) pourrait être une motivation à l'adhésion aux théories du complot sur la base de leurs qualités.

outre mesure l'influence de la Théorie de la menace intergroupe, que nous avons déjà abordée précédemment et qui est largement discutée dans le Chapitre 4.

Notons pour l'heure que cette théorie permet de conceptualiser la menace intergroupe perçue comme déterminant des croyances conspirationnistes (Cichocka et al., 2016). Dans ce travail, nous mobilisons principalement la notion de menace intergroupe symbolique (i.e., en lien aux valeurs de l'endogroupe), mais d'autres articles ont également utilisé la menace intergroupe réelle (e.g., Mashuri et al., 2015a). En effet, les menaces intergroupes réalistes et symboliques peuvent participer chacune à expliquer des parts uniques de variance de l'attitude envers des exogroupes (Riek et al., 2006). Il n'est donc pas étonnant que le récent modèle théorique de van Prooijen (2019) mobilise ces deux types de menace. Ce modèle prédit la survenue de croyances conspirationnistes lorsqu'une menace existentielle est perçue (i.e., un sentiment d'anxiété ou d'incertitude ressenti en réaction à un évènement sociétal remettant en question les valeurs, le mode de vie ou l'existence) et qu'un exogroupe antagoniste est saillant. D'autres contributions théoriques prédisent également que les *perceptions de complot* émergeraient entre des groupes lorsque qu'un groupe perçoit que l'autre représente une menace économique, sociale ou existentielle (Kramer & Schaffer, 2014). Enfin, nous mobilisons la notion de menace *globale* (ou menace *macro* ; e.g., Brambilla & Butz, 2013) dans le cadre d'études conduites à propos d'évènements *transnationaux* (e.g., pandémie, changement climatique). Bien que non directement intergroupe, ces menaces sont cependant susceptibles de faire augmenter la suspicion et de détériorer les relations intergroupes (Butz & Yogeeswaran, 2011).

L'approche de l'identité sociale (Reicher et al., 2010 ; voir également Licata, 2007 pour une introduction) regroupe deux théories influentes en psychologie sociale : la Théorie de l'identité sociale (Tajfel & Turner, 1979) et la Théorie de l'auto-catégorisation (Turner et al., 1987). La Théorie de l'identité sociale théorise l'importance de l'identité sociale, dérivée

de l'appartenance à des groupes (Brown, 2000), dans les relations intergroupes. En effet, la comparaison intergroupe serait au cœur du processus de valorisation de l'identité sociale (i.e., la partie du concept de soi d'un individu qui découle de sa connaissance d'appartenir à un groupe social, ainsi que la valeur et la signification émotionnelle qu'il attache à cette appartenance [« that part of an individual's self-concept which derives from his knowledge of his membership in a social group together with the value and emotional significance attached to that membership »], Tajfel, 1981, p. 255, cité par Luhtanen & Crocker, 1992, p. 302). Dans cette définition transparaissent par ailleurs les deux dimensions formalisées et mesurées grâce l'échelle de Leach et al. (2008), l'identification par investissement de soi et par définition de soi (dont nous utilisons la sous-composante de satisfaction dans les Chapitres 4 et 5).

La valeur positive d'une identification pouvant être menacée, différentes stratégies de gestion de l'identité peuvent être déployées pour y faire face (Berjot & Gillet, 2011 ; Blanz et al., 1998 ; Branscombe et al., 1999). Par exemple, face à une menace de l'identité, les individus qui s'identifient faiblement vont avoir tendance à s'écarter du groupe (mobilité sociale) alors que les individus s'identifiant fortement vont mobiliser des stratégies pour faire face à cette menace et maintenir une identité sociale positive (Ellemers et al., 1997). De même, nous suggérons que les croyances conspirationnistes soient des stratégies de gestion de l'identité sociale utilisées par les individus fortement identifiés. Cependant, dans le prolongement de Cichocka et al. (2016), nous faisons la prédiction que seule une forte identification *défensive* (i.e., narcissisme collectif) soit en lien aux croyances conspirationnistes. Aussi, nous proposons deux critères pour qualifier le type d'identité sociale susceptible de recourir aux croyances conspirationnistes : un critère *quantitatif* (i.e., une forte identification) et un critère *qualitatif* (i.e., une identification défensive). Notons que nous nous inscrivons ici dans le prolongement de Brown (2000), qui invite à développer les liens entre l'identification et la formation du système de croyances et de mythes sociaux

justifiant le préjudice intergroupe. Alors que le processus causal conduisant au préjudice intergroupe est testé dans le Chapitre 4, nous suggérons que les croyances conspirationnistes *per se* (i.e., pas uniquement en tant qu'elles sont en lien au préjudice intergroupe) constituent une forme de stratégie de gestion de l'identité sociale.

La Théorie de l'auto-catégorisation (Turner et al., 1987) théorise les conditions de *saillance* d'une identité sociale, suivant des critères d'accessibilité de l'identité et de pertinence du contexte de saillance. Par exemple, parmi les multiples identités sociales disponibles pour un individu (complexité de l'identité sociale ; Roccas & Brewer, 2002), une perception de menace pour l'endogroupe va rendre saillante l'identification en lien à cet endogroupe (Roccas & Brewer, 2002). Cette théorie est moins centrale dans notre travail. Cependant, nous la mobilisons dans le cadre du Chapitre 6 pour théoriser l'évolution du niveau de catégorisation des groupes mobilisés dans le cadre de théories du complot pendant la coupe du monde de la FIFA 2018.

Etat actuel de la littérature sur l'approche intergroupe

Afin d'éviter d'être redondant avec les parties précédentes et les sections théoriques des articles présentés dans la suite de ce travail, nous n'allons pas développer ici l'importance de la prise en compte de la perception de menace intergroupe (Cichocka et al., 2016 ; Mashuri & Zaduqisti, 2015b) et du type d'identification au groupe (Cichocka et al., 2016 ; Marchlewska et al., 2019) dans l'étude des croyances conspirationnistes. Ces deux variables sont parmi les plus mobilisées en tant que prédicteurs des croyances conspirationnistes dans les travaux qui pourraient être catégorisés dans l'approche intergroupe. Au niveau des conséquences de ces croyances intergroupes, les intentions de discrimination sont la mesure la plus souvent utilisée (e.g., Jolley et al., 2020 ; Marchlewska et al., 2019 ; Mashuri & Zaduqisti, 2014a ; voir également le Chapitre 4). Ainsi, notre perspective de recherche s'intéresse aux déterminants et aux conséquences des croyances conspirationnistes comme

stratégies de gestion d'identités sociales *préexistantes* (e.g., identification à la nation ou à une équipe de football). Avant de développer nos propositions théoriques, il convient de mentionner une autre ligne de recherche proche s'intéressant aux croyances conspirationnistes comme socle d'une appartenance groupale et par extension d'une identification.

Cette conceptualisation *communautaire* des croyances conspirationnistes a été largement structurée par Franks et al. (2017), qui décrivent une typologie intergroupe des niveaux de catégorisation (i.e., vision du monde) de l'endogroupe *théoriciens du complot* par rapport aux exogroupes. Dans la continuité de ces travaux, Nera et al. (2021) proposent un modèle selon lequel l'identification comme « complotiste » serait nourrie par la perception de discrimination contre ce groupe, et contre les théories du complot. Enfin, alors que l'adhésion aux théories du complot semble permettre une identification, être ostracisé (i.e., privé d'identification) augmente l'adhésion aux théories du complot génériques (Poon et al., 2020). Notons que les faibles tailles d'effet observées par les auteurs pourraient s'expliquer par le recours à des inventaires de théories du complot plutôt qu'à des mesures de croyances conspirationnistes spécifiques (i.e., dont le contenu serait plus pertinent).

Propositions théoriques

Sur la base de la littérature précédemment exposée et afin d'examiner dans quelle mesure les croyances conspirationnistes sont des stratégies de gestion de l'identité sociale, nous formulons une série de propositions opérationnalisées et testées dans ce travail de thèse.

Tout d'abord, dans le prolongement des précédentes contributions théoriques de l'approche intergroupe, nous conceptualisons les croyances conspirationnistes à un niveau intergroupe, en différenciant les théories du complot portant sur l'endogroupe de celles portant sur l'exogroupe (réplication conceptuelle de Cichocka et al., 2016). Nous faisons en outre l'hypothèse que les croyances conspirationnistes spécifiques sont différentes de la

mentalité conspirationniste ou d'autres formes de défiance (e.g., scepticisme climatique ; voir Chapitre 3).

Ensuite, dans le prolongement d'une ligne de recherche déjà féconde (réplication conceptuelle de Cichocka et al., 2016 ; Marchlewska et al., 2019 ; Sternisko et al., 2020a), nous prédisons une relation entre l'identification sociale défensive (i.e., le narcissisme collectif), et les croyances conspirationnistes. Par contraste, nous nous attendons à ce que l'identification sécuritaire ne soit pas en lien aux croyances conspirationnistes. Nous testons ces relations dans différents contextes.

De plus, nous conceptualisons la perception de menaces intergroupes comme étant le déclencheur des croyances conspirationnistes (réplication conceptuelle de Cichocka et al., 2016). En effet, si les croyances conspirationnistes permettent de faire face à une menace de l'identité sociale (ou de faciliter le recours à des actions ayant ce but), la perception de menace semble être une condition nécessaire au déclenchement de ce processus.

Enfin, nous formulons l'hypothèse originale qu'une perception exacerbée de la victimisation de l'endogroupe (i.e., victimisation exclusive) motiverait les croyances conspirationnistes.

Présentation générale des articles

Le présent travail est organisé suivant le format *thèse par articles*. Nous reproduisons ci-après cinq articles empiriques en premier auteur, publiés, acceptés, en cours de révision ou soumis pour publication (voir les sections *Article Information*).

L'ensemble de ces articles a été rédigé en anglais. Afin de préserver l'exactitude du propos (notamment à l'aune du travail de révision par les pairs), nous avons pris la décision de présenter ces articles dans leurs versions originales, sans les traduire en français. Afin de faciliter la fluidité de la lecture, nous avons également rédigé les courtes transitions entre ces

articles en anglais. Nous présentons le matériel des articles dans la partie Annexe à la fin de ce manuscrit (i.e., matériel utilisé dans les études, matériel et analyses supplémentaires).

Enfin, et en l'absence de norme de rédaction *officielles*, nous avons fait le choix de rédiger l'ensemble de ce manuscrit suivant les normes de la 7^{ème} édition de l'American Psychological Association (American Psychological Association, 2019), dans la continuité des articles présentés.

Le premier article a été conduit dans le cadre de la pandémie de COVID-19. Nous y testons l'effet des croyances conspirationnistes sur le COVID-19 (croyances conspirationnistes intergroupes, et croyances conspirationnistes relatives à l'hydroxychloroquine), ainsi que de la mentalité conspirationniste sur l'attitude générale envers la vaccination et les intentions de vaccination spécifiques au COVID-19. Ce premier article illustre l'importance de différencier les différents construits (croyances conspirationnistes sur l'endogroupe, l'exogroupe, spécifiques, mentalité conspirationniste) dans l'étude des conséquences sociétales de ces croyances.

Le deuxième article porte sur les attitudes envers la science sur le climat. Nous y débutons à proprement parler l'étude des facteurs intergroupes en lien avec les croyances conspirationnistes en mobilisant le narcissisme national. Nous testons un modèle de médiation de la relation entre le narcissisme national et les attitudes envers la science sur le climat par les croyances conspirationnistes sur le climat. Ce deuxième article poursuit la différenciation entre croyance conspirationniste, mentalité conspirationniste et scepticisme sur le climat. De plus, ce deuxième article suggère que les croyances conspirationnistes en lien à une identification nationale défensive pourraient avoir des conséquences environnementales néfastes.

Dans un troisième article, nous testons les relations de causalité entre le type d'identification nationale, la perception de menace intergroupe, les croyances

conspirationnistes et le préjudice intergroupe. Nous y testons également l'influence du manque de contrôle personnel sur la relation entre narcissisme national et croyances conspirationnistes. Nous avons opérationnalisé ce programme de recherche dans le cadre du préjudice envers les migrants. Ce troisième article illustre l'importance de prendre en compte la perception de menace intergroupe dans l'étude des croyances conspirationnistes, ainsi que les conséquences délétères sur les discriminations envers les migrants. Nous y suggérons également que les croyances conspirationnistes pourraient augmenter en cas de compensation d'un manque de contrôle personnel par une identification narcissique.

Dans un quatrième article, nous avançons l'idée qu'une perception exacerbée de la victimisation de l'endogroupe dans un contexte de crise (i.e., victimisation exclusive ; Vollhardt et al., 2021) soit une explication possible de la relation entre narcissisme national et croyances conspirationnistes. Nous testons cette hypothèse de façon expérimentale dans le cadre d'une étude supplémentaire.

Dans un cinquième article, nous appliquons notre conceptualisation des croyances conspirationnistes comme stratégies de gestion de l'identité à une analyse de tweets émis lors de la Coupe du monde de la FIFA 2018. Nous proposons qu'en tant que stratégies de gestion de l'identité sociale, les croyances conspirationnistes soient éphémères et voient leur contenu évoluer au fil de l'avancement de la compétition. Nous présentons enfin une deuxième étude supplémentaire dans le cadre de laquelle nous répliquons nos principales hypothèses dans le cadre d'une étude longitudinale menée lors de l'Euro 2020 (dont nous ne présentons que le matériel et la procédure).

Enfin, et parce que certaines études ont été utilisées dans le cadre de plusieurs articles, nous résumons l'utilisation faite de l'ensemble des études menées ainsi que leurs principales caractéristiques (e.g., type de plan d'expérience) dans le Tableau 2.

Tableau 2*Synthèse des études présentées dans les articles*

Etude	Nombre de participants	Nationalité	Mode de recrutement	Type de plan d'expérience	Chapitre	Article
Etude 1	$N = 409$	Français	Tout venant (réseaux sociaux)	Corrélationnel	2, 3	1, 2
Etude 2	$N = 396/375$	Français	Tout venant (réseaux sociaux), étudiants	Corrélationnel	2, 3	1, 2
Etude 3	$N = 295$	Français	Etudiants	Corrélationnel	3	2
Etude 4	$N = 1104$	Français	<i>Dynata</i>	Corrélationnel	4, 5	3, 4
Etude 5	$N = 474$	Français	<i>Foule Factory</i>	Expérimental	4	3
Etude 6	$N = 350$	Français	<i>Foule Factory</i>	Expérimental	4	3
Etude 7	$N = 331$	Français	<i>Prolific Academic</i>	Expérimental	5	E.S
Etude 8	N.C	Français, Belge, Anglais	Tout venant (<i>Reddit</i> , <i>Facebook Ads</i>)	Longitudinale	6	E.S

Note. N.C = non-communicable. E.S = étude supplémentaire. La différence entre les deux tailles d'échantillons pour l'étude 2 est due à l'exclusion des participants non-français dans le cadre de l'Article 2. Nous avons le sentiment que prendre en compte les scores de narcissisme national des participants non-Français n'avait pas de sens. En revanche, l'application de ce critère d'exclusion ne semblait pas nécessaire dans le cadre de l'Article 1. Dans les deux cas, l'application ou non de ce critère ne modifiait pas les résultats. Du fait de l'absence de préenregistrement de ce critère d'exclusion pour l'Article 2, nous rapportons en annexe l'ensemble des analyses principales sur échantillons brut (i.e., avant exclusions).

Chapter 2

Conspiracy Beliefs, Rejection of Vaccination, and Support for hydroxychloroquine: A Conceptual Replication-Extension in the COVID-19 Pandemic Context

Abstract

Many conspiracy theories appeared along with the COVID-19 pandemic. Since it is documented that conspiracy theories negatively affect vaccination intentions, these beliefs might become a crucial matter in the near future. We conducted two cross-sectional studies examining the relationship between COVID-19 conspiracy beliefs, vaccine attitudes, and the intention to be vaccinated against COVID-19 when a vaccine becomes available. We also examined how these beliefs predicted support for a controversial medical treatment, namely, chloroquine. In an exploratory study 1 ($N = 409$), two subdimensions of COVID-19 conspiracy beliefs were associated with negative attitudes toward vaccine science. These results were partly replicated and extended in a pre-registered study 2 ($N = 396$). Moreover, we found that COVID-19 conspiracy beliefs (among which, conspiracy beliefs about chloroquine), as well as a conspiracy mentality (i.e., predisposition to believe in conspiracy theories) negatively predicted participants' intentions to be vaccinated against COVID-19 in the future. Lastly, conspiracy beliefs predicted support for chloroquine as a treatment for COVID-19. Interestingly, none of the conspiracy beliefs referred to the dangers of the vaccines. Implications for the pandemic and potential responses are discussed.

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Ethics Statement

By the time this project was conducted, the university of the leading author does not have institutional review boards for psychology or social science research. We thus applied the 1964 Helsinki Declaration and its later amendments (2001), the ethical principles of the French Code of Ethics for Psychologists (2012), and the American Psychological Association Ethical Principles of Psychologists and Code of Conduct (2017). Participants were informed about the purpose of the study in a cover letter and were assured that their data would remain confidential. Participants had to give explicit written consent to access the study.

Author Contributions⁶

P.B. conceptualized the project. P.B., K.N., and S.D. created the materials. P.B. and S.D. conducted the data collections. P.B., and K.N. conducted the data curation. P.B. and K.N. conducted the analysis. P.B., K.N., and S.D. wrote the original draft. P.B. and K.N. revised the manuscript. P.B. did the project administration and supervision.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Acknowledgments

⁶ P.B. = Paul Bertin, K.N. = Kenzo Nera, S.D. = Sylvain Delouvé

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Open Science Statement

For all studies, materials in French (with English translation), data and analyses are openly available on the Open Science Framework repository of the project at the following link: https://osf.io/3qyf4/?view_only=c2aa291fb1604b73aef9057cfc41980e.

Supplementary Material

The Supplementary Material for this article can be found online in Appendix A (p. 266).

Conspiracy Beliefs, Rejection of Vaccination, and Support for hydroxychloroquine: A Conceptual Replication-Extension in the COVID-19 Pandemic Context⁷

Conspiracy theories can be defined as “attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by two or more powerful actors” (Douglas et al., 2019, p. 4). These beliefs tend to appear in social crisis situations, which are times of heightened collective uncertainty and fear (van Prooijen and Douglas, 2017). It has been proposed that these beliefs are a response to psychological needs (Douglas et al., 2017), and might constitute attempts to understand complex, otherwise hardly understandable and predictable threatening situations (Franks et al., 2013). Hence, it is not surprising that conspiracy beliefs have flourished with the COVID-19 pandemic, and that medical misinformation spreads at a spectacular rate (Kouzy et al., 2020). Interestingly, conspiracy beliefs also surged during the 1918–1919 Spanish flu pandemic (Spinney, 2017) and the 2009 H1N1 outbreak (Bangerter et al., 2012).

Conspiracy beliefs may also influence the course of a crisis that initially favored their appearance. Indeed, conspiracy beliefs have consequences, notably in the health domain (van Prooijen and van Douglas, 2018). For example, exposure to anti-vaccine conspiracy theories decreases vaccination intention (Jolley and Douglas, 2014a). This relation is not limited to conspiracy theories about vaccines, as authors have found that the endorsement of “classic” conspiracy beliefs unrelated to vaccination (e.g., about JFK, the Moon Landing) is also associated with negative attitudes toward vaccines (Lewandowsky et al., 2013a). This might be explained by the fact that the endorsement of some conspiracy beliefs is a powerful predictor of the endorsement of others, even when they are seemingly unrelated (e.g.,

⁷ By the time this manuscript was accepted, talking about “hydroxychloroquine” had become more common than talking about “chloroquine”. However, we chose to use the latter in the text which we believe improve the readability.

Goertzel, 1994; Swami et al., 2011). As a result, it has been proposed that conspiracy beliefs are associated with a generic belief system, which has been given names such as “monological belief system” (Goertzel, 1994), or “conspiracy mentality” (Moscovici, 1987). Overall, there might be a negative relation between conspiracy beliefs and attitude toward scientific medicine, Lamberty and Imhoff (2018) have shown that conspiracy mentality was associated with a preference for alternative medicines over evidence based, biomedical treatments.

In this research, we sought to replicate the aforementioned relationship between conspiracy beliefs, rejection of vaccination, and support for alternative treatments, in the context of the COVID-19 pandemic. Indeed, previous studies were conducted before the sanitary crisis that the world is currently experiencing. Replicating past results is essential for at least two reasons. Firstly, replication is necessary to establish the validity of frequentist statistical inferences (Krueger, 2001), which is the overwhelmingly dominant statistical approach in the psychological literature (Blanca et al., 2018). Secondly, given that research in psychology is in a post-replication crisis era (Anvari and Lakens, 2018), advice from psychological science must be taken with great caution, especially in a situation such as the ongoing COVID-19 pandemic (IJzerman et al., 2020). In this context, replication studies might strengthen social psychological knowledge (Rosenfeld et al., 2020) and constitute a safety baseline needed to build evidence-based policies and effective sanitary guidelines.

Replication efforts should be encouraged even more given the magnitude of the stakes. In the context of the COVID-19 pandemic, conspiracy beliefs may foster distrust toward health authorities and their recommendations, which could potentially impede efforts to put an end to the pandemic. In the short term, respect for containment behavior guidelines (e.g., social distancing) is crucial to limit the spread of the pandemic we are currently experiencing, because the development of a treatment (including a vaccine) could take months (World

Health Organization, 2020). However, in the long run, the development and distribution of a vaccine against COVID-19 might be a necessary step to put an end to the pandemic (Le et al., 2020).

In this research, we examine how the endorsement of various COVID-19 conspiracy beliefs is predictive of two vaccine-related outcomes: attitude toward vaccination science (Studies 1 and 2), conceptually replicating a research by Lewandowsky et al. (2013a), and intention to be vaccinated against COVID-19 when a vaccine becomes available (Study 2), conceptually replicating Jolley and Douglas (2014a). In Study 2, we also examined the extent to which COVID-19 conspiracy beliefs are associated with positive attitudes toward a controversial COVID-19 treatment, namely, chloroquine.

Note that in both studies, we referred to COVID-19 (the disease) and not to SARS-CoV-2 (the virus that causes the disease), to be in line with the terminology of the French media coverage of the pandemic and therefore avoid misunderstandings.

Study 1

In Study 1, our goal was to explore the relationship between COVID-19 conspiracy beliefs and attitudes toward vaccines science.

Method

Sampling and Procedure

The online questionnaire was disseminated by the authors on Facebook, Twitter, and LinkedIn from March 19 (i.e., 2 days after the official beginning of the lockdown in France) to March 27. In total, 609 participants participated in the survey. Two hundred participants were removed from the data for not completing the questionnaire, for failing the attention or seriousness checks, or for being under 18 years old. The final sample was constituted of 409 participants (299 women and 3 “other,” $Mage = 28.4$, $SD = 11.4$, $min = 18$, $max = 72$, see the

Supplementary Material for the geographical localization of participants), which is above the threshold of $N = 250$ requested to achieve correlations stability (Schönbrodt and Perugini, 2013). For a given power of 0.90, this sample size enabled us to detect correlations of $r = 0.16$ with two tailed tests.

Materials

For each scale, participants were asked to give their response on a 5-point scale ranging from Strongly Disagree (coded 1) to Strongly Agree (coded 5).

COVID-19 Conspiracy beliefs. Nine items were designed to capture the endorsement of some COVID-19 conspiracy theories currently popular in France (Conspiracy Watch, 2020). Given the wide variety of COVID-19 conspiracy theories (Van Bavel et al., 2020), we designed items tapping into three group-based categories: conspiracy theories involving a threatening foreign outgroup, namely, China (three items, e.g., “COVID-19 is a bacteriological weapon used by the Chinese Communist Party to create panic in the West”), conspiracy theories involving unspecified outgroups (i.e., not referring to any foreign country outgroups, three items, e.g., “Industrials will use the coronavirus pandemic to justify higher prices and make a profit”), and conspiracy theories involving members of the national ingroup, namely, the French government (three items, e.g., “The French government uses the current pandemic to keep significant reforms and challenges quiet”). Some authors have emphasized the theoretical and empirical relevance of distinguishing between national ingroup and outgroup conspiracy beliefs (e.g., Cichocka et al., 2016). Exploratory factor analysis with Oblimin rotation revealed a two-factor structure yielding a satisfactory fit, one consisting of the three “foreign outgroups” and two “unspecified outgroups” items ($\alpha = 0.88$), and one combining the three “ingroup” items and one “unspecified outgroup” ($\alpha = 0.77$). The two factors were substantially correlated, $r = 0.53$, $p < 0.001$ (see Table 2 for additional

analyses for the item loadings). The dimensions were labelled “outgroup conspiracy beliefs” and “ingroup conspiracy beliefs,” respectively.

Attitude toward vaccination. We translated into French the 5-items scale (1 reverse coded) developed by Lewandowsky et al. (2013a). We used three items due to length restrictions (e.g., “I believe that vaccines are a safe and reliable way to help avert the spread of preventable diseases”, $\alpha = 0.83$).

Sociodemographic measures. Participants reported their age, gender (M/F/Other), geographic location, and political orientation on a scale ranging from 1 (far left) to 9 (far right), with the possibility to tick “other.”

Results and Discussion

Descriptive statistics and correlations between measured variables are displayed in Table 1.

Table 1

Correlations, Means, and Standard Deviations for Measured Variables (study 1)

	<i>Mean</i>	<i>SD</i>	1	2	3
1. Outgroup COVID-19 conspiracy beliefs	1.44	0.69	-		
2. Ingroup COVID-19 conspiracy beliefs	2.47	0.97	.53***	-	
3. Attitude toward vaccination	3.37	0.47	-.23***	-.28***	-
4. Political orientation	4.19	1.94	.26***	.04	.06

Note. *** $p < .001$. $N = 409$ except for political orientation ($N = 314$). All variables were measured using a 5-point Likert scale, except for political orientation (9 points).

We carried out hierarchical regression analyses to examine whether the two dimensions of COVID-19 conspiracy beliefs predicted attitudes toward vaccination, controlling for gender, age, and political orientation at step 1 (see Table 2). Since the two

factors of COVID-19 conspiracy beliefs were substantially correlated both to each other and to attitudes toward vaccines, they were first tested as predictors in separate regressions. In the two models, attitudes toward vaccines were negatively predicted by both “outgroup” conspiracy beliefs, $\beta = 0.052$, 95% CI [0.61, 0.42], $t = 10.36$, $p < 0.001$, and “ingroup” conspiracy beliefs, $\beta = 0.44$, 95% CI [0.53, 0.34], $t = 8.71$, $p < 0.001$. Finally, we tested a model integrating both dimensions as predictors, with outgroup COVID-19 conspiracy beliefs introduced at step 2, and ingroup COVID-19 conspiracy beliefs introduced at step 3 (see Table 2). The relationship remained significant for both the “ingroup” factor, $\beta = 0.23$, 95% CI [0.34, 0.12], $t = 4.19$, $p < 0.001$, and the “outgroups” factor, $\beta = 0.38$, 95% CI [0.50, 0.27], $t = 6.64$, $p < 0.001$, $\Delta R^2 = 0.03$, $p < 0.001$. The fact that confidence intervals for the standardized coefficients do not overlap suggests that the “outgroups” factor might be more strongly associated with the dependent variable than the “ingroup” factor.

Hence, regardless of their specific content, the more participants endorsed COVID-19 conspiracy beliefs, the less likely it was that they held a positive attitude toward vaccination. This result is congruent with past research showing that conspiracy beliefs are related to negative attitudes toward vaccination (Lewandowsky et al., 2013a).

Table 2*Hierarchical Regressions on Attitude toward Vaccination (study 1)*

Independent variables	Dependent variables					
	Attitude toward vaccination				Total R^2	ΔR^2
	B	95%CI	t	p		
Step 1					.04	
Gender	-.17	[-.28; -.06]	-3.08	.01		
Age	.02	[-.08; .13]	0.50	.61		
Political orientation	-.12	[-.023; -.01]	-2.31	.02		
Step 2 (outgroup conspiracy beliefs)					.29	.24
Gender	-.10	[-.19; 01]	-2.09	.03		
Age	.01	[-.08; .10]	0.26	.78		
Political orientation	.01	[-.08; .11]	0.26	.78		
Outgroup COVID-19 conspiracy beliefs	-.52	[-.61; -.42]	-10.36	< .001		
Step 2 (ingroup conspiracy beliefs)					.23	.18
Gender	-.10	[-.20; -.01]	-2.09	.04		
Age	.01	[-.08; .11]	0.28	.77		
Political orientation	-.10	[-.20; -.01]	-2.15	.03		
Ingroup COVID-19 conspiracy beliefs	-.44	[-.53; -.34]	-8.71	< .001		
Step 3					.33	.03
Gender	-.08	[-.17; .01]	-1.77	.07		
Age	.01	[-.08; .10]	0.19	.84		
Political orientation	-.01	[-.01; .08]	-0.23	.81		
Outgroup COVID-19 conspiracy beliefs	-.38	[-.50; -.27]	-6.64	< .001		
Ingroup COVID-19 conspiracy beliefs	-.23	[-.34; -.12]	-4.19	< .001		

Note. $N = 409$.

Study 2

We designed a second study to replicate and strengthen results from study 1. To grasp a more comprehensive understanding of the relationship between COVID-19 conspiracy beliefs and vaccination in the context of the pandemic, we examined if conspiracy beliefs were also negatively associated with the intention to be vaccinated against the disease (a relationship previously reported in Jolley and Douglas, 2014). For the same reason, we included a measure of conspiracy mentality, that is, the general propensity to subscribe to theories blaming a conspiracy of ill-intending individuals or groups for important societal phenomena (Bruder et al., 2013), as an additional independent variable. As we mentioned in the introduction, previous studies found conspiracy mentality to be related to negative attitudes toward vaccination (Lewandowsky et al., 2013a).

Lastly, we wanted to examine the extent to which COVID-19 conspiracy beliefs would predict support for a controversial treatment against disease, namely, chloroquine. Chloroquine is a well-known anti-malarial drug that has been mostly promoted by the French infectious disease expert Didier Raoult. In April, a poll reported that 59% of a representative sample of the French population believes this treatment to be effective (Institut français d'opinion publique [IFOP], 2020). Lamberty and Imhoff (2018) have shown that conspiracy mentality is associated with a preference for alternative therapies over biomedical therapies. In this regard, the situation with chloroquine is interesting, because it is a drug produced by pharmaceutical companies, that is promoted by a prominent medical researcher. Hence, one could expect conspiracy theories to be negatively related with trust in this treatment. However, many chloroquine advocates appear to mobilize conspiracy theories to defend this treatment, arguing that pharmaceutical companies are willing to discredit it because generalizing it would jeopardize potential profits. We therefore expected that despite the fact that it is a medication produced by pharmaceutical companies, COVID-19 conspiracy beliefs

would predict support for chloroquine treatment. Given their prevalence on French social media, we moreover included “pro-chloroquine” conspiracy beliefs among the independent variables.

Whereas Study 1 was exploratory, Study 2 aimed at testing a set of pre-registered hypotheses⁸. We hypothesized that COVID-19 conspiracy beliefs (ingroup, outgroup, and pro-chloroquine) would be (1) negative predictors of both pro-vaccination attitudes and vaccination intention, and (2) positive predictors of pro-chloroquine attitudes. Lastly, we included conspiracy mentality as an exploratory measure.

Method

Sampling and Procedure

The study was disseminated online among undergraduate students from Rennes 2 and Lille Universities who were awarded course credit for answering. It was also shared by authors on social media in order to diversify the sample, from April 17 to April 25. In total, 469 participants participated in the study, out of which 396 remained (280 women and 6 “other,” $Mage = 26.1$, $SD = 10.3$, $min = 18$, $max = 70$, see the Supplementary Material for information about participants’ level of education) after excluding participants who did not comply to the inclusion criteria (see pre-registration). For a given power of 0.90, the sample size enabled us to detect correlations of $r = 0.16$ with two tailed tests.

⁸ https://osf.io/x43na/?view_only=53Lp3XwFS4e7GGH8WseizHm1pd6nkJmqcz2

Note that this preregistration also includes hypotheses (H1.1 to H3.2) about an unpublished aborted project.

Measures

Unless otherwise indicated, participants answered on a 5-point scale ranging from Strongly Disagree (coded 1) to Strongly Agree (coded 5). Measures of attitudes and conspiracy beliefs about chloroquine, as well as vaccination intention, were pretested for internal reliability and ceiling and floor effects in an online preliminary study ($N = 81$, see Supplementary Material in the OSF repository for further details).

COVID-19 Conspiracy Beliefs. We used the same scale as in Study 1, and added a conspiracy theory about the creation of the coronavirus by a famous French laboratory (“Coronavirus has been created and patented by the Pasteur Institute in the early 2000s”). The two factors structure found in Study 1 yielded a satisfactory fit (CFI = 0.94, TLI = 0.93, RMSEA = 0.08), and the dimensions returned satisfactory internal reliability ($\alpha = 0.76$ and 0.87 for, respectively, “ingroup” and “outgroups” factors, see Supplementary Table 4). It is worth noting that the new item about the Pasteur Institute was loaded onto the “outgroup” dimension, along with other conspiracy theories involving scientists and foreign governments. One explanation could be related to the magnitude of the considered conspiracies. Whereas the ingroup conspiracy theories have consequences at the scale of the nation (e.g., municipal elections, political reforms), the outgroup conspiracy theories have potentially worldwide consequences, with the Pasteur Institute conspiracy falling in this latter group.

Chloroquine Conspiracy Beliefs. We designed a 6-item scale to assess participant beliefs in popular “pro-chloroquine” conspiracy theories (e.g., “Pharmaceutical industries, together with the government, avoid chloroquine-based treatment diffusion to protect its financial interests,” $\alpha = 0.88$). The confirmatory factor analysis of the scale yielded an acceptable fit for a single factor structure, suggesting that the items captured a single construct (CFI = 0.97, TLI = 0.95, RMSEA = 0.10). Note that when carrying out an exploratory factor

analysis on ingroup, outgroup, and chloroquine conspiracy beliefs altogether, the three postulated dimensions were observed (see Supplementary Table 4).

Conspiracy Mentality Questionnaire. The general propensity to endorse conspiracy theories was measured with a validated French translation of the Conspiracy Mentality Questionnaire (CMQ; Bruder et al., 2013, translation by Lantian et al., 2016). It is a 5-item measure designed to assess an individual's tendency to engage in general conspiracist ideation (e.g., "I think that many very important things happen in the world, which the public is never informed about", $\alpha = 0.84$). Participants rated how true they thought a given item was on an 11-point scale (from 0% = "Certainly not" to 100% = "Certain").

Attitude toward Chloroquine Treatment. We created a 5-item scale (2 reverse-coded) to measure participants' attitudes toward chloroquine medical treatment for COVID-19 (e.g., "This treatment is to date the most effective one against COVID-19", $\alpha = 0.88$). Items were preceded by a paragraph introducing the question of chloroquine ("We hear a lot about the potential of a drug, chloroquine, to cure COVID-19 [...] what is your opinion on the topic?"). The confirmatory factor analysis of the scale yielded a satisfactory fit for a single factor structure (CFI = 0.98, TLI = 0.96, RMSEA = 0.08).

Attitude toward Vaccination. We used the full 5-item scale (e.g., "Vaccinations are one of the most significant contributions to public health," $\alpha = 0.84$) developed by Lewandowsky et al. (2013a).

Vaccination Intention. We adapted the single item used by Jolley and Douglas (2017), to assess behavioural intention to be vaccinated against COVID-19. We asked participants what they would do if a COVID-19 vaccine were developed and validated by the health authorities, and they had the opportunity to be vaccinated next week. Participants answered on a scale ranging from 1 ("I would definitely not be vaccinated under any circumstances") to 7 ("I would be vaccinated without any hesitation").

Sociodemographic Measures. Participants reported their age, gender (M/F/other), and political orientation on a scale ranging from 1 (far left) to 9 (far right), with the possibility to tick “other.” They also reported their level of education on a multiple-choice question (ranging from no diploma to doctoral degree).

Results

Confirmatory Analyses

Descriptive statistics and correlations between measured variables are displayed in Table 3.

Table 3

Correlations, Means, and Standard Deviations for Measured Variables (study 2)

	<i>Mean</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Outgroup COVID-19 conspiracy beliefs	1.60	0.69	-						
2. Ingroup COVID-19 conspiracy beliefs	2.60	0.94	.41***	-					
3. Chloroquine conspiracy beliefs	2.22	0.89	.55***	.50***	-				
4. Attitude toward vaccination	3.86	0.82	-.41***	-.25***	-.54***	-			
5. COVID-19 vaccination intention	4.72	1.80	-.28***	-.17***	-.38***	.66***	-		
6. Attitude toward chloroquine	2.63	0.76	.25***	.18***	.59***	-.33***	-.21***	-	
7. Political orientation	3.52	1.68	-.02	-.09+	-.07	.01	.04	.01	-
8. CMQ	6.54	2.13	.27***	.30***	.35***	-.29***	-.22***	.23***	-.12*

Note. + $p < .10$ * $p < .05$ *** $p < .001$. $N = 396$ except for political orientation ($N = 325$). All variables were measured using 5-point Likert scales, except for vaccination intention (7 points), political orientation (9 points), and CMQ (11 points).

To test our hypotheses, we carried out hierarchical regression analyses that controlled for age, gender, and political orientation at step 1 (see Table 3). As can be seen in the table, all of our hypotheses were corroborated, as all types of conspiracy beliefs (outgroup, ingroup, pro-chloroquine) were negative predictors of both positive attitudes toward vaccination and intention to get vaccinated for the disease in the future (Step 2). Moreover, also congruent with our expectations, all types of conspiracy beliefs positively predicted a pro-chloroquine attitude. Contrary to study 1, when outgroup COVID-19 conspiracy beliefs were included in the model, ingroup COVID-19 conspiracy beliefs were significantly related to none of the dependent variables (Step 3). This echoes the fact that in Study 1, outgroup COVID-19 conspiracy beliefs were more strongly associated with the dependent variable than ingroup conspiracy beliefs.

Table 4*Hierarchical Regressions on Attitude toward Vaccination, Vaccination Intention, and Attitude toward Chloroquine controlling for Gender, Age, Political orientation (study 2)*

Independent variables	Dependent variables																	
	Attitude toward vaccination						Vaccination intention						Attitude toward chloroquine					
	β	95%CI	<i>t</i>	<i>p</i>	Total R^2	ΔR^2	β	95%CI	<i>t</i>	<i>p</i>	Total R^2	ΔR^2	β	95%CI	<i>t</i>	<i>p</i>	Total R^2	ΔR^2
Step 1																		
Gender	-.08	[-.19; .02]	-1.58	.11			-.10	[-.21; .01]	-1.87	.06			.01	[-.09; .12]	0.28	.77		
Age	.09	[-.05; .15]	1.06	.29			.05	[-.05; .16]	0.92	.35			.03	[-.07; .14]	0.68	.49		
Political orientation	.01	[-.09; .12]	0.19	.84			.04	[-.06; .15]	0.79	.42			.01	[-.09; .12]	0.23	.81		
Step 2 (outgroup conspiracy beliefs)																		
Gender	-.02	[-.12; .07]	-0.05	.59	.16	.15	-.06	[-.17; .04]	-1.23	.21	.07	.05	-.02	[-.13; .07]	-0.53	.59	.08	.08
Age	.09	[-.01; .19]	1.92	.06			.05	[-.05; .15]	0.94	.34			.03	[-.06; .14]	0.71	.47		
Political orientation	-.07	[-.07; .12]	0.44	.65			.05	[-.05; .15]	0.94	.34			.01	[-.10; .11]	0.07	.93		
Outgroup COVID-19 conspiracy beliefs	-.39	[-.49; -.29]	-7.58	< .001			-.23	[-.34; -.12]	-4.33	< .001			.29	[.18; .40]	5.41	< .001		
Step 2 (ingroup conspiracy beliefs)																		
Gender	-.05	[-.16; .05]	-1.05	.29	.06	.04	-.08	[-.19; .02]	-1.59	.11	.02	.01	-.01	[-.12; .09]	-0.20	.83	.04	.03
Age	.09	[-.01; .19]	1.69	.09			.04	[-.06; .15]	0.86	.38			.04	[-.06; .15]	0.80	.42		
Political orientation	-.01	[-.11; .09]	-0.19	.84			.03	[-.07; .14]	0.59	.54			.03	[-.07; .14]	0.58	.55		
Ingroup COVID-19 conspiracy beliefs	-.22	[-.32; -.11]	-3.99	< .001			-.11	[-.22; -.01]	-1.97	.05			.19	[.08; .30]	3.57	< .001		
Step 3																		
Gender	-.03	[-.12; .08]	-0.40	.33	.17	.01	-.06	[-.17; .04]	-1.19	.23	.07	.01	-.03	[-.14; .06]	-0.6	.49	.09	.01
Age	.01	[-.01; .19]	1.87	.19			.05	[-.05; .15]	0.93	.35			.04	[-.06; .14]	0.7	.44		
Political orientation	.01	[-.08; .11]	0.27	.78			.04	[-.05; .15]	0.89	.37			.01	[-.09; .12]	0.2	.78		
Outgroup COVID-19 conspiracy beliefs	-.43	[-.47; -.25]	-6.46	< .001			-.22	[-.34; -.11]	-3.84	< .001			.25	[.14; .37]	4.35	< .001		
Ingroup COVID-19 conspiracy beliefs	-.06	[-.19; .03]	-1.41	.15			-.02	[-.13; .09]	-0.36	.71			.10	[-.01; .21]	1.7	.09		
Step 2 (chloroquine conspiracy beliefs)																		
Gender	-.03	[-.12; .05]	-0.77	.44	.33	.31	-.06	[-.17; .03]	-1.33	.18	.15	.14	-.04	[-.12; .04]	-0.95	.34	.39	.38
Age	.06	[-.02; .15]	1.49	.13			.03	[-.07; .13]	0.60	.54			.07	[-.01; .15]	1.63	.10		
Political orientation	-.03	[-.12; .05]	-0.71	.47			.01	[-.08; .11]	0.28	.77			.06	[-.02; .14]	1.39	.16		
Chloroquine conspiracy beliefs	-.56	[-.65; -.47]	-12.30	< .001			-.38	[-.48; -.27]	-7.35	< .001			.62	[.54; .71]	14.21	< .001		
Step 2 (CMQ)																		
Gender	-.08	[-.19; .01]	-1.61	.11	.09		-.10	[-.20; .01]	-1.89	.06	.06		.01	[-.09; .12]	0.26	.79	.07	
Age	.09	[-.01; .19]	1.76	.29			.04	[-.05; .15]	0.88	.37			.04	[-.06; .14]	0.78	.43		
Political orientation	-.02	[-.13; .08]	-0.47	.84			.01	[-.09; .12]	0.29	.76			.04	[-.06; .15]	0.86	.39		
CMQ	-.28	[-.39; -.18]	-5.37	< .001			-.22	[-.32; -.11]	-4.05	< .001			.27	[.16; .37]	4.97	< .001		

Note. $N = 396$. CMQ = Conspiracy Mentality Questionnaire.

Exploratory Analyses

We also tested the extent to which conspiracy mentality, rather than belief in specific conspiracy theories, predicted the three outcomes (see Step 2 (CMQ) in Table 4). Conspiracy mentality had the same relationship as COVID-19 and chloroquine conspiracy beliefs with vaccine attitudes, intention to be vaccinated, and pro-chloroquine attitudes.

We might add that, contrary to our expectations, we did not find a strong ceiling effect for the vaccination intention scale ($M = 4.72$; $SD = 1.80$). Strikingly, 22% of the sample ($N = 87$) answered below the median point (4), and among them 29 (7.3% of the sample) reported that they would “refuse vaccination without hesitation.”

General Discussion

In our studies, various COVID-19 conspiracy beliefs were substantially and negatively related to both positive attitudes toward vaccination science and intention to be vaccinated against COVID-19 in the future. This relationship was observed for conspiracy beliefs accusing outgroups, conspiracy theories involving the French government, “pro-chloroquine” conspiracy beliefs, and conspiracy mentality.

Furthermore, all types of conspiracy beliefs were positively associated with support for an alternative treatment, namely, chloroquine. This deserves some unpacking. Whereas the relationship between positive attitudes toward alternative treatment and conspiracy mentality has been documented (Imhoff and Lamberty, 2018), chloroquine is produced and distributed by pharmaceutical industries (e.g., Sanofi in France, as Plaquenil), and advocated by the infection diseases specialist Didier Raoult, who is a renowned (although controversial) medical scientist. This might be explained by chloroquine being associated with an anti-establishment discourse targeting, among other actors, pharmaceutical companies. Thus, conspiracy beliefs about the dismissal of this treatment, which is itself manufactured by

pharmaceutical companies, might paradoxically have become an indicator of individuals' prejudice against pharmaceutical companies.

Furthermore, this result also puts in perspective the idea that people scoring high on the conspiracy mentality scale are more prone to support a remedy if it comes from a powerless agent (Imhoff and Lamberty, 2018). While Didier Raoult pretends to be the target of pharmaceutical companies, he is the head of a university hospital in Marseille (IHU Méditerranée) and repeatedly reminds his audience that he is a highly respected scientist, and that he is "the elite" (Le Point, 2020).

In both studies, our results suggest that COVID-19 conspiracy beliefs about outgroups (foreign governments and scientists) have stronger relationships to vaccines science attitudes and vaccination intention than conspiracy beliefs about the ingroup (French government and industries). This might be explained both by the foreign origin of the pandemic (e.g., the role of Chinese authorities) and distrust toward multinational pharmaceutical companies (among which, the Pasteur Institute). It would surely be of interest to further investigate factors explaining the difference between ingroup and outgroup conspiracy beliefs.

Rather concerning is the fact that in our sample, more than one participant out of five leaned toward refusal of the hypothetical COVID-19 vaccine, even though it was described as having been approved by the health authorities. This is congruent with data showing that the French population is extremely distrustful of vaccines (Ward et al., 2019). If a COVID-19 vaccine were available, 26% of French people would refuse to be vaccinated according to a longitudinal study of a representative sample (Yamey et al., 2020). This proportion, measured for the fifth time since the start of the CORonavirus et CONfinement: Enquête Longitudinale survey (COCONEL; 27 March 2020), appears to remain very stable. While many variables might influence this overall high rate of distrust toward vaccines (e.g., past sanitary scandals

in French history, experience of vaccines side effects), it is likely that conspiracy theories are fueling (and potentially fueled by) such distrust.

Lastly, we wish to emphasize that none of the conspiracy beliefs or conspiracy mentality items referred to the dangers of vaccines. Hence, a wide range of conspiracy beliefs seems to be associated with a distrust of vaccines. This is congruent with the idea that conspiracy beliefs are underpinned by a generic belief system, which is characterized by negative attitudes toward powerful groups (Imhoff and Bruder, 2014). It therefore conceptually replicates research conducted before the pandemic (Lewandowsky et al., 2013a; Jolley and Douglas, 2014a; Imhoff and Lamberty, 2018) as well as during the pandemic (Goldberg and Richey, 2020).

Limitations and Discussions

Our research has limits. Firstly, the cross-sectional design we used does not allow for inference to be drawn regarding causality. Although in line with previous research, we suspect that conspiracy beliefs may fuel negative attitudes toward vaccination (Bogart et al., 2010; Jolley and Douglas, 2014), one could hypothesize a reverse causal path, with distrust toward vaccination leading to conspiracy beliefs (e.g., as a confirmatory strategy). People might indeed reject vaccination for non- conspiracist reasons (e.g., religious reasons) and therefore endorse conspiracy theories that legitimize their view.

Secondly, some unmeasured factors may influence negative attitude toward vaccination and vaccination intention, such as concern about drug companies profiteering from vaccines (Martinez-Berman et al., 2020), distrust toward political parties (Rozbroj et al., 2019), or even individuals' own vaccination history. As for unmeasured sociodemographic variables such as level of education or income, they seem to be overall unrelated to negative attitudes toward vaccination (Hornsey et al., 2018a).

Thirdly, the phrasing of our vaccination intention measure may explain the high level of vaccination hesitancy in our sample. Indeed, people may need more information and guarantees about the success of medical trials and possible side-effects before stating their intention to use such a new vaccine.

Lastly, our samples were not representative of the French population, with an overrepresentation of female, southern-located, educated, and left-wing participants. Moreover, online surveys do not reach the population that has no access to the internet (in France, with about 15% of the population have no access to the internet, Institut National de la Statistique et des Etudes Economiques [INSEE], 2019). However, according to a recent poll conducted on a French representative sample, conspiracy beliefs are more endorsed among men and right-wing individuals (Conspiracy Watch, 2019). Thus, we can expect that the results of the present studies might not be overestimated due to unrepresentative sampling. Further research is, however, needed to assess the generalizability of our results to similar yet different contexts (e.g., European and other Western countries).

What should be done in response to the questions investigated in this research? Previous works have shown several ways to reduce the detrimental consequences of conspiracy beliefs. Firstly, exposure to anti-conspiracy arguments both before and after exposure to conspiracy theories can restore vaccination intention (Jolley and Douglas, 2017; Lyons et al., 2019) As for Chen et al. (2020), they observed that pre-existing knowledge about the HPV vaccine nullified the impact of exposure to anti-vaccines conspiracy theories on HPV vaccination intention. Altogether, these results emphasize the relevance of both proactive information and misinformation correction initiatives before the public is exposed to misinformation, and debunking efforts after exposure, to reduce the impact of COVID-19 conspiracy beliefs.

In conclusion, our results are congruent with past research and suggest that when a vaccine against COVID-19 becomes available, conspiracy beliefs of all kinds might slow down the population's immunization. This should encourage academics, policy makers, health authorities, and journalists to start working on initiatives to tackle this issue.

Transition

In Chapter 2 we showed that a set of different conspiracy beliefs were related to negative attitudes and behavioural intentions toward vaccinations, which in a pandemic context posits dramatic consequences. Specifically, we observed that conspiracy beliefs about outgroups were especially strong predictors of these negative outcomes. Hence, in the following chapter, we mainly focus on outgroup conspiracy beliefs.

In Chapter 3 we switched our focus to the climate change context, investigating in this context potential factors and consequences of conspiracy beliefs motivated at intergroup level. We mobilized national narcissism, a form of defensive ingroup identification that has been documented as especially related to outgroup conspiracy beliefs (Cichocka et al., 2016). We tested whether conspiracy beliefs about climate change (*specific* conspiracy beliefs) might be mediating the relationship between national narcissism and attitudes toward climate science, and whether their role was different from the one of conspiracy mentality and other documented forms of climate skepticism.

Chapter 3

Stand out of my Sunlight: The Mediating Role of Climate Change Conspiracy Beliefs in the Relationship between National Collective Narcissism and Acceptance of Climate Science

Abstract

Despite the scientific consensus about the anthropogenic nature of climate change, there are still obstacles hindering society from acknowledging the severity of the situation. Notably, previous research suggests that climate change threats can cause people to display ethnocentric reactions to preserve the ingroup's interests. In this research, we investigate the relation between collective narcissism and attitudes towards climate science. We argue that national collective narcissism is negatively associated with the acceptance of climate science. We further hypothesized that this relation might be mediated by conspiracy beliefs about climate change, because narcissistic identifiers are prone to hold conspiracy beliefs. In a pilot study ($N = 409$), we found that national collective narcissism was significantly associated with climate change conspiracy beliefs. In Study 1 ($N = 295$), climate change conspiracy beliefs mediated the negative relation between national collective narcissism and acceptance of climate science. In Study 2 ($N = 375$), this mediation was replicated when controlling for other forms of climate skepticism. Lastly, general conspiracy mentality did not mediate this relation, which emphasizes the importance of considering the specificity of climate change conspiracy theories (rather than generic propensity to believe in conspiracy theories) in understanding distrust of climate science.

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Ethics Statement

By the time this project was conducted, the university of the leading author does not have institutional review boards for psychology or social science research. We thus applied the 1964 Helsinki Declaration and its later amendments (2001), the ethical principles of the French Code of Ethics for Psychologists (2012), and the American Psychological Association Ethical Principles of Psychologists and Code of Conduct (2017). Participants were informed about the purpose of the study in a cover letter and were assured that their data would remain confidential. Participants had to give explicit written consent to access the study.

Author Contributions⁹

P. B. conceptualized the project. P. B. and S. D. created the materials. P. B. and S. D. conducted the data collections. P. B. and K. N. conducted the analysis. P. B., K. N., K. H., and I.U.H. wrote the first draft of the manuscript. P.B., K.N., and K.H. revised the manuscript. P.B. did the project administration and supervision.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

⁹ PB = Paul Bertin, KN = Kenzo Nera K.H. = Katarzyna Hamer, I.U.H = Isabella Uhl-Hädicke, SD = Sylvain Delouvée

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Open Science Statement

For all three studies, materials in French (with English translation), data and analyses are openly available on the Open Science Framework repository of the project at the following link: https://osf.io/cnmev/?view_only=1e75c061d7434458864d6ace1ad72ed5.

Supplementary Material

The Supplementary Material for this article can be found in Appendix B (p. 271).

Stand out of my Sunlight: The Mediating Role of Climate Change Conspiracy Beliefs in the Relationship between National Collective Narcissism and Acceptance of Climate Science

Climate change is arguably one of the biggest threats of our times. After decades of debate, there is now a scientific consensus about the fact that climate change is due to human activities (Cook et al., 2013, 2016). However, the scientific consensus is one thing, its acceptance by the population is another. Appraising the factors driving the acceptance and rejection of climate science is crucial to motivate mitigation behaviors aimed at reducing the consequences of climate alteration (Van der Linden et al., 2015). As it turns out, acceptance of climate science by the public remains low and is even decreasing in many countries (Tranter & Booth, 2015). Thus, research aiming at understanding such distrust is more vital than ever (Cologna & Siegrist, 2020).

A large body of literature has investigated the mechanisms involved in the acceptance and rejection of climate science from an individualistic approach (Bamberg, 2013), but we still lack knowledge about this phenomenon from a collective approach. Such an approach was adopted by the Social Identity Model of Pro-Environmental Action (SIMPEA; Fritsche et al., 2018). This model predicts that skepticism toward climate change might come from ethnocentric ingroup identification and group-based cognition as reactions to climate threat. In line with SIMPEA's prediction, recent findings shows that national collective narcissism, a defensive form of national attachment (Golec de Zavala et al., 2009; Cichocka, 2016), is related to support for anti-conservation policies, potentially as a way to protect national sovereignty (Cislak et al., 2018).

However, the magnitude of national narcissistic identifiers' opposition to environmentalism is unclear: Is this defensive national attachment *solely* related to anti-environmentalism at the national level, or does it reflect a more general rejection of

environmental concerns at a global level, and climate science in particular? We argue for the latter, with the rationale that climate science's recommendations for global policies and international conventions might threaten national narcissistic identifiers' perception of their national group as sovereign. Moreover, due to their defensive-based identification, collective narcissistic identifiers are prone to reframe perceived threats into plots occurring against the ingroup, and hence to hold conspiracy beliefs (Cichocka, 2016). Thus, we argue that climate change conspiracy beliefs might explain the relation between national collective narcissism and the rejection of climate science. Three studies were conducted to test these hypotheses.

The group-level understanding of climate science denial

The rejection of scientific consensus, also called denialism (Diethelm & McKee, 2009), and operationalized in this paper as (climate) science rejection, has been rising during the past decade, notably through anti-science movements about various scientific topics such as vaccines, tobacco-caused diseases, evolution, and so on (Hotez, 2020a, 2020b). Research has shown that some forms of denialism are interrelated (Hansson, 2017). For example, denialism about vaccination is positively associated with denialism about genetically modified organisms (GMOs; Rutjens et al., 2018), and denialism about evolution is positively associated with denialism about climate change (Ecklund et al., 2017). However, it is also important to acknowledge that each form of denialism seem to gather distinct communities (Bliuc et al., 2015; Lewandowsky & Oberauer, 2016; Washburn & Skitka, 2018). These particularities call for specific investigations of collective and group processes involved in the rejection of a given scientific theory.

As it pertains to a global threat, climate denialism also ought to be studied at the group-level. Indeed, it has been shown that the anxiety triggered by global threats, such as climate change, increases self-categorization at a collective level (Fritsche et al., 2011; Jonas et al., 2014). However, in such situations, the level of inclusivity of the salient social identity

is not systematically congruent with the level of inclusivity of the global threat (i.e., global identification or identification with all humanity, McFarland et al., 2019). Rather, when confronted with global threats, self-categorization often occurs at a national and ethnocentric level (Uhl et al., 2018). For example, it has been shown that when facing climate threat, high national British identifiers displayed defensive group-based reactions through increased system justification (Fritsche et al., 2012, Study 2). Relatedly, Bliuc et al. (2015) found a higher level of national identification among climate skeptics than among “believers,” who, in turn, reported a higher level of identification with all humanity.

Explanations have been proposed to explain ethnocentric responses to global threats: That such self-categorization might serve a function of defense of the societal status quo (Feygina, 2012), or that it enables ingroup protection over climate threat consequences (Fritsche et al., 2011). Others argued that this reaction has a coping function and aims at reducing climate change-related anxiety (Haltinner & Sarathchandra, 2018; Uhl et al., 2016, 2018). Notably, Uhl et al. (2018) found ingroup affirmation fostered an ethnocentric national response to climate threat, which in turn was linked to a decrease in pro-environmental behavioural intentions.

To sum up, when facing climate threats, some individuals tend to react by self-categorizing themselves at the level of the national group. Such ethnocentric reactions are related to detrimental environmental consequences. Thus, an ethnocentric reaction to climate threat might constitute a group-level predictor of the rejection of climate science.

Collective narcissism and the rejection of climate science

According to Cichocka (2016), there are two kinds of ingroup attachment: Secure attachment, which is related to virtuous outcomes at the group-level, and defensive attachment which is associated with high sensitivity to threat and negative group-level

consequences. As it seems to be heightened by feelings of being threatened, we could hypothesize that previously discussed findings regarding the detrimental consequences of ethnocentric reactions to climate threat are related to the defensive form of national attachment.

This defensive group attachment has been previously operationalized through the notion of collective narcissism (Golec de Zavala et al., 2009, 2013; Hamer et al., 2018). Collective narcissism is “an attitudinal orientation towards one’s in-group that captures a grandiose and inflated image of the in-group that is contingent upon external recognition of one’s group’s worth” (Cichocka, 2016, p. 287). Collective narcissism can be applied to virtually any type of groups, from football fans (Larkin & Fink, 2019) to religious groups (Marchlewska et al., 2019). However, examining collective narcissism at the level of the national group is particularly relevant when investigating environmental issues. Indeed, environmental policies are often decided at the national level, and national identification is salient in the context of international relations and supranational recommendations (e.g., Intergovernmental Panel on Climate Change (IPCC) reports are addressed to nation-states).

Collective narcissism is related to, but distinct from, individual narcissism (for a review, see Golec de Zavala et al., 2019). The latter was already found to be a negative predictor of concern for the environment. Indeed, past research has shown that individual narcissism significantly and negatively predicted public action on climate change (Van der Linden & Rosenthal, 2016), environmental ethics (Bergman et al., 2014), connectedness to nature (Frantz et al., 2005, study 2) and valuation of green behaviors (Naderi & Strutton, 2014, Study 1).

By contrast, as far as we know, only one published paper investigated the relationship between collective narcissism and environmental issues. Cislak et al. (2018) showed that in Poland, high narcissistic national identifiers supported anti-conservation policies about the

Bialowieza forest, even though it is part of the national environmental heritage. The authors found that this connection was partly mediated by the support for decisional independence toward the European Union concerning environmental policies. The authors proposed that narcissistic identifiers might have an instrumental view of their own natural environment, and that they might care for it as long as it enables the group's sovereignty to be consolidated.

In this research, we sought to investigate further the negative relationship between national collective narcissism and environmental concerns, extending this question to climate science acceptance. By advocating for the power and sovereignty of their ingroup, narcissistic identifiers might not only be opposed to conservation policies at the national level, but also to climate science at the international level.

Previous findings support the hypothesis that narcissistic identifiers reject supranational influences. Narcissistic identification has been related to the valuation of national independence (Golec de Zavala et al., 2019). Moreover, Marchlewska et al. (2018a) argued that collective narcissism is closely related to populism in perceiving one's ingroup as great, yet unfairly deprived. This sense of unfair deprivation predicted voting for the populist Law and Justice party in Poland, supporting Brexit in the UK, and voting for Trump in the US. Finally, collective narcissists are hypersensitive to ingroup criticism, perceiving an ambiguous message as insulting (Golec de Zavala et al., 2016). Together, this evidence indicates that climate science might be perceived as constraining one's narcissistic group, consequently leading to rejection of the scientific consensus.

Last, it has also been proposed that collective narcissistic identifiers are more likely to express hostility toward issues challenging the social order and traditional habits (for a review, see Golec de Zavala & Lantos, 2020). In Poland, religious collective narcissism has been related to the belief that people advocating gender equality are conspiring to harm the traditional values and structure of the country (Marchlewska et al., 2019). A similar form of

hostility might arise in the face of climate issues, due to the recommendations to lower individuals' carbon footprint (e.g., decreasing meat consumption; Stoll-Kleemann & Schmidt, 2017). This hostility could be associated with conspiracy framing of perceived threat to the group's values and power, as observed by Marchlewska et al. (2019) in the case of catholic collective narcissism in Poland. Indeed, conspiracy beliefs are a core feature of collective narcissism (Cichocka et al., 2015), as well as of science denialism (Diethelm & McKee, 2009), and could play a major explicative role in their relationship.

The mediating role of conspiracy beliefs

Conspiracy beliefs can be defined as “attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by two or more powerful actors” (Douglas et al., 2019, p. 4). Conspiracy beliefs are related to numerous detrimental consequences in various domains such as health (Bertin et al., 2020; Jolley & Douglas, 2014a; Marinthe et al., 2020), distrust toward political institutions (Einstein & Glick, 2013), intergroup prejudice (Jolley et al., 2019) and justification of violence (Jolley & Paterson, 2020).

In the context of climate change and pro-environmental action, conspiracy theories are negatively related to intentions to reduce one's carbon footprint (Jolley & Douglas, 2014b) and pro-environmental behavior (Van der Linden, 2015). Douglas and Sutton (2015) described the specificities of climate change conspiracy beliefs, whose content “postulates that global warming is not happening and instead that scientific findings are being exaggerated or fabricated by people who have something to gain” (p. 100). Climate change conspiracy theories grew over the debates surrounding the existence of climate change (Goertzel, 2010), and are a core feature of climate change denialism (Diethelm & McKee, 2009; Goldsby & Kollage, 2015).

The relationship between narcissistic identification and conspiracy beliefs has been documented in a diversity of contexts, and for a variety of conspiracy beliefs. For example, national collective narcissism was shown to be associated with belief in a global conspiracy driving the 2016 American elections (Golec de Zavala & Federico, 2018), as well as with belief in COVID-19 conspiracy beliefs among British and American participants (Sternisko et al., 2020a). In Poland, catholic collective narcissism was associated with conspiracy beliefs pertaining to gender movements (Marchlewska et al., 2019). Yet, as far as we know, this relation has never been documented empirically for climate change conspiracy beliefs.

Because of the documented relations between collective narcissism and conspiracy beliefs on the one hand, and climate change conspiracy beliefs and climate change denialism on the other, we hypothesize that conspiracy beliefs might play a mediating role in explaining the relationship between collective narcissism and the rejection of climate science. It is worth noting that previous research on the relationship between concern for global warming and conspiracy beliefs mainly focused on conspiracy mentality (for a review, see Uscinski et al., 2017). Thus, it appears that specific climate change conspiracy beliefs have been under-investigated in the study of the rejection of climate science. In this research, following the suggestion of Sternisko et al. (2020b), we focus on climate change conspiracy beliefs, rather than conspiracy mentality. According to these authors, conspiracy beliefs can assume a different function, depending on the context in which they are endorsed. Their approach suggests that specific conspiracy theories might be more relevant than general conspiracy mentality (i.e., the general propensity to endorse conspiracy beliefs) to understand processes rooted in social identity dynamics.

The Current Studies

We conducted three studies on French samples to test the mediation model introduced above. In a pilot study ($N = 409$) we checked the connection between national collective

narcissism and climate change conspiracy beliefs. In Study 1 ($N = 295$), we tested how this relationship predicted rejection of climate science. In Study 2 ($N = 375$), we re-tested these connections when controlling for other forms of climate skepticism. We also tested conspiracy mentality (i.e., the general propensity to endorse conspiracy beliefs; see Bruder et al., 2013) as an alternative mediator in the relationship between collective narcissism and the rejection of climate science in order to further explore the context dependency of narcissist identifiers' attraction to conspiracy beliefs.

For all three studies, materials, data, and analyses are openly available on the Open Science Framework: https://osf.io/cnmeey/?view_only=None.

Analyses were run using Jamovi (The jamovi project, 2020). Internal consistency was estimated using McDonald's omega which is a more accurate coefficient than Cronbach's alpha (Dunn et al., 2014). The sample sizes of the three studies were all above the threshold of $N = 250$ required for stabilized correlations (Schönbrodt & Perugini, 2013).

In all studies, we systematically controlled for non-narcissistic national identification, age and gender when conducting the analyses. National identification is usually highly correlated with national collective narcissism (Cichocka et al., 2016). By controlling for this overlapping variable, we sought to isolate the narcissistic component of national attachment. Age and gender are not systematically related to conspiracy beliefs, however, a recent poll in France revealed that younger people are more prone to endorsing conspiracy theories (Institut français d'opinion publique [IFOP], 2019). In a similar vein, Galliford and Furnham (2017) recently found age and gender to be significantly related to conspiracy beliefs. Thus, in order to control for this potential noise (Douglas & Sutton, 2018), we controlled for gender and age as well.

Pilot Study

Before testing our model, we conducted a pilot study to test the basic assumption underlying our argument, namely, that the relation between collective narcissism and conspiracy beliefs found in previous research (e.g., Cichocka et al., 2016; Douglas et al., 2019) holds for conspiracy beliefs about climate science as well. Therefore, we hypothesize that collective narcissism would predict conspiracy beliefs about climate change (H_1).

Method

Participants and procedure

The survey was conducted online as part of a larger project and disseminated on Facebook, LinkedIn & Twitter among a French audience. Overall, 609 people answered the questionnaire. Four hundred and nine participants (299 women and 3 “other”, $M_{age} = 28.4$, $SD = 11.4$, $min = 18$, $max = 72$) remained after excluding those who did not fully complete the questionnaire ($N = 152$), failed to answer the attention or seriousness checks correctly ($N = 44$), or were under 18 years old ($N = 3$). One participant was removed as he/she explicitly answered for two people. These exclusions did not affect the results (see the supplementary analyses file for the detailed analyses without exclusions). For a given a power of .90, the sample size enabled us to detect correlations of $r = .16$ with two-tailed tests.

Measures

Descriptive statistics are displayed in Table 1. Participants answered to all scales using a 5-point Likert scale (1 = *totally agree*, 5 = *totally disagree*).

Table 1

Correlations, Means, Standard Deviations, and Internal Reliability Coefficients for Measured Variables (Pilot Study)

	<i>Mean</i>	<i>SD</i>	α	ω	1.	2.	3.
1. National collective narcissism	1.66	0.75	.83	.83	-		
2. National identification	3.44	0.76	.70	.70	-.01	-	
3. Conspiracy beliefs about climate change	2.17	0.87	.85	.86	.35***	.01	-

Note. $N = 409$. All variables were measured using a 5-point Likert scale.

*** $p < .001$.

National collective narcissism. We used the Collective Narcissism Scale (Golec de Zavala et al., 2009) to measure participants' national (i.e., French collective narcissism). We translated the scale into French using a translation - back translation process. Due to length constraint, we used the 5-items version of the scale (e.g., "The French nation deserves special treatment"; $\omega = .86$).

Conspiracy beliefs about climate change. We used 1 item from (Lewandowsky et al., 2013a) combined with 4 original items to measure climate change conspiracy beliefs (e.g. "Some scientists falsify their results, concluding that climate change is due to humans, in order to gain power and influence"; $\omega = .83$).

National identification. In order to grasp participants' national identification, we used the related items from the Identification With All Humanity scale (IWAH; McFarland et al., 2012). This scale measures three levels of social identification, namely, the community, national, and humanity levels (e.g., "How close do you feel to each of the following groups?");

$\omega = .70$). We used a four-items version of the French translation of the IWAH (see Hamer et al., 2021).

Results and discussion

The correlation matrix (see Table 1) reveals a significant positive correlation between national collective narcissism and conspiracy beliefs about climate change. Surprisingly, we did not find a significant positive relationship between national identification and the two remaining variables (national collective narcissism and conspiracy beliefs about climate change).

To test our hypothesis, we carried out a linear hierarchical regression to test the relationship between national collective narcissism and climate change conspiracy beliefs. We controlled for gender, age, and national identification at Step 1. National collective narcissism was introduced as an independent variable at Step 2. Congruent with H₁, national collective narcissism positively predicted climate change conspiracy beliefs $B = .30$, 95% CI [.21; .38], $t = 7.08$, $p < .001$ (see Table 2).

Table 2

Hierarchical Regressions on Climate Change Conspiracy Beliefs (Pilot Study)

Independent variable	Dependent variable				Total R^2
	Climate change conspiracy beliefs				
	B	95% CI	t	p	
Step 1					.03
Gender	0.14	[-0.03; 0.30]	1.64	.101	
Age	0.01	[0.01; 0.20]	3.25	.001	
National identity	0.01	[-0.08; 0.11]	0.22	.828	

Step 2					.14
Gender	0.14	[-0.08; 0.30]	1.85	.07	
Age	0.08	[-0.01; 0.01]	1.77	.07	
National identification	0.01	[-0.08; 0.11]	0.32	.75	
National collective narcissism	0.30	[0.21; 0.38]	7.08	< .001	

Note. $N = 409$.

This result corroborates our assumption that the positive relationship between collective narcissism and conspiracy beliefs observed in previous research (see e.g., Cichocka et al., 2016; Douglas, et al., 2019) holds for conspiracy beliefs about climate change as well. In Studies 1-2, we incorporated this relation into a mediation model, in which the negative relation between collective narcissism and acceptance of climate science is mediated by climate change conspiracy beliefs.

Study 1

In study 1, we hypothesize that collective narcissism will negatively predict acceptance of climate science (H₁). Indeed, we suspect that for collective narcissists, climate change science, which calls for supranational cooperation at the expense of narrow national interests, might be perceived as a threat to the sovereignty of the ingroup. We further hypothesize that this relation will be mediated by conspiracy beliefs about climate change (H₂).

Method

Participants and procedure

The pencil and paper survey was conducted among undergraduate students at two French universities. Overall, 301 participants took part in the survey, of which 295 remained

(242 women and 1 “other”, $M_{age} = 20.1$, $SD = 3.67$, $min = 18$, $max = 61$) after excluding 5 participants under 18 years old (which is the legal age in France for participating in scientific studies), and 1 participant who was not a French native speaker. These exclusions did not affect the results (see the supplementary analyses file for detailed analyses without exclusions). For a given a power of .90, the sample size enabled us to detect correlations of $r = .19$ with two-tailed tests.

Measures

Participants responded to all scales using a 5-point scale (1 = *totally disagree*, 5 = *totally agree*). Means, standard deviations, and inter-scales correlations are displayed in Table 3.

Table 3

Correlations, Means, Standard Deviations, and Internal Reliability Coefficients for Measured Variables (Study 1)

	<i>Mean</i>	<i>SD</i>	α	ω	1.	2.	3.
1. National collective narcissism	2.28	0.76	.81	.82	-		
2. National identification	3.39	0.70	.66	.67	.17**	-	
3. Conspiracy beliefs about climate change	2.05	0.83	.68	.69	.37***	-.05	-
4. Acceptance of climate science	3.95	0.62	.55	.58	-.22***	.08	-.38***

Note. $N = 295$. All variables were measured using a 5-point Likert scale.

** $p < .01$ *** $p < .001$.

National collective narcissism. We used a short 5-items version of the French translation of the collective narcissism scale (Golec de Zavala et al., 2009) assessing narcissistic attachment to the French nation (e.g., “If the French nation had a major say in the world, the world would be a much better place”; $\omega = .82$).

Conspiracy beliefs about climate change. Due to length restriction, we used three items to determine participants' conspiracy beliefs about climate change (e.g., “In order to increase their profits, some multinationals agree to finance organizations that accuse human beings of being the cause of climate change”; $\omega = .69$).

Acceptance of climate science. We translated into French four items from Lewandowsky et al. (2013b) assessing attitudes toward climate science (e.g., “Human CO2 emissions cause climate change”, two reverse-items; $\omega = .58$).

National identification. We used the same 4-items scale as in the pilot Study ($\omega = .67$).

Results and discussion

An inspection of the correlations revealed significant positive relationships between national collective narcissism and conspiracy beliefs about climate change (see Table 3). Both of these variables were negatively related to acceptance of climate science. Contrary to the results from the Pilot study and in accordance with the literature (Cichocka et al., 2016), national collective narcissism was positively related to national identification.

We first tested the main effect of the mediation model, by carrying out a linear regression with collective narcissism as the independent variable and acceptance of climate science as the dependent variable, controlling for age, gender and national identification (see Table 4). As expected, we found a direct negative effect of collective narcissism on acceptance of climate science, $B = -0.21$, 95% CI [-0.30; -0.11], $t = -4.48$, $p < .001$. Hence, congruent with H₁, heightened national collective narcissism was associated with lower acceptance of climate science. Notably, national identification was significantly and positively related to acceptance of climate science, $B = 0.13$, 95% CI [0.03; 0.23], $t = 2.54$, $p = .012$.

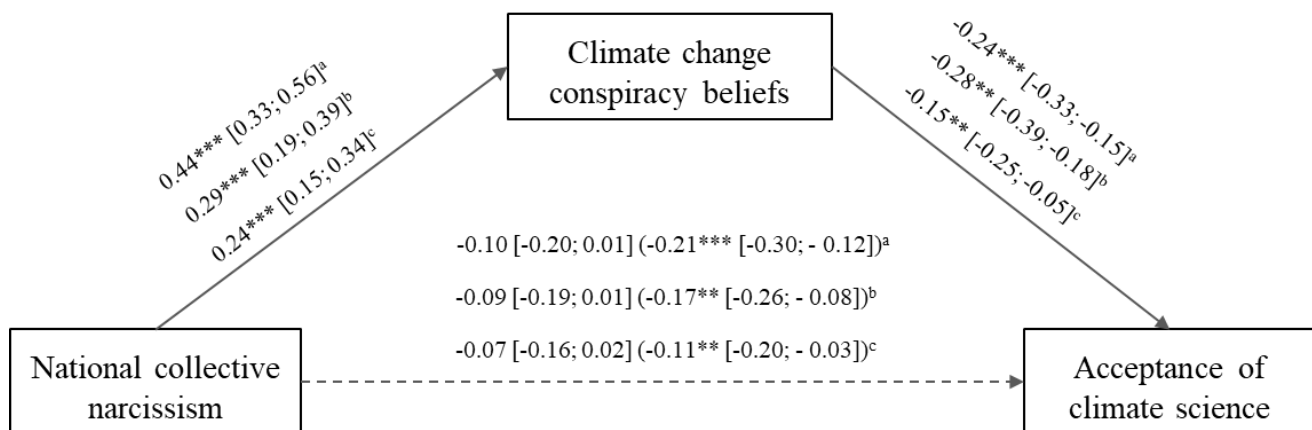
Table 4*Linear Regression on Acceptance of Climate Science (Study 1)*

Independent variable	Dependent variable			
	Acceptance of climate science			
	B	95%CI	t	p
Gender	-0.19	[-0.38; -0.01]	-2.05	.04
Age	-0.01	[-0.03; 0.01]	-1.23	.22
National identification	0.13	[0.03; 0.23]	2.54	0.012
National collective narcissism	-0.21	[-0.30; -0.11]	-4.48	< .001

Note. $N = 409$

We tested the mediation (H_2) using the “jAMM” (jamovi Advanced Mediation Models) package for jamovi (Gallucci, 2020). Acceptance of climate science was introduced as the dependent variable, collective narcissism as the independent variable, and climate change conspiracy beliefs as a mediator. We controlled for gender, age and national identification for all paths and used bootstrapping with 1000 resamples for bias correction of the indirect effect. Corroborating H_2 , the main effect was mediated by climate change conspiracy theories, $IE = -0.11$ (52% of the total effect), 95% CI [-0.16; -0.06], $z = -4.35$, $p < .001$, leaving no significant direct effect, $B = -0.10$, 95% CI [-0.20; 0.01], $z = -1.87$, $p = .06$ ¹⁰ (see Figure 1, paths marked with superscript “a”).

¹⁰ Without controlling for national identification, the pattern of results remains the same $IE = -0.11$ (57% of the total effect), 95% CI [-0.16; -0.06], $z = -4.57$, $p < .001$, direct effect: $B = -0.07$, 95% CI [-0.17; 0.02], $z = -1.60$, $p = .11$.

Figure 1*Mediation Model (Studies 1-2)*

Note. ^a Study 1, ^b Study 2, ^c Study 2 controlling for other forms of climate scepticism.

Coefficients are unstandardized. For each path, we controlled for age, gender and national identification.

** $p < .01$ *** $p < .001$.

Thus, as expected, national collective narcissism is negatively related to acceptance of climate science, and this relation is mediated by climate change conspiracy beliefs.

Study 2

In Study 2, we wanted to check whether the negative relationship between national collective narcissism and the acceptance of climate science (H_1) would be mediated by climate change conspiracy beliefs (H_2), even when controlling for other forms of climate change skepticism. We also tested conspiracy mentality as an alternative mediator (H_3).

Climate skepticism can be described as “strongly held disbeliefs in or a rejection of the tenets of mainstream climate science” (Poortinga et al., 2011, p. 5). Rahmstorf (2004) differentiates three kinds of climate skepticism, pertaining to different components of the climate change issue: 1) Trend skepticism, denying the reality of climate change in general; 2) Attribution skepticism, denying the anthropogenic origin of climate change and advocating for natural causes; 3) Impact skepticism, not denying the anthropogenic origin of climate

change but considering the consequences to be harmless. We hypothesize that these dimensions of skepticism are related to, but different from climate change conspiracy beliefs. Hence, we tested for the uniqueness of climate change conspiracy beliefs in mediating the relation between collective narcissism and attitudes toward climate science by controlling for other kinds of skepticism in the analyses.

Furthermore, whilst the mediating role of climate change conspiracy beliefs in our model could be accounted for by other forms of climate skepticism, it could also be a manifestation of a generic conspiracy mentality (Bruder et al., 2013, Moscovici, 1987), which has been previously linked to rejection of climate science (Lewandowsky et al., 2013b) and collective narcissism (Golec de Zavala & Federico, 2018). Hence, in Study 2, we examined conspiracy mentality as an alternative mediator of the relation between collective narcissism and rejection of climate science.

Method

Participants and procedure

The study was disseminated online both among undergraduate students of two French universities and on social media among a French audience (Facebook, Twitter and LinkedIn) in order to add diversity to the sample, compared with the sample for Study 1, which used participants from two universities only. Overall, 469 participants answered the survey. We excluded 69 participants for not having fully completed the survey, 21 for not being French, 2 for failing the attention check and 2 for being under 18 years old. These exclusions did not affect the results (see the supplementary analyses file for detailed analyses without exclusions). The final sample was made up of 375 participants (264 women and 6 “other”, $M_{age} = 25.9$, $SD = 10.1$, $min = 18$, $max = 70$), which enabled two-tailed tests correlations of $r = .17$ with a given power of .90.

Measures

Unless otherwise stated, all scales ranged from 1 (*totally disagree*) to 5 (*totally agree*). Means, standard deviations, and inter-scales correlations are displayed in Table 4.

National collective narcissism. We used the full French 9 item version of the collective narcissism scale (Golec de Zavala et al., 2009). Participants answered using a 6-point scale (1 = totally disagree”, “6-totally agree”; one reversed item; $\omega = .87$).

Conspiracy beliefs about climate change. As in the Pilot study and Study 1, we used one item from Lewandowsky et al. (2013a) together with four new items to assess participants' endorsement of various conspiracy theories about climate change (e.g., “Some companies having invested large sums of money in renewable energies are financing worrisome research about climate change in order to secure their investment”; $\omega = .83$).

Acceptance of climate science. Because the internal reliability of the scale used in Study 1 was not optimal, we used a different, yet conceptually similar scale for Study 2. We translated into French four items from Lewandowsky et al. (2013a) to determine participants' acceptance of climate science (e.g., “I believe that the burning of fossil fuels on the scale observed over the last 50 years has increased”; $\omega = .88$).

National identification. As in the Pilot study and Study 1, we computed items about national level of identification from the IWAH scale (McFarland et al., 2012). We used the full 9-item version (e.g., “How much would you say you have in common with the French people”; $\omega = .84$; see Hamer et al. (2021) for the French translation).

Climate skepticism. We used four items from Poortinga et al.'s (2011) scale to assess three forms of skepticism about climate change. Trend skepticism was measured using the item “I am uncertain that climate change is really happening”, attribution skepticism was measured using the item “Most scientists agree that humans are causing climate change” (reversed item), and impact skepticism was measured using two items (e.g., “It is uncertain what the effects of climate change will be”). In line with Poortinga et al. (2011), participants

answered using a scale ranging from (1 = *totally agree*, 5 = *totally disagree*). In the following analysis, trend skepticism and impact skepticism scores were reversed for the ease of interpreting the results, with higher scores reflecting a higher level of skepticism.

Conspiracy mentality. We measured the generic propensity to endorse conspiracy beliefs using the French version (Lantian et al., 2016) of the Conspiracy Mentality Questionnaire (CMQ, Bruder et al., 2013; $\omega = .89$). The CMQ is one of the most widely used scales to measure conspiracy mentality (Swami et al., 2017). Participants rated the likelihood of each of the 5 items (e.g., “I think that many very important things happen in the world, which the public is never informed about”) on an 11-point scale (0% = *Certainly not*, 100% = *Certain*).

Results

An inspection of the correlations revealed significant positive correlations between national collective narcissism and conspiracy beliefs about climate change, trend skepticism and attribution skepticism (but not impact skepticism), and national identification. There were negative correlations between acceptance of climate science and national collective narcissism, as well as the three types of climate skepticism. All three types of climate skepticism, conspiracy mentality, and conspiracy beliefs about climate change were positively intercorrelated. Last, national identification was significantly and positively related to conspiracy beliefs about climate change and not significantly related to acceptance of climate science (see Table 5).

Table 5

Correlations, Means, and Standard Deviations, Internal Reliability Coefficients and Pearson's correlation coefficients (Study 2)

	<i>Mean</i>	<i>SD</i>	α	ω	1.	2.	3.	4.	5.	6.	7.
1. National collective narcissism	2.03	0.82	.85	.87	-						
2. National identification	2.89	0.64	.84	.84	.36***	-					
3. Conspiracy beliefs about climate change	1.73	0.71	.82	.83	.33***	.11*					
4. Acceptance of climate science	4.24	0.70	.88	.88	-.20***	-.04	-.33***	-			
5. Trend skepticism	1.56	0.89	-	-	.13*	-.01	.27***	-.28***	-		
6. Attribution skepticism	1.76	0.79	-	-	.12*	.10+	.25***	-.32***	.13**	-	
7. Impact skepticism	2.21	0.77	-	-	.09+	-.03	.22***	-.37***	.33***	.27***	-
8. CMQ	6.56	2.10	.88	.89	.06	.05	.21***	.01	.01	.06	.04

Note. $N = 375$. All variables were measured using a 5-points Likert scale, except for national collective narcissism (6 points) and CMQ (11 points).

+ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$.

We first tested the main effect of the mediation model, by carrying out a linear regression with collective narcissism as the independent variable, and acceptance of climate science as a dependent variable, controlling for age, gender and national identification (see Table 6). We found a direct negative effect of collective narcissism on acceptance of climate science, $B = -0.17$, 95% CI [-0.26; -0.08], $t = -3.61$, $p < .001$. As in Study 1, heightened national collective narcissism was associated with lower acceptance of climate science, validating H_1 .

Table 6*Hierarchical Regressions on Acceptance of Climate Science (Study 2)*

Independent variable	Dependent variable			
	Acceptance of climate science			
	B	95%CI	t	p
Gender	-0.15	[-0.31; 0.01]	-1.92	.06
Age	0.01	[-0.01; 0.01]	1.85	.07
National identification	0.04	[-0.08; 0.16]	0.69	.49
National collective narcissism	-0.17	[-0.26; -0.08]	3.61	< .001

Note. $N = 409$.

Next, we tested our mediation model to replicate results from Study 1, using the “jAMM” package for jamovi (Gallucci, 2020). We used 1000 bootstraps for bias correction of the indirect effect, with climate change conspiracy beliefs as the mediating variable. For all paths, we controlled for gender, age and national identification. Results showed that climate change conspiracy beliefs mediated the relationship between collective narcissism and acceptance of climate science, $IE = -0.08$ (47% of the total effect), 95% CI [-0.12; -.04], $z = -3.85$, $p < .001$, leaving no significant direct effect $B = -0.09$, 95% CI [-0.19; 0.01], $z = -1.73$, $p = .08$ (see Figure 1, paths marked with superscript “b”)¹¹. This is congruent with results from Study 1 and corroborates H_2 .

To test H_2 , we carried out the same mediation analyses, while also controlling for the three other forms of climate skepticism. The indirect effect of climate change conspiracy

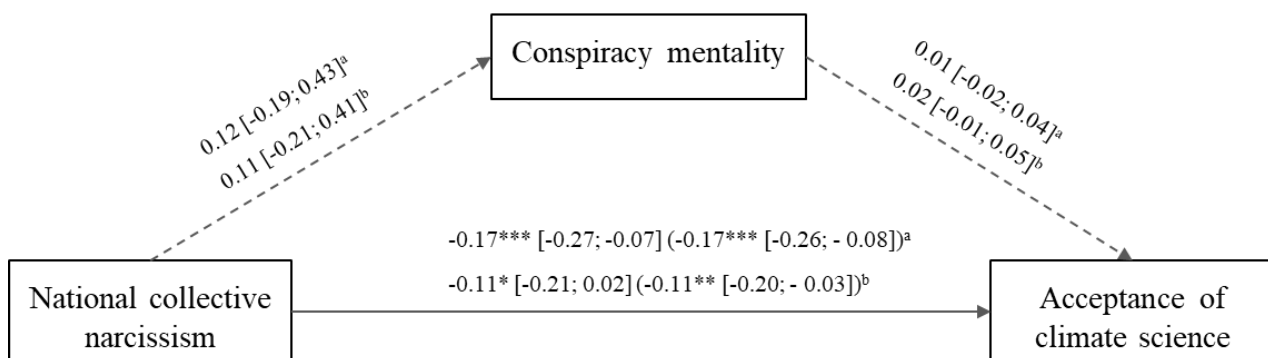
¹¹ Without controlling for national identification, the pattern of results remains the same $IE = -0.08$ (50% of the total effect), 95% CI [-0.11; -0.03], $z = -3.94$, $p < .001$, direct effect: $B = -0.08$, 95% CI [-0.17; 0.02], $z = -1.59$, $p = .11$.

beliefs remained significant, IE = -0.04 (34% of the total effect), 95% CI [-0.06; -0.01], $z = -2.47$, $p = .014$, and national collective narcissism no longer significantly predicted acceptance of climate science, $B = -0.07$, 95% CI [-0.17; 0.02], $z = -1.61$, $p = .11$ (see Figure 1, paths marked with superscript “c”). This corroborates H₂¹².

Lastly, we examined whether general conspiracy mentality also mediated the relationship between collective narcissism and rejection of climate science. We controlled for age, gender, and national identification. The data did not support a mediation, IE = 0.01 (0.01% of the total effect), 95% CI [-0.01; 0.01], $z = 0.59$, $p = .55$ (see Figure 2). Indeed, conspiracy mentality was not a significant predictor of acceptance of climate science, $B = 0.02$, 95% CI [-0.01; 0.05], $z = 1.21$, $p = .23$, and was not significantly predicted by collective narcissism, $B = 0.13$, 95% CI [-0.15; 0.40], $z = 0.90$, $p = .36$.

Figure 2

Alternative Mediation Model (Study 2)



Note. ^a Study 2, ^b Study 2 controlling for other forms of climate scepticism. Coefficients are unstandardized. For each path, we controlled for age, gender and national identification.

* $p < .05$ ** $p < .01$ *** $p < .001$.

¹² See the supplementary analyses file for testing of the mediation model using the three forms of climate skepticism as mediators.

Discussion

The results of Study 2 replicated results from the Pilot study and Study 1. Furthermore, climate change conspiracy beliefs still mediated the relation between national collective narcissism and acceptance of climate science when controlling for other types of climate skepticism, in addition to age, gender, and national identification. Thus, our results suggest that climate change conspiracy beliefs play a specific role in the rejection of climate science among collective narcissists.

Furthermore, conspiracy mentality did not mediate the relationship between national collective narcissism and climate science acceptance, in line with the view of Sternisko et al. (2020b), according to which social identity motives are likely to lead primarily to context-relevant conspiracy beliefs. Below, we further discuss further this latter point, as well as our findings, limitations, and prospects for future research.

General discussion

Across three studies, our mediation model was corroborated. Congruent with our expectations, we found that collective narcissism negatively predicted acceptance of climate science. Furthermore, this relation was mediated by conspiracy beliefs about climate change, even when controlling for different dimensions of climate change skepticism. Furthermore, general conspiracy mentality did not mediate this relationship, which emphasizes the specific role of climate change conspiracy beliefs in the rejection of climate science.

Our results indicate that national collective narcissism is not solely related to specific anti-environmentalism attitudes such as support for anti-conservation policies at the national level (Cislak et al., 2018), but is more deeply and broadly grounded on rejection of climate science. Climate change conspiracy beliefs seem to play a specific role in this relationship. Indeed, such beliefs might reframe climate change threat into intergroup suspicion and denialism. Following Cislak et al. (2018), we can hypothesize that this suspicious stance

against climate science and stakeholders is fed by the motivation to protect the power and sovereignty of one's national ingroup. But this is speculative and more research is needed to test this hypothesis.

The observed mediating role of conspiracy beliefs, but not of conspiracy mentality, is interesting and needs to be further investigated. Based on previous empirical findings, it would not have been surprising to find a positive relation between conspiracy mentality and climate science rejection (Lewandowsky et al, 2013a; Van der Linden et al., 2020), and between collective narcissism and conspiracy mentality (Golec de Zavala & Federico, 2018). One explanation might be that, as far as we know, these studies were conducted in a U.S. setting. Given its important political and ideological specificities (Van der Linden et al., 2020), research conducted in this context might produce results that cannot be generalized to other countries. This interpretation is supported by recent cross-cultural research, which found the U.S. population to be unique concerning climate skepticism and conspiracy ideology, compared with 24 other countries (Hornsey et al., 2018b). But as noted by Van der Linden et al. (2020) and by Golec de Zavala (2021), the recent growth in popularity of right-wing authoritarian governments around the world (Hungary, Poland, Brazil, etc.) may mark the end of this U.S. particularity discussed above. This emphasizes the necessity for future research to replicate this study.

Two frameworks were recently published and intended to explain collective narcissist attraction to conspiracy theories. Based on the meaning maintenance model and on previous research (Golec de Zavala & Federico, 2018), Golec de Zavala (2021) stated that collective narcissism is impregnated with conspiracy mentality, and is therefore likely to be related to the endorsement of any kind of conspiracy theories. By contrast, Sternisko et al. (2020b) advocated that when they respond to social identity motives, people might be only sensitive to some conspiracy theories, depending on their content. As collective narcissism is rooted in

social identity motives, collective narcissists might therefore selectively endorse some conspiracy theories that serve such motives. Our findings are in favor of the latter framework, with collective narcissism being related to the rejection of climate science through climate conspiracy beliefs, but not to conspiracy mentality.

However, these two positions are not incompatible, and narcissistic identifiers may have a more pronounced conspiracy mentality than non-narcissistic identifiers, coupled with contextual sensitivity. Indeed, it is difficult to distinguish between dispositional and contextual motives for endorsing conspiracy theories. This point is acknowledged by Sternisko et al. (2020b, p.4), who state that “people are driven by multiple motives and conspiracy theories can meet these various motives at the same time. Further, motives can interact with each other, as can the content and qualities of conspiracy theories”. At this point, our results suggest that the speculated conspiratorial mentality component of collective narcissism may not be as quick to endorse a wide variety of conspiracy theories as predicted by Golec de Zavala (2020).

Limitations and future research

First and foremost, we must acknowledge a limitation lying in the absence of a generic measure of political conservatism in our studies. Indeed, conservative political orientation is a negative predictor of climate science acceptance (Lewandowsky et al., 2013a; van der Linden et al., 2020) and also a positive predictor of national collective narcissism (Cichocka, et al., 2016). Regarding climate change acceptance, for example, more than 90% of books published since 1972 which have been skeptical of environmentalism were sponsored by conservative think tanks (Jacques et al., 2008). Moreover, Lewandowsky et al. (2013a) indicate that rejection of science among conservatives may be suffused with a general tendency to endorse conspiracy theories. However, most of the studies about climate science acceptance have been conducted in an Anglo-American context and may thus overgeneralize the weight of some

political and ideological factors (Bjornberg et al., 2017). For example, Hornsey et al. (2018b) found that the positive relations between conspiratorial thinking, conservative ideologies and climate skepticism seems to be specific to the U.S. Nevertheless, as the line of research about collective narcissism and environmentalism is very new, future research should examine the extent to which the relation between collective narcissism and rejection of climate science might be explained by a third variable, namely, conservative ideology. Note that given that The Left-Right scale has conceptual and construct validity issues in many contexts (see Bauer et al., 2017), one should be very careful about the definition and measurement of this third variable. Also, conservatism can be operationalized as cultural or economic, and these different types of conservatism are connected to different psychological characteristics, such as needs for security and certainty. There are also some country-level differences in these relations (Malka et al., 2014). One should also be careful about collinearity issues, that is, issues arising when independent variables are strongly correlated. Lastly, causality in the theoretical models should also be carefully defined, as controlling for a variable causally affected by the independent variable can not only result in spurious correlations, but also in the suppression of the effect under investigation (Rohrer, 2018).

Second, further research is also needed to overcome the cross-sectional limitations of our studies. An experimental design would be valuable to causally assert the path between collective narcissism and conspiracy beliefs. Also, it would be interesting to reverse the classic theorized causal path of collective narcissism leading to conspiracy beliefs (Cichocka et al., 2016). Indeed, it is quite plausible to think of collective narcissism as a consequence of conspiracy beliefs, with narcissistic self-categorization occurring due to suspicion of a threatening plot.

Future research might also be interested in replicating this finding with a cross-cultural perspective. Indeed, given the particularities of the U.S. population (Hornsey et al., 2018b;

Van der Linden et al., 2020), and the East European population (Malka et al, 214), a replication of our findings comparing different populations would be useful for the literature on climate science acceptance in general and in particular, its relationship to a conspiracy mentality. Furthermore, even though our samples reached the heuristic level for stabilized correlations (Schönbrodt & Perugini, 2013), it would be useful to replicate our studies in a broader representative sample, as psychological science is in a post-replication crisis era (Anvari & Lakens, 2018) and replication is needed for frequentist statistical inferences (Krueger, 2001).

Last, because no validated climate change conspiracy beliefs scale existed in the literature, we relied on a scale that we designed ourselves, as is the case in most research on the topic. Given the importance of the topic of climate change, a psychometrically validated measurement of climate change conspiracy beliefs in different languages is needed. Such a measurement tool is even more necessary since these conspiracy beliefs have a number of particularities compared with other conspiracy theories (e.g., they do not blame industry and governments, but rather scientific groups).

Conclusion

Across three cross-sectional studies conducted in France, we found support for a mediation model in which climate change conspiracy beliefs mediate the relation between collective narcissism and rejection of climate science. This model held when controlling for age, gender, national identification and other forms of climate skepticism. Thus, our results suggest that collective narcissism is not only related to specific anti-conservation policies, but also more broadly to rejection of climate science.

Furthermore, we found that conspiracy mentality did not mediate this relation. Our research reinforces the observation that the results of previous studies carried out in the U.S might be specific to the American context (Hornsey et al., 2018b). Lastly, we discussed the idea that

whereas collective narcissistic identifiers are especially prone to hold conspiracy beliefs, this might be in a way that is context-relevant and not context-blind, as suggested by the monological belief system hypothesis.

Transition

In Chapter 3 we showed that climate change conspiracy beliefs mediated the relationship between national narcissism and the rejection of climate science. This role held even when controlling for other forms of climate skepticism and was unique to specific conspiracy beliefs. Hence, we focus on specific conspiracy beliefs in the following chapters.

In Chapter 4 we theorized the process of *defensive group beliefs* in order to explain the causal relationship between national narcissism, perceived intergroup threat and conspiracy beliefs, and their consequences for outgroup prejudice. Specifically, we focused on prejudice against immigrants, integrating this work in line with research on the identification-prejudice link (Spiegler et al., 2021). Lastly, following the group-control model (Fritsche et al., 2011), we also aimed to test whether these defensive group beliefs might increase among national narcissists facing a lack of personal control.

Chapter 4

Investigating the Identification-Prejudice Link Through the Lens of National Narcissism: The Role of Defensive Group Beliefs

Abstract

The identification-prejudice link describes the defensive stance toward immigrants held by strong national identifiers. Recent research refined this relationship by suggesting that defensive national identification (operationalized through national narcissism), but not secure national identification, was associated with prejudice. While previous research found intergroup threat and conspiracy beliefs to mediate the identification-prejudice link, the need to comprehensively and experimentally test the role of these defensive group beliefs remains in the context of the *narcissistic* identification-prejudice link. Furthermore, following the group-based control model, we proposed that these defensive group beliefs might be more pronounced among national narcissists compensating for a low personal control. In Study 1 ($N = 1,104$, representative sample), national narcissism, but not secure national identification, was related to prejudice against immigrants, and a serial model composed of perceived intergroup threat and conspiracy beliefs mediated this relationship. These relationships held when controlling for conspiracy mentality, supporting the notion that these conspiracy beliefs were motivated at the intergroup level. In Study 2 ($N = 474$, pre-registered), we experimentally induced intergroup threat and exposure to conspiracy theories about immigrants. Induced threat increased conspiracy beliefs, and both increased prejudice, corroborating their causal relationship. In Study 3 ($N = 350$, pre-registered), we induced low personal control and made national narcissism salient to test the group-based control hypothesis. The relationship between measured (but not manipulated) national narcissism and conspiracy beliefs was more pronounced under low personal control. We discuss the role of defensive group beliefs on group-based control and prejudice against immigrants.

Article Information

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Ethics Statement

We applied the 1964 Helsinki Declaration and its later amendments (2001), the ethical principles of the French Code of Ethics for Psychologists (2012), and the American Psychological Association Ethical Principles of Psychologists and Code of Conduct (2017). Participants were informed about the purpose of the study in a cover letter and were assured that their data would remain confidential. Participants had to give explicit written consent to access the study.

Author Contributions¹³

P.B. and G.M. conceptualized the project. P.B., G.M. and S.D. created the materials. P.B., G.M. and S.D. conducted the data collections. P.B. and G.M. conducted the analysis. P.B., G.M. and M.B. wrote and revised the manuscript. P.B. did the project administration and supervision.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

¹³ P.B. = Paul Bertin, G.M. = Gaëlle Marinthe, M.B. = Mikey Biddlestone, SD = Sylvain Delouvé

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Open Science Statement

For all three studies, materials in French (with English translation), data and analyses are openly available on the Open Science Framework repository of the project at the following link: https://osf.io/d9yce/?view_only=1e959a4e48f14978aec254f5f9cc956f

Supplementary Material

The Supplementary Material for this article can be found online in Appendix C (p. 275).

Investigating the Identification-Prejudice Link Through the Lens of National Narcissism: The Role of Defensive Group Beliefs

By 2060, 8 million international immigrants are expected to have reached Europe (Migration Data Portal, 2020). Despite the fact that more than 20,000 have died trying to cross the Mediterranean Sea since 2014 (ONU Info, 2020), notable protests against welcoming these newcomers have been organized in many European countries. Research has shed light on this hostility by showing that strong identification with the national ingroup is related to prejudice against immigrants (Falomir-Pichastor & Frederic, 2013; Hasbun Lopez et al., 2019), a relationship labelled the *identification-prejudice link* by Spiegler et al. (2021). However, recent findings have revealed that the type of ingroup positivity matters, and that only national narcissism (and not secure national identification) is related to prejudice (Dyduch-Hazar et al., 2019). National narcissism is a defensive social identification rooted in the belief that one's ingroup greatness suffers from a lack of external recognition (Golec de Zaval et al., 2009), making one highly sensitive to intergroup threat and conspiracy theories (i.e., accusations of malevolent outgroups secretly plotting against the ingroup to achieve nefarious goals, Zonis & Joseph, 1994). Intergroup threat and conspiracy beliefs, which we labelled *defensive group beliefs*, are causally related (Cichocka et al., 2016; Mashuri & Zaduqisri, 2015b), and mediate the identification-prejudice link (Swami et al., 2018; Uenal, 2016). However, these relationships have not yet been replicated in the context of the *narcissistic* identification-prejudice link. We aim to fill this gap by arguing that intergroup threat and conspiracy beliefs serially mediate the narcissistic identification-prejudice link. Moreover, based on the group-based control model (Fritsche et al., 2013), we further argue that these defensive group beliefs might be especially prevalent when national narcissists are compensating for low personal control (Cichocka et al., 2018). Hence, in this paper we aimed to investigate the narcissistic identification-prejudice link by comprehensively testing the

mediating role of defensive group beliefs, and the particular proneness of these reactions following group-level control compensation.

Types of Ingroup Positivity and Prejudice Against Immigrants

Prejudice can be defined as “any negative attitudinal, emotional, or behavioral reaction against an outgroup” (Rios et al., 2018, p. 227). Strong identification with the national ingroup has been documented as a reliable predictor of prejudice against immigrants (e.g., Pehrson et al., 2009a, 2009b; for a review see Esses, 2020). This identification-prejudice link has been replicated, for example, in predicting negative feelings (Yitmen & Verkuyten, 2017), collective action intentions (Shepherd et al., 2018), negative attitudes (Espinosa et al., 2018), and support for discriminatory policies (Adam-Troian et al., 2020). However, recent research has provided nuance to these findings by showing that the identification-prejudice link was not observed for all kinds of national ingroup positivity.

Rather, recent evidence suggests a narcissistic identification-prejudice link against immigrants, but not for secure national identification (Dyduch-Hazar et al., 2019a). Hereafter, we distinguish between two kinds of national ingroup positivity with different intergroup consequences. First, secure national identification captures “a confidently held ingroup evaluation, which stems from satisfied needs” (Marchlewska et al., 2020, p. 8). Secure national identification has been related to virtuous intergroup consequences (Dyduch-Hazar et al., 2019b) and to decreased hostility toward immigrants (Dyduch-Hazar et al., 2019a). Second, defensive national identification, here operationalized through national narcissism (Cai & Gries, 2013) is a defensive social identification rooted in the belief that one’s nation’s greatness suffers from a lack of external recognition (Golec de Zavala et al., 2009). Contrary to secure national identification, national narcissism has been related to various prejudices against immigrants, such as increased hostility (Dyduch-Hazar et al., 2019a), negative

attitudes (Lyons et al., 2010), justification of collective violence (Cichocka et al., 2021) and decreased collective action intentions in solidarity with immigrants (Gorska et al., 2020, Study 1). In the following section, we review literature supporting the idea that perceiving immigrants as threatening and conspiring against one's ingroup might serially mediate the narcissistic identification-prejudice link.

The Serially Mediating Role of Intergroup Threat and Conspiracy Beliefs

The Mediating Role of Intergroup Threat

A consequent body of evidence suggests that the identification-prejudice link (without distinguishing between types of ingroup positivity) is mediated by perceived intergroup threat from immigrants (Caricati, 2018; Hasbún López et al., 2019; Louis et al., 2013; Shepherd et al., 2018; Swami et al., 2018; Yitmen & Verkuyten, 2018). This relationship has been interpreted following the Intergroup Threat Theory (Stephan & Stephan, 2017), stating that prejudice will be displayed against outgroups following perceptions of symbolic or realistic intergroup threats. With regards to perceived threat from immigrants, symbolic threat refers to perceiving immigrants as threatening the “ingroup’s values, culture, or way of life”, while realistic threat refers to perceiving immigrants as threatening the “ingroup’s power, resources, or well-being” (Rios et al., 2018, p. 213). As mentioned by Caricati (2018) and following Social Identity Theory (Tajfel & Turner, 1979), high identifiers are more susceptible to perceptions of intergroup threat. But with regards to prejudice, the above-mentioned research did not differentiate between types of ingroup positivity, which is problematic since a suppression effect frequently occurs between narcissistic and secure ingroup identification when predicting intergroup threat.

Indeed, contrary to national narcissism, secure national identification is usually no longer positively associated with perceiving intergroup threat when these two types of

ingroup positivity are partialled out (e.g., Golec de Zavala et al., 2017). Contrary to secure national identification, national narcissists' sensitivity to intergroup threat has been associated with generally negative outgroup attitudes (for a review, see Golec de Zavala et al., 2019). For example, perceived intergroup threat mediated the relationship between Hungarian national narcissism and moral exclusion of Roma and Muslim immigrants (Hadarics et al., 2020). Based on these previous results, we expected that perceived intergroup threat from immigrants would mediate the narcissist identification-prejudice link, but not the secure identification-prejudice one. Of importance, defensive group beliefs displayed by national narcissists and leading to prejudice against immigrants might not only be explained by perceiving intergroup threat. Indeed, Hadarics et al. (2020) suggested that “blaming outgroups may not just increase salience of in-groups but also mobilize collective action against the out-group” (p. 120). That is, for prejudice (e.g., collective action) to occur, perceived intergroup threat may take the form of blaming outgroups, encompassing sentiments that are typical of conspiracy theories. Hence, we expected perceived intergroup threat to lead to conspiracy beliefs, and that these two defensive group beliefs would serially mediate the narcissistic identification-prejudice link.

The Mediating Role of Conspiracy Beliefs

Previous findings support the hypothesis that the narcissistic identification-prejudice link might not only be mediated by intergroup threat, but also by conspiracy beliefs. The relationship between national narcissism and conspiracy beliefs is robust and has been documented in many contexts. For example, national narcissism has been related to Jewish conspiracy beliefs (Golec de Zavala and Cichocka, 2012) and vaccination conspiracy beliefs (Cislak et al., in press) in Poland, and to COVID-19 conspiracy beliefs in the U.S, U.K (Sternisko et al., 2020a), and Romania (Stoica & Umbres, 2020). The suppression effect usually occurs when accounting for both national narcissism and secure national

identification, the latter becoming non-significantly or even negatively related to conspiracy beliefs (see Cichocka, 2016). Furthermore, national narcissists' conspiracy beliefs appear to be triggered by perceiving outgroups as threatening to the ingroup.

Conspiracy beliefs can be described as reactions to perceived intergroup threats in which the outgroup is no longer simply depicted as threatening, but as intentionally threatening the ingroup in secret. Whereas intergroup threats can be somewhat diffuse and intangible (Green et al., 1998), conspiracy beliefs directly attribute clear and unambiguous malevolent motives to threatening outgroups. A consequent body of evidence supports the idea that at an intergroup level, perceived intergroup threat is a necessary condition for conspiracy beliefs to occur (Mashuri & Zaduqisti, 2015b; Mashuri et al., 2016; Van Prooijen & Song, 2021; Zein et al., 2020, study 1). Indeed, intergroup threat has been shown to positively mediate the relationship between national narcissism and conspiracy beliefs (Cichocka et al., 2016, Study 2). The same study found that secure national identification was negatively related to intergroup threat and conspiracy beliefs, further suggesting that defensive group beliefs pertain to national narcissism. Two other studies have investigated relationships between national identification (without distinguishing types of ingroup positivity), intergroup threat and conspiracy beliefs about Muslim immigrants (labelled "Islamophobic" conspiracy beliefs; Swami et al., 2018; Uenal, 2016). Their findings highlighted through cross-sectional models that national identification led to higher perceived intergroup threat from immigrants, which in turn predicted Islamophobic conspiracy beliefs. Experimental research by Mashuri and Zaduqisti (2015b) also showed that conspiracy beliefs are caused by the interaction between perceived intergroup threat and strong national identification. That is, intergroup threat might trigger conspiracy beliefs in an intergroup context when it is relevant (i.e., motivated by the need to protect one's national identification), justifying outgroup prejudice.

This is in line with Sternisko et al. (2020b) distinguishing between individual and social motivations grounding conspiracy beliefs, depending on whether people are attracted by their content or by their qualities. Following this model, one is likely to endorse conspiracy beliefs based on their qualities (e.g., their epistemic power) following individual inclinations (e.g., believing that the earth is flat to make sense of seeing the Chicago skyline from the opposite bank of the Lake Michigan; Brazil, 2020). By contrast, Sternisko et al. (2020b) argued that one is likely to endorse conspiracy beliefs based on their content following their motives to maintain and protect a positive social identity (e.g., claiming that a football match was rigged to cope with identity threat following one's team elimination; Bertin et al., 2021b). This group-based tendency to hold conspiracy beliefs in the face of threat for one's ingroup is also in line with the notion of collective conspiracy mentality, describing Polish national identifiers' tendency to perceive conspiracies due to their strong defensive and victimized national identification (Soral et al., 2018). Overall, these conspiracy beliefs motivated at a group-level and blaming outgroups perceived as threatening, differ from conspiracy beliefs grounded on the so-called "conspiracy mentality", describing the dispositional tendency to hold conspiracy theories (Imhoff & Bruder, 2014).

Of importance, the blaming narrative of conspiracy theories leads them to be especially consequential on intergroup relations and prejudice. For example, Marchlewska et al. (2019) found that gender conspiracy beliefs held by Polish catholic narcissists were related to outgroup hostility toward those perceived as undermining Catholic values. Conspiracy beliefs also led to anticipated behavioural responses to perceived intergroup threats in the form of violent collective actions (for a review, see Biddlestone et al., 2020). Kreko (2015) argues that conspiracy beliefs have a function of justifying prejudices and stereotypes, referring to what Abalakina-Paap et al. (1999) called an "outlet for hostility". Conspiracy beliefs seem to especially fuel prejudice when targeting powerless groups such as immigrants

(i.e., Downward conspiracy theories; Nera et al., 2021). For example, Jolley et al. (2020, Study 1) found through an experiment that exposure to conspiracy theories about immigrants coming to the U.K with malevolent motives increased prejudice against immigrants. Several studies also suggested that conspiracy beliefs have a function of justifying the ingroup's violent collective actions against outgroups (Chayinska & Minescu, 2018; Sapountzis & Condor, 2013). Other findings support the idea that conspiracy beliefs are related to the endorsement of violent political actions (Lamberty & Leiser, 2019; Castanho et al., 2017) and intentions to employ non-normative forms of political action (Imhoff et al., 2020). Hence, we propose that conspiracy beliefs caused by perceived intergroup threat are grounded in national narcissism as defensive group beliefs leading to prejudice against immigrants. Importantly, national narcissists might be especially prone to display these defensive beliefs when compensating for low personal control.

Defensive Group Beliefs and Group-Based Control

The group-based control model (Fritsche et al., 2011, 2013) posits that individuals are likely to look for affiliation with an ingroup viewed as powerful and agentic to restore a sense of personal control. This compensatory group-level control process seeking to protect the agentic and powerful image of the ingroup (Stollberg et al., 2015) has been associated with ethnocentric and detrimental consequences for intergroup relations (Aydin et al., 2014; Agroskin & Jonas, 2013; Goode et al., 2017; Jutzi et al., 2020; Schlueter et al., 2008). For example, recent research suggests that group-based control is associated with blaming immigrants when economic threat is experimentally induced (Hirsch et al., 2021, Study 1).

Similarly, it has been suggested that the relationship between types of ingroup positivity and outgroup hostility is influenced by the motivation to compensate for low personal control. Based on longitudinal evidence, Cichocka et al. (2018, Study 4) showed that

while secure national identification increased following personal control, collective narcissism increased after a loss of personal control was experienced, mediating the relationship between personal control and outgroup hostility. Marchlewska et al. (2020) replicated these findings through a cross-sectional design showing that the relationship between personal control and positive attitudes toward Ukrainians (presented as potential refugees) was positively mediated by secure national identification, but negatively by national narcissism.

Previous research also found that both intergroup threat (Greenaway et al., 2014) and conspiracy beliefs (Van Prooijen & Acker, 2015) increased due to low personal control. Similarly, Stojanov and Halberstadt (2020) have revealed a small meta-analytic experimental effect of low personal control on belief in specific conspiracy theories (but not generic forms of conspiracy belief; see also Stojanov et al., 2021). Furthermore, Kofta et al. (2020) found that lack of personal control increased Jewish conspiracy beliefs, which in turn led to prejudice toward Jews, highlighting the intergroup consequences of one's lack of personal control. Congruently, we argue that defensive group beliefs, and consequently prejudice against immigrants, might be especially prevalent following national narcissism that is being used to compensate for a low personal control.

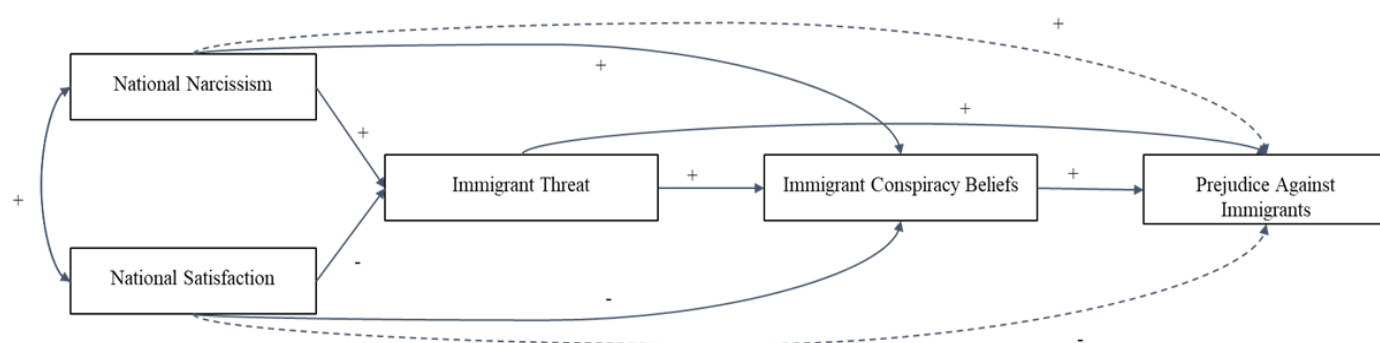
The Current Studies

In this paper, we aimed to test the general hypothesis that national narcissism is related to prejudice against immigrants through a causal path composed of intergroup threat and conspiracy beliefs, and that these defensive group beliefs might be more pronounced under low personal control. In Study 1 ($N = 1,104$), we tested this general hypothesis through a cross-sectional study on a representative sample, controlling for conspiracy mentality to isolate conspiracy beliefs held at the group-level. In Study 2 ($N = 474$), we experimentally

manipulated intergroup threat and conspiracy beliefs about immigrants to test their causal relationship and their main effect on prejudice against immigrants. Study 2 also allowed us to test the alternative hypothesis of an interaction effect between threat and conspiracy theories on prejudice. In Study 3 ($N = 350$), we investigated whether these defensive group beliefs might be contingent at the individual-collective level when national narcissism is used to compensate for low personal control. We experimentally manipulated personal control and national narcissism salience, to test whether control compensation through national narcissism would impact defensive group beliefs.

Study 1

In Study 1, we first aimed to test our general hypothesis through a highly powered and representative correlational study. The proposed serial mediation model is displayed in Figure 1. We used a set of three scales to assess prejudice against immigrants in various ways: by measuring collective action intentions (Hasbun Lopez et al., 2019), support for discriminatory policies (Adam-Troian et al., 2020), and attitudes against naturalisation of immigrants (Aydin et al., 2014; Pereira et al., 2010). Accordingly, our hypotheses are that perceived threat and conspiracy beliefs serially mediate the relationship between national narcissism and all three types of prejudice against immigrants separately (collective actions, H_1 ; support for discriminatory policies, H_2 ; attitudes against naturalisation, H_3). Following previous literature (Dyduch-Hazar et al., 2019a), we expect secure national identification to be related to the prejudice against immigrants' variables through negative associations with the mediators (collective actions, H_4 ; support for discriminatory policies, H_5 ; attitudes against naturalisation, H_6).

Figure 1*The Model Tested Across Study 1*

We controlled for conspiracy mentality, which has been recently described as an individual trait underlying conspiracy beliefs (Stojanov & Halberstadt, 2019). Indeed, following the distinction made by Sternisko et al. (2020b), we are interested in conspiracy beliefs motivated at an intergroup and not at an individual level. Furthermore, a theoretical proposition has been recently made that collective narcissists' sensibilities to conspiracy beliefs are rooted in a more general conspiracy mentality (Golec de Zavala, 2021). Thus, to better capture group-based conspiracy beliefs, and due to the expected overlap with collective narcissism, we controlled for individuals' levels of conspiracy mentality.

Method

Participants and Procedure

We ran this survey on a representative sample of the French population using *Dynata* survey services (see the supplementary materials for quota details). Overall, 1,104¹⁴ participants answered the survey (574 women, $M_{age} = 47.1$, $SD = 16.4$, $max = 18$, $min = 85$), allowing us to detect a small effect size ($r = .10$) in a multiple regression analysis testing one

¹⁴ For scales about immigrants, participants had the possibility to not answer if they felt uncomfortable. Between 5 and 28 participants did not answer, depending on the scale. See Table 1 for details.

predictor among six others, with an alpha level of .05 and a power of .80 (G*Power; Faul et al., 2007).

Measures

For all newly translated scales, we used a back-translation procedure. Two to four researchers (depending on the scale) translated the material from English to French, then a native English speaker translated it back into English, and finally two of the co-authors and the native speaker discussed differences. Full translated scales and scales we created by aggregating existing items can be found in the supplementary materials¹⁵.

Unless otherwise mentioned, participants responded to all scales using a 5-point response scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Means, standard deviations, and internal reliability coefficients are displayed in Table 1.

National Narcissism. We used the 9-item Collective Narcissism Scale (Golec de Zavala et al., 2009) in its French version (Bertin et al., in press), and adapted it to the French national context (e.g., “If France had a major say in the world, the world would be a much better place”, one reverse-coded item, $\alpha = .89$).

Ingroup Satisfaction. We operationalized secure national identification through the 4-item ingroup satisfaction subscale from Leach et al. (2008), referring to French national identity (e.g., “I am glad to be French”, $\alpha = .93$). This way of operationalizing secure national identification has been previously used in studying consequences of national narcissism on prejudice against immigrants (Dyduch-Hazar et al., 2019a).

Immigrant Conspiracy Beliefs. To capture belief in specific conspiracy theories about immigrants, we used items from various previous studies (Jolley et al., 2020; Marchlewska et al., 2019; Swami et al., 2018; Gaston & Uscinski, 2018) to create a 9-item

¹⁵These measures were included in a data collection with other unrelated projects. For the present project, all measures are disclosed here except political orientation and education.

scale in the French context (e.g., “Immigrants are working within secret networks on behalf of ISIS”, one reverse-coded item, $\alpha = .93$).

Intergroup Threat. We translated items from various scales (Hasbun Lopez et al., 2019, Mahfud, 2016) to create a 6-item scale capturing perceived symbolic and realistic threats from immigrants. An exploratory factor analysis revealed a single dimension according to Kaiser criteria, and all the items loaded onto this dimension (all factor loadings $> .84$). We thus aggregated them into a unidimensional threat variable (e.g., “Immigrants are a threat to French culture”, $\alpha = .96$). Aggregating realistic and symbolic threats due to high intercorrelation has been frequently reported in the literature (Shepherd et al., 2018; Riek et al., 2006).

Collective Action Intentions. We used the 6-item scale developed by Hasbun Lopez et al. (2019) assessing collective action intentions in favour (3 items), and against (3 items) immigrants. For ease of interpretation, we reverse-coded items in favour of immigrants so that higher scores indicate collective action intentions against immigrants. One of the coauthors provided us with the French version of the questionnaire (e.g., “Sign a petition to restrict the number of migrants arriving in France”, three reverse-coded items, $\alpha = .82$).

Support for Discriminatory Policies. We used 5 items from the scale developed by Adam-Troian et al. (2020, e.g. “In the current context in France, do you think that 'family reunification' should be abolished?”, $\alpha = .89$) to measure support for discriminatory policies against immigrants.

Attitudes Against Naturalisation of Immigrants. We translated a single item from Pereira et al. (2010) into French to measure attitudes toward naturalisation of immigrants (e.g., “Children born in France, of foreign parents, should have the right to acquire French nationality”, reverse-coded).

Conspiracy Mentality. We used the French version (Lantian et al., 2016) of the Conspiracy Mentality Questionnaire (CMQ, Bruder et al., 2013) to measure participants' general propensity to endorse conspiracy beliefs (e.g., "I think that many very important things happen in the world, which the public is never informed about.", $\alpha = .89$). Participants answered using an 11-point scale to rate the likelihood of each of the 5 items ranging from 0% (*Certainly not*) to 100% (*Certain*).

Results

Inter-scale correlations (see Table 1) showed positive relationships between national narcissism, immigrant conspiracy beliefs, perceptions of immigrant threat and the three types of prejudice against immigrants. In contrast, ingroup satisfaction was not related to immigrant conspiracy beliefs, collective actions, support for discriminatory policies, and was negatively related to perceptions of immigrant threat and attitudes toward naturalisation.

Table 1

Correlations, Means, and Standard Deviations, Internal Reliability Coefficients and Pearson's correlation coefficients (Study 1)

	<i>n</i>	<i>Mean</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.
1. National narcissism	1104	3.25	0.76	-						
2. Ingroup Satisfaction	1104	3.96	0.91	.46***	-					
3. Immigrant threat	1099	3.36	1.27	.40***	-.02	-				
4. Immigrant conspiracy beliefs	1093	2.89	1.07	.39***	-.05	.82***	-			
5. Collective action	1088	2.99	1.03	.33***	-.06	.80***	.71***	-		
6. Support for discriminatory policies	1098	3.53	1.11	.40***	.03	.82***	.71***	.78***	-	
7. Attitudes against naturalisation	1076	2.72	1.29	.21***	-.08**	.54***	.48***	.58***	.57***	-
8. CMQ	1104	7.19	1.94	.12***	-.10**	.36***	.45***	.28***	.25***	.16***

Note. All variables were measured using a 5-point scale, except for CMQ (11 points).

* $p < .05$ ** $p < .01$ *** $p < .001$.

Test of the Serial Mediation Models

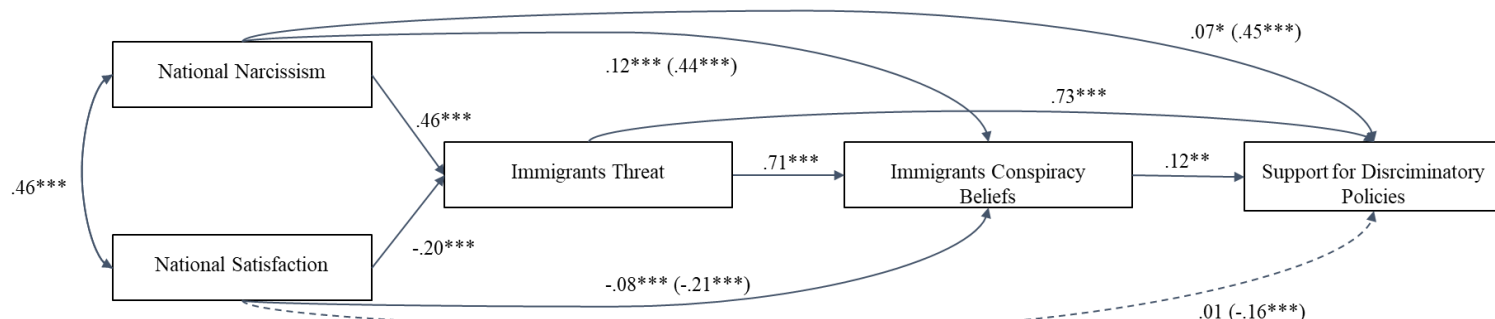
Mediation analyses with manifest variables were run using the lavaan R package (Rosseel, 2012), with bias-corrected bootstrapping (1000 re-samples) of the indirect effect. We ran three serial mediation models with national narcissism and national satisfaction as predictors, perceptions of threat and immigrant conspiracy beliefs as serial mediators, and support for discriminatory policies (Figure 2), collective action intentions (Figure 3), and attitudes against naturalisation (Figure 4), as outcome variables. We included conspiracy mentality as a covariate in all analyses to control for its potential overlap with national narcissism and conspiracy beliefs. Detailed results of these analyses, as well analyses without controlling for conspiracy mentality, can be found in the supplementary materials.

As can be seen from Figures 2 to 4, similar patterns were observed for all three types of prejudice against immigrants. National narcissism (total effect) was positively related to collective action intentions, support for discriminatory policies, and attitudes against naturalisation, $\beta = .29$, 95% CI [.22, .35], $z = 8.50$, $p < .001$. These effects were mediated by perceived intergroup threat and conspiracy beliefs about immigrants. Specifically, a higher level of national narcissism was linked to a greater perception of intergroup threat, as well as stronger beliefs in immigrant conspiracy theories. These two variables mediated the relationship between national narcissism and collective action intentions, as well as attitudes against naturalisation. When these indirect effects were taken into account, the direct effects were no longer significant, thus supporting H₁ and H₃. However, the direct effect of national narcissism on support for discriminatory policies remained significant although weaker, thus not confirming H₂. Indirect effects only via threat, and, to a lesser extent, only via immigrant conspiracy beliefs, were also found.

By contrast, ingroup satisfaction (total effect) was negatively related to collective action intentions, $\beta = -.22$, 95% CI [-.28, -.16], $z = -6.80$, $p < .001$, support for discriminatory policies, $\beta = -.16$, 95% CI [-.23, -.10], $z = -4.62$, $p < .001$ and attitudes against naturalisation, $\beta = -.20$, 95% CI [-.27, -.13], $z = -5.53$, $p < .001$. Indirect effects through threat and immigrant conspiracy beliefs mediated the relationship between ingroup satisfaction and discriminatory policies, thus confirming H₅. However, although indirect effects of ingroup satisfaction on collective actions and attitudes against naturalisation through the mediating variables were present, the direct effects were also significant, thus not confirming H₄ and H₆. Note that the relationship between ingroup satisfaction and the outcome variables was also mediated by threat only and by conspiracy beliefs only.

Figure 2

The mediating Role of Intergroup Threat and Conspiracy Beliefs about Immigrants in the Relationship Between Types of ingroup positivity and Support for Discriminatory Policies



Note. Coefficients placed within parentheses are total effects. Coefficients presented are standardised coefficients. Indirect effects¹⁶: NN -> IT -> Discr: $\beta = .33$, $p < .001$, 95% CI [.28, .39]; NN -> ICB -> Discr: $\beta = .01$, $p = .005$, 95% CI [.004, .02]; NN -> IT -> ICB -> Discr: $\beta = .04$, $p = .001$, 95% CI [.02, .06]; NS -> IT -> Discr: $\beta = -.15$, $p < .001$, 95% CI [-

¹⁶ Abbreviations for Figures 2-4: NN = National Narcissism, NS = National Satisfaction, IT = Immigrants Threat, ICB = Immigrant Conspiracy Beliefs, Discr = Support for Discriminatory Policies, CA = Collective Actions Intentions, AN = Attitudes Against Naturalisation.

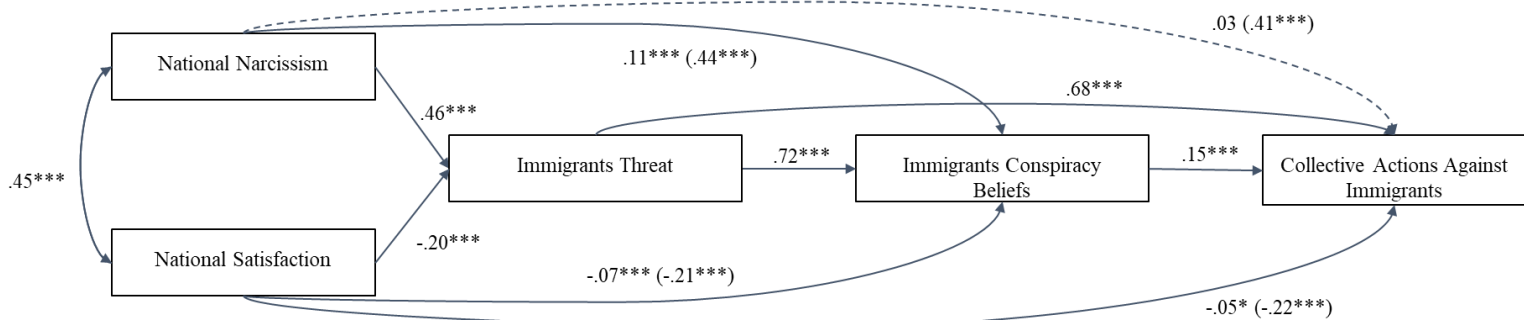
.20 -.10]; NS -> ICB -> Discr: $\beta = -.01, p = .011, 95\% \text{ CI } [-.016, -.002]$; NS -> IT -> ICB ->

Discr: $\beta = -.02, p = .004, 95\% \text{ CI } [-.03, -.01]$.

* $p < .05$ ** $p < .01$ *** $p < .001$.

Figure 3

The mediating Role of Intergroup Threat and Conspiracy Beliefs about Immigrants in the Relationship Between Types of ingroup positivity and Collective Actions Intentions

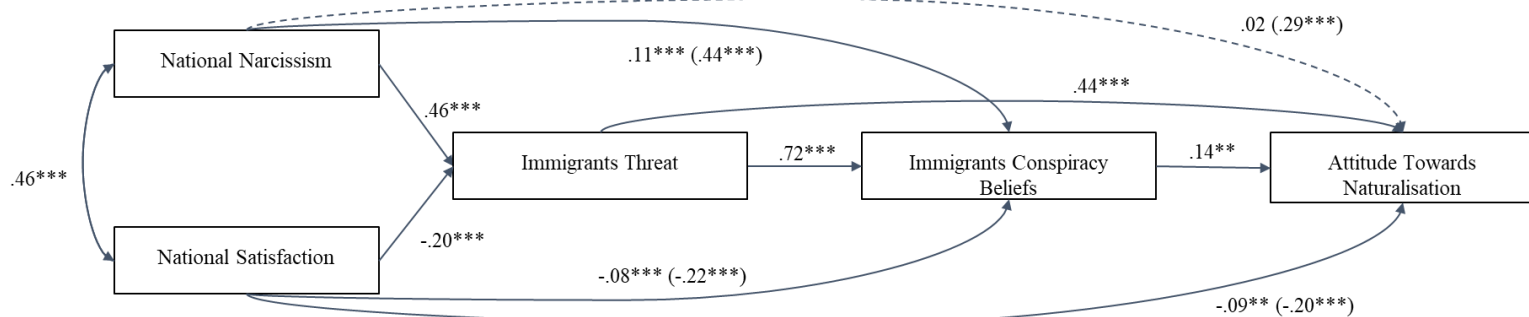


Note. Coefficients placed within parentheses are total effects. Coefficients presented are standardised coefficients. Indirect effects: NN -> IT -> CA: $\beta = .31, p < .001, 95\% \text{ CI } [.26, .36]$, NN -> ICB -> CA: $\beta = .02, p = .001, 95\% \text{ CI } [.01, .03]$, NN -> IT -> ICB -> CA: $\beta = .05, p < .001, 95\% \text{ CI } [.03, .08]$, NS -> IT -> CA: $\beta = -.14, p < .001, 95\% \text{ CI } [-.18, -.09]$, NS -> ICB -> CA: $\beta = -.01, p = .007, 95\% \text{ CI } [-.02, -.003]$, NS -> IT -> ICB -> CA: $\beta = -.02, p = .001, 95\% \text{ CI } [-.03, -.01]$.

* $p < .05$ ** $p < .01$ *** $p < .001$.

Figure 4

The mediating Role of Intergroup Threat and Conspiracy Beliefs about Immigrants in the Relationship Between Types of ingroup positivity and Attitudes Against Naturalisation



Note. Coefficients placed within parentheses are total effects. Coefficients presented are standardised coefficients. Indirect effects: NN \rightarrow IT \rightarrow AN: $\beta = .20, p < .001, 95\% \text{ CI } [.15, .26]$, NN \rightarrow ICB \rightarrow AN: $\beta = .01, p = .015, 95\% \text{ CI } [.003, .03]$, NN \rightarrow IT \rightarrow ICB \rightarrow AN: $\beta = .05, p = .011, 95\% \text{ CI } [.01, .08]$, NS \rightarrow IT \rightarrow AN: $\beta = -.09, p < .001, 95\% \text{ CI } [-.12, -.05]$, NS \rightarrow ICB \rightarrow AN: $\beta = -.01, p = .029, 95\% \text{ CI } [-.02, -.001]$, NS \rightarrow IT \rightarrow ICB \rightarrow AN: $\beta = -.02, p = .019, 95\% \text{ CI } [-.04, -.003]$.

$**p < .01$ $***p < .001$.

Discussion

Based on a sample representative of the French population, findings of Study 1 replicated into a unified model previous isolated findings about the role of defensive group beliefs in the narcissistic identification-prejudice link. First, it highlighted the importance of differentiating types of ingroup positivity in investigating relationships to different kinds of prejudice against immigrants, be it for collective action intentions or support for anti-immigrant policies. Similar to previous studies (Dyduch-Hazar et al., 2019), national narcissism was positively related to prejudice while ingroup satisfaction was negatively related. Also congruent with previous studies are our findings that defensive group beliefs, operationalized as perceived intergroup threat and conspiracy beliefs about immigrants, are

relevant as mediating variables of the identification-prejudice link (Swami et al., 2018; Uenal, 2016). While these previous studies did not account for defensive national identification, our results suggest that national narcissism, but not secure national identification, is associated with these defensive group beliefs.

It is important to note that conspiracy beliefs were significantly related to prejudice even when accounting for conspiracy mentality, in line with the view of conspiracy beliefs as context-dependent when motivated at an intergroup level (Sternisko et al., 2020b). Overall, we integrated these past results into a comprehensive cross-sectional model showing the role of defensive group beliefs in the narcissistic identification-prejudice link. However, because very few of these paths have been experimentally investigated, we cannot infer causality. Thus, in Studies 2 and 3, we experimentally tested this model using factorial designs. Specifically, in Study 2 we experimentally tested the causal relationship between intergroup threat and conspiracy beliefs, and the effect of these two defensive group beliefs on prejudice against immigrants.

Study 2

In Study 2, we aimed to test the causal path between perceived intergroup threat about immigrants, conspiracy beliefs about immigrants, and prejudice against immigrants. Past results have shown that inducing intergroup threat increases conspiracy beliefs (Cichocka et al., 2016, Study 2; Mashuri & Zaduqisti, 2015b), as well as outgroup prejudice (Shepherd et al., 2018). Other research also showed that exposure to conspiracy theories about immigrants increased prejudice toward this group (Jolley et al., 2020). However, these causal paths have never been tested together, nor in the context of immigrant issues. Thus, we tested these paths using a factorial between-subjects design.

We hypothesized that compared to the no threat (control) condition, inducing perceived intergroup threat would increase conspiracy beliefs (H₁) and prejudice against immigrants using the variables from Study 1 (collective actions, H₂; support for discriminatory policies, H₃; attitudes against naturalisation, H₄). We also hypothesized that compared to the no conspiracy (control) condition, exposure to conspiracy theories about immigrants would increase prejudice against immigrants (collective actions, H₅; support for discriminatory policies, H₆; attitudes against naturalisation, H₇). We also test the alternative hypothesis of an interaction effect between intergroup threat and conspiracy beliefs, i.e., that conspiracy exposure would interact with and amplify the effects of intergroup threat on prejudice against immigrants (collective actions, H₈; support for discriminatory policies, H₉; attitudes against naturalisation, H₁₀).

Hypotheses were pre-registered on the OSF:

https://osf.io/8c4v5/?view_only=b934acc751ea410099d68080889176ff.

Method

Participants

We conducted a power analysis using G*Power (Faul et al., 2007) to estimate the minimum sample size we would need to detect the smallest effect sizes reported by Jolley et al. (2018, Study 1) and Shepherd et al. (2018, Study 2), on which our experimental manipulations were based. We computed a medium effect size of $\eta^2_p = .06$ ($r = .24$), with a statistical power of .80, and an alpha level of .05 for an ANOVA with four groups, which gave us $N = 128$ as the requirement for a factorial design. Following the guidelines in a blogpost by Simonsohn (2014) and Giner-Sorolla (2018) to multiply the required sample size by 4 to detect an interaction, we planned to recruit 512 participants.

Participants were recruited online using *Foule Factory*, a French survey platform, and were paid €1.10 for their participation. Overall, 529 participants answered the survey. One participant was excluded for not providing consent, one for not being French, and 12 for failing the attention check, giving a final sample of 515 participants. Congruent with our pre-registration, we applied the Median Absolute Deviation method (MAD; Leys et al., 2013) to exclude participants with doubtful completion times¹⁷. From this criterion, we excluded 41 participants and our analyses were based on the 474 remaining (227 women, 3 others, $M_{age} = 40.6$, $SD = 13.3$, $min = 18$, $max = 79$). Thus, our actual sample is slightly underpowered compared to what was expected with the G*power analysis and Giner-Sorolla's (2018) rule of thumb, but still allows us to detect a similar medium effect size ($r = .25$).

Experimental Procedure

The survey was presented as two independent parts, with the experimental inductions depicted as information-seeking tasks and measured variables presented as questions about various societal issues. First of all, participants completed the identification and national narcissism measures. Then, they were randomly assigned to either the intergroup threat or the no threat (control) condition. We adapted the intergroup threat induction from Shepherd et al. (2018, Study 2, see the supplementary materials for the French and English versions of the adapted texts). In both conditions, people were asked to read a short article about the current and future situation regarding immigration in France according to demographic studies. In the no-threat condition, the percentage of immigrants in France was predicted to remain more or less the same in 40 years' time, French people thus remaining the majority (10.6% immigrants, 89.4% French). In the intergroup threat condition, the percentage of immigrants in France was predicted to increase dramatically and become the new majority in 40 years'

¹⁷ The median was 616 seconds and the MAD was 169 seconds. Because we chose a conservative 3MAD criterion, we excluded participants answering below 109 seconds or above 1123 seconds.

time (51.8% of immigrants, 48.2% of French). Participants had to answer two questions to ensure they read the text. Then, participants were randomly assigned to a conspiracy vs. no-conspiracy (control) condition. We adapted the conspiracy theories about immigrant induction developed by Jolley et al. (2020, Study 1; see the supplementary materials). In the conspiracy condition, people read a text highlighting the involvement of immigrants in terrorist actions in other countries, calling into question the role of immigrants in France. Then, they answered a question to ensure they read the text and completed the immigrant conspiracy beliefs scale as a manipulation check. In the no-conspiracy condition, participants did not read anything about conspiracies, only completing the immigrant conspiracy beliefs scale. Then, they completed the measures of collective action intentions, support for discriminatory policies, attitudes against naturalisation of immigrants, perceived threat (manipulation check for the threat/no-threat condition), and socio-demographic information. Finally, participants were thanked and fully debriefed.

Measures

Unless otherwise mentioned, participants responded to all scales using a 5-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Means, standard deviations, and internal reliability coefficients are displayed in Table 2.

Most of the variables used in Study 2 were measured with the same items and scales as for Study 1, namely ingroup satisfaction ($\alpha = .91$), threat ($\alpha = .95$), immigrant conspiracy beliefs ($\alpha = .93$), collective action against immigrants ($\alpha = .87$), support for discriminatory policies ($\alpha = .91$), attitudes against naturalisation. Due to length restriction, we measured national narcissism with the short 5-item version of the Collective Narcissism scale (Golec de Zavala et al., 2009) in its French adaptation (Bertin et al., in press; $\alpha = .88$)¹⁸.

¹⁸ All measures (except education and political orientation), manipulations and exclusions are disclosed here.

Results

Inter-scale correlations are displayed in Table 2. For all following analyses, conditions were coded as follows: threat = +1, no threat = -1, conspiracy = +1, no conspiracy = -1. The means and standard deviations reported are the estimated marginal means and the associated standard deviation.

Table 2

Correlations, Means, and Standard Deviations, Internal Reliability Coefficients and Pearson's correlation coefficients (Study 2)

	<i>Mean</i>	<i>SD</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>	<i>5.</i>	<i>6.</i>
1. National narcissism	3.01	0.84	-					
2. Ingroup Satisfaction	3.92	0.79	.52***	-				
3. Immigrant threat	2.59	1.20	.44***	.09*	-			
4. Immigrant conspiracy beliefs	2.26	0.96	.43***	.03	.83***	-		
5. Collective action	2.48	0.71	.42***	.08+	.82***	.77***	-	
6. Support for discriminatory policies	3.05	1.25	.45***	.16***	.82***	.75***	.74***	-
7. Attitudes against naturalisation	3.45	1.21	.23***	.05	.55***	.47***	.54***	.60***

Note. $N = 474$. All variables were measured using a 5-point Likert scale.

+ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$.

Manipulation Checks

We first tested whether our experimental manipulations worked by conducting two-ways ANOVAs with the two experimental manipulations. The level of perceived intergroup threat was significantly higher in the threat condition (estimated $M = 2.78$, $SD = 0.08$), than in the no threat condition (estimated $M = 2.39$, $SD = 0.08$), $F(1,470) = 12.85$, $p < .001$, $\eta^2_p = .03$, and the level of immigrant conspiracy beliefs was significantly higher in the conspiracy

(estimated $M = 2.38$, $SD = 0.06$) than in the no conspiracy condition (estimated $M = 2.14$, $SD = 0.06$), $F(1,470) = 7.32$, $p = .007$, $\eta^2_p = .02$. Thus, according to our manipulation checks, both the intergroup threat and the conspiracy theory inductions were successful.

Causal Effects of Intergroup Threat and Conspiracy Theories Manipulations

The primary goals of Study 2 were to experimentally corroborate the correlational findings from Study 1. Thus, we examined the effects of threat induction on both immigrant conspiracy beliefs and the outcomes (collective action intentions, support for discriminatory policies, and attitudes against naturalisation), and the effect of conspiracy theories exposure on the outcomes. We also aimed to test the interaction effect between threat and conspiracy exposure on the outcomes.

Effect of Threat on Immigrant Conspiracy Beliefs. We conducted a two-way ANOVA (threat manipulation: threat vs. no threat, and conspiracy manipulation: conspiracy vs. no conspiracy) to test the main effects of threat on immigrant conspiracy beliefs. Conspiracy beliefs were significantly higher in the threat (estimated $M = 2.35$, $SD = 0.06$), than in the no threat condition (estimated $M = 2.17$, $SD = 0.06$), $F(1,470) = 4.53$, $p = .034$, $\eta^2_p = .01$. Thus, inducing intergroup threat about immigrants causally increased conspiracy beliefs about this outgroup, confirming H_1 .

We also ran exploratory analyses to test whether the causal effect of intergroup threat on conspiracy beliefs remained even when controlling for types of ingroup positivity, following the mediation findings from Study 1. An ANCOVA including induced intergroup threat and conspiracy theories, and controlling for national narcissism and ingroup identification showcased that, when controlling for these variables, the effect of threat on conspiracy beliefs was no longer significant, $F(1,468) = 2.67$, $p = .103$, $\eta^2_p = .01$.

Effects of Threat and Conspiracy on Prejudice Against Immigrants. We

hypothesized that inducing intergroup threat on the one hand, and conspiracy theories on the other hand, would lead to increased collective action intentions, support for discriminatory policies, and attitudes against naturalisation. We also tested the interaction effect between induced intergroup threat and conspiracy theories by conducting two-way ANOVAs on each outcome variable. Lastly, we also tested these experimental effects in an exploratory manner while controlling for national narcissism and ingroup identification using ANCOVAs, in line with the model highlighted in Study 1.

Effect of Threat. ANOVAs revealed that collective action intentions against immigrants were significantly higher in the threat (estimated $M = 2.82$, $SD = 0.06$), than in the no threat condition (estimated $M = 2.57$, $SD = 0.06$), $F(1,470) = 7.68$, $p = .006$, $\eta^2_p = .02$, confirming H₂. This effect remained when controlling for both types of ingroup positivity, $F(1,468) = 6.11$, $p = .014$, $\eta^2_p = .01$. However, the threat manipulation had no effect on support for discriminatory policies, $F(1,470) = 3.41$, $p = .065$, $\eta^2_p = .01$ (controlling for types of ingroup positivity: $F(1,468) = 2.31$, $p = .129$, $\eta^2_p = .01$), contrary to H₃. The threat manipulation also had no effect on attitudes against naturalisation, $F(1,470) = 0.06$, $p = .803$, $\eta^2_p < .001$ (controlling for types of ingroup positivity: $F(1,468) = 0.004$, $p = .947$, $\eta^2_p < .001$), contrary to H₄.

Effect of Conspiracy. Similar to the effect of threat, participants reported significantly higher willingness to engage in collective actions against immigrants in the conspiracy (estimated $M = 2.81$, $SD = 0.06$), than in the no conspiracy condition (estimated $M = 2.58$, $SD = 0.06$), $F(1,470) = 7.32$, $p = .007$, $\eta^2_p = .02$, thus supporting H₅. This effect remained significant when controlling for both types of ingroup positivity, $F(1,468) = 8.97$, $p = .003$, $\eta^2_p = .02$. However, the conspiracy manipulation did not impact support for discriminatory policies, $F(1,470) = 2.48$, $p = .116$, $\eta^2_p = .01$ (controlling for types of ingroup positivity:

$F(1,468) = 3.02, p = .083, \eta^2_p = .01$), nor attitudes against naturalisation, $F(1,470) = 1.77, p = .184, \eta^2_p = .004$ (controlling for types of ingroup positivity: $F(1,468) = 1.90, p = .169, \eta^2_p = .004$), contrary to both H_6 and H_7 .

Interaction Effect Between Threat and Conspiracy. We found no interaction effect between threat and conspiracy exposure on the outcomes, controlling for types of ingroup positivity, all $F_s(1,468) < 2.82, p > .093, \eta^2_p < .01$, or not, all $F_s(1,470) < 0.92, p > .339, \eta^2_p < .003$, contrary to H_8, H_9 , and H_{10} .

Discussion

In Study 2, we aimed to test the causal relationship between perceived intergroup threat, conspiracy beliefs, and prejudice against immigrants using a factorial experimental design. We observed that experimentally induced intergroup threat about immigrants increased conspiracy beliefs about immigrants, causally confirming previous cross-sectional results (Cichocka et al., 2016, Study 2). However, this relationship was no longer significant when controlling for both types of ingroup positivity (i.e., national narcissism and ingroup satisfaction). This lack of robustness might be due to a lack of statistical power.

We also observed that both induced threat and conspiracy exposure increased collective action intentions against immigrants separately, experimentally validating previous cross-sectional results (Hasbún López et al., 2019). However, these defensive beliefs did not impact all forms of prejudice against immigrants, and our hypotheses about support for discriminatory policies and attitudes against naturalisation were not confirmed. Drawing on this null effect with great caution (i.e., Harms & Lakens, 2018), we might speculate that defensive group beliefs are more strongly directed toward concrete collective action, rather than abstract anti-immigrant policies. This would be in line with previous studies suggesting

that conspiracy beliefs are used to justify violent collective actions (Chayinska & Minescu, 2018; see also Jolley & Paterson, 2020; Jolley et al., 2019).

Lastly, Study 2 provides clarification for the serial effect of perceived threat and conspiracy beliefs, as no interaction effect was found between the two. Apart from methodological issues (e.g., lack of statistical power), we might hypothesize that if perceived intergroup threat causes conspiracy beliefs, this process might be a “transfer” of animosity from one form of defensive group belief to one another, without further interaction. As such, perceiving an intergroup threat from immigrants might be more of a proximal defense (i.e., anxiety reaction), and derived conspiracy beliefs might be more action-oriented reactions (Jonas et al., 2014; Jutzi et al., 2020). In sum, our findings highlight that perceived intergroup threats causally increase conspiracy beliefs, and that these two defensive group beliefs have a similar impact on increasing collective action intentions, but not policy-related forms of prejudice, without an interaction.

The interplay between defensive group beliefs and their consequences on prejudice at the intergroup level highlighted in Study 2 might be especially pronounced when national narcissism is made salient to compensate for low personal control. We thus conducted another experiment in which we successively manipulated personal control and national narcissism salience to test whether this group-level compensation process increases defensive group beliefs.

Study 3

In Study 3, our goal was to investigate whether defensive group beliefs would be more pronounced when national narcissism is salient to compensate for low personal control. Previous findings indicated that low personal control increases defensive identification (Goode et al., 2017), and differentially affects the links between national ingroup positivity and outgroup hostility (Cichocka, 2018; Marchlewska et al., 2018a), in line with the group-

based control model (Fritsch et al., 2011, 2013; Hirsch et al., 2021). Furthermore, low personal control has also been reported to increase belief in specific conspiracy theories (Stojanov & Halberstadt, 2020).

Extending from this previous literature, in Study 3 we examined whether inducing low personal control, and then making national narcissism salient to trigger group-level control, would increase defensive group beliefs about immigrants. Given the significant findings of Study 1 and 2, we also included intentions for collective action against immigrants as a measure of prejudice against immigrants, to check whether it was directly affected by our manipulations.

Our hypotheses relied on interaction effects between low personal control and national narcissism salience (i.e., group-level control compensation). We expected this interaction to increase perceived intergroup threat about immigrants (H_1), conspiracy beliefs about immigrants (H_2), and collective action intentions (H_3).

Hypotheses were pre-registered:

https://osf.io/d9yce/?view_only=1e959a4e48f14978aec254f5f9cc956f

Method

Participants

Similar to Study 2, we conducted a power analysis to determine our required sample size based on previous effects reported in the literature. Cichocka et al. (2018, Study 2), from which our experimental design is inspired, reported a medium effect size of $\eta^2_p = .06$ ($r = .24$). Thus, we would have needed the same number of participants as in Study 2 ($N = 512$), for a 2x2 factorial design given a statistical power of .80, an alpha level of .05, and following Giner-Sorolla's (2018) rule of thumb to multiply the estimated sample size by 4 to have sufficient power to detect a knock-out interaction effect. However, due to restricted resources, we were not able to collect as many participants. We thus conducted an effect-size sensitivity

analysis (Giner-Sorolla et al., 2019) to determine which effect size we could detect given our resources. A sample size of $N = 90$ for the same above-mentioned statistical parameters allowed us to detect a medium effect size of $r = .29$. We estimated this effect size to be close enough to Cichocka et al.'s (2018) to justify conducting the study. We multiplied this estimated sample size by 4, which gives 360 participants, so we aimed to recruit 400 participants, anticipating exclusions.

As in Study 2, participants were recruited using *Foule Factory*, and paid €1. In total, 414 participants answered the survey, from which we excluded 14 participants for failing the attention check and 3 participants who reported a nationality other than French. In line with our pre-registration, we then applied the MAD method (Leys et al., 2013) to exclude participants with unrealistic completion times¹⁹. From this criterion we excluded 47 participants, and the final sample was composed of 350 participants (167 women, 1 other, $M_{age} = 38.8$, $SD = 11.7$, $min = 18$, $max = 74$). This sample size would allow us to detect a similar medium effect size to the one that was pre-registered ($d = .60$, $r = .29$).

Experimental Procedure

The survey was presented as three independent studies, with the personal control manipulation depicted as a memory task, the national narcissism induction presented as an information-seeking task, and the measured variables presented as questions about various societal issues. The personal control induction was adapted from Whitson and Galinsky (2008, Study 4), which has been recently used by Cichocka et al. (2018, Study 2) and van Elk et al. (2018, Study 1). It consists of a biographical recall task designed to increase low personal control while holding the valence of the event similar to the one recalled in the control condition. Participants were asked to write a short paragraph (around 50 words) about

¹⁹ The median was 765 seconds and the MAD was 232 seconds. Based on a conservative 3MAD criterion, we excluded participants answering below 69 seconds or above 1461 seconds.

a threatening event that happened in their lives over which they had control (high control condition) or not (low control condition). Following this first part was the manipulation of national narcissism salience. As far as we know, and despite indirect experimental manipulations (e.g., Marchlewska et al., 2018a, Study 2), national narcissism (and broadly speaking, collective narcissism), has never been successfully directly manipulated. We thus designed a new experimental paradigm consisting of a text-reading task depicting fictional poll results about domains for which French people find France to be not sufficiently recognized by other countries. These fake results indicated that French people on average believed that freedom of speech is the most unfairly criticized facet of France, and that recent international actualities corroborate this feeling, with denigration coming from several countries. Participants in the control conditions were presented a neutral text about amphibians, intended to not alter group-level salience. Participants in both conditions then answered questions to indicate that they properly read the texts (see Supplementary materials for the French and English versions of both conditions). Lastly, participants answered the measured variables in the following order: perceived intergroup threat from immigrants, immigrant conspiracy beliefs, collective action intentions, ingroup satisfaction, national narcissism (manipulation check), personal control items (manipulation check), and demographics. Finally, participants were thanked and fully debriefed.

Measures

Unless otherwise mentioned, participants responded to all scales using a 5-point scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Means, standard deviations, and internal reliability coefficients are displayed in Table 3.

Most of the variables used in Study 3 were measured with the same items and scales as Study 2, namely national narcissism ($\alpha = .88$), ingroup satisfaction ($\alpha = .92$), perceived intergroup threat from immigrants ($\alpha = .95$), immigrant conspiracy beliefs ($\alpha = .93$), and

collective action intentions ($\alpha = .87$). We also measured personal control to check whether our personal control manipulation worked. We used 3 items from van Elk et al. (2018) tapping into personal control: situational personal control (used as the manipulation check; “How much control did you experience in the situation you just described?”), valence of the situation (“How upsetting was the situation you just described?”), and control in life (“To what extent do you believe that you are the one who is in control of your life?”), measured on a slider scale from 0 to 100²⁰.

Results

Inter-scale correlations are displayed in Table 3. For all following analyses, conditions were coded as follows: high personal control = -1, low personal control = +1, national narcissism = +1, neutral (no national narcissism) = -1. The means and standard deviations reported are the estimated marginal means and their associated standard deviations.

Table 3

Correlations, Means, and Standard Deviations, Internal Reliability Coefficients and Pearson's correlation coefficients (Study 3)

	<i>Mean</i>	<i>SD</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>	<i>5.</i>	<i>6.</i>	<i>7.</i>
1. National narcissism	3.00	0.89	-						
2. Ingroup Satisfaction	4.00	0.84	.46***	-					
3. Immigrant threat	2.52	1.22	.40***	.05	-				
4. Immigrant conspiracy beliefs	2.11	0.92	.40***	-.03	.83***	-			
5. Collective action	2.66	0.99	.39***	.05	.84***	.73***	-		
6. Situational personal control	37.2	30.4	.03	-.01	-.03	-.01	-.03	-	
7. Valence of the situation	67.6	28.7	.06	-.05	.13*	.17**	.09	-.12*	-
8. Control in life	66.4	21.9	.08	.08	-.06	-.08	-.01	.20***	-.04

Note. $N = 350$. All variables were measured using a 5-point Likert scale, except for personal control

²⁰ All measures (except education and political orientation), manipulations and exclusions are disclosed here.

items (100 points).

* $p < .05$ ** $p < .01$ *** $p < .001$.

Manipulation Checks

First, we checked whether our intended manipulations were detected by our manipulation checks. The levels of situational personal control, $F(1, 346) = 278.32, p < .001, \eta^2_p = .45$, and of control in life, $F(1, 346) = 4.68, p = .031, \eta^2_p = .01$, were significantly lower in the low personal control condition than in the control condition (Table 4). No difference between the two conditions has been observed on the valence of the situation, $F(1, 346) = 0.07, p = .795, \eta^2_p < .001$. This is unsurprising given that this experimental manipulation is intended to hold valence constant between conditions.

Table 4

Means, and Standard Deviations on Manipulation Checks Depending on Control

Manipulation Condition

	Low Control estimated M (SD)	High Control estimated M (SD)
Situational personal control	17.68 (1.69)	58.32 (1.76)
Valence of the situation	68.00 (2.14)	67.20 (2.23)
Control in life	64.03 (1.62)	69.10 (1.69)

The level of national narcissism was significantly higher in the national narcissism salience condition (estimated $M = 3.16, SD = 0.07$) than in the neutral condition (estimated $M = 2.86, SD = 0.06$), $F(1, 346) = 10.26, p = .001, \eta^2_p = .03$. Ingroup satisfaction was also significantly higher in the national narcissism salience condition (estimated $M = 4.13, SD = 0.07$) than in the neutral condition (estimated $M = 3.89, SD = 0.06$), $F(1, 346) = 7.16, p = .008, \eta^2_p = .02$. This result is not surprising given how ingroup positivity and national narcissism are positively correlated (Cichocka et al., 2018).

Causal effects of Control and Collective Narcissism Manipulations

We ran two-way ANOVAs (personal control manipulation: low control vs. high control, and collective narcissism manipulation: collective narcissism vs. neutral) on perceptions of threat, immigrant conspiracy beliefs, and collective actions, separately.

No effect of the personal control manipulation was observed on the outcome variables, all $F_s(1, 346) < 2.41$, $p_s > .121$, $\eta^2_{ps} < .01$.

No effect of the manipulation of national narcissism salience or its interaction with the manipulation of control was observed, all $F_s(1, 346) < 2.40$, $p > .122$, $\eta^2_{ps} < .01$, contrary to H₁, H₂, and H₃.

Exploratory Analyses: National Narcissism and Ingroup Satisfaction as Continuous Variables

Because our national narcissism manipulation was new and its effectiveness could only be measured based on the manipulation checks, we pre-registered the possibility to conduct exploratory analyses using national narcissism in its continuous form. Thus, we tested interaction effects between the personal control manipulation and the continuous measure of national narcissism on our outcome variables, controlling for ingroup satisfaction. We did so by conducting multiple regression analyses with the control manipulation, national narcissism (standardized score), and their interaction as predictors, controlling for ingroup satisfaction (standardized score)²¹. We included threat, immigrant conspiracy beliefs, and collective action intentions as three separate dependent variables (see Table 5).

²¹ Analyses controlling for the interaction between ingroup satisfaction and control were also carried out. No effect of this interaction was observed, and its addition did not alter the results. These analyses are reported in the additional material.

Table 5

Main Effects and Interactions Between Types of Ingroup Positivity and Control Manipulation on Intergroup Threat, Conspiracy Beliefs, and Collective Action Intentions

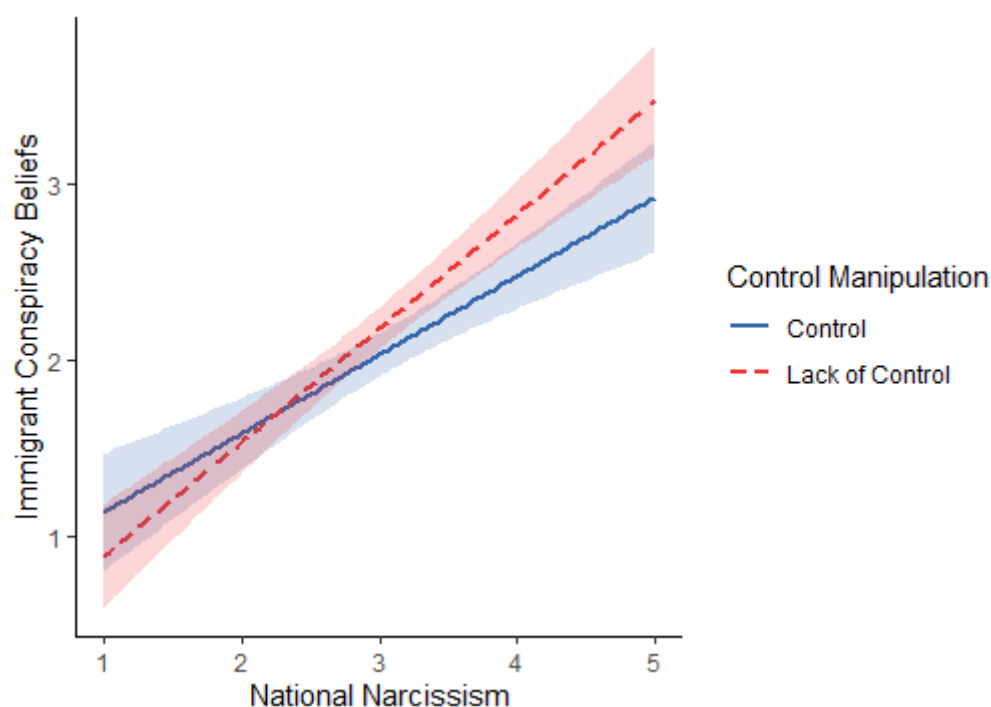
Predictor	β	t	p	95% CI	η^2_p
Threat					
Ingroup Satisfaction	-.17	-3.09	.002	[-.27, -.06]	.03
Control	.09	1.92	.056	[-.002, .19]	.01
National Narcissism	.48	8.84	.000	[.37, .59]	.18
Control x National Narcissism	.07	1.36	.174	[-.03, .16]	.01
Immigrant Conspiracy Beliefs					
Ingroup Satisfaction	-.28	-5.20	.000	[-.38, -.17]	.07
Control	.08	1.72	.086	[-.01, .17]	.01
National Narcissism	.53	9.92	.000	[.42, .63]	.22
Control x National Narcissism	.10	2.03	.043	[.003, .19]	.01
Collective Action Intentions					
Ingroup Satisfaction	-.18	-3.24	.001	[-.28, -.07]	.03
Control	.12	2.50	.013	[.03, .22]	.02
National Narcissism	.48	8.76	.000	[.37, .58]	.18
Control x National Narcissism	.06	1.33	.185	[-.03, .16]	.01

As shown in Table 5, the continuous measure of national narcissism had significant main effects, predicting higher perceptions of threat, immigrant conspiracy beliefs, and collective action intentions against immigrants. Interestingly, the interaction between the personal control manipulation and continuous national narcissism impacted immigrant conspiracy beliefs. Specifically, the effect of the personal control manipulation was significant for people high in national narcissism (+1 *SD*), predicting higher immigrant

conspiracy beliefs in the low personal control (vs. high control) condition, $\beta = 0.18$, $t = 2.66$, $p = .008$, $\eta^2_p = .02$, but not among people low in collective narcissism ($-1 SD$), $\beta = -0.02$, $t = -0.22$, $p = .825$, $\eta^2_p < .001$. The link between national narcissism and immigrant conspiracy beliefs was significant in both conditions, albeit stronger in the low personal control condition, $\beta = 0.62$, $t = 9.08$, $p < .001$, $\eta^2_p = .19$, than in the high control condition, $\beta = 0.43$, $t = 5.86$, $p < .001$, $\eta^2_p = .09$ (Figure 5).

Figure 5

Interaction Between level of National Narcissism and Personal Control Manipulation on Conspiracy Beliefs about Immigrants



Discussion

In Study 3, we successfully manipulated personal control and national narcissism salience, which for the latter is the first reported successful direct experimental manipulation as far as we know. However, contrary to what we expected, these experimental manipulations and their interactions did not impact intergroup threat and conspiracy beliefs about immigrants, nor did they impact collective action intentions. Despite this, we did find

interaction effects between the personal control conditions and national narcissism in its continuous form on conspiracy beliefs about immigrants. This result extends previous literature on individuals' motivations to restore personal control through national narcissism (Cichocka et al., 2018; Marchlewska et al., 2020), and derogating immigrants (Hirsch et al., 2021), by suggesting that group-level control might influence intergroup conspiracy beliefs.

The lack of significant effects for our manipulations on outcome variables may be explained by two possible factors. First, we must acknowledge that this study was slightly underpowered due to resource constraints. A second possible explanation might be theoretical and based on the limit of cross-sectional findings previously reported in the literature. That is, national narcissism might not be directly related to perceived threat and conspiracy beliefs, or this relationship might be in the reverse direction. Next, we discuss in detail these points as well as implications for the literature about group-based control and consequences of defensive beliefs on prejudice against immigrants.

General discussion

Across three studies, we used the distinction between secure national identification and national narcissism to investigate the role of defensive group beliefs in the identification-prejudice link. We proposed that prejudice would occur as a consequence of two kinds of related but different defensive group beliefs: perceived intergroup threat and conspiracy beliefs, themselves arising as a result of defensively investing in the national group. Lastly, we propose that these defensive reactions might be especially prevalent when national narcissism is made salient under low personal control, acting as a group-level compensatory process. Study 1 provided cross-sectional evidence from a representative sample. Perceived intergroup threat and conspiracy beliefs about immigrants separately, and sequentially, mediated the relationship between both types of ingroup positivity, and various prejudices

against immigrants, even when controlling for conspiracy mentality. Then, we causally tested this model through two factorial experiments. In Study 2, we found supporting evidence for the causal impact of perceived intergroup threat on conspiracy beliefs, as well as for the causal impact of these two variables on collective action intentions, but not on other forms of prejudice. We found no supporting evidence for the alternative hypothesis of an interaction between perceived threat and conspiracy beliefs on the prejudice variables, their effects being comparable but not cumulative. In Study 3, we successfully manipulated personal control and national narcissism salience, but these manipulations did not increase defensive group beliefs. However, we did find an interaction effect between personal control and the measure of national narcissism on conspiracy beliefs.

The present contribution sheds new light on the identification-prejudice link. Firstly, it conceptually replicates previous research highlighting that only defensive, narcissistic (and not secure) national identification is related to prejudice against immigrants (Dyduch-Hazar et al., 2019a). In contrast, secure national identification (operationalized through ingroup satisfaction) was related to virtuous inclinations toward immigrants through decreased defensive group beliefs. Secondly, our results extend previous research on the detrimental role of defensive group beliefs on prejudice against immigrants. In line with Jolley et al. (2020, Study 1), we showed that conspiracy beliefs about immigrants increased collective action intentions against this outgroup, and that this effect was similar to that of perceived intergroup threat about immigrants previously observed by Sheppherd et al. (2018). Interestingly, the effects of perceived intergroup threat and conspiracy beliefs were both distinct and sequential at a cross-sectional level, and were not interacting when experimentally induced in succession. This might indicate that beyond the fact that conspiracy beliefs are a response to a perceived intergroup threat as observed in Study 2, both kinds of defensive group beliefs activate a state of hypersensitivity against the outgroup, increasing collective action intentions

against this group. This propensity to react to perceived intergroup threat by blaming and accusing immigrants of conspiring, ultimately motivating prejudice, is congruent with recent research showing that people with a high level of collective narcissism adopt a biased viewpoint on the immoral actions of the ingroup to serve its interests (Bocian et al., 2021). Similar mechanisms could be at work in our studies: by relying on conspiracy beliefs as an “outlet for hostility” (Abalakina-Paap et al., 1999, cited by Kreko, 2015) to justify collective actions against immigrants perceived as threatening, people with a high level of national narcissism might protect the ingroup while allowing little questioning of their morality.

Furthermore, our findings contribute to the emerging literature about the intergroup perspective of conspiracy beliefs (Biddlestone et al., 2020; Van Prooijen et Van Lange, 2014), highlighting the importance of accounting for the impact of domain-specific, contextualized conspiracy theories at the intergroup level (Sternisko et al., 2020b). Indeed, in Study 1 we showed that the effects of immigrant conspiracy beliefs appear even when controlling for individuals' conspiracy mentality. This is of great importance because it suggests that actions to reduce these specific conspiracy beliefs might be achieved most effectively in a targeted way, without attempting to change the general mindset embedded in individuals. This is in line with recent findings pointing out the effect of low personal control on increasing only conspiracy beliefs that are context-relevant (i.e., “domain-specific” conspiracy beliefs; Stojanov et al., 2021a, 2021b). Our findings suggest that restoring individuals' sense of control might help to diminish, although not completely neutralize, specific conspiracy beliefs targeting immigrants. This interpretation extends findings pointing out that reinforcing a personal sense of control can have beneficial effects in diminishing conspiracy beliefs to the intergroup level (Van Prooijen & Acker, 2015).

The interaction effect we observed between low personal control and the continuous measure of national narcissism on conspiracy beliefs extends previous findings on the

consequences of group-based control (Fritsche et al., 2011; 2013; Goode et al., 2017), suggesting that conspiracy beliefs might be prevalent among national narcissists facing lack of personal control. Firstly, while Cichocka et al. (2018, Study 4) observed that individuals investing narcissistically in the ingroup following a lack of personal control expressed outgroup hostility, our results suggest that this hostility might be rooted in “collective motivated cognition” such as beliefs in outgroup conspiracies (Kreko, 2015, p. 64). Together with Study 2, our results suggest that conspiracy beliefs arise from high narcissistic identifiers lacking personal control, which as a consequence increases collective action intentions against immigrants. Interestingly, we did not find similar effects for other kinds of prejudice, namely, support for discriminatory policies and attitudes against naturalisation of immigrants. We speculate that these forms of prejudice are more abstract and politically rooted, and thus less reactive to perceived intergroup threat. On the contrary, collective action intentions tap into concrete group-level reactions to face the threatening outgroup. However, we failed to conceptually replicate previous evidence (Cichocka et al., 2018; Marchlewska et al., 2020) highlighting the effect of personal control on the relationship between national narcissism and outgroup hostility (here operationalized through collective action intentions). These null results might be due to Study 3 lacking statistical power, which we will now discuss along with other limitations of our work.

Limitations and future research

First, as previously stated, Study 3 was quite underpowered compared to our a priori determined sample size and Study 2. This lack of statistical power calls for further replication to attest to the robustness of our findings using the continuous form of national narcissism. We also note that this continuous form of national narcissism was a manipulation check, so future research should measure it more distinctly from experimental manipulations. The lack of statistical power in Study 3 might also explain why we did not observe experimental effects

of lack of personal control and national narcissism salience on our outcome variables. However, given the consequent size of the correlations between these variables reported in the literature and observed in Study 1, we may have expected to find an effect nevertheless. Thus, the relationship might be contingent upon a third variable, or it may be reversed. Guerra et al. (2020) recently argued for intergroup threat to be a cause rather than a consequence of national narcissism, but their results are cross-sectional and thus do not allow for inference of causation. Also, our experimental manipulation of national narcissism increased both national narcissism and ingroup satisfaction, thereby potentially diminishing the effect of national narcissism salience on our outcome variables. Indeed, both types of ingroup positivity are correlated but have contradictory effects. Future research should attempt to only activate national narcissism, and clarify this causality question through an experimental research program.

We also must acknowledge potential cultural limitations of the present research. Indeed, our results are only based on French populations and one must be cautious when generalizing to other contexts. Recent media and political events in France, such as terrorist attacks and police violence against immigrants, might have influenced our findings. Thus, we also call for future replications in other contexts to strengthen the generalisability of our findings about the role of defensive group beliefs on the narcissistic identification-prejudice link. Future research might also want to test whether these findings extend to collective narcissism in other intergroup contexts, such as catholic narcissism, which has also been associated to be related to outgroup derogation through specific conspiracy beliefs (Marchlewska et al., 2019). In line with previous studies, we operationalized secure ingroup identification through Leach et al.' (2008) ingroup satisfaction subscale (Dyduch-Hazar et al., 2019; Golec de Zavala, 2019). However, recent research suggests that accounting for the full self-investment dimension of Leach's scale together with national narcissism will provide

more nuanced effects (Marchlewska et al., 2020), and thus future research would benefit from applying this distinction in further investigations of the identification-prejudice link. Last, we used the generic “immigrant” label, which is the most commonly used in French media. However, in their review, Esses (2021) pointed out that the level of prejudice against immigrants can depend on characteristics and specificities of the immigrant group. Thus, future research might want to add nuance to our findings by conceptually replicating them with different groups of immigrants.

Conclusion

Overall, the present contribution aimed at comprehensively examining the role of defensive group beliefs in the identification-prejudice link. We did so by showing that it is necessary to distinguish between types of ingroup positivity, with only national narcissism being related to prejudice through perceived threat and conspiracy beliefs about immigrants. This model held even when controlling for conspiracy mentality, which corroborates the domain-specificity of conspiracy beliefs motivated at the group-level. We provided experimental evidence for the causal relationship between these mediating variables and collective action intentions against immigrants. Lastly, we find that the relationship between national narcissism and conspiracy beliefs was moderated by experimentally induced low personal control, extending previous research on the consequences of group-based control. Our research shed more light, in both cross-sectional and experimental ways, on the individual and collective processes involved in hostility against immigrants. At a time when migratory waves are intensifying, it is of utmost importance to understand the causes of these rejections in order to mitigate the deleterious consequences for intergroup harmony, for example, by debunking conspiracy theories about immigrants, or by minimizing individuals’ feelings of control loss.

Transition

In Chapter 4, we showed that perceived intergroup threat, conspiracy beliefs, and collective action intentions against immigrants were causally related. Even though we failed to demonstrate the causal link between national narcissism and conspiracy beliefs, our exploratory analyses nevertheless suggested that this association was more pronounced under lack of personal control. Hence, we aimed to further investigate the relationship between national narcissism and conspiracy beliefs.

In Chapter 5, we proposed that the relationship between national narcissism and conspiracy beliefs might be underlined by the perception that the ingroup has a special victim status. This positioning would legitimize the holding of conspiracy beliefs protecting one's idealized ingroup image (Sternisko et al., 2020a). We first tested this hypothesis through a correlational design in the context of the Zika outbreak, and then through an experimental design in the context of the COVID-19 pandemic.

Chapter 5

Affected more than Infected: The Relationship between National Narcissism and Zika Conspiracy Beliefs is Mediated by Exclusive Victimhood about the Zika Outbreak

Abstract

Many conspiracy theories appeared along with the Zika outbreak. While the virus is still circulating, motives underlying Zika conspiracy beliefs remain underexplored. National narcissism has been shown to be a robust social motive predicting conspiracy beliefs about other public-health crises. This relationship has been interpreted as conspiracy beliefs protecting one's idealistic national image from the crisis by externally attributing any potential threatening factors. We seek to provide an additional account by proposing that such external projection of grievances is rooted in the ethnocentric tendency to frame one's nation's suffering as central to the crisis. We argue that this inflated perception of victimhood, which we operationalized through exclusive victimhood, legitimizes national narcissists' expression of their (conspiracy) view of the crisis, hence managing their identity. Based on a representative sample of the French population ($N = 1,104$), results confirmed that national narcissism was related to Zika conspiracy beliefs, and that this relationship was mediated by the belief that French people suffered uniquely and more than others from the Zika outbreak. These results held even when controlling for potential confounding variables. We discuss the possible functions of exclusive victimhood in times of global threats, and the defensive role played by conspiracy beliefs.

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Ethics Statement

This research has been approved by the ethical committee of the second author’s university (number: 2020-003).

Author Contributions²²

P.B. conceptualized the project. P.B and S.D created the materials. P.B and S.D conducted the data collections. P.B conducted the analysis. P.B wrote the manuscript. P.B revised the manuscript. P.B. did the project administration and supervision.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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²² P.B. = Paul Bertin, SD = Sylvain Delouvé

Open Science Statement

Materials, data and analyses are openly available on the Open Science Framework repository of the project at the following link:

https://osf.io/vn98b/?view_only=514484a69bee458a917430e74d45d946

Supplementary Material

The Supplementary Material for this article can be found online in Appendix D (p. 293).

Affected more than Infected: The Relationship between National Narcissism and Zika Conspiracy Beliefs is Mediated by Exclusive Victimhood about the Zika Outbreak

Conspiracy theories are accusations of malevolent outgroups secretly plotting against the ingroup to achieve nefarious goals (Zonis & Joseph, 1994). During the 2015-2016 Zika outbreak, a wave of conspiracy theories spread worldwide with potential detrimental consequences on health behaviours (Dredze et al., 2016; Mitchell, 2019). One of the most transmitted Zika conspiracy beliefs stated for example that the virus is transmitted through genetically-modified mosquitoes or vaccines (Klofstad et al., 2019). While no vaccine is yet available, the Zika virus is still circulating and might in the future lead to a new outbreak situation (WHO, July 2019). Yet, little is known about the motives associated with Zika conspiracy beliefs. We aimed to fill this gap by investigating whether some key findings about COVID-19 conspiracy beliefs might apply to this different *pathogen* threat (Kashima et al., 2021). Specifically, we focus on social motives (Douglas et al., 2017), by replicating and extending findings about the relationship between national narcissism (i.e., the belief that one's national greatness is insufficiently recognized by others; Golec de Zavala et al., 2009) and conspiracy beliefs.

National narcissism has been extensively related to conspiracy beliefs in the context of the COVID-19 pandemic (Hughes & Machan, 2021; Sternisko et al., 2020a; Stoica & Umbres, 2020; Rothmund et al., 2020). This relationship has been interpreted following an *intergroup* approach, according to which national narcissists manage identity threats posed by the pandemic by attributing threatening factors (e.g., poor crisis management, absence of medication) to the action of plotting outgroups (Sternisko et al., 2020a). We further draw on conspiracy beliefs as identity management strategies by arguing that along with national narcissists' tendency to seek special recognition of their ingroup (Golec de Zavala et al., 2019), these defensive beliefs stem from a sense of exclusive victimhood resulting from the

crisis (i.e., the “perceived uniqueness and distinctiveness of the ingroup's victimization compared to other groups’ suffering”, Vollhardt et al., 2021). We propose that framing a diffuse and *contingent* pathogen threat as a concrete and *intentional* intergroup threat (i.e., conspiracy beliefs) is the consequence of an ethnocentric perception of the crisis to which one’s ingroup’s suffering is central. Such victimized positioning then legitimizes expressions of conspiracy beliefs regarding the crisis, in order to protect one’s idealistic national image. Thus, we sought to investigate the association between national narcissism and conspiracy beliefs in the context of the Zika outbreak and predicted that this relationship would be mediated by exclusive victimhood. As this model was theorized in relation to social motives (Sternisko et al., 2020b; Van Prooijen & Van Lange, 2014), we predicted that it would hold even when controlling for variables previously associated with Zika conspiracy beliefs at individual level.

National Narcissism and Conspiracy Beliefs in Time of Outbreak

Societal crises are threatening contexts which provide fertile ground for conspiracy theories (Van Prooijen & Douglas, 2017), as observed during pathogen threats, such as those of the COVID-19 pandemic (Heiss et al., 2021; Van Mulukom et al., 2021) and the 2015-2016 Zika outbreak (Smallman, 2018). Motives underlying conspiracy theories about the former have received extensive attention (Douglas, 2021), while those regarding the latter remain understudied. The few studies targeting Zika conspiracy beliefs found associations with “classic” individual-level variables, such as concern about the outbreak (Connolly et al., 2019; Mitchell, 2019), conspiracy mentality (i.e., the general propensity to endorse conspiracy beliefs; Klofstad et al., 2019), and demographic factors, such as age (Pitch-Loeb et al., 2019). As far as we know, no study to date has investigated Zika conspiracy beliefs using the intergroup approach proposed by Van Prooijen and Van Lange (2014). Yet, this level of analysis might be relevant, particularly given the challenging nature of pathogen threats for

one's national image, as observed in the context of the COVID-19 pandemic (Sternisko et al., 2020a).

Collective narcissism, a defensive form of ingroup identification (Cichocka, 2016), operationalized here at the national level, under the label 'national narcissism' (Cais & Gries, 2013), has been shown to be a robust predictor of conspiracy beliefs about the COVID-19 pandemic (Hughes & Machan, 2021; Sternisko et al., 2020a; Stoica & Umbres, 2020; Rothmund et al., 2020). Previous literature suggesting that national narcissists are prone to perceive threats against their ingroup (see Cichocka, 2016), and that conspiracy beliefs are triggered by perceived threat (see Van Prooijen, 2019), has reinforced these empirical observations. However, Sternisko et al. (2020a) provided a more contextualised and refined interpretation of this relationship by arguing that "conspiracy theories related to a public-health crisis may serve as a reinforcement of the idealistic image of one's nation that was threatened by the crisis" (p. 5). As such, national narcissists' reactions to the image threat posed by public-health crises might be compared with reactions to intergroup threats.

That is, national narcissists might defend their idealistic national image by attributing threatening factors to the alleged actions of malevolent outgroups. Similarly, Chen et al. (2021) found that symbolic (but not realistic) threat perceptions mediated the relationship between national identity uncertainty and outgroup conspiracy beliefs regarding COVID-19. At the individual narcissism level, Mu (2020) reported relationships to nationalist conspiracy theory (i.e., "conspiracy theory that targets a rival out-group and stirs hostility among the believers to attain certain goals", p. 340). Previous studies also found that heightened perceived threat toward the ingroup mediated the relationship between national narcissism and conspiracy beliefs (Bertin et al., 2021, Study 1; Cichocka et al., 2016, Study 2). We further draw on conspiracy beliefs as a reaction to threats by arguing that rather than being merely provoked by perceived threats, national narcissists' conspiracy beliefs are rooted on an

inflated and *ethnocentric* perception of threat. We therefore propose that conspiracy beliefs can serve as identity management strategies which stem from and are legitimized by positioning one's ingroup suffering as central to the crisis, operationalized in this study as exclusive victimhood.

The Mediating Role of Exclusive Victimhood

The status of being a *victim* has to be conceptualized as a subjective phenomenon (Christie, 1986). Despite this subjective reality, claiming victimhood can have concrete consequences. For example, it has been shown that, at individual level, a high frequency of victimhood signalling is related to third-party support, such as material advantages (Ekin et al., 2020). Interestingly, this tendency seems especially prevalent among individual narcissists (measured as part of dark triad traits; Ekin et al., 2020). Furthermore, framing oneself as a victim has been reported as a moral positioning which absolves oneself from blame, due to one's status as a *moral patient* (i.e., deprived of agency hence incapable of blameworthy actions). Thus, at individual-level, claiming victim status seems to be a moral positioning that legitimates expectation of external recognition.

At collective level, a similar process has been theorized and captured through exclusive victimhood (comprising competitive victimhood, as proposed by Vollhardt et al., 2021). Exclusive victimhood is a form of comparative collective victimhood that has been mostly investigated in the context of human conflicts, classically taking the form of each conflicting group claiming superior victim status (for a review, see Young & Sullivan, 2016).

It has been proposed that this tendency of self-positioning the ingroup as being “uniquely” and “more” of a victim than others might be a defence mechanism attempting to reinforce the ingroup's position in the face of threats (Hirschberger & Ein-Dor, 2020). Indeed, recent empirical findings support the view that perceived identity threats are a driving factor in competitive victimhood (Demirdağ & Hasta, 2019; Mashuri et al., 2015a; Pantazi et al.,

2021). Hence, we propose that exclusive victimhood can occur in the context of an outbreak, this event being both threatening to national identities (Kachanoff et al., 2020) and involving several nations that might similarly claim victim status.

This distorted perception of ingroup victimhood might be especially prevalent among collective narcissists, given their biased view of their ingroup interests (Bocian et al., 2021) and their tendency to seek special recognition (for a review see Golec de Zavala et al., 2019). National narcissism has been previously associated with defence mechanisms similar to exclusive victimhood. For example, early work on national narcissism found it to be associated with siege mentality, “the beliefs that the national in-group is threatened by hostile intentions of other groups and stands alone against the world” (Golec de Zavala et al., 2012, p. 224). Hence, national narcissists might be prone to perceive their ingroup as deserving a ‘special victim’ status in the context of outbreaks, reinforcing their ingroup positioning and legitimizing the expression of ingroup grievances.

This view is supported by Lerner (2020), who recently theorized that people who believe in national victimhood beliefs tend to legitimize the projection of national ingroup grievances onto third parties. Our proposition aims to offer a complementary empirical account to this prediction from a social psychology perspective. We propose that this ethnocentric positioning of ingroup suffering as central to the crisis legitimizes the expression of alternative versions of the event which attribute threatening factors externally, in the form of conspiracy beliefs.

Previous empirical findings support the mediating role of exclusive victimhood in the relationship between national identification and conspiracy beliefs. Indeed, competitive victimhood has been reported to mediate the relationship between national identification and conspiracy beliefs in Poland (Bilewicz & Stefaniak, 2013), and in Indonesia (Mashuri & Zaduqisti, 2014). While the causality between the mediator and the outcome variable cannot

be statistically asserted (Lemmer & Gollwitzer, 2017), recent experimental evidence has suggested a causal relationship between historical collective victimhood and conspiracy beliefs among strong national identifiers (Pantazi et al., 2020). Hence, we might speculate that this causality can be applied in the context of exclusive victimhood regarding an outbreak. However, even though these previous studies emphasized the importance of national identification in predicting competitive victimhood and conspiracy beliefs, none of them accounted for national narcissism, which has been reported to suppress the effect of national identification on conspiracy beliefs (Cichocka et al., 2016). Furthermore, as expressed by Armaly and Enders (2021), implications of group-level perceived victimhood remain to be investigated together with collective narcissism. Hence, we aimed to address this gap in the literature by investigating the association between national narcissism and conspiracy beliefs, and by testing the mediating role of exclusive victimhood in the context of the Zika outbreak. To explore the robustness of this model, we also sought to test it while controlling for variables previously associated with Zika conspiracy beliefs.

Overview of the Present Study

We tested this model on a representative sample in France. First, we hypothesize that French national narcissism (but not secure national identification) will be related to Zika conspiracy beliefs (H_1). Second, we hypothesize that exclusive victimhood about the Zika outbreak will mediate the relationship between national narcissism and Zika conspiracy beliefs (H_2). Finally, we posit that exclusive victimhood, as well as conspiracy beliefs about the Zika outbreak, might be influenced by a set of confounding variables previously associated with Zika conspiracy beliefs (knowledge and concern about the Zika outbreak, age, and conspiracy mentality; Klofstad et al., 2019; Piltch-Loeb et al., 2019). Thus, we hypothesize that the mediation model will be corroborated, even when controlling for these covariates (H_3).

Method

Participants and Procedure

We used *Dynata* services to conduct our survey, targeting a representative sample of the French metropolitan population according to quotas of age, gender, socio-professional category, and geographical location. Overall, 1104 participants answered the survey (574 women, $M_{age} = 47.1$, $SD = 16.4$, $max = 18$, $min = 85$) in late October 2020.

Measures

Unless otherwise mentioned, a 5-point Likert scale ranging from 1 “totally disagree” to 5 “totally agree” was used. Mean, standard deviation, and internal reliability coefficients are displayed in Table 1. Full scales are displayed in the Open Science Framework repository for this project²³: https://osf.io/vn98b/?view_only=514484a69bee458a917430e74d45d946.

National Narcissism

We measured collective narcissism at national level using the French version (Bertin et al., in press) of the 9-item Collective Narcissism Scale (Golec de Zavala et al., 2009, one reverse item, e.g., “France deserves special treatment”, $\alpha = .89$).

Ingroup Satisfaction

As in previous research (e.g., Dyduch-Hazar et al., 2019; Golec de Zavala, 2019), we operationalized secure national identification using the satisfaction subscale from Leach et al. (2008, e.g., “It is pleasant to be French”, $\alpha = .93$), in its French version (Bertin et al., 2021).

Zika Conspiracy Beliefs

²³ These measures were included in data collection with other unrelated projects. For the present project, all measures are disclosed here.

We used items from Piltch-Loeb et al. (2019) and Klofstad et al. (2019) to create a 5-item scale measuring conspiracy beliefs about the Zika outbreak (e.g., “Zika was a form of population control”, $\alpha = .94$).

Exclusive Victimhood about the Zika Outbreak

Like Vollhardt et al. (2021), we measured two kinds of closely-related exclusive victimhood: competitive and exclusive victimhood. While competitive victimhood taps into how severe one’s ingroup victimhood is compared with that of outgroups (quantitative comparison), exclusive victimhood taps into how distinct one’s ingroup victimhood is compared with that of outgroups (qualitative victimhood). We adapted three items from Noor et al. (2008) to measure competitive victimhood in relation to the Zika outbreak (e.g., “French people suffered more from the Zika virus than other countries in the world”, $\alpha = .85$). Similarly, we adapted three items from Vollhardt et al. (2016) to measure exclusive victimhood in relation to the Zika outbreak (e.g., “No other country has suffered as France from Zika virus”, $\alpha = .70$). Ultimately, because these two scales were highly correlated ($r = .79, p < .001$) and due to their close theoretical interrelation (Szavo (2020), we aggregated them under the label ‘exclusive victimhood about the Zika outbreak’ ($\alpha = .88$). This one factor solution had an acceptable fit, $\chi^2/df = 6.63$, CFI = .99, RMSEA = .07 95% CI [.05, .089], SRMR = .023.

Covariates

Following on from previous studies that investigated predictors of Zika conspiracy beliefs, we identified several potential confounding variables for which we controlled. First, we controlled for age, given that Pitch-Loeb et al. (2019) found Zika conspiracy beliefs to be prevalent among younger people. Second, we controlled for individuals’ predisposition to endorse conspiracy theories as measured by conspiracy mentality (Bruder et al., 2013), which has been reported to be a strong predictor of Zika conspiracy beliefs (Klofstad et al., 2019).

To do so, we used a French version (Lantian et al., 2016) of the Conspiracy Mentality Questionnaire (Bruder et al., 2013, e.g., “I think that events which superficially seem to lack a connection are often the result of secret activities”, $\alpha = .89$). This involved an 11-point scale ranging from 0% “Certainly not” to 100% “Certain”. Concern about the Zika outbreak has also been associated with Zika conspiracy beliefs (Connolly et al., 2019; Mitchell, 2019), which we measured using a single item (e.g., “When you think about the Zika epidemic, you feel”, from 1 “not concerned at all” to 5 “very much concerned”). Last, subjective knowledge about the Zika outbreak may play a role in predicting Zika conspiracy beliefs (Pitch-Loeb et al., 2019). We therefore measured this using a single item (e.g., “In your opinion, your knowledge about the Zika epidemic is”, from 1 “very low” to 5 “very high”).

Results

All analyses were run using Jamovi (The jamovi project, 2020). We first inspected the correlation matrix (Table 1), which revealed significant positive associations between national narcissism and Zika conspiracy beliefs, exclusive victimhood about the Zika outbreak, and covariate variables. By contrast, ingroup satisfaction was negatively associated with Zika conspiracy beliefs, exclusive victimhood about the Zika outbreak, and conspiracy mentality.

Table 1*Correlations, Means and Standard Deviations for Measured Variables*

	<i>Mean</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.
1. National narcissism	3.25	0.76	-						
2. Ingroup satisfaction	3.96	0.91	.46***	-					
3. Zika conspiracy beliefs	2.17	0.94	.17***	-.14***	-				
4. Exclusive victimhood about the Zika outbreak	2.15	0.82	.23***	-.09**	.59***	-			
5. Concern about the Zika outbreak	2.56	1.08	.18***	-.02	.32***	.38***	-		
6. Knowledge about the Zika outbreak	1.83	0.94	.11***	.03	.08**	.10**	.21***	-	
7. CMQ	7.19	1.94	.12***	-.10**	.34***	.15***	.09**	-.04	-
8. Age	47.1	16.4	.28***	.16***	-.04	-.02	-.01	-.06*	.01

Note. $N = 1104$. All variables were measured using a 5-point Likert scale except for CMQ (11 points).

CMQ = Conspiracy Mentality Questionnaire.

* $p < .05$ ** $p < .01$ *** $p < .001$.

Then, we performed a linear regression to test for the relationship between types of ingroup identification and Zika conspiracy beliefs. Results revealed a positive association between national narcissism and Zika conspiracy beliefs, $B = 0.38$, 95% CI [0.30; 0.46], $t = 9.07$, $p < .001$ (controlling for ingroup satisfaction). In contrast, ingroup satisfaction was negatively related to Zika conspiracy beliefs, $B = -0.29$, 95% CI [-0.36; -0.22], $t = -8.36$, $p < .001$ (controlling for national narcissism), thus confirming H_1 . These relationships remained significant when controlling for covariate variables (see Table 2).

Table 2*Hierarchical Regressions on Zika Conspiracy Beliefs*

Independent variable	Dependent variable				Total R^2
	Zika conspiracy beliefs				
	B	95 %CI	<i>t</i>	<i>p</i>	
Step 1					.03
National narcissism	0.22	[0.15; 0.30]	5.74	<.001	
Step 2					.09
National narcissism	0.38	[0.30; 0.46]	9.07	< .001	
Ingroup satisfaction	-0.29	[-0.36; -0.22]	-8.36	< .001	
Step 3					.24
National narcissism	0.25	[0.16; 0.33]	5.93	< .001	
Ingroup satisfaction	-0.20	[-0.26; -0.13]	-6.02	< .001	
Concern about Zika	0.23	[0.18; 0.28]	9.25	< .001	
Knowledge about Zika	0.02	[-0.04; 0.07]	0.62	.54	
Conspiracy mentality	0.14	[0.11; 0.17]	10.32	< .001	
Age	-0.01	[-0.01; -0.01]	-2.14	.03	

Note. $N = 1104$.

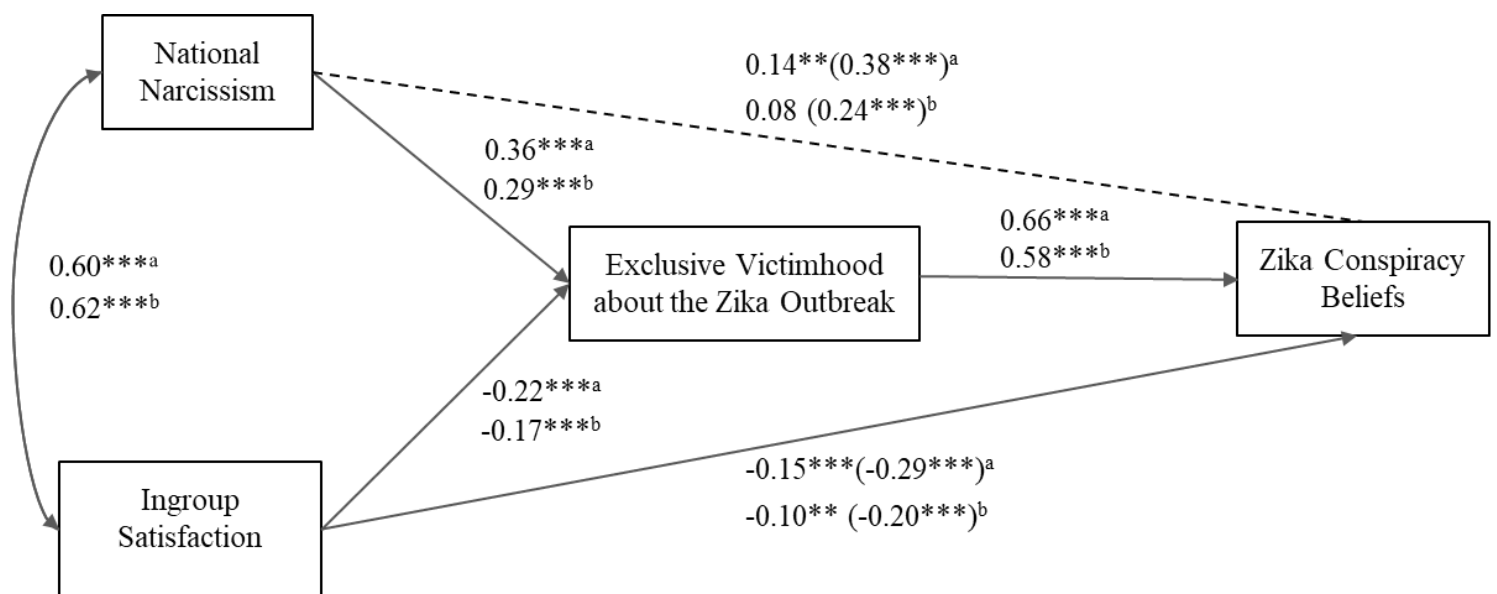
We then tested the indirect effect of exclusive victimhood using the JaMM module for Jamovi (Gallucci, 2020), with 1000 bootstrapping of the indirect effect. Exclusive victimhood mediated the relationship between national narcissism and Zika conspiracy beliefs, $IE = 0.24$ (63% of the total effect), 95% CI [0.19; 0.29], $z = 9.05$, $p < .001$ (Figure 1, paths a), confirming H_2 . By contrast, ingroup satisfaction was negatively related to Zika conspiracy

beliefs through exclusive victimhood, $IE = -0.15$ (51% of the total effect), 95% CI [-0.19; -0.10], $z = -6.44$, $p < .001$.

This pattern of results held even when accounting for covariates (Figure 1, paths b). Exclusive victimhood about the Zika outbreak still mediated the relationship between national narcissism and Zika conspiracy beliefs, $IE = 0.17$ (70% of the total effect), 95% CI [0.12; 0.21], $z = 7.26$, $p < .001$, thus confirming H_3 . It is worth noting that when accounting for these confounding variables, the direct path between national narcissism and Zika conspiracy beliefs was no longer significant, $B = 0.08$, 95% CI [-0.01, 0.16], $z = 1.77$, $p = .08$. Ingroup satisfaction was still negatively related to Zika conspiracy beliefs through exclusive victimhood about the Zika outbreak, $IE = 0.10$ (50% of the total effect), 95% CI [-0.13; -0.06], $z = 5.35$, $p < .001$.

Figure 1

The mediating Role of Exclusive Victimhood about the Zika Outbreak in the Relationship between Types of Ingroup Identification and Zika Conspiracy Beliefs



Note. ^amediation model not controlling for covariates, ^bmediation model controlling for covariates. Coefficients presented are unstandardized coefficients. Coefficients placed within parentheses are total effects. Paths for covariates are not reported for clarity.

** $p < .01$ *** $p < .001$.

Exploratory Analyses

Our measure of Zika conspiracy beliefs included three items about hidden plots potentially targeting the ingroup (e.g., “Zika was a form of population control”), but also two items about conspiracy beliefs rather targeting outgroups (e.g., “Zika was a form of biological weapon used against the South American population). Hence, we differentiated conspiracy beliefs targeting the ingroup from those targeting outgroups, testing whether our pattern of results would remain when distinguishing these two kinds of conspiracy beliefs.

The table displaying the correlation matrix and descriptive of these new variables (Table S1), as well as the below mentioned figures, can be found in the supplementary analyses file. The pattern of results remains similar when separately accounting for Zika conspiracy beliefs targeting the ingroup and those targeting outgroups (see Figures S1 and S2). This is not surprising given the high correlation between these two factors ($r = .89$). We discuss this finding in the Discussion section with regard to the hypothesis of conspiracy beliefs organized in a belief system (Enders et al., 2021).

Discussion

Based on a representative sample of the population in France, we showed that national narcissism was positively related to Zika conspiracy beliefs. By contrast, secure national identification, captured through ingroup satisfaction, was negatively associated with Zika conspiracy beliefs (H_1). We found that these relationships were significantly mediated by exclusive victimhood about the Zika outbreak (H_2). Last, this mediation model held even when controlling for variables previously associated with Zika conspiracy beliefs (H_3), and when differentiating conspiracy beliefs threatening to the ingroup from those targeting outgroups.

These results extend previous findings on predictors of conspiracy beliefs about the Zika outbreak (Klofstad et al., 2019; Pitch-Loeb et al., 2019) to group level factors. Specifically, we replicated in the Zika outbreak context observations made in the context of the COVID-19 pandemic about the relevance of types of ingroup identification in predicting *specific* conspiracy beliefs (i.e., conspiracy beliefs about a given event, here pathogen threats). While national narcissism was related to conspiracy beliefs through exclusive victimhood, secure ingroup identification was negatively related to these variables. This pattern of relationships is in line with previous findings showing that when controlling for collective narcissism, secure identification is usually negatively or unrelated to conspiracy beliefs (e.g., Bertin et al., 2021; Cichocka et al., 2016; Marchlewska et al., 2019). Importantly, our findings held even when accounting for a set of confounding individual-level variables previously associated with Zika conspiracy beliefs, that is knowledge and concern about the Zika outbreak, conspiracy mentality, and age (Klofstad et al., 2019; Pitch-Loeb et al., 2019). It is worth noting that conspiracy mentality and concern (i.e., threat perception) have been especially associated with specific conspiracy beliefs in previous research (Lewandowsky et al., 2013; Mashuri & Zaduqisti, 2015b; Swami et al., 2018). Hence, the robustness of our model, when accounting for these variables, may suggest that when studied alongside national narcissism, specific conspiracy beliefs cannot be reduced to either threat perception or to an individual's general propensity to perceive conspiracy. This is in line with Sternisko et al.'s (2020b) theory that conspiracy theories might be primarily appealing at social identity level when these narratives echo ingroup concerns. Our findings further suggested that specific conspiracy theories might be appealing at group-level, due to perceiving one's ingroup's suffering as central to the crisis.

Our mediation model held when distinguishing between conspiracy beliefs potentially targeting the ingroup from those targeting outgroups, which is in line with the view of

conspiracy beliefs as being interrelated and in belief systems (Sutton & Douglas, 2014; see also Franks et al., 2017). A belief system can be defined as “a configuration of ideas and attitudes in which the elements are bound together by some form of constraint or functional interdependence” (Converse, 1964, p. 207, cited by Enders et al., 2021). In the context of the present study, if one believes that the Zika outbreak is a conspiracy threatening one’s ingroup, one might congruently believe that this threat applies to other groups, since it is congruent and reinforces one’s conspiracy view of the event. Following Sternisko et al. (2020b), we suggest that conspiracy beliefs motivated at group-level might be interrelated with other conspiracy beliefs as long as they share a common content explaining a threatening context (i.e., the Zika outbreak). Following this belief system perspective, conspiracy beliefs about a given event might help manage one’s ingroup identification even when these conspiracy theories target outgroups, as long as their content refers to the event perceived as threatening for one’s ingroup.

Our findings are in line with the theoretical proposition made in the area of international relations by Lerner (2020) that nationalist victimhood legitimizes the projection of ingroup grievances onto third parties. We observed that exclusive victimhood played a mediating role in the relationship between national identification and conspiracy beliefs, thereby replicating previous research (Bilewicz & Stefaniak, 2013; Mashuri & Zaduqisti, 2014). Moreover, the present study further contributes to this line of research by suggesting that only national narcissism (and not secure national identification) is positively related to conspiracy beliefs through exclusive victimhood. Perceiving the ingroup as being qualitatively and quantitatively “more” a victim of a given event, as compared with other groups, might legitimize the expression of alternative narratives of the event in order to favour one’s ingroup and protect its idealistic national image in the face of threats. Replicating our findings in other contexts and in response to various global societal threats (i.e., “a natural or

human-caused threat that can adversely affect a large portion of a human population” (Kashima et al., 2021, p. 223), such as climate change, would be useful in furthering research in this area.

Whereas conspiracy theories have been reported to have detrimental effects on one’s health (e.g., increasing negative intentions regarding vaccinations; Jolley & Douglas, 2014a), some scholars have suggested that from an intergroup perspective, these beliefs may be adaptative (e.g., Raihani & Bell, 2019). Indeed, another possible interpretation of our findings follows the adaptive approach to conspiracy beliefs which posits that anticipating intergroup threats is crucial for one’s survival (van Prooijen & Van Vugt, 2018). That is, even though the Zika outbreak did not greatly impact France, victimizing the ingroup might be a way of maintaining one’s alertness and vigilance towards future threats. The concept of collective conspiracy mentality might also be relevant here. This collective state has been conceptualized and fuelled by historical victimhood, leading to a perpetual adaptative state of hypervigilance (Soral et al., 2018; see also Bilewicz and Liu, 2020). Even though we investigated contextual competitive victimhood, rather than historical victimhood, our findings could be interpreted as the expression of a national conspiracy mentality which still perceives the Zika outbreak as posing a potential threat years after its epidemic peak. Interestingly, the COVID-19 pandemic was still ongoing when we conducted our questionnaire and may have played the role of a traumatic event by fuelling a national conspiracy mentality and increasing Zika conspiracy beliefs. Future research could explore whether a national conspiracy mentality plays a role in predicting conspiracy beliefs about ongoing public-health crises, and whether these beliefs are interrelated with conspiracy beliefs about past crises.

As far as we know, the present contribution is the first empirical work documenting the relationship between national narcissism and exclusive victimhood. This relationship is

somewhat unsurprising given that a core feature of narcissistic identifiers is their tendency to seek external recognition (Cichocka, 2016). Future research might further investigate how other comparative victim beliefs, such as inclusive victimhood (Vollhardt et al., 2021), might be related to each kind of ingroup identification. Indeed, inclusive victimhood can be universal - with a virtuous intergroup outcome, or selective and linked to competitive victimhood designed to strengthen one's ingroup position (Cohrs et al., 2015). A sense of selective inclusive victimhood might be especially related to conspiracy beliefs targeting outgroups, which future research might want to investigate. Narcissistic identifiers might also seek to get closer to some groups through inclusive victimhood in order to gain victim status and benefits, as has been observed previously, with individual-level narcissism being associated with victimhood, in an aim to gain material advantages (Ok et al., 2020). This would also be congruent with results showing that competitive victimhood can be used strategically to increase ingroup grievances (McNeill et al., 2017) and to gain outgroup support (Belavadi & Hogg, 2018).

This study has some limitations. First, several points underpinning our theoretical contribution are speculative. Future research is needed to test the proposition made by Sternisko et al. (2020a) that conspiracy beliefs expressed by narcissistic identifiers in the context of public-health crises target the management of threats to their identity. It has also yet to be established that exclusive victimhood is indeed expressed as a biased perception of ingroup suffering by national narcissists in the context of public-health crises. Further, even if our sample was representative of the French population, our study was cross-sectional, and causation cannot be asserted. Even though experimental findings by Pantazi et al. (2021) support the view of exclusive victimhood as causing conspiracy beliefs, reverse causation is theoretically possible. That is, endorsing a conspiracy theory during a societal crisis might increase one's sense of exclusive victimhood by making one feel especially threatened by

alleged conspirators. Conspiracy beliefs would then fuel one's ingroup victimhood, be it merely perceptual or strategically motivated, in order to gain benefits over outgroups.

Another potential limitation of our work is the fact that France has not been severely impacted by the Zika outbreak, contrary to South American countries. Hence, it would be useful to test whether exclusive victimhood influences national narcissists' conspiracy beliefs to a similar extent in countries where the outbreak took a more severe turn. Moreover, as previously stated, at the time of our data collection, the COVID-19 pandemic was unfolding. We cannot rule out the possibility that anxiety related to the COVID-19 pandemic context influenced our findings. From a measurement point of view, we operationalized secure national identification using the satisfaction subscale from Leach et al. (2008). While this operationalization has been used previously (e.g., Dyduch-Hazar et al., 2019; Golec de Zavala, 2019), secure national identification has also been measured using Leach et al.'s (2008) self-investment dimension (e.g., Marchlewska et al., 2020) or Cameron's (2004) three-dimensional scale (e.g., Gorska et al., 2020). Accordingly, future research might seek to measure secure national identification more accurately using multi-component constructs. Last, our measure of knowledge about the Zika outbreak tapped into subjective knowledge. Future research could improve this measurement by also controlling for objective knowledge about the Zika outbreak.

Conclusion

Based on a representative sample of the French population, we showed that national narcissism, but not secure national identification, was related to conspiracy beliefs about the Zika outbreak. We also observed that perceiving the national ingroup as being *more* and *uniquely* a victim of the outbreak mediated the relationship between types of national identification and conspiracy beliefs about the outbreak. These relationships held even when accounting for a set of confounding variables identified in the literature. We formulated the

theoretical proposition that national narcissists' ethnocentric perceptions that their ingroup victimhood is central to the crisis might legitimize their tendency to attribute threats to their idealistic national image to external factors. These results highlight the importance of social motivational factors in studying conspiracy beliefs about pathogen threats. As the Zika virus is still circulating and may resurge, health authorities must be prepared to encounter a parallel rise in Zika conspiracy beliefs, potentially among individuals and groups with defensive national identifications.

Supplementary Study 1

Following Article 4, the aim of this experimental study was to experimentally test the causal relationship between exclusive victimhood and conspiracy beliefs about a public-health crisis. As far as we know, no previous published study has experimentally manipulated competitive victimhood (i.e., exclusive or competitive victimhood). It is worth noting the recent publication by Pantazi et al. (2021) who reports that the experimental induction of a sense of collective historical victimhood increases conspiratorial beliefs among individuals with strong national group identification.

While paper 4 addresses exclusive victimhood and conspiracy beliefs in the context of the Zika epidemic, the material and measures of this supplementary study were operationalised around the COVID-19 pandemic. Indeed, this study was launched at the time of the 'second wave' of COVID-19 (November 2020), and we assumed that this salient event would increase the credibility of our experimental induction and promote the overall consistency of the study.

We hypothesized that conspiracy beliefs about COVID-19 would be higher in the competitive victimhood condition (vs. non-competitive victimhood and control conditions). The preregistration²⁴ of the hypotheses, as well as the material, data and analyses, are available on the OSF repository of this study:

https://osf.io/8u9ph/?view_only=d4604f5a9496485495a3b47064b09cc4.

Method

This study was financially supported by EUR ODYSSEE.

²⁴ Note that hypotheses aimed at replicating the mediation model presented in Article 4 were preregistered. However, as the mediator was manipulated, we realized that the design of this experiment did not enable proper replication. We thus discarded this part of the pre-registration.

Participants

We recruited French participants on the online recruitment platform Prolific Academic. Following a power analysis on G*Power, we planned to recruit 450 participants, anticipating criterion exclusions from the estimated sample size of $N = 432$ participants (given three groups, small-to-medium effect size of $f = .15$, power of .80 and a bilateral alpha level of .05).

However, we faced difficulties in reaching the planned sample size. Indeed, Prolific Academic is an English platform with only a small pool of French participants. We applied the MAD method (Leys et al., 2013) in order to exclude participants with an unrealistic completion time. We applied a conservative 3MAD criterion, excluding participants whose completion time was lower than 99.1 seconds and higher than 690.5 seconds ($N = 35$). We also excluded participants who failed the attention check ($N = 9$) and seriousness check ($N = 1$). In total and after exclusions ($N = 45$), the sample was composed of 331 participants (118 women, 6 others, $Mage = 27.3$, $SD = 18$, $max = 18$, $min = 62$). Hence, the sample was smaller than expected and the study was underpowered.

Procedure

The study was presented as composed of two independent parts: a cognitive task of information processing and a survey with questions about societal issues. During the first part, participants were asked to answer questions based on a table displaying COVID-19 positive cases, recovery and deaths for 19 countries. This table was a screenshot taken from Google COVID-19 on November 3, 2020. In the competitive victimhood condition, participants answered questions aimed at inducing an unfavourable comparison between France and other countries. In the non-competitive victimhood condition, participants answered questions aimed at inducing favourable comparisons between France and other countries. Finally, in the control condition participants were asked to report the number of deaths for France to keep

victimhood constant while not inducing any kind of comparative victimhood. Participants from other conditions also answered this open-ended question (see Materials in Appendix E). Participants were then presented with the COVID-19 conspiracy beliefs scale (dependent variable), the exclusive victimhood scales (i.e., competitive and exclusive victimhood, manipulation checks) and demographic variables. Participants were finally debriefed and paid.

Measures

Competitive and Exclusive Victimhood about COVID-19. Although our manipulation was rather designed to induce competitive victimhood (i.e., *quantitative* exclusive victimhood; Szabo, 2020; Vollhardt et al., 2021), we measured both competitive and exclusive victimhood because these two variables are usually highly correlated (see Article 4), and in order to explore the scope of this new experimental manipulation. To measure competitive victimhood about the COVID-19 pandemic, we adapted the 3-item scale from Noor et al. (2008, e.g., “French people suffered more from the COVID-19 pandemic than other countries in the world”, $\alpha = .79$). Similarly, we measured exclusive victimhood by adapting the 3-item scale from Vollhardt et al. (2016, “No other country has suffered as much as France from the COVID-19 pandemic”, $\alpha = .52$).

COVID-19 Conspiracy Beliefs. We used the 9-item scale from Article 1 (i.e., Bertin et al., 2020) to measure conspiracy beliefs about the COVID-19 pandemic (e.g., “Coronavirus is a bacteriological weapon used by the Chinese Communist Party to create panic in the Western world”, $\alpha = .86$). We forgot to preregister the use of this scale with a two-factor solution, which this scale is supposed to be (Bertin et al., 2020), and which we tested using Jamovi (The Jamovi project, 2020). Based on guidelines by Hu and Bentler (1999), the factorial structure of the scale was satisfactory, $\chi^2/df = 2.62$, CFI = .968, RMSEA = .07 95% CI [.049, .091], SRMR = .034. Both factors were moderately correlated ($r = .43$, 95% CI [.43;

.52], $p < .001$) and had good internal reliability (outgroup conspiracy beliefs $\alpha = .87$, ingroup conspiracy beliefs $\alpha = .77$).

Results

We first tested the effectiveness of our experimental manipulation of competitive victimhood in relation to the COVID-19 pandemic. To do so, we tested the effect of conditions on manipulation checks. The omnibus effect was significant, $F(2, 328) = 5.97$, $p = .003$, $\eta^2p = .035$. Thus, we applied orthogonal Helmert contrasts to compare the effect of the victimhood condition (coded 2) to one of the two other conditions (non-competitive condition coded -1 and control condition coded -1). The level of competitive victimhood was significantly higher in the competitive victimhood condition ($M = 2.12$, $SD = 0.77$) than in the two other conditions ($M = 1.81$, $SD = 0.76$), $F(1, 329) = 11.93$, $p < .001$, $\eta^2p = .035$. However, according to Brauer & McClelland (2005), this significant result is valid only if the residual variance is not significant, which we tested using orthogonal contrast (competitive victimhood = 0, non-competitive victimhood = 1, control = -1). This contrast was not significant, $F(1, 329) = 2.03$, $p = .99$, $\eta^2p = .000$, confirming the significant effect of the competitive victimhood condition on the competitive victimhood measure. We repeated the same procedure for the exclusive victimhood measure. The level of exclusive victimhood did not differ between conditions, $F(2, 328) = 0.26$, $p = .77$, $\eta^2p = .002$. Because the omnibus test may not be informative of specific differences found with orthogonal contrasts (Brauer & McClelland, 2005), we performed the same orthogonal contrasts as previously described. The level of exclusive victimhood was not significantly higher in the competitive victimhood condition ($M = 1.91$, $SD = 0.74$) than in the other two conditions ($M = 1.85$, $SD = 0.73$), $F(1,$

329) = 0.49, $p = .48$, $\eta^2p = .001$, suggesting that our experimental manipulation only impacted *quantitative* but not *qualitative* exclusive victimhood²⁵.

Next, we tested our hypothesis. We found no omnibus effect of the competitive victimhood induction on COVID-19 ingroup conspiracy beliefs, $F(2, 328) = 0.26$, $p = .77$, $\eta^2p = .002$. Specifically, applying the same orthogonal contrasts as before, we observed that COVID-19 conspiracy beliefs were not significantly higher in the competitive victimhood condition ($M = 1.52$, $SD = 0.76$) than in the other two conditions ($M = 1.47$, $SD = 0.64$), $F(1, 329) = 0.40$, $p = .53$, $\eta^2p = .001$, not supporting our hypothesis.

Similarly, we found no omnibus effect of the competitive victimhood induction on COVID-19 ingroup conspiracy beliefs, $F(2, 328) = 0.26$, $p = .77$, $\eta^2p = .002$. Specifically, applying the same orthogonal contrasts as before, we observed that COVID-19 conspiracy beliefs were not significantly higher in the competitive victimhood condition ($M = 2.68$, $SD = 0.94$) than in the other two conditions ($M = 2.49$, $SD = 0.99$), $F(1, 329) = 2.56$, $p = .11$, $\eta^2p = .008$, not supporting our hypothesis.

Discussion

The goal of this experimental study was to experimentally test one of the propositions made in Article 4 about the relationship between exclusive victimhood in relation to a public-health crisis and conspiracy beliefs specific to this crisis. To do so, we designed an experimental manipulation aimed at inducing competitive victimhood (i.e., the quantitative side of exclusive victimhood), which was achieved according to manipulation checks. However, we found no significant relationship between induced competitive victimhood and conspiracy beliefs about COVID-19.

²⁵ Because this contrast yielded non-significant results, we do not report the effect of the residual variance test in order to improve readability.

Several reasons might help explain this lack of results. First and foremost, this study was underpowered due to an insufficient pool of French participants on the recruitment platform, Prolific Academic. Due to this lack of statistical power, we cannot exclude the risk of this absence of results being a type II error. Due to the difficulty in recruiting participants, we had to leave this experiment active for 7 days (3 November to 10 November 2020), which might have weakened the relevancy of our induction material. Indeed, the table we used was explicitly presented as showing numbers of the pandemic up to 2 November 2020. More than one week later, participants confronted with this material might have perceived it as outdated, which might have embedded, inducing competitive victimhood. Hence, this study should be replicated on an adequate sample and in a smaller time frame.

Transition

In Chapter 5, we proposed that exclusive victimhood is a motive underlying conspiracy belief at intergroup level. Despite cross-sectional evidence, we failed to causally demonstrate this link. Hence in Chapter 6 we aimed to replicate this victimhood hypothesis in an ecological context, as well as our principal hypotheses about the identity management function of conspiracy beliefs.

We chose to do so in the sport fandom context surrounding international football tournaments. This context is optimal for testing our hypotheses because it occurs on a regular basis (every two years if focusing on the FIFA World Cup and on the UEFA Euros), allowing for replications. It also constitutes a potentially highly threatening context for sports fans, through defeats and elimination of their team, allowing us to anticipate and measure the consequences of team-based identity threats for conspiracy beliefs. Lastly, recent research has introduced the study of collective narcissism into the sport fandom context (Larkin & Fink, 2019). Hence, by turning our focus on *team* narcissism and its defensive group beliefs, we sought to replicate and extend our study of the intergroup motives to conspiracy beliefs. Firstly, we did so through a Twitter content analysis during the 2018 FIFA World Cup. Secondly, we present the materials of a longitudinal survey conducted during UEFA Euro 2020 (postponed to 2021).

Chapter 6

Rage Against the Machine: Investigating Conspiracy Theories about the Video Assistant Referee on Twitter During the 2018 FIFA World Cup

Abstract

Conspiracy theories arise during important societal and political events, with potential negative consequences. Yet, these theories remain to be investigated in sporting events. During the 2018 FIFA World Cup, conspiracy theories alleging that the Video Assistant Referee (VAR) was used with malevolent motives gained popularity online. In this paper, we used a Twitter content analysis to explore VAR conspiracy theories during the World Cup ($N = 2,768$ tweets). Conspiracy tweets peaked after a teams' elimination and repeated use of the VAR, supporting the notion that conspiracy beliefs are triggered by threatening contexts. Conspiracy tweets were also correlated with tweets expressing skepticism or defiance against the VAR, suggesting that conspiracy beliefs might be related to sport fans' other identity management strategies. Lastly, we drew an intergroup typology of VAR conspiracy beliefs' recurrent figures, highlighting that higher-ordered categorization helped conspiracy narratives and content to adapt throughout the tournament. We discuss potential psychological processes underlying sport fans' conspiracy beliefs.

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Author Contributions²⁶

P.B. conceptualized the project. P.B., K.M., and S.D. created the materials. P.B. conducted the data collections. P.B. conducted the analysis. P.B., K.M., and J.V. wrote the manuscript. P.B. did the project administration and supervision.

Conflict of Interest

The authors declare that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Open Science Statement

Data are openly available on the Open Science Framework repository of this project:
https://osf.io/xeavt/?view_only=00f9f4a315a5433eba727c04736b1306

Supplementary Material

The Supplementary Material for this article can be found in Appendix F (p. 300)

²⁶ P.B. = Paul Bertin, SD = Sylvain Delouvé, K.M. = Kathleen McColl, J.W. = Jan-Willem Van Prooijen

Rage Against the Machine: Investigating Conspiracy Theories about the Video Assistant Referee on Twitter During the 2018 FIFA World Cup

“At the international level sport is frankly mimic warfare.” Orwell (1945, para. 4)

The Fédération Internationale de Football Association (FIFA) World Cup tournament gathers billions of viewers²⁷ and could be described as a theater of war for sport fans, following George Orwell’s quote. Indeed, it is a stressful and emotional time for national teams’ supporters, who repeatedly face the threat of seeing their team eliminated from the tournament. Literature derived from the Social Identity Approach (Reicher et al., 2010), has documented various identity management strategies used by sports fans to cope such with team-based threats (see Wann & James, 2018). In this paper, we propose to add conspiracy beliefs to this set of coping strategies. Conspiracy beliefs are explanations for important events that involve secret plots by powerful and malevolent groups (Goertzel, 1994), leading to detrimental consequences (see Douglas et al, 2019). These beliefs frequently arise following societal crises (Van Prooijen & Douglas, 2017) and perceived threat (Bertin et al., 2021a). Yet, despite the emotional burden sports’ fans might encounter, to the best of our knowledge conspiracy beliefs have never been investigated in the sport context as highlighted by Van Prooijen & Douglas (2018). In this paper, we used a Twitter content analysis to explore conspiracy theories about the newly introduced Video Assistant Referee (VAR) in the context of the 2018 FIFA World Cup.

Team-Based Threats and Identity Management Strategies

Sport fans are frequently confronted with team-based threats to their identity (Wann & James, 2018). The most common threat is that to the value and competence of the supported

²⁷ The 2018 edition has been watched by more than 3.5 billion people (FIFA, 2018).

team, following a defeat or elimination (see Branscombe et al., 1999). More frequently experienced by high identifiers (Bernache-Assollant, 2010), such threatening events are experienced as personal defeats (Hirt et al., 1992) and can have serious physical and psychological consequences. For example, after the elimination of the Nottingham Forest Football Club from the FA cup, Steels (1994) reported an increase of self-poisoning records at the local hospital. Similarly, teams' relegation from the English Premier League can impact supporters in a way close to post-traumatic stress syndrome (Banyard & Shevlin, 2001). Last, Kirkup and Merick's (2003) five-year longitudinal study in England highlighted a relationship between home defeat and death rate due to circulatory disease among men. These findings underscore how heavily invested sports fans can be in their team's performance, making it plausible that they display an array of identity management strategies to cope with team-based threats.

In social psychology, identity management strategies have been mostly documented based on the Social Identity Approach (Reicher et al., 2010). Applied to the sport context, this theory predicts that supporters will strategically use a set of reactions and behaviors to promote or maintain a positive social identification of the supported team. Historically, the first identity-related process studied in the sport context has been Basking in Reflected Glory (BIRGing), occurring after a victory when sports fans boost their social identity by expressing their belonging (Cialdini et al., 1976). In contrast, Cutting Off Reflected Failure (CORFing) takes the form of distancing one's self to the team following a defeat (Wann & Branscombe, 1990). When mobility is not possible due to the centrality of one's attachment to the team, blasting might occur by denigrating other teams and fans (Cialdini & Richardson, 1980; Wann, 1993). While a strong body of evidence documents these identity management strategies, here we argue that independent of these processes, sports fans additionally endorse conspiracy theories to regulate team-based threats to identity.

An Intergroup Approach to Sports Conspiracy Beliefs

It has been proposed that conspiracy beliefs might be rooted at a group level by the need to maintain a positive social identity (Douglas et al., 2017; Kreko, 2015; Sternisko et al., 2020b; Van Prooijen & Van Lange, 2014). Conspiracy beliefs can fulfill this function by attributing negative outcomes for one's ingroup to the covert actions of an alleged malevolent outgroup (Abalakina-Paap et al., 1999). Early findings showed that in the U.S., the belief that the U.S. government was conspiring against African Americans was best predicted by race (Crocker et al., 1999). The authors proposed that conspiracy beliefs are "a construal that reflects a particular view of the situation facing one's racial group and perhaps an attempt to cope with the threat to the self that situation poses" (p. 949). Similarly, after a terrorist attack by Indonesian Muslim extremists in Indonesia, a conspiracy theory spread in the population claiming that perpetrators were in fact Western governments, thus protecting a positive Indonesian identity by blaming an outgroup for these events (Mashuri & Zaduqisti, 2015b). Hence, perceiving a threat for one's ingroup identity is a core feature of conspiracy belief at the group level.

Congruently, the existential threat model of conspiracy belief (Van Prooijen, 2020) predicts that endorsement of a conspiracy theory is likely to occur if people experience feelings of existential threat, defined as the anxiety or insecurity that people feel when they, or the people around them, are harmed or expect to suffer losses. For example, Uscinski and Parents (2014) showed that conspiracy theories were more popular among partisan supporting an electoral loser in the United States, threatened by being out-of-power (the "conspiracy theories are for losers" argument, Smallpage et al., 2017). Similarly, the elimination of the team one supports from an international tournament might be an especially prominent existential threat. Another core feature to predict conspiracy beliefs according to this model is the saliency of an antagonistic outgroup. That is, trying to make sense of an existential threat

by attributing the wrongdoing to a contextually or historically competing outgroup, such as (in the context of a sporting event) other national teams or officials. For instance, Finn (1991) described how Catholic Irish-Scottish players were accused of conspiring against the Scottish majority in the Scottish football championship, extending the intergroup conflict between the Scots and the Catholic Irish Scots.

In this research, we focused on conspiracy theories surrounding the VAR during the 2018 FIFA World Cup. The VAR was used for the first time in a World Cup during this tournament. This system is aimed at improving referees' decisions by allowing them to review litigious actions on a screen. From the supporters' perspective, the VAR provides fertile ground for mistrust and anger. Indeed, given the reviewed in-game situations' being ambiguous, supporters might be quick to fall into engaging in ingroup bias (Wann & Grieve, 2005) and to perceive the right decision to be the one in favor of their team. Furthermore, supporters might be both frustrated by the VAR's call not being in favor of their team, but also by an absence of a VAR call, when they believe it should have been necessary. Hence, these team-centered perceptions of the VAR, added to the emotional load of the event, created a fertile ground for conspiracy theories that we labeled VAR conspiracy beliefs.

VAR conspiracy theories claimed that VAR was introduced in the tournament with the malevolent goal of discarding non-European or "minor" teams (i.e., teams representing African, Arabian, and "small" countries like Sweden or Serbia). One of the most prominent versions of the VAR conspiracy theory claimed that racist motives were behind the introduction of the VAR (i.e., to prematurely eliminate African and Arabian teams). This later motive was fueled by the fact that for the first time since 1982, no African or Arabian teams out of the six initially qualified (Nigeria, Egypt, Senegal, Morocco, Tunisia, Iran) reached the knockout stage. This VAR conspiracy theory led to massive online protests, in the form of online petitions, one of which, that called to reschedule the Morocco - Spain match, gathered

more than 60,000 signatures. Lastly, players also played a role in the rise of this mistrust, as illustrated by the Moroccan player, Nordin Amrabat, who claimed in front of the cameras that “VAR is bullshit”, or Younès Belhanda, who argued that “VAR just helps big teams”. In the following section, we investigate VAR conspiracy theories through the lens of a Twitter content analysis.

Overview of the Present Study

We aimed to examine conspiracy theories in the sport context, specifically focusing on VAR conspiracy theories during the 2018 World Cup. Using a Twitter content analysis, our goals were to explore: (a) the temporal distribution of VAR conspiracy theories, (b) the match distribution of VAR conspiracy theories, (c) the relationship between conspiracy theories and tweets expressing skepticism or defiance against the VAR, (d) the potential differential popularity between VAR conspiracy theories and tweets expressing skepticism or defiance against the VAR, and to (e) establish an intergroup typology of VAR conspiracy theories based on the tweet’s content. Through these objectives, we sought to increase knowledge of conspiracy theories in the sport context, by providing an initial insight into their nature, content, and context.

Method

The microblogging platform Twitter has been increasingly used for academic research purposes to study a wide range of topics (Williams et al., 2013). Some authors even argue that the archival research Twitter facilitates might improve social psychology (Heng et al., 2018). Twitter is very useful to study “breaking news” (i.e., highly mediatized events like natural disasters), due to the reactivity this kind of news elicits. Moreover, the hashtag system interferes with traditional media coverage, allowing a comprehensive account of the diversity of reactions to an event (Bruns & Moe, 2014). In the present research, World Cup matches were the “breaking news,” in which we analyzed VAR conspiracy theories.

Twitter seems especially relevant to explore sports fans' identity management strategies. Indeed, previous research highlighted the importance internet plays in the development of sports fans' identity, allowing a digital transposition of identity management strategies (for a review, see Pegaro, 2013). Notably, Berg and Hartcock (2008) observed similarities between online and offline sports fans' identity management strategies. This might be due to sports fans' identification and self-esteem's being highly sensitive to mass online media coverage (Phua, 2010). Last, online gatherings of sports fans have been reported to be larger and more heterogeneous than offline ones, providing unique research opportunities (Hutchins & Rowe, 2012).

Data Collection

We collected tweets published in English during the 2018 FIFA World Cup (14 June to 15 July 2018), using the independent and open-source software, Orgneat (OrgneatUI, 2020). This software allows collection of "historical" tweets based on keywords. To grasp tweets broadly referring to VAR conspiracy theories, we chose four different keyword associations. First, we targeted VAR conspiracy theories claiming that the FIFA used the VAR with racist motives using the keywords "var" and "racism.". This first scraping allowed us to identify 740 tweets. Second, we aimed to tap into conspiracy theories surrounding the anger movement launched by the Moroccan player, Nordin Amrabat, using the keywords "var" and "bullshit" ($N = 9,607$). Last, to diversify our sample with VAR conspiracy theory tweets unrelated to the previously mentioned keywords, we ran two broader scraps using the keywords "var" and "FIFA" ($N = 10,849$), and "var" and "world cup" ($N = 26,387$).

Then, we randomly sampled 740 tweets from each data set. We arbitrarily chose this subsample size to match the size of our smallest data set. Each of these subsamples were combined into a new data set ($N = 2,960$), from which redundant tweets were deleted ($n = 192$). The final data set was composed of 2,768 tweets.

Data Analysis

We drew from Bordia and Difonzo's (2004) Rumor Interaction Analysis System (RIAS) to develop a matrix, aiming to categorize the sampled tweets. By categorizing a statement's content based on a set of established criteria, the RIAS is well-suited to classify a small number of characters such as those involved in tweets. The RIAS has previously been adapted to study conspiracy beliefs by using content analysis of Twitter statements (Wood, 2017).

We developed four categories (see Table 2 for details). The first category was labelled "conspiracy tweets". It referred to tweets that contents linked the use of the VAR to malevolent hidden motives of a powerful outgroup toward a victimized ingroup (e.g., "Football as we know it managed for 150+ years without the gimmick of #VAR and we see now how it is used to ensure FIFA's favorites (those who pay the biggest bribes) go through. God curse those who are conspiring to rob #IRN of their rightful victory.")²⁸. Second, sceptical tweets referred to tweets discussing or criticizing the use of the VAR in an argumentative way, without referring to the conspiracist features of the first category (e.g., "If the 7 VAR refs are all FIFA accredited and make a choice at all angles why does another ref have to make the final decision #greyarea"). Third, defiant tweets referred to tweets criticizing the use of the VAR in a non-argumentative way, hence without falling into the conspiracy or skeptic features of categories 1 and 2 (e.g., "VAR is bullshit"). This latter category might be compared to blasting as previously described in the literature (Cialdini & Richardson, 1980; Wann, 1993). The last category comprised unclassified tweets (i.e., tweets not matching criteria of neither above-mentioned categories, e.g., "well the same japan team got eliminated last night and since then i haven't seen anyone on social media complaining about racism

²⁸ Note that the following reproduced tweets were not altered in spelling nor in capitalization, as advised by the APA guidelines (American Psychological Association, 2019).

against Asians. That was a pure game of good football; VAR only called in once i think. Both teams going for the win. Anybody got anything to say???)”).

Before coding the whole sample of tweets, two independent judges coded 400 tweets (i.e., 100 tweets sampled from each of the four databases), to estimate adequacy of the categorization matrix. We calculated Cohen’s Kappa to test interrater reliability of this first set of categorizations. According to Landis and Koch’s (1977) benchmark, the level of agreement was substantial, $\kappa = .67$, 95% CI [.61, .72], $p < .001$. Then, the entire dataset was coded. The level of agreement increased, compared with the first wave of coding, and overall interrater reliability remained substantial, $\kappa = .70$, 95% CI [.68, .72], $p < .001$. Last, a third judge had the last word in categorizing tweets for which a disagreement remained ($n = 618$).

Summaries of the categorization depending on days of the tournament can be found in Table S1 (Supplementary Materials). We also summarized the categorization depending on specific matches of the tournament (Table S2). Note that we duplicated in the dataset tweets referring to more than one match ($n = 65$). For tweets not explicitly stating to which matches they referred to (e.g., by not using an official’s FIFA World Cup hashtag), we attempted to retrieve this information based on content and date of the tweets. Overall, 1218 tweets referred to at least one match, with 51 out of 64 matches played during the tournament.

Results

Data Visualization

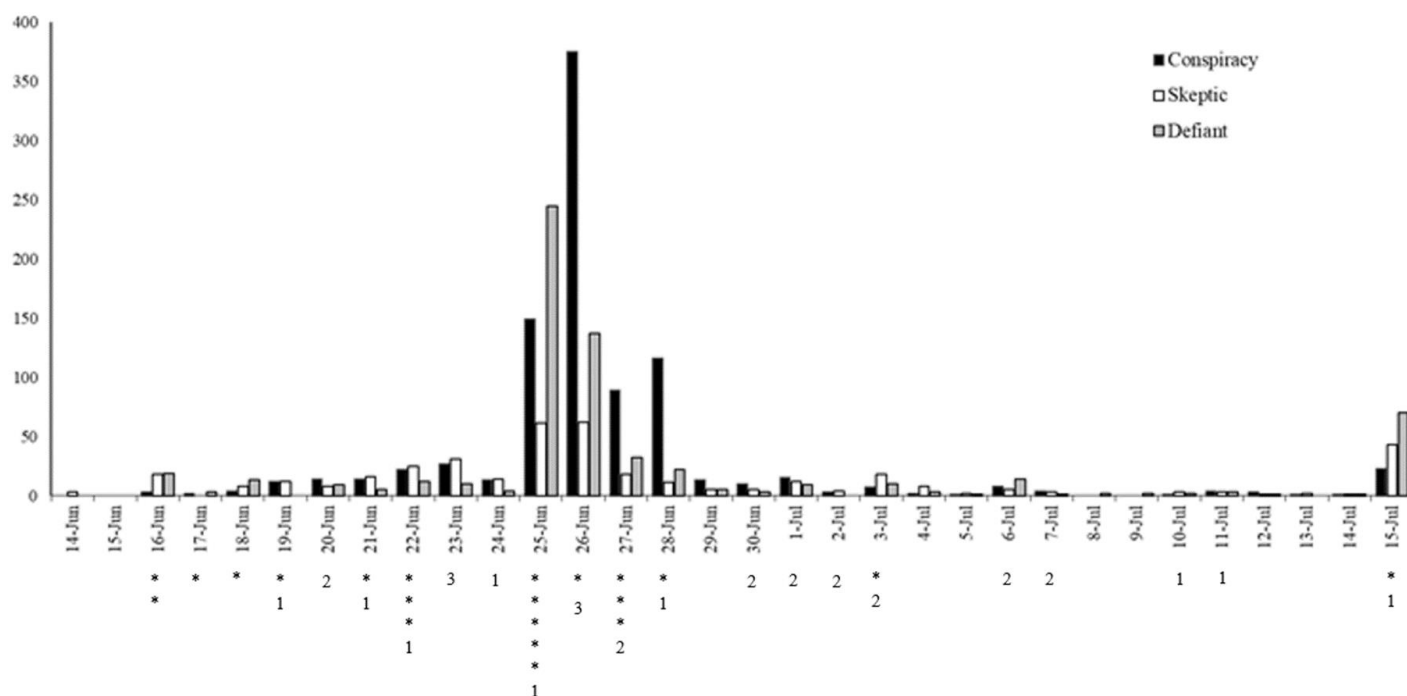
Distribution by Days of the Tournament

First, we used data visualization to observe the temporal distribution of the coded tweets for each day of the World Cup. As can be seen in Figure 1, conspiracy tweets slowly increased from June 19 (when the first team was eliminated) to June 24, before peaking between June 25 and June 28 (end of the group stages when half of the teams did not qualify for the

knockout stage). Interestingly, defiant tweets seemed to increase more than conspiracy tweets, before this pattern changed on June 26 and after. The distribution then sharply decreased from July 29 to July 15 (knockout stage), before slightly increasing on July 15 (Final match). Last, whereas skeptical tweets were rather equally distributed with other categories of tweets, they did not peak as much as conspiracy and defiant tweets, which might indicate that this category is unrelated to threatening contexts.

Figure 1

Distribution of the Number of Tweets per Categories for each World Cup Days



Note. $N = 2,768$. * = crucial referee decision based on a VAR reviewing. Numbers on the horizontal axis indicate the number of eliminated teams for a given day of the tournament.

Note that we did not consider the defeat during the third-place match between Belgium and England as an elimination, as these two teams were eliminated during semi-final matches. See Figure S1 in Supplementary Materials for the figure including the uncategorized tweets category.

To further explore the categorization of tweets, we next moved from a day to a match distribution.

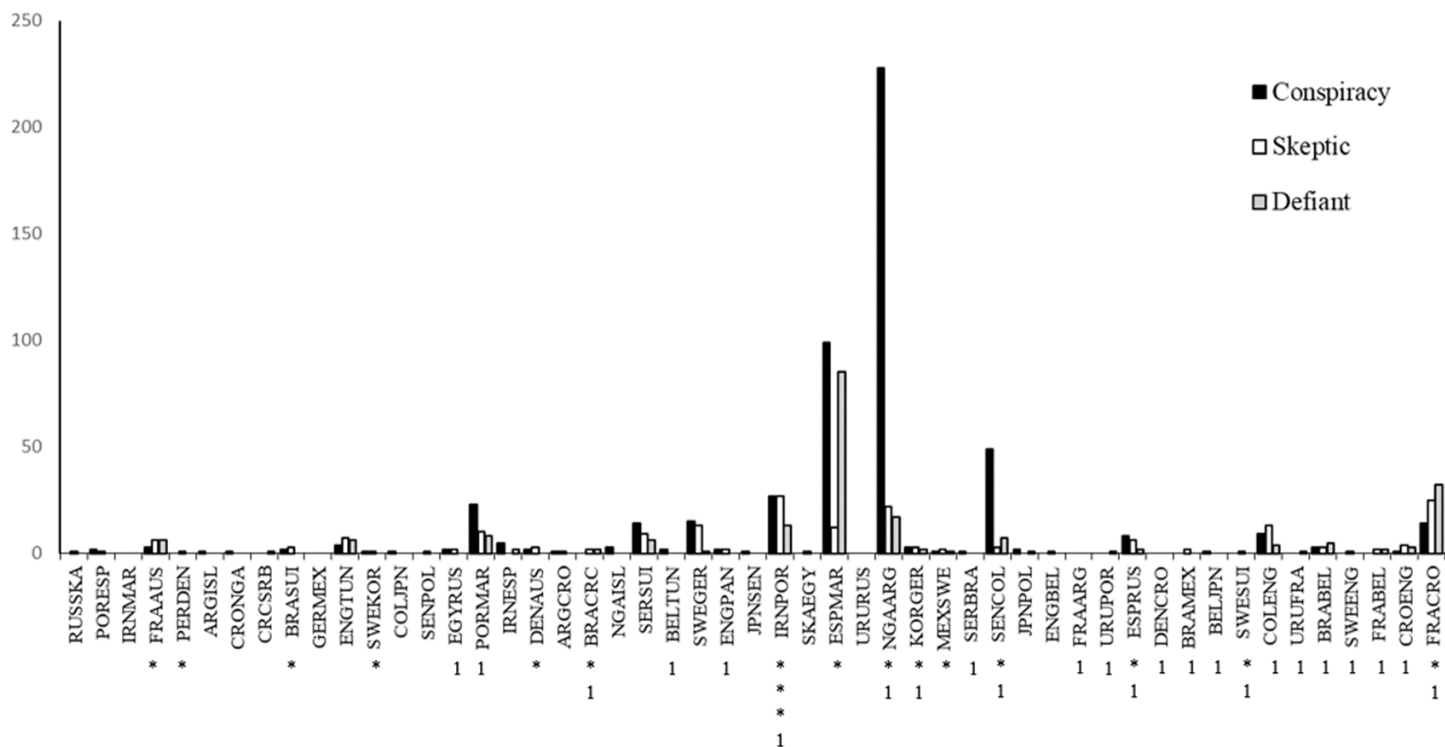
Distribution by Retrieved Matches

For each match, categories were positively correlated, such that the more conspiracy tweets were expressed, the more they were also skeptical, $r = .57, p < .001$, and defiant tweets, $r = .53, p < .001$. Skeptical and defiant tweets were also correlated, $r = .52, p < .001$.

As can be seen in Figure 2, the classification of conspiracy tweets was highly asymmetrical between matches. Many matches had a small number of tweets, independent of the categories. About seven matches had a substantial number of tweets, but nothing compared to the three leading matches. Indeed, Spain against Morocco (at the end of which Nordin Amrabat said that “VAR is bullshit”), Nigeria against Argentina (elimination of Nigeria), and Senegal against Poland (elimination of Senegal), generated the greatest number of tweets. Interestingly, a consequence of Nordin Amrabat’s words appeared to be that conspiracy and defiant tweets were rather equally distributed for the Spain against Morocco match, whereas conspiracy tweets were much more prevalent for the two other leading matches. As for the daily distribution, skeptical tweets were overall less represented than the two other categories.

Figure 2

Distribution of the Number of Tweets per Categories for each Retrieved Matches of the Tournament



Note. $N = 1,218$. * = crucial referee decision based on a VAR reviewing. 1 = one of the two playing teams is eliminated from the tournament. The Matches are presented by their official hashtags. See Figure S2 Supplementary Materials for the corresponding team names and the figure including the unclassified tweets category.

Hence, conspiracy tweets seemed to rise at the end of the group stage, as a consequence of increased in team eliminations. Conspiracy tweets might also have been amplified by the “VAR is bullshit” movement initiated by Nordin Amrabat’s words, which at first caused a wave of defiant tweets. Interestingly, the increase of tweets during the World Cup Final had a unique distribution, with only a minority of conspiracy tweets compared to skeptic and defiant tweets. Next, we explored whether VAR conspiracy tweets were more popular than other categories of tweets expressing skepticism or defiance against the VAR.

Exploration of Popularity Indexes

We aimed at investigating whether conspiracy tweets varied in popularity, compared with other categories of tweets. To do so, we relied on popularity indexes, that is replies, retweets, and likes given to each categories of tweets. However, large differences of variance within and between popularity indexes did not allow us to run inferential statistics by which we may have test whether categories of tweets differed in popularity. See Table S4 for descriptive statistics of popularity indexes.

In the following, we take a qualitative stance and draw a typology of VAR conspiracy theories, based on our sampled tweets.

Content of Conspiracy Tweets

We identified a typology of VAR conspiracy theories based on the intergroup approach to conspiracy beliefs (Nera et al., in press; Sternisko et al., 2020b; Van Prooijen & Van Lange, 2014). That is, we differentiated VAR conspiracy theories depending on the categorization made of portrayed ingroups and outgroups. Below is the proposed typology, with examples for each kind of VAR conspiracy theories.

Typology of Portrayed Ingroups

National. Most of observed conspiracy theories focused on one's national team interest and victimhood. As such, national ingroup level was the most basic and widespread ingroup categorization.

Sample tweet: "I know one thing; in every World Cup I have seen I have come to the conclusion that the Refs are paid to ensure we lose. They have probably hacked the VAR as well under the orders of England hater; Sepp Blatter who remains plotting in the shadows!"

Continental. Interestingly, and congruently with the Self-Categorization Theory (Turner et al., 1987), supporters switched to higher ordered self-categorization depending on the context (i.e., match played), and VAR conspiracy theories were adapted consequently. The most observed recategorization occurred at the African level at the end of the group stages, when many African teams were successively eliminated (see Figure 3).

Sample tweet: “This var was actually put in place for the African teams due to racism. African teams have been getting robbed at this major event majority of the time due to bad call against them.”

Racial. Another higher ordered self-categorization encountered was observed at the racial group level. Related tweets were similar to the continental category and arose following the African teams’ elimination. Congruently, the main alleged conspirators’ motive was racism.

Sample tweet: “This is nonsense! Height of racism was shown today by FIFA and the ref! Keep Violating African Right with the nonsense VAR! I don't know when all these hate against the black will stop! Total rubbish.”

Minor Teams. The nature of ingroups in these VAR conspiracy theories was similar to that regarding national groups previously described but differed in that supporters categorized their national team as being a “minor” team, less lucrative than “major” teams. Hence, alleged conspirators’ motive was mainly pecuniary.

Sample tweet: “@FIFACOM VAR showing they choose who they want to benefit. You change de president but don't change your old and disgusting mind. Sweden had to win but FIFA didn't want. Money before soccer.”

Note that higher ordered self-categorization also seemed to happen concerning minor national teams, with victimhood shared by several minor teams together (i.e., inclusive victimhood, see Szabo, 2020).

Sample tweet: “Sweden was robbed; can’t believe two blatant penaltys have been missed one day after the other. VAR is a load of garbage; neither sweden nor serbia was given a fair chance. Fifa is a load of shit.”

Typology of Portrayed Outgroups

FIFA. The alleged conspirator that was the most common in VAR conspiracy theories we observed was FIFA, who organized the tournament and implemented the VAR system. Underlying malevolent motives varied, from pecuniary to racism as previously mentioned.

Sample tweet: “Pure act of conspiracy by @FIFACOM To ensure that Argentina qualify. Suddenly the VAR is not effective to see the foul on @67Kelechi in the box. I can see Racism playing itself here.”

Switzerland. Switzerland appeared to be the national embodiment of the animosity against FIFA, as the FIFA headquarters is based in Zurich. Consequently, this outgroup appeared in conspiracy theories about matches involving the Swiss national team.

Sample tweet: “@FIFACOM STILL corrupt i see. Serbia don't get a penalty review from #VAR (which WAS a penalty) against SWITZERLAND. It just so happens the FIFA President (Gianni Infantino) is SWISS! Who'd have thought. Shocking. #FifaWorldCup2018 #FIFAWC2018 #SERSUI”

Russia. The host country of the tournament also gathered mistrust and was accused of conspiring. As for Switzerland, this outgroup mostly appeared in VAR conspiracy theories when the Russian national team was playing.

Sample tweet: “The VAR all awarding Russia the calls; the same reason FIFA awarded Putin the World Cup?”

Western Countries. Higher ordered categorization also occurred about alleged conspiring outgroups, the most common being about western countries or “rich” countries.

Sample tweet: “I will never forget that one day in #Russia2018 #FIFA created the #VAR to help the rich countries against Africa Arab and Muslim countries...”

Racial. As for higher order ingroup categorization, racial outgroups were also depicted as conspirators in some VAR conspiracy theories.

Sample tweet: “FUCK the VAR...FUCK the white people..Racism is fuckin real#NGAARG #ARGNGR”

Chinese Gamblers. Some more “eccentric” outgroups appeared in some VAR conspiracy theories, such as Chinese gamblers.

Sample tweet: “It's bizarre how many penalties are given in the worldchampionship;matches that end in 1-0.Is this the influence of the chinese gamblers?Are players threatened with death when they win?Whats the role of the VAR ?Is FIFA engeged also?Is Blatter right?Has nothing changed”

Data Visualization of African Teams’ recategorization at the Continental Level

As previously described, the continental level “Africa” as ingroup in tweets seemed to be especially prevalent among supporters of African teams. To test the hypothesis that this higher ordered recategorization occurred following successive eliminations, we summed the number of occurrences of the words “Africa” (and “African”), and the African team’s names in our sampled tweets for each day of the tournament (Figure 3). We observed that the first peak of occurrences was on June 25 for “Morocco”, while the “African” occurrences were much smaller. On June 26, the peak was similar in intensity for “Nigeria” and “Africa”. Then, from June 27 to July 1, “Africa” remained more prevalent than names of individual African country teams, which we interpreted as the recategorization of eliminated teams on a higher-ordered level. The pattern of the distribution was similar overall when only conspiracy tweets were considered ($n = 935$; Figure 4). Last, occurrences of “Africa” were much more prevalent

than the “Arabian” (and “Arab”), which could have been an alternative super-ordinate categorization (see Figures S3 and S4 in the Supplementary Materials).

Figure 3

Distribution of the Number of Tweets mentioning “Africa” and African Teams’ Countries Names over the Tournament

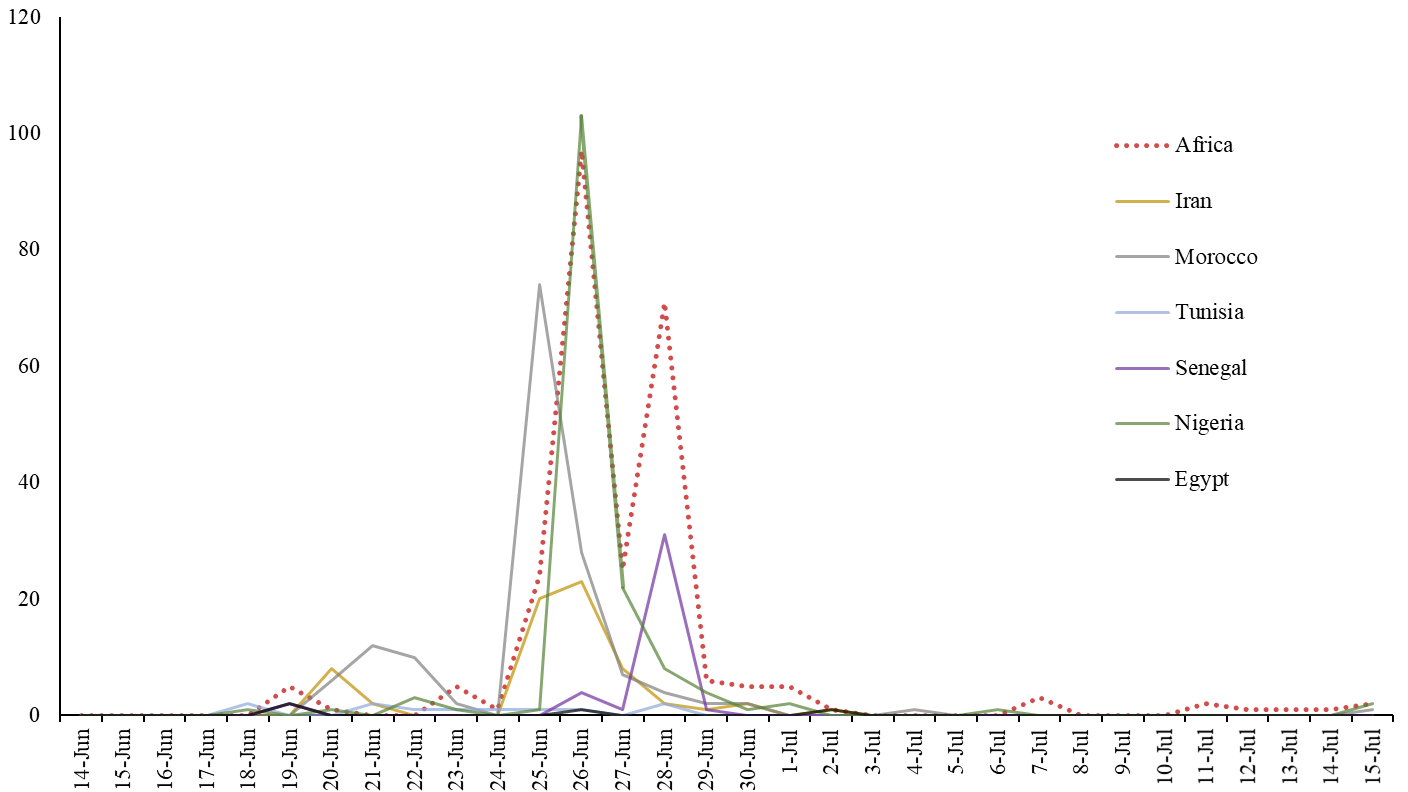
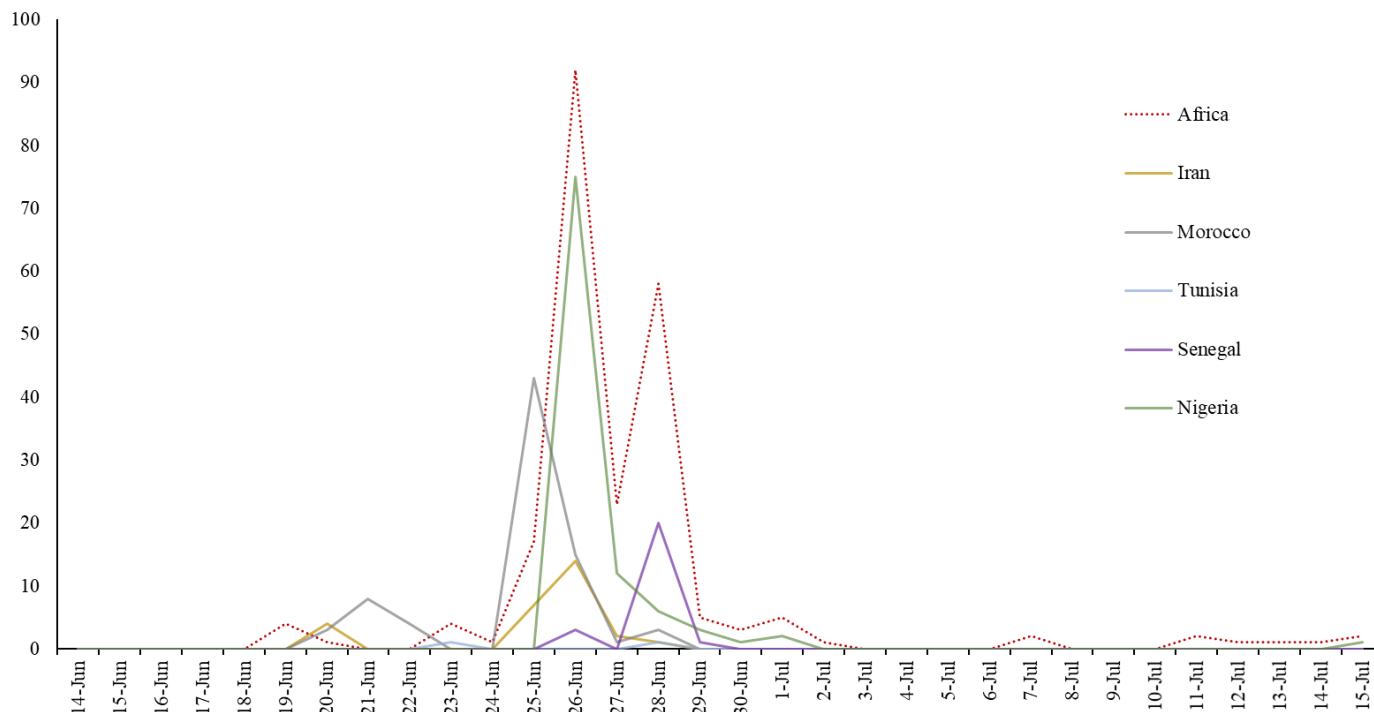


Figure 4

Distribution of the Number of Conspiracy Tweets mentioning “Africa” and African Teams’ Countries Names over the Tournament



Discussion

The present work aimed at investigating the context and content of conspiracy theories about the VAR that spread during the 2018 World Cup on Twitter. Our findings suggest that conspiracy tweets peaked at the end of the group stages, and then abruptly decreased. A match-by-match distribution further indicated that only a few matches generated most of the conspiracy tweets from our sample. The occurrence of conspiracy tweets was positively correlated with tweets expressing skepticism and defiance towards the VAR. Last, we proposed a typology of the different actors observed in the different versions of the VAR conspiracy theory from an intergroup approach. The main finding here was that higher ordered categorization was associated with the content of the conspiracy theories, which was confirmed by data visualization.

The rise of the conspiracy tweets echoed an increase in team eliminations and of use of the VAR. Following Van Prooijen (2020), we speculate that people experienced the elimination of their team from the tournament as an existential threat and blamed this on the use of the VAR by FIFA, leading to the observed expression of conspiracy beliefs. The abrupt decline in the number of conspiracy tweets also was rather intriguing. This pattern supports the view that conspiracy beliefs may serve as short-term identity management strategies in the sport context. Once the instant negative emotions associated with elimination of one's team from the tournament dissipated, supporters no longer felt the need to tweet conspiracy theories about VAR. Our observation that conspiracy tweets were not more popular than other categories of tweets might also indicate that these were spontaneous reactions to elimination from the tournament, rather than expressions of seeking long-term recognition. It might be especially worthwhile to investigate this short-lived feature in order to further and better understand why some conspiracy beliefs last for decades (e.g., the JFK assassination), while others seem to last only for a few days.

Sternisko's et al. (2020) theoretical framework differentiating between individual and group-based motives behind conspiracy belief might be especially useful in interpreting our results. This framework posits that individuals' motives are primarily driven by conspiracy theory qualities, while group-level motives aim at protecting one's social identity based on conspiracy theory contents. Hence, one may argue that the conspiracy tweets we observed were of one of these two kinds, depending on the context. That is, individual motives might have underlined tweets expressed at the beginning of the tournament and before the first use of the VAR, or rather eccentric tweets such as those about Chinese gamblers. Group-level motives, on the other hand, may have accounted for the major peaks we observed, underlying identity management purposes when teams get eliminated. The latter needs further

investigation to better understand how conspiracy beliefs might help coping with team-based threats.

Supporters' conspiracy beliefs might be the manifestation of a collective conspiracy mentality, that is a collective tendency to perceive conspiracies due to past suffering (Soral et al., 2020). Indeed, countries from which supporters expressed the most conspiracy tweets were African and Arabian countries, for which neo-colonialism is still a vivid memory. Congruent with our findings, a study based on YouTube comments on the FIFA official channel found that viewing the VAR as a neo-colonialist biased tool was widespread (Petersen-Wagner & Ludvigsen, 2019). Relatedly, sports fans' conspiracy beliefs might be the consequence of a narcissistic attachment to the supported team. Collective narcissism (i.e., the belief that the greatness of one's ingroup is insufficiently recognized by others; Golec de Zavala et al., 2009) is a robust predictor of conspiracy beliefs (Cichocka, 2016), and has been previously shown to moderate sport fans' aggressiveness (Larkin & Fink, 2019). Hence, whereas African teams frequently underperformed during the FIFA World Cup compared with European teams, according to performance indicators (Kubayi & Toriola, 2020), conspiracy narratives might help to uphold a favorable perception of their teams.

Our results about the defiant tweets might also be viewed as an expression of blasting. This would be in line with research showing that another identity management strategy, BIRGing, could be observed on Twitter during the 2018 World Cup (Fan et al., 2019). Future research might seek to account more comprehensively for multiple identity management strategies when conducting online content analysis.

The typology of VAR conspiracy theories we propose attempts to emphasize the core intergroup feature of such beliefs. Both ingroup and outgroups portrayed were context-dependent and evolved following advances in the tournament and teams' eliminations. Importantly, we observed that the level of categorization of the victimized ingroup similarly

moved from a national to continental level. This finding is especially interesting to analyze in light of recent research on comparative victimhood (Vollhardt et al., 2021). Whereas we might at first speculate that competitive victimhood would be at play after one's team's elimination (i.e., claiming that one's team's elimination is more undeserved than elimination of other teams), congruently with ingroup bias, we might have observed inclusive victimhood (i.e., claiming that the ingroup suffered in a way similar to what other groups experienced). As such, the conspiracy theories that we observed might reflect a narrative bonding of supporters of eliminated teams at a higher level of categorization. We nonetheless probably observed what might also be described as competitive victimhood, especially by English supporters (e.g., "How the F does VAR get used for everything in every other world cup match apart from in Englands game ? Surely there is something dodgy there"). Here we might hypothesize that "major" teams' supporters use competitive victimhood to claim their superior status whereas "minor" teams' supporters use inclusive victimhood to gather with other "underdogs". It would be worthwhile testing these hypotheses empirically, to gain potential insight into both sport fans' reactions to threat and comparative victimhood.

Our research has some limitations that must be acknowledged. First, we collected tweets using keywords in English. This linguistic constraint led to inequalities between represented teams depending on the prevalence of English-speaking communities in these countries. For example, the biggest peak in conspiracy tweets we observed was related to the Nigerian team, which has a broad English-speaking community. By contrast, we are likely to have missed conspiracy tweets posted by Asian, Arab, or European teams' supporters who did not tweet in English. Future research might attempt to look at tweets posted in more diverse languages when investigating supporters' reactions to threat and conspiracy beliefs. Relatedly, our results mainly focused on the VAR conspiracy theories regarding alleged racist motives, which was by far the more prevalent in our sample. Future research may further investigate

VAR conspiracy theories in a broader way, such as narratives about monetary issues or conflict of interest with FIFA, as highlighted in our typology. Conspiracy theories also exist in the football and sport contexts outside the realm of the VAR case (Finn, 1991), but more research is needed here as current knowledge is scarce. Ultimately, the assumption of conspiracy theories as supporters' identity management strategies would benefit from empirical research.

VAR conspiracy theories are consequential, which is a documented key feature of conspiracy theories in various contexts (see Van Prooijen & Douglas, 2018). In the case of VAR conspiracy theories, the consequences we observed were online petitions, protests, and distrust. More dramatic consequences might occur in the future due to VAR conspiracy theories, especially between supporters of opposing teams since conspiracy beliefs have been related to violent behavioral intentions (Jolley and Patterson, 2020). Since it is undeniable that the VAR had a concrete impact on 2018 FIFA World Cup games (e.g., by increasing the number of penalties; Kubayi, Larkin, & Toriola, 2021), this change in the tournament's rules should have been closely monitored and explained. Rather, its introduction might have suffered from a lack of communication and transparency by FIFA, especially regarding VAR-based decisions, which probably provided a fertile setting for breeding VAR conspiracy theories. Hence, because the spread of this form of mistrust is not without risk, it would be worthwhile investigating ways to diminish VAR conspiracy beliefs, for example by increasing public transparency about communications between the VAR team and the main referee.

Conclusion

As far as we know, the present contribution provides the first attempt to empirically investigate sport conspiracy theories. Through a Twitter content analysis, we explored the context and content of occurrence of VAR conspiracy beliefs during the 2018 FIFA World

Cup. Our findings suggest that conspiracy tweets arose at the end of the group stages, when an increase in team eliminations occurred, together with several crucial VAR-based decisions. The content of conspiracy beliefs used as identity-management strategies might be contingent upon perceived stakeholders of the match played by the supported team, and evolve during the tournament, through recategorization, as highlighted by our typology and graphs.

Supplementary Study 2

Contribution Statement²⁹

P.B. conceptualized the project. P.B., C.F., and B.C. preregistered the project. P.B. created the materials. I.B., K.N., E.D., and S.D. proofread the materials. P.B., R.G., and M.B. conducted the data collection.

²⁹ P.B. = Paul Bertin, C.F. = Cyril Forestier, B.C. = Boris Cheval, K.N. = Kenzo Nera, I.B. = Iouri Bernache-Assollant, E.D. = Elizabeth Delia, S.D. = Sylvain Delouvé, R.G. = Ricky Green, M.B. = Mikey Biddlestone

“The very generous penalty, which allowed Southgate’s team to beat Denmark, confirms the suspicions about the exchange of favours with Boris Johnson, considered as the saviour of European football after the attack on the Super League.” *La Gazzeta Dello Sport* (cited by *The Independent*, July 09, 2021), expressing conspiracy suspicions against UEFA after the victory of the England national football team over Denmark, three days before the final match against Italy.

We view the above citation as an example of conspiracy beliefs expressed as a form of identity management strategy helping fans to overcome threatening events such as (anticipated or experienced) elimination from an international tournament, which we theorized through Article 5. However, this hypothesis remained to be tested in an empirical context, despite being a promising avenue of research (Larkin et al., 2019). We sought to fill this gap by conducting a longitudinal study during UEFA Euro 2020. This major international tournament, organized on a 4-year basis, offers an adequate context of inquiry. Indeed, even though this event is not as prestigious as the FIFA World Cup, it is highly mediatised and surrounding by high expectations among fans (and thus potentially high team-based threats to cope with).

At this point, we must warn the reader that we were not able to report full details of the samples and results in the present thesis, and that we only report the method section. Indeed, due to the COVID-19 pandemic, the tournament, initially scheduled from June 12th to July 12th, 2020, was rescheduled from June 11th to July 11th, 2021. Hence, the data collection finished only few days before the completion of this thesis, which would have not allowed proper data cleaning and analysis. We apologize to the reader for this incompleteness.

Our first hypothesis was that one’s team elimination from the tournament would constitute an identity threat increasing specific conspiracy beliefs. Hence, we sought to test the difference between conspiracy beliefs measured after a victory and after the elimination of

one's team. In line with the view of specific conspiracy beliefs being localized identity management strategies, we were also interested to test whether this potential increasing of conspiracy beliefs would only be temporary. Hence, we hypothesized that the level of conspiracy beliefs would be lower one week after the elimination (wave 5) compared to after the elimination (wave 4). In line with previous research displayed in this thesis, we also aimed to test whether the relationship between match outcomes and conspiracy beliefs would be mediated by team narcissism. Lastly, we hypothesized that perceived threat and exclusive victimhood about the elimination would mediate the relationship between national narcissism (but not secure team identification) and conspiracy beliefs. Hypotheses were preregistered³⁰: https://osf.io/q8fve/?view_only=60566c7bdfad468a914dbb280a0a3558

Method

This study was validated by the University of Kent Ethics Committee (ID: 202116231336167210) and financially supported by the Société Française de Psychologie.

Participants

We decided to conduct this longitudinal study on more than one nationality of fan. Indeed, we conducted a similar study during the 2018 FIFA World Cup based on a sample of French fans. However, because France won the tournament without losing any games, we couldn't test the hypothesis of an increase in conspiracy beliefs after elimination. Hence, we conducted this study on three nationalities of fans: French, Belgian and English. For the purpose of another research project, we also included French fans from official supporter associations (The *Section de Dunkerque* and the *Section Var*), subdividing the French sample between supporters from associations and from convenience sampling. On baseline (wave 1), we excluded participants who were under 18 years old, who answered "no" to the seriousness

³⁰ Note that hypotheses for other projects were preregistered. We only reported relevant hypotheses here.

check, who answered “no” to the question “are you a supporter of the [country’s] football team?”. After exclusions, baseline samples were composed of $N = 1,226$ English fans, $N = 552$ Belgian fans, $N = 382$ French fans from convenience sampling, and $N = 31$ French fans from associations. For other waves, we planned to exclude participants who declared that they did not watch the match of interest or failed to report the score.

Procedure

We organised this longitudinal study based on five waves, corresponding to five questionnaires (hosted on Qualtrics) for each nationality of fan. Wave 1 questionnaires were distributed a few days before the tournament began, on Reddit for the English sample, on Twitter and Facebook using Facebook Ads for the Belgian and French convenience samples, and sent by email for the French fans from associations. In wave 1, we measured main variables of interest (i.e., types of team positivity and conspiracy beliefs) and we explained to the participant how this project was set and what was expected from them if they consented to participate. We finally asked participants to report their email address and a personal identification code in order to link their answers between them while ensuring anonymity. Questionnaires of waves 2 and 3 were sent by email immediately after the first two games of each national football team and left active for three days³¹. Questionnaires of wave 4 were sent after the *last* game of each national team, be it after an elimination or the final victory. These questionnaires included measures of perceived threat and competitive victimhood about the elimination (if the last game was an elimination from the tournament). All post-match questionnaires (waves 2, 3 and 4) included a filler question at the beginning of the survey aimed at both motivating participants and preventing weariness due to repetition (see

³¹ We preregistered to leave active questionnaires for 48 hours but finally chose to leave questionnaires active for 72 hours to limit between-wave attrition. We also sent a reminder 36 hours after the first invitation email of each wave.

Appendix G). This filler question asked participants to rate performances of key player positions (e.g., goalkeeper) and the tactical management of the coach using stars. This filler was inspired from similar ratings used in famous video games (e.g., *FIFA*) and sports newspapers (e.g., *L'Équipe*). Lastly, questionnaires of wave 5 were sent one week after the last game of each national team and left active for one week. Participants who answered each wave were included in a lottery to win an Amazon voucher of €50 (one coupon per nationality).

Measures

All scales were measured using a 5-point scale from “Strongly Disagree” to “Strongly Agree”. French and English versions of full scales are displayed in Appendix G. Measures for unrelated projects were included in the questionnaire: Basking in reflected glory and cutting off reflected failure (Brown-Devlin et al., 2018), boosting and retroactive pessimism (Bernache-Assollant et al., 2014), consumption intentions about the national football team (Hedlund, 2014), the short version of the Warwick-Edinburgh Mental Wellbeing Scales (Stewart-Brown et al., 2009; French translation from Franck, 2013), and an open-ended question. Demographics and basic indicators of sports fan habits were also measured in wave 1.

Team Narcissism. We adapted the 5-item team narcissism scale (Larkin et al., 2019, based on the Collective Narcissism Scale of Golec de Zavala et al., 2009, 2013) to the national football team context (e.g., It really makes me angry when others criticize the England national football team).

Secure Team Identification. We adapted the 4-item scale from Doosje et al. (1995, adapted by Jones et al., 2012), to measure fans’ secure identification with their national teams (e.g., I am pleased to be a supporter of the English national football team).

Football Conspiracy Beliefs. We created a new 4-item scale to measure specific conspiracy beliefs about Euro 2021 (e.g., The winner of Euro 2021 has been secretly decided before the tournament started, based on economic and political criteria), and about international football in general (e.g., The real purpose behind the Video Assistant Referee [VAR] is to eliminate unwelcome teams from the tournament).

Perceived Threat about the Elimination. We created a single-item measure to grasp fans' perception of threat after their team was eliminated (e.g., The elimination of the England national football team from Euro 2021 threatens their reputation).

Competitive Victimhood about Elimination. We adapted the 3-item scale of Noor et al. to the Euro 2021 context (2008, e.g., On average, throughout its elimination from Euro 2021, the England national football team has received more criticism than the other teams).

Discussion générale

Malgré l'engouement croissant pour la *psychologie des théories du complot* (Douglas et al., 2017), les processus intergroupes en lien à ces croyances restent peu étudiés. Notre travail de thèse s'insère dans cette approche intergroupe, selon la dénomination que nous avons proposé de donner à cette perspective d'étude des croyances conspirationnistes. Plus spécifiquement, et dans la lignée de l'approche de l'identité sociale (Reicher et al., 2010 ; Tajfel & Turner, 1979 ; Turner et al., 1987), nous avons adressé la question suivante : les croyances conspirationnistes peuvent-elles revêtir une fonction de stratégie de gestion de l'identité sociale ? Nous allons discuter cette question au regard des conclusions des articles et des études supplémentaires présentées dans ce travail, ainsi que de la littérature sur le sujet.

Distinctions entre croyances conspirationnistes et mentalité conspirationniste

Tout d'abord, nous avons tâché de cadrer les croyances conspirationnistes à un niveau intergroupe, en les différenciant d'autres construits qui sont selon nous proches mais différents, tels que la mentalité conspirationniste. Ainsi, dans notre premier article (Chapitre 2), nous avons utilisé une conceptualisation intergroupe des théories du complot sur le COVID-19 pour examiner leurs conséquences sanitaires en contexte pandémique (i.e., attitudes envers la vaccination et les intentions de se faire vacciner contre le COVID-19). Pour ce faire, nous avons différencié les croyances portant sur l'endogroupe de celles portant sur les exogroupes. Nous avons également différencié ces croyances conspirationnistes spécifiques de la mentalité conspirationniste, mesurée à l'aide de la CMQ de Bruder et al. (2013). Nous avons observé que les croyances conspirationnistes spécifiques, tout comme la mentalité conspirationniste, prédisent négativement attitudes et intentions envers la vaccination. Cependant, ces variables n'étaient pas utilisées conjointement dans le même modèle, ne permettant pas de statuer sur le caractère significatif de leurs contributions uniques. Les modèles testés dans le cadre de notre deuxième article (Chapitre 3) ne permettent

pas non plus de renseigner sur la valeur prédictive des croyances conspirationnistes spécifiques lorsque la mentalité conspirationniste est contrôlée statistiquement. En revanche, nous avons adressé cette question dans nos troisièmes et quatrièmes articles (Chapitres 4 et 5). Nous avons observé que lorsque nous contrôlions pour la mentalité conspirationniste, la valeur explicative des croyances conspirationniste spécifiques restait significative. Ces résultats s'insèrent dans la récente et encore peu alimentée ligne de recherche sur les différences entre ces deux formes de complotisme.

D'une part, Sternisko et al. (2020b) ont conceptualisé l'attractivité des théories du complot au niveau de leur contenu suivant des motivations sociales (Sternisko et al., 2020b). Autrement dit, le contenu d'une théorie du complot est dit pertinent lorsqu'il fait écho au contexte de saillance d'une identité sociale. Ainsi, nous suggérons que ces croyances conspirationnistes soient fortement dépendantes d'un contexte, et doivent être conceptualisées en lien à l'identité sociale qui motive leur adhésion. Dans l'Article 4 (Chapitre 5), nous avons proposé que l'approche des croyances conspirationnistes en termes de système de croyances (Enders et al., 2021) puisse s'appliquer aux croyances conspirationnistes visant à défendre une identité sociale. En effet, il nous semble que cette fonction pourrait se déployer indépendamment de la distinction entre les croyances conspirationnistes visant l'endogroupe et celles visant des exogroupes. Nous proposons que la pertinence contextuelle serait un meilleur prédicteur, c'est-à-dire la prise en compte des croyances conspirationnistes portant sur le contexte perçu comme menaçant l'endogroupe, et qui participeraient ainsi à la construction de la vision conspirationniste de cet évènement.

Par contraste, la mentalité conspirationniste a été précédemment conceptualisée comme un construit stable, c'est-à-dire ne variant pas en fonction de fluctuations contextuelles (Imhoff & Lamberty, 2017), et pourrait être conceptualisée comme une prédisposition à adhérer aux théories du complot (Uscinski et al., 2016). Enders et al. (2021)

ont observé que la mentalité conspirationniste corrèle avec l'ensemble des 27 croyances conspirationnistes spécifiques de l'inventaire qu'ils ont utilisées dans leurs études, alors que les croyances conspirationnistes auraient plutôt tendance à se grouper par clusters thématiques. Dans nos études, la mentalité conspirationniste corrèle modérément avec les croyances conspirationnistes mesurées, de $r = .21$ ($p < .001$; Article 2, étude 2) à $r = .45$ ($p < .001$; Article 3, étude 1), en lien à une conceptualisation de ces deux construits comme étant distincts.

Nos résultats suggèrent que la distinction entre croyances conspirationnistes et mentalité conspirationniste est particulièrement pertinente à un niveau intergroupe, notamment lorsqu'étudiée en lien au narcissisme collectif. Dans notre deuxième article (Chapitre 3), nous avons noté que la mentalité conspirationniste n'entretient pas les mêmes relations au narcissisme collectif et aux attitudes envers la science sur le climat que les croyances conspirationnistes spécifiques au changement climatique. Ainsi, là où la mentalité conspirationniste pourrait être abordée comme un indicateur stable de la tendance à adhérer aux théories du complot, elle ne saurait se soustraire à la mesure de croyances conspirationnistes spécifiques 1) au contexte étudié et 2) au niveau d'auto-catégorisation (e.g., niveau personnel, identité sociale, catégorisation supra-ordonnée). Les observations faites dans le cadre de l'Article 5 (Chapitre 6) à propos de la *plasticité* des croyances conspirationnistes sur la VAR au cours de la coupe du monde de la FIFA 2018, sont cohérentes selon nous avec cette conceptualisation. En effet, nous avons observé que l'avancement du tournoi (e.g., augmentation du nombre d'équipes éliminées, type d'exogroupe antagoniste), semble avoir fait évoluer le niveau de catégorisation de l'endogroupe saillant vers une catégorisation supra-ordonnée, ce qui expliquerait l'évolution du contenu des théories du complot observées.

Dans un récent chapitre d'ouvrage, Golec de Zavala (2021) argumente que le narcissisme collectif n'est pas uniquement lié aux croyances conspirationnistes, mais également à la mentalité conspirationniste. Selon Golec de Zalava (2021), le contenu des croyances conspirationniste n'a pas à être pertinent pour qu'il y ait adhésion par le narcissique collectif. Or, la conception du narcissisme collectif de cet auteur diffère légèrement de la nôtre : là où nous abordons ce construit comme une identification sociale défensive dans la lignée de Cichocka (2016), Golec de Zavala conceptualise le narcissisme collectif comme une croyance (e.g., Golec de Zavala et al., 2019 ; Golec de Zavala, 2021). La conséquence de cette différence de conceptualisation transparaît dans la théorisation que Golec de Zavala (2021) fait de la relation entre narcissisme collectif et mentalité conspirationniste. La *croyance* en la grandeur du groupe étant continuellement frustrée, le narcissique collectif se compenserait de manière abstraite en adoptant une vision du monde conspirationniste (i.e., mentalité conspirationniste), adhérant à des théories du complot, quelles qu'elles soient.

L'argumentaire de Golec de Zavala (2021) se base une étude longitudinale montrant que le narcissisme national Américain est en lien à une augmentation de la mentalité conspirationniste pendant les élections américaines de 2016 (Golec de Zavala & Federico, 2018). Or, malgré la prise en compte d'un grand nombre de covariés, les croyances conspirationnistes spécifiques aux élections (ou à la politique Américaine) ne sont pas mesurées, alors que de récents travaux ont montré l'importance de l'inscription partisane des croyances conspirationnistes aux Etats-Unis (e.g., Enders et al., 2021). De plus, alors que Golec de Zavala (2021) théorise un lien entre le narcissisme collectif et potentiellement *toutes* les théories du complot, Golec de Zavala et Federico (2018) n'ont pas non plus utilisé d'inventaires mesurant l'adhésion à de grandes théories du complot, mais seulement la mesure de mentalité conspirationniste en 4 items d'Uscinski et al. (2016, e.g., Même si nous vivons dans une démocratie, quelques personnes dirigeront toujours les choses quoi qu'il arrive

[« Even tough we live in a democracy, a few people will always run things anyway »], p. 5). Cette échelle mesurerait les croyances en des actions politiques secrètes et influentes menées par des groupes indéterminés («belief in secret, influential political actions by unspecified groups», Golec de Zavala & Federico, p. 1013). Or, ces items ne semblent pas tant mesurer la mentalité conspirationniste qu'une forme vague de théories du complot spécifiques à la politique. Dès lors, il n'est pas étonnant que la relation entre le narcissisme national et cette mesure augmente lors des élections politiques, qui sont des évènements potentiellement menaçants pour l'image idéalisée du groupe national caractérisant le narcissisme national.

De plus, et contrairement à la proposition de Golec de Zavala (2021), les corrélations entre le narcissisme national et la mentalité conspirationniste que nous avons pu observer sont soit non-significatives ($r = .06, p = .20$; Article 2, étude 2), soit faibles ($r = .12, p < .001$; Article 3, étude 1). Plus encore, concernant ce dernier cas, contrôler pour le niveau de croyances conspirationnistes envers les migrants provoque un effet de suppression (MacKinnon et al., 2000), la relation entre le narcissisme national et la mentalité conspirationniste devenant négative ($r_{partiel} = -.06, p = .04$). Ces quelques indications empiriques, ainsi que les différents résultats présentés dans ce travail, vont selon nous dans le sens d'une conceptualisation d'une relation entre le narcissisme collectif et les croyances conspirationnistes qui serait dépendante du contexte, par contraste à la proposition théorique de Golec de Zavala (2021). Les recherches futures pourraient continuer à étudier dans quelle mesure contrôler pour la mentalité conspirationniste permet de rendre compte de la relation entre narcissisme collectif et croyances conspirationnistes, afin de poursuivre l'examen de cette proposition théorique.

Le rôle déterminant du caractère défensif de l'identification sociale

Dans le présent travail, nous avons également largement répliqué le rôle déterminant du caractère défensif de l'identification sociale, opérationnalisé par le narcissisme collectif,

dans l'étude des motivations sociales en lien aux croyances conspirationnistes (Cichocka et al., 2016 ; Cislak et al., 2021 ; Marchlewska et al., 2019 ; Sternisko et al., 2020a). Plus précisément, nous avons répliqué cette relation dans le contexte des croyances conspirationnistes sur le changement climatique (Article 2), dans le contexte des croyances conspirationnistes sur les migrants (Article 3) et dans le contexte des croyances conspirationnistes sur l'épidémie de Zika (Article 4). Nous avons également prévu de tester cette relation dans le contexte de l'étude longitudinale conduite lors de l'Euro 2020 de football (étude supplémentaire du chapitre 6). Cette relation était d'autant plus marquée lorsque nous contrôlions le chevauchement avec le score à une mesure classique d'identification. Nous avons par exemple utilisé dans l'Article 2 (Chapitre 3) le niveau national de l'échelle d'identification à l'humanité (McFarland et al., 2012 ; voir Hamer et al., 2021 pour la traduction française que nous avons proposée) ou la sous-dimension de satisfaction envers l'endogroupe (Leach et al., 2008) dans l'Article 3 (Chapitre 4). Selon Cichocka (2016), cette manière de faire permet d'isoler la part de variance du narcissisme collectif de celle de l'identification sécuritaire à l'endogroupe. Au niveau de l'identification sécuritaire, les relations aux croyances conspirationnistes étaient soit non-significatives (e.g., Article 2, Chapitre 3) soit négatives (e.g., Article 4, Chapitre 5), lorsque nous contrôlions pour le chevauchement avec le narcissisme collectif.

De précédents travaux utilisaient uniquement une mesure d'identification nationale pour prédire le niveau de croyances conspirationnistes (Mashuri & Zaduqisti, 2014a), en se basant sur le *niveau* d'identification, c'est-à-dire en différenciant les individus s'identifiant fortement de ceux s'identifiant faiblement au groupe. Or, nos résultats vont dans le sens de l'importance d'une prise en compte de la *qualité* de l'identification, c'est-à-dire de son caractère défensif. En effet, une récente étude qualitative conduite dans le cadre du supportérisme montre qu'une forte identification narcissique à l'équipe est différente d'une

forte identification non-narcissique à l'équipe, notamment dans la perception du caractère unique de l'équipe mais également de la perception qu'elle serait injustement et constamment observée et critiquée (Larkin et al., 2021). Aussi, il nous semble crucial de tenir compte de la qualité défensive de l'identification sociale étudiée en lien au narcissisme collectif.

Une contribution récente distingue le narcissisme collectif *communal* (i.e., en lien à une perception exacerbée de la prosocialité de l'endogroupe ; Žemojtel-Piotrowska et al., 2020) du narcissisme collectif *agentique* (i.e., tel que mesuré traditionnellement par l'échelle de narcissisme collectif de Golec de Zavala et al., 2009). Cette distinction prolonge une distinction préexistante au niveau du narcissisme individuel et se concrétise dans le cadre d'une échelle de mesure développée par Žemojtel-Piotrowska et al. (2021). Des résultats préliminaires suggèrent que le narcissisme collectif communal serait positivement lié aux perceptions de menace intergroupes, mais négativement ou non lié aux croyances conspirationnistes (Bertin et al., 2021c). Ainsi, cette forme de narcissisme collectif nouvellement introduite dans la littérature semble entretenir une relation différente du narcissisme agentique avec la perception de menace intergroupe et les croyances conspirationnistes. Il serait intéressant d'étudier la manière dont une même menace intergroupe est perçue, suivant que le narcissisme collectif soit communal ou agentique, afin de mieux comprendre dans quelles situations une identification défensive recourt aux croyances conspirationnistes pour faire face à une menace perçue.

Le rôle déclencheur de la perception de menace intergroupe

Dans la lignée de précédents travaux (Cichocka et al., 2016 ; Mashuri & Zaduqisti, 2014a ; Mashuri et al., 2015b), nous avons répliqué la relation entre perception de menace intergroupe et croyances conspirationnistes (Chapitre 4, Article 3, étude 1). Nous avons également montré cette relation à un niveau expérimental (Chapitre 4, Article 3, étude 2), répliquant conceptuellement Mashuri et Zaduqisti (2015b). Aussi, les notions de perception de

menace intergroupe et de croyances conspirationnistes ont parfois été associées (Van Prooijen & Van Lange, 2014), mais elles semblent différentes et causalement liées.

Comme observé dans l'Article 3 (Chapitre 4), la perception de menace et les croyances conspirationnistes, bien que liées, entretiennent également des relations uniques avec les mesures de discrimination envers les migrants. Aussi, nous avons proposé le terme de *croyance de groupe défensive* pour qualifier la spécificité du processus causal allant de la perception de menace intergroupe et sa traduction en croyance conspirationniste.

Dans ce travail nous avons principalement mobilisé des menaces intergroupes dites symboliques (Stephan & Stephan, 2017), que cela soit dans l'induction de l'étude 2 de l'Article 3 (Chapitre 4), ou dans l'étude supplémentaire du Chapitre 6. Il serait intéressant d'essayer de répliquer le processus de croyance de groupe défensive dans le cadre de perceptions de menace intergroupes réalistes (e.g., augmentation des impôts ; Makashvili et al., 2018). Cela permettrait de préciser les conditions d'expression de ces croyances de groupe défensives.

Le rôle médiateur de la victimisation exclusive

Afin d'expliquer la relation entre narcissisme national et croyances conspirationnistes, nous avons proposé qu'une perception de victimisation exacerbée de l'endogroupe puisse être un des facteurs motivant ces croyances face à une menace. Afin de tester cette prédiction, nous avons utilisé la notion de victimisation exclusive (Vollhardt et al., 2021), en lien aux épidémies de Zika (Article 4, Chapitre 5) et de la pandémie de COVID-19 (étude supplémentaire, Chapitre 5). Alors que des résultats corrélationnels allaient dans le sens de cette hypothèse, la validation expérimentale de cette relation n'a pas été concluante. Nous allons répliquer conceptuellement cette hypothèse dans le cadre de l'EURO 2020 (étude supplémentaire, Chapitre 6). Nous avons formulé la prédiction que la victimisation exclusive à propos de l'élimination du tournoi sera médiatrice de la relation entre narcissisme envers

l'équipe et croyances conspirationnistes sur le football. Il serait intéressant d'étudier plus précisément la relation entre perception de menace et victimisation exclusive, dans la prédiction des croyances conspirationnistes (dans le cadre de l'EURO 2020 nous avons pré-enregistré une utilisation de ces deux variables en tant que médiateurs). Étudiée en lien à une identification sociale défensive, la victimisation exclusive pourrait être conceptualisée comme une forme de perception de menace exacerbée, qualitativement et quantitativement.

Autrement dit, la victimisation exclusive pourrait être conceptualisée comme une forme de redéfinition de la situation de l'endogroupe dans un contexte donné, restructurant la comparaison intergroupe suivant un prisme ethnocentré. Ainsi, et parce qu'elle est conceptualisable à la croisée de l'identité et de la croyance, la motivation à la victimisation comparative (i.e., victimisation exclusive et inclusive) nous semble être une perspective prometteuse pour étendre l'examen des relations entre identification sociale et croyances conspirationnistes.

Limites

Le présent travail, et plus particulièrement les études empiriques rapportées sous format d'article ou d'études supplémentaires, présentent de nombreuses limites. Pour ne pas être redondant avec les limites présentées dans les différents articles, nous ne présenterons ici que certaines limites relatives à l'ensemble de notre travail.

Tout d'abord, la relation causale entre narcissisme collectif et croyances conspirationnistes reste spéculative. En effet, notre tentative dans l'étude 3 de l'Article 3 (Chapitre 4) n'a pas été concluante, que cela soit du fait du manque de cadrage de notre induction du narcissisme collectif ou d'un manque de puissance statistique. Du reste, aucune étude publiée ne rapporte de manipulation directe réussie du narcissisme collectif, ce qui présente un vrai défi pour l'avenir de ce champ de recherche en général et de la ligne de recherche en lien aux croyances conspirationnistes en particulier.

Une autre limite, cette fois en lien à notre étude longitudinale, est l'absence de mesure de la mentalité conspirationniste. En effet, cette mesure nous aurait permis de tester la proposition selon laquelle le narcissisme collectif est en lien aux croyances conspirationnistes spécifiques, et non à la mentalité conspirationniste qui serait un construit stable. Cependant, cette mesure aurait dû être introduite lors de la première vague, qui comportait déjà l'échelle de mesure des croyances conspirationnistes sur le football. Ainsi, alors que nous avons pour projet d'inclure la CMQ de Bruder et al. (2013), nous nous sommes ravisés afin de ne pas éveiller les soupçons et la défiance chez nos participants afin de ne pas compromettre leur participation aux quatre vagues de questionnaires restantes.

Enfin, de nombreuses propositions formulées dans les articles présentés dans cette thèse n'ont pas été testées et sont spéculatives. Entre autres points, nous pouvons citer notre idée qu'une menace pour la souveraineté de l'endogroupe, incarnée par les conventions et législations internationales de lutte contre le changement climat, expliquerait la relation entre narcissisme collectif et croyances conspirationnistes sur le climat (Article 2, Chapitre 3). Le caractère légitimant de la victimisation exclusive sur l'expression des croyances conspirationnistes est également spéculatif. Plus généralement, un travail expérimental semble nécessaire pour tester ces propositions et poursuivre la conceptualisation des croyances conspirationnistes au niveau intergroupe. Par exemple, il serait intéressant de distinguer conceptuellement et empiriquement la fonction d'externalisation de la menace de la dynamique de bouc-émissaire (Campbell, 2012).

Enfin, la question de la mesure doit être adressée et n'est que trop souvent écartée dans le champ. De récentes études ont montré que les résultats varient grandement suivant le type d'énoncé conspirationniste mobilisé (Enders et al., 2021) et le type de labélisation utilisé sur les échelles de Likert (Sutton & Douglas, 2020b). Nous ne pouvons pas non plus écarter le risque que nous ayons non pas mesuré les croyances préexistantes des participants, mais

plutôt l'accord des participants à des théories du complot dont ils n'avaient par ailleurs jamais entendu parler. En ce sens, un travail de répliques conceptuelles semble nécessaire. Le recours à de l'analyse de contenu (e.g., Article 5, Chapitre 6), et à des méthodes plus qualitatives nous semble notamment être une solution envisageable face à ces questions de mesures, que cela soit en tant que travail préparatoire ou de complément.

Conclusion

Dans ce travail de thèse, nous nous sommes demandé si les croyances conspirationnistes pouvaient servir de stratégies de gestion de l'identité sociale. En attribuant à d'autres les facteurs menaçant l'endogroupe, les croyances conspirationnistes permettraient de conserver une identité sociale positive. De plus, une perception de l'endogroupe comme particulièrement victime d'une situation permettrait de légitimer l'interprétation conspirationniste de cette situation. Nous avons adressé ces propositions à travers cinq articles et deux études supplémentaires. Nous avons conceptualisé les croyances conspirationnistes au niveau intergroupe, en les différenciant notamment de la mentalité conspirationniste et en théorisant l'importance de la prise en compte de leurs spécificités. Nous avons répliqué dans différents contextes la relation entre narcissisme collectif et croyances conspirationnistes, confortant l'importance de la qualité défensive de l'identification sociale dans sa relation aux croyances conspirationnistes. Nous avons également répliqué la relation de causalité entre perception de menace intergroupe et croyances conspirationnistes, précisant la spécificité de ce processus à travers le terme de croyance de groupes défensive. Nous avons en outre conceptualisé la victimisation exclusive comme étant une des motivations responsables des croyances conspirationnistes au niveau intergroupe. Enfin, nous avons tenté de répliquer conceptuellement ces différents points en contexte écologique, à travers une analyse de tweets et une étude longitudinale dans le contexte de tournois internationaux de football. Dans l'ensemble, à partir des études présentées dans cette thèse, nous ne pouvons pas affirmer que

les croyances conspirationnistes permettent une gestion de l'identité sociale. Cependant, nous pensons que cette ligne de recherche comporte des perspectives prometteuses et mériterait d'être poursuivie. De plus, l'approche intergroupe nous semble féconde, notamment pour mieux comprendre le fonctionnement des croyances conspirationnistes spécifiques à certains contextes à enjeux et polarisés (e.g., changement climatique, vagues migratoires), et aux conséquences délétères. Alors que ces questions de société sont largement politisées, l'approche intergroupe de ces croyances devra marquer sa différence ou sa complémentarité de l'approche politique et idéologique. Dès lors, il conviendra d'éviter la psychologisation de ce fait social, sans pour autant tomber dans un réductionnisme au niveau des catégories partisans.

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Annexes

Nous présentons ici le matériel utilisé dans nos études ainsi que les analyses supplémentaires dont il est fait mention dans les articles. Notez que nous ne rapportons pas les échelles de mesure qui seraient exactement identiques à ce qui est déjà publié et en accès libre (e.g., la version Française de la CMQ de Bruder et al., 2013 ; Lantian et al., 2016). En revanche, nous présentons les échelles traduites ou modifiées.

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Annexe A – Article 1

Matériel de l'article 1

Attitudes envers la vaccination (attitudes toward vaccination)

Veillez exprimer votre opinion sur les affirmations suivantes à partir de l'échelle de réponse proposée :

1. Je crois que les vaccins sont des moyens sûrs et fiables d'empêcher la propagation des maladies
2. Je crois que les vaccins ont des effets négatifs qui surpassent leurs effets positifs dans la vaccination (R)
3. Les vaccins sont rigoureusement testés en laboratoire et ne seraient pas disponibles pour la population s'ils n'étaient pas sûrs
4. Le risque de blesser et tuer les enfants par la vaccination l'emporte sur les bénéfices sanitaires (R)
5. La vaccination est l'une des contributions les plus importantes pour la santé publique

Note. De « pas du tout d'accord » (1) à « tout à fait d'accord » (5), R = item inversé

Intention de se faire vacciner contre le COVID-19 (COVID-19 vaccination intention)

Imaginez qu'un vaccin contre le Covid-19 soit développé, validé par les autorités de santé et mis sur le marché. Si vous aviez l'opportunité de vous faire vacciner contre le Covid-19 la semaine prochaine, que décideriez-vous ?

Note. De « 1- je refuserais sans aucune hésitation » à « 7- j'accepterais sans aucune hésitation »

Attitudes envers la chloroquine (attitudes toward chloroquine)

On parle beaucoup du potentiel d'une molécule, la chloroquine, pour lutter contre le Covid-19. Certains scientifiques proposent par exemple un traitement combinant hydroxychloroquine et azythromycine. Et vous, quelle est votre opinion sur ce sujet ? Veillez noter votre positionnement par rapport aux affirmations suivantes en utilisant l'échelle proposée :

1. Il faut soigner les patients atteints du Covid-19 avec ce traitement
2. Il existe des preuves suffisantes de l'efficacité de ce traitement pour l'utiliser contre le Covid-19
3. Ce traitement est à ce jour le traitement le plus efficace contre le Covid-19
4. Il ne faut pas utiliser ce traitement car il a potentiellement des effets secondaires dangereux (R)

5. Il n'y a rien à perdre, et peut-être tout à gagner, à généraliser au plus vite ce traitement pour lutter contre le Covid-19
6. A ce jour, il n'existe aucune preuve solide de l'efficacité de ce traitement (R)

Note. De « pas du tout d'accord » (1) à « tout à fait d'accord » (5), R = item inversé

Théories du complot sur la chloroquine (chloroquine conspiracy theories)

Toujours concernant la chloroquine, veuillez exprimer votre opinion sur les affirmations suivantes à partir de l'échelle de réponse proposée :

1. L'industrie pharmaceutique, de mèche avec le gouvernement, empêche la diffusion de traitements à base de chloroquine pour préserver ses intérêts financiers
2. Les médias décrédibilisent les personnes qui font la promotion des traitements à base de chloroquine car ces personnes dérangent le système en place
3. Les traitements à base de chloroquine ne sont pas utilisés par le gouvernement car les dirigeants ont intérêt à ce que la crise sanitaire se prolonge
4. La mise sous ordonnance de la chloroquine par Agnès Buzyn vise à empêcher la population d'avoir accès facilement à un traitement peu coûteux
5. Les scientifiques qui critiquent les travaux du professeur Didier Raoult sur l'hydroxychloroquine sont vendus à l'industrie pharmaceutique

Note. De « pas du tout d'accord » (1) à « tout à fait d'accord » (5)

Théories du complot sur le COVID-19 (COVID-19 conspiracy theories)

Veuillez exprimer votre opinion sur les affirmations suivantes à partir de l'échelle de réponse proposée :

1. Le coronavirus est une arme bactériologique utilisée par le parti communiste Chinois pour créer la panique en Occident
2. La pandémie de coronavirus est une stratégie de la Chine pour déclencher une nouvelle crise économique
3. Le coronavirus a été créé en laboratoire par des scientifiques chinois qui en ont perdu le contrôle
4. Un vaccin existe contre le coronavirus, mais il est tenu secret par ceux qui le détiennent afin d'en augmenter la valeur
5. Les industriels vont utiliser la pandémie de coronavirus afin de justifier une hausse des prix et faire du profit
6. Le coronavirus est une attaque perpétrée par un petit groupe puissant et secret afin de faire diminuer la population mondiale
7. Le coronavirus a été créé et breveté par l'institut Pasteur au début des années 2000*

8. Le gouvernement français instrumentalise la pandémie de coronavirus pour faire taire la contestation liée à la réforme des retraites
9. Le gouvernement a tardé à annoncer des mesures fortes et fait preuve de laxisme dans sa gestion de la pandémie de coronavirus afin de pouvoir tirer parti du sentiment d'impuissance de la population
10. Le maintien du premier tour des élections municipales 2020 était une stratégie de l'exécutif afin d'augmenter ses scores

Note. De « pas du tout d'accord » (1) à « tout à fait d'accord » (5). * = item ajouté pour l'étude 2

Analyses supplémentaires de l'Article 1

Etude 1

Table 1

Geographic distribution for Study 1

<i>Locality</i>	<i>N</i>
Auvergne-Rhône-Alpes	20 (4.8%)
Bourgogne-France-Comté	1 (0.2%)
Bretagne	52 (12.7%)
Centre-Val de Loire	3 (0.7%)
Corse	3 (0.7%)
Grand Est	4 (0.9%)
Hauts-de-France	4 (0.9%)
Îles-de-France	30 (7.3%)
Normandie	16 (3.9%)
Nouvelle-Aquitaine	9 (2.2%)
Occitanie	7 (1.7%)
Pays de la Loire	17 (4.1%)
Provence-Alpes-Côte d'Azur	231 (57.9%)
Régions d'Outre-mer	3 (0.7%)
Other	9 (2.2%)

Table 2.*Factor loadings for exploratory Factor Analyses of COVID-19 conspiracy beliefs*

	Factor 1	Factor 2
1. Chinese bioweapon	.84	
2. Chinese economic crisis	.88	
3. Chinese failure	.76	
4. Hidden vaccine	.58	
5. Industrialist strategy		.47
6. Eugenics motives	.77	
7. French pension reform		.63
8. French government laxity		.68
9. French municipal election		.81

Note. Using Oblimin rotation.**Study 2****Table 3.***Distribution of the education*

High school	College	Bachelor's degree	Master's degree	Doctoral degree	Other	Missing
0.7 % (N = 3)	14.6 % (N = 58)	58.3 % (N = 231)	15.9% (N = 63)	2.2 % (N = 9)	2.7 % (N = 11)	5.3 % (N = 21)

Table 4*Factor loadings for exploratory Factor Analyses of COVID-19 and chloroquine conspiracy beliefs*

	Factor 1	Factor 2	Factor 3
1. Chinese bioweapon	0.933		
2. Chinese economic crisis	0.938		
3. Chinese failure	0.587		
4. Hidden vaccine	0.556		
5. Industrialist strategy			0.495
6. Eugenics motives	0.734		
7. Pasteur Institute	0.506		
8. French pension reform			0.758
9. French government laxity			0.794
10. French municipal election			0.639
11. Chloroquine financial conflict		0.859	
12. Chloroquine media bashing		0.785	
13. Chloroquine government		0.583	
14. Chloroquine prescription		0.722	
15. Pharmaceutical industry and scientists		0.818	

Note. Using Oblimin rotation.

Annexe B - Article 2

Matériel supplémentaire de l'article 2

Version française de l'échelle de narcissisme collectif (collective narcissism scale)

1. J'aimerais que les autres groupes reconnaissent plus rapidement l'autorité de la nation française
2. La nation française mérite un traitement de faveur
3. Je ne serai satisfait que lorsque la nation française obtiendra la reconnaissance qu'il mérite
4. J'insiste pour que la nation française reçoive le traitement qui lui est dû
5. Cela me met très en colère lorsque d'autres personnes critiquent la nation française
6. Je ne suis pas contrarié quand les réussites de la nation française passent inaperçues. (R)
7. Le monde serait bien meilleur si la nation française y jouait un rôle majeur
8. Peu de gens semble pleinement comprendre l'importance de la nation française
9. La véritable valeur de la nation française est souvent sous-estimée

Note. Traduit à partir de Golec de Zavala et al. (2009). (R) = item inversé. Items utilisés pour la version courte de l'échelle dans l'étude pilote et l'étude 1 : items 2, 3, 5, 7, 9.

Croyances conspirationnistes sur le climat (climate change conspiracy beliefs)

1. L'affirmation que le changement climatique est causé par les activités humaines est une supercherie perpétrée par des scientifiques corrompus qui espèrent dépenser davantage l'argent du contribuable dans la recherche sur le climat. (Pilot study, Study 1, Study 2)
2. Certains scientifiques falsifient leurs résultats, affirmant que le changement climatique est dû aux êtres humains, afin de gagner en pouvoir et en influence. (Pilot study, Study 2)
3. Pour imposer leurs réformes politiques néo-libérales, les gouvernements occidentaux développent l'idée selon laquelle le changement climatique serait dû aux activités humaines. (Pilot study, Study 1, Study 2)
4. L'état, de mèche avec de grands groupes privés, cherche à promouvoir l'énergie nucléaire en répandant l'idée que l'être humain émet trop de carbone et que cela cause le changement climatique. (Pilot study, Study 2)
5. Certaines compagnies financent de fausses recherches alarmistes sur le changement climatique afin de sécuriser leurs investissements dans les énergies renouvelables. (Pilot Study)
6. Pour augmenter leur profit, certaines multinationales s'entendent pour financer des organisations qui accusent l'être humain d'être à l'origine du changement climatique. (Study 1)
7. Certaines compagnies ayant investi de grandes sommes d'argent dans les énergies renouvelables financent de fausses recherches alarmistes sur le changement climatique afin de sécuriser leurs investissements. (Study 2)

Version française des échelles d'acceptation de la science sur le climat (acceptance of climate science)

Etude 1.

1. Je crois que le climat a toujours changé et ce que nous observons actuellement est simplement une fluctuation naturelle. (R)
2. Je crois que la combustion des énergies fossiles lors des 50 dernières années a causé de graves dommages au climat mondial.
3. Les émissions de CO₂ humaines causent le changement climatique.
4. Les humains sont trop insignifiants pour avoir un impact significatif sur la température mondiale. (R)

Note. (R) = item inversé. Traduit à partir de Lewandowsky et al. (2013b).

Etude 2.

1. Je crois que la combustion des énergies fossiles augmente la température atmosphérique de manière notable.
2. Je crois que la combustion des énergies fossiles dans les proportions observées durant les 50 dernières années a augmenté la température atmosphérique de manière palpable.
3. Je crois que la combustion des énergies fossiles dans les proportions observées durant les 50 dernières années va causer d'importants changements négatifs au climat de la planète, à moins qu'un changement substantiel vers les énergies non-émettrices de CO₂ ait lieu.
4. Je crois que la combustion des énergies fossiles dans les proportions observées durant les 50 dernières années a causé de sérieux dégâts au le climat de la planète.

Note. Traduit à partir de Lewandowsky et al. (2013a).

Version française des échelles de scepticisme sur le changement climatique (climate change skepticism)

Trend Skepticism

Je ne suis pas certain que le changement climatique se produise réellement.

Attribution Skepticism

La plupart des scientifiques sont d'accord pour dire que les êtres humains causent le changement climatique.

Impact Skepticism

1. La gravité du changement climatique est exagérée.
2. Les effets qui seront causés par le changement climatique sont incertains.

Note. Traduit à partir de Poortinga et al. (2011).

Analyses supplémentaires de l'Article 2

Etude Pilote - Analyses sur données brutes (avant exclusions)

Here we report the main analyses conducted for the Pilot Study without excluding any participants (with the exception of participants who did not finish the study, $N = 48$). The sample for the following analysis is $N = 457$.

We ran a linear regression to test the hypothesis of a relation between climate change conspiracy beliefs and national collective narcissism. We controlled for gender, age and national identification at Step 1, and climate change conspiracy beliefs were introduced as the independent variable at Step 2. As expected, national collective narcissism positively predicted climate change conspiracy beliefs $\beta = .39$, 95% CI [.30; .48], $t = 8.50$, $p < .001$. Thus, exclusions did not affect the results. It is worth noting that contrary to the analysis after exclusions, when adding collective narcissism at Step 2, national identification became negatively related to climate change conspiracy beliefs, $\beta = -.13$, 95% CI [-.22; -.05], $t = -3.07$, $p = .002$.

Etude 1 - Analyses sur données brutes (avant exclusions)

Here we report the main analyses conducted for Study 1 without exclusions due to reasons others than unfinished questionnaires ($N = 6$).

We tested the main effect of the mediation model by running a linear regression with national collective narcissism as IV and acceptance of climate science as DV. We controlled for age, gender and national identification. Congruent with our hypothesis, national collective narcissism was significantly and negatively related to acceptance of climate science, $\beta = -.25$, 95% CI [-.36; .13], $t = 4.28$, $p < .001$. Congruently with the analyses ran with the exclusions, when accounting for national collective narcissism, national identification was significantly and positively related to acceptance of climate science, $\beta = .15$, 95% CI [.04; .27], $t = 2.67$, $p = .008$.

We then tested the mediation model. As for the main analyses, we controlled for gender, age and national identification and we used bootstrapping to resample 1000 times the indirect effect.

The pattern of results remains similar to the analyses reported without exclusions. The indirect effect is significant, $B = -0.11$, 95% CI [-0.16; -0.06], $z = -4.11$, $p < .001$, leaving no significant direct effect, $B = -0.10$, 95% CI [-0.19; 0.01], $z = -1.81$, $p = .07$.

Etude 2 - Analyses sur données brutes (avant exclusions)

Here we report the main analyses conducted for Study 2 without exclusions due to reasons others than unfinished questionnaires ($N = 25$). As for the main analyses, we controlled for gender, age and national identification and we used bootstrapping to resample 1000 times the indirect effect.

When testing the mediation model without the exclusions, the pattern of result remains the same. Climate change conspiracy beliefs fully mediated the relationship between collective narcissism and acceptance of climate science, $IE = -0.08$, 95% CI [-0.12; -.04], $z = -4.05$, $p < .001$, leaving no significant direct effect, $B = -0.10$, 95% CI [-0.19; 0.01], $z = -1.86$, $p = .06$.

When controlling for other forms of climate skepticism, exclusions did not modify the results either. The indirect effect of climate change conspiracy beliefs remained significant, $IE = 0.04$, 95% CI [-0.07; -0.01], $z = -2.66$, $p = .008$, and national collective narcissism no longer significantly predicted acceptance of climate science, $B = -0.08$, 95% CI [-0.17; 0.01], $z = -1.68$, $p = .09$.

When using conspiracy mentality alternative mediator without the exclusions, the results remain the same. Conspiracy mentality did not significantly mediate the relationship, $IE = 0.01$, 95% CI [-0.01; 0.01], $z = 0.24$, $p = .80$. The indirect effect of conspiracy mentality were non-significant also when accounting for other kind of climate skepticism, $IE = 0.01$, 95% CI [-0.01; 0.01], $z = 0.60$, $p = .55$.

Etude 2 - Scepticisme climatique comme variable médiatrice

We tested whether each of the three form of climate skepticism (trend, attribution, and impact). As for the main analyses, we controlled for gender, age and national identification and we used bootstrapping to resample 1000 times.

We found a significant indirect effect of trend skepticism, $IE = -0.03$, 95% CI [-0.06; 0.01], $z = -2.31$, $p = .02$. But the mediation was only partial: The direct effect of national collective narcissism remained significant, $B = -0.14$, 95% CI [-0.24; -0.04], $z = -2.76$, $p = .01$. The indirect effect of trend skepticism was no longer significant when controlling for the other forms of climate skepticism, $IE = -0.01$, 95% CI [-0.03; 0.01], $z = -1.75$, $p = .08$, but the direct effect remained, $B = -0.11$, 95% CI [-0.20; -0.02], $z = -2.40$, $p = .02$.

We found no significant indirect effect of attribution skepticism, $IE = -0.02$, 95% CI [-0.05; 0.01], $z = -1.39$, $p = .16$. The indirect effect of attribution skepticism remained non-significant when controlling for other forms of climate skepticism, $IE = -0.01$, 95% CI [-0.03; 0.12], $z = -0.87$, $p = .39$.

We found a significant indirect effect of impact skepticism, $IE = -0.03$, 95% CI [-0.07; -0.01], $z = -1.98$, $p = .048$. But the mediation was only partial because of the direct effect of national collective narcissism remained significant, $B = -0.14$, 95% CI [-0.22; -0.04], $z = -2.88$, $p = .01$. The indirect effect of impact skepticism was no longer significant when controlling for other forms of climate skepticism $IE = -0.01$, 95% CI [-0.03; 0.01], $z = -0.88$, $p = .38$.

Annexe C – Article 3

Matériel de l'Article 3

Menace intergroupe à propos des migrants (intergroup threat about immigrants)

1. L'augmentation du taux de criminalité en France vient de l'augmentation du nombre de réfugiés^a
2. Les immigrés sont une menace pour la culture française^b
3. Les valeurs et les traditions françaises sont de plus en plus compromises par la présence des immigrés^b
4. En raison de la présence de nombreux immigrés, les Français perdent graduellement leur mot à dire concernant les questions nationales importantes^b
5. Parfois, il semble que notre pays soit davantage la propriété des immigrés plutôt que des Français^b
6. Les réfugiés augmentent le poids des impôts pour les citoyens français^a

Note. a = adapted from Hasbún López et al. (2019); b = adapted from Mahfud (2016).

Croyances conspirationnistes à propos des migrants (immigrant conspiracy beliefs)

1. Les migrants travaillent dans des réseaux secrets pour le compte de l'État Islamique^a
2. Les migrants travaillent avec des groupes terroristes ayant pour objectif d'attaquer la société française de l'intérieur^a
3. Les migrants sont souvent impliqués dans des machinations et des projets secrets visant à déstabiliser la société française^a
4. Les migrants ne coopèrent pas avec des organisations terroristes^a (R)
5. Le fort taux de natalité des migrants en Europe vise à délibérément transformer notre société
6. Le gouvernement cache au contribuable et à la société le coût réel de l'immigration^c
7. Un projet secret existe entre nos politiciens locaux et les gouvernements d'origine des migrants pour se partager nos ressources
8. L'Union Européenne accueille les migrants en France pour détruire la culture française
9. L'Union Européenne cache les vraies raisons de l'accueil des migrants en France

Note. R = reverse-item. a = adapted from Jolley et al. (2020); b = adapted from Swami et al. (2018); c = adapted from Gaston and Uscinski (2018); d = adapted from Marchlewska et al. (2018a).

Intentions d'actions collectives contre les migrants (Collective action intentions against immigrants)

Quelle est la probabilité que vous adoptiez les comportements suivants ?

1. Signer une pétition pour restreindre le nombre de migrants arrivant en France.
2. Rejoindre et participer au travail d'une organisation à but non-lucratif aidant les migrants. (R)
3. Faire don de couvertures, vêtements, etc., aux migrants. (R)
4. Participer à une manifestation contre les migrants.
5. Participer à une manifestation en soutien aux droits des migrants. (R)
6. Soutenir une politique visant à exclure les migrants de l'Europe.

Note. R = reverse-item.

Soutien aux politiques discriminatoires (support for discriminatory policies)

Dans le contexte actuel, en France, pensez-vous qu'il faudrait...

1. ... baisser le montant des allocations sociales (RSA, Indemnités chômage, APL...) pour les Français d'origine étrangère.
2. ...réduire les quotas d'immigration légale.
3. ...supprimer le 'regroupement familial'.
4. ... supprimer le 'droit du sol'.
5. ...expulser dans leur pays d'origine les Français d'origine étrangère condamnés pénalement.

Attitude contre la naturalisation des migrants (attitude against naturalization of immigrants)

1. Les enfants nés en France de parents étrangers devraient avoir le droit d'acquérir la nationalité française. (R)

Note. R = reverse-item.

Manque de contrôle personnel (items de verification de la manipulation de l'étude 3)

1. Quel niveau de contrôle aviez-vous dans la situation que vous avez décrite?
2. Dans quelle mesure la situation que vous venez de décrire a-t-elle été bouleversante pour vous?
3. Dans quelle mesure pensez-vous être aux commandes de votre vie?

Etude 2

Induction expérimentale de la menace intergroupe à propos des migrants

Dans cette première partie, nous vous demandons de lire attentivement le résumé d'un récent rapport de l'INSEE.

Selon l'Institut National de la Statistique et des Etudes Economiques (INSEE), la part de l'immigration dans la population française représente actuellement 9.9%.

Les données de l'INSEE et d'études menées par l'Observatoire de l'Immigration et de l'Asile suggèrent que ce pourcentage va très probablement évoluer dans le futur. Ces études montrent que si la tendance se confirme, dans 40 ans, la proportion de migrants en France sera supérieure à celle des Français. Les Français représenteront 48.2% et les migrants 51.8% de la population française.

Au vu de ces prédictions, ces études affirment qu'en 2060 la situation culturelle française sera différente d'aujourd'hui. Les migrants auront davantage de lieux de prières (par exemple, des mosquées) et d'associations culturelles alors qu'actuellement, les églises catholiques et les associations soutenant la culture française sont majoritaires. De plus, il est probable que les traditions culturelles et religieuses des migrants seront plus courantes dans la vie de tous les jours, ce qui conduirait à des difficultés pour les Français à maintenir une culture et une identité française intactes.

Enfin, ces études suggèrent que le marché du travail en 2060 sera également différent de la situation actuelle. Les migrants occuperont des emplois actuellement occupés principalement par des Français. Leur présence dans tous les domaines économiques rendra probablement l'accès à l'emploi plus compliqué pour les Français.

Condition contrôle

Dans cette première partie, nous vous demandons de lire attentivement le résumé d'un récent rapport de l'INSEE.

Selon l'Institut National de la Statistique et des Etudes Economiques (INSEE), la part de l'immigration dans la population française représente actuellement 9.9%.

Les données de l'INSEE et d'études menées par l'Observatoire de l'immigration et de l'asile suggèrent que ce pourcentage va très probablement rester stable dans le futur. Ces études montrent que si la tendance se confirme, dans 40 ans, la proportion de Français et de migrants restera approximativement la même. Les Français représenteront 89.4% et les migrants 10.6% de la population française. Ces études concluent qu'en 2060, les Français seront toujours majoritaires en France.

Question de vérification de l'attention lors de l'induction (pour les deux conditions)

Selon les données de l'INSEE et de l'Observatoire de l'Immigration et de l'Asile, si la tendance actuelle se confirme, quel serait le pourcentage de migrants et de Français sur le territoire français en 2060 ?

1. 90.1% Français / 9.9% migrants
2. 89.4% Français / 10.6% migrants

3. 71.8% Français / 28.2% migrants
4. 65.5% Français / 35.5% migrants
5. 55.9% Français / 44.1% migrants
6. 48.2% Français / 51.8% migrants

Induction expérimentale des croyances conspirationnistes à propos des migrants

A présent, veuillez lire ce court extrait d'un récent article en ligne à propos de l'implication des migrants dans les événements internationaux.

Nous vous poserons des questions à propos de cet extrait dans la suite de l'étude, merci de le lire avec attention.

De nombreuses personnes pensent que les migrants en France sont impliqués dans des organisations qui planifient des activités terroristes et cherchent à affaiblir la sécurité de la société française.

Certains groupes de migrants travaillent-ils au sein de réseaux secrets au nom de l'Etat Islamique (EI) ? Œuvrent-ils ensemble pour attaquer la société française de l'intérieur ? De telles questions sont largement répandues dans les médias et sur internet, mais devrions-nous y prêter attention ?

La réponse est OUI. Il y a de nombreuses raisons de se méfier des migrants.

Plus précisément, des enquêtes menées dans d'autres pays ont mis au jour que des migrants travaillaient pour le compte d'organisations terroristes cachées. Par exemple, lors des récents attentats en Europe, les autorités ont découvert la présence de migrants nouvellement arrivés parmi les terroristes. De plus, les autorités ont confirmé que les organisations terroristes travaillent en étroite collaboration avec des passeurs expérimentés qui organisent le passage de dizaines de milliers de migrants vers l'Europe chaque mois. Les preuves s'accumulent donc quant au fait que les migrants arrivant dans les pays européens sont intégrés ou impliqués d'une manière ou d'une autre dans des réseaux terroristes.

Pourquoi en serait-il autrement ici, en France ?

Il n'est donc pas surprenant que, dans un sondage national de 2018, 35% des répondants déclaraient croire que les migrants étaient impliqués dans des groupes terroristes. Dans un sondage similaire réalisé en 2019, ce chiffre montait à 53%.

De nombreuses personnes affirment également que les migrants travaillent activement, en secret, avec des organisations terroristes pour mener une cyber-attaque contre le société française. De nombreuses preuves supportent ces allégations ... [suite de l'article] ...

Questions de vérification de l'attention lors de l'induction (pour les deux conditions)

En 2019, quel était le pourcentage des Français qui déclaraient croire les migrants impliqués dans des groupes terroristes ?

1. 12%
2. 35%
3. 53%

Etude 3

Induction expérimentale du manque de contrôle personnel

Cette première partie du questionnaire est une étude sur la mémoire. Nous allons vous demander de décrire une situation personnelle (vos réponses sont anonymes et confidentielles). Nous vous poserons quelques questions sur cette situation un peu plus tard dans le questionnaire.

Nous vous demandons de penser à une situation négative et menaçante qui vous est arrivée dans votre vie et dans laquelle vous n'avez eu absolument aucun contrôle (vous ne pouviez rien faire pour arranger les choses).

Nous vous demandons de prendre quelques minutes pour décrire précisément cette situation dans l'espace ci-dessous (environ 50 mots). Décrivez les circonstances de l'événement lors duquel vous vous êtes senti menacé sans rien pouvoir contrôler, ainsi que les émotions que vous avez pu ressentir lors de cette situation.

Condition contrôle

Cette première partie du questionnaire est une étude sur la mémoire. Nous allons vous demander de décrire une situation personnelle (vos réponses sont anonymes et confidentielles). Nous vous poserons quelques questions sur cette situation un peu plus tard dans le questionnaire.

Nous vous demandons de penser à une situation négative et menaçante qui vous est arrivée dans votre vie et dans laquelle vous avez totalement eu le contrôle (vous avez pu arranger les choses).

Nous vous demandons de prendre quelques minutes pour décrire précisément cette situation dans l'espace ci-dessous (environ 50 mots). Décrivez les circonstances de l'événement lors duquel vous vous êtes senti menacé et avez tout contrôlé, ainsi que les émotions que vous avez pu ressentir lors de cette situation.

Induction expérimentale du narcissisme national

Cette deuxième partie du questionnaire est une étude sur le traitement de l'information. Nous allons vous demander de lire des extraits d'articles de presse attentivement puis de répondre à quelques questions en lien.

L'image de la France et des Français à travers le monde en 2020

Malgré une histoire riche et jalonnée d'avancées majeures, la France et les Français sont parfois critiqués et peuvent souffrir d'un manque de reconnaissance de la part des dirigeants et des populations de pays étrangers.

Une récente étude s'est intéressée à l'opinion des Français sur le sujet. Il a été demandé à un échantillon de 1024 Français représentatif de la population (âge, niveau d'éducation et milieux socio-économiques), quels sont les domaines dans lesquels ils ont le sentiment que la France n'est pas reconnue à sa juste valeur à l'internationale.

Voici les résultats du sondage. Les pourcentages indiquent la part des Français qui trouvent que chacun des domaines ci-dessous n'est pas suffisamment reconnue à travers le monde :

- L'attachement des Français à la liberté d'expression (88%)
- L'importance de l'industrie française (82%)
- La capacité des Français à mener des luttes sociales et à être solidaire entre citoyens (81%)
- La qualité du système d'aides sociales et de santé français (75%)
- L'esprit de contestation français (68%)

Selon ce sondage, l'attachement des Français à la liberté d'expression est le domaine pour lequel il y a le plus fort déficit de reconnaissance de la part des états et des populations à l'étrangers.

La liberté d'expression apparait comme une valeur fondamentale pour les Français. Or, durant l'automne 2020, plusieurs pays à travers le monde ont critiqué la liberté d'expression française, notamment les médias américains et anglais. Les réactions ont également été vives dans d'autres pays à travers le monde, comme en Iran, en Turquie, au Liban, au Bangladesh, au Koweït et dans les pays du Golfe, qui ont lancé des campagnes de boycott des produits français.

Selon le Huffington post, ces réactions internationales hostiles à l'attachement des Français à la liberté d'expression ont "choqué le public français, qui s'est senti profondément incompris". Un récent sondage Ifop montre que 71% des Français ne comprennent pas l'hostilité à l'égard de cette valeur fondamentale de la culture et l'identité nationale française.

Sources:

Ifop, France tv info, Huffington post et Courrier international

Questions de verification de l'attention lors de l'induction

Quel pourcentage des Français semble trouver que les valeurs françaises de liberté d'expression sont dénigrées et méprisées à l'international ?

1. 88%
2. 50%
3. 10%

De quels pays sont venues les critiques et l'hostilité à l'encontre de la liberté d'expression française ? Plusieurs réponses possibles.

1. Les Etats-Unis
2. La Turquie
3. L'Angleterre

Condition contrôle

Cette deuxième partie du questionnaire est une étude sur le traitement de l'information. Nous allons vous demander de lire des extraits d'articles attentivement puis de répondre à quelques questions en lien.

Les amphibiens à travers le monde

La classe des amphibiens se compose de plusieurs sous-ordres : les anoures (grenouilles, crapauds et reinettes), les urodèles (tritons et salamandres) et les gymnophiones (les cécilies). Un quatrième sous-ordre est désormais disparu : les Seymouriamorpha.

Les amphibiens ont comme caractéristique de débiter leurs vies sous forme de larves aquatiques avant de se métamorphoser sous une forme adulte. Les amphibiens respirent également par la peau, certaines espèces n'ont pas du tout de poumons.

Le plus petit des amphibiens est une grenouille de Nouvelle-Guinée (*Paedophryne amauensis*) qui mesure seulement 7,7 millimètres. Le plus grand des amphibiens est la Salamandre Géante de Chine (*Andrias davidianus*), qui mesure jusque 1,8 mètres. Notons qu'une espèce préhistorique vivant il y a des millions d'années, et donc maintenant éteinte, atteignait les 9 mètres (*Prionosuchus*).

Les amphibiens se répartissent sur dans une grande variété d'habitats à travers le monde, que cela soit dans le grand nord pour certaines salamandres, jusque dans les forêts tropicales pour de nombreuses espèces d'anoures.

Source:

Science & Vie

Questions de vérification de l'attention lors de l'induction

Quelle taille peut atteindre la Salamandre Géante de Chine ?

1. 1,8 mètres
2. 90 centimètres
3. 7,7 milimètres

Dans quel pays se trouve la plus petite espèce d'amphibiens ?

1. La Chine
2. La Nouvelle-Guinée
3. Le Mexique

Analyses supplémentaires de l'Article 3

Etude 1 – Informations démographiques supplémentaires

Table 1

Age distribution

18-24	122
25-34	176
35-44	200
45-54	205
55-64	170
Above 65	231
Total	1104

Table 2
Geographic distribution

Paris area	205
Northwest	252
Northeast	257
Southwest	116
Southeast	274
Total	1104

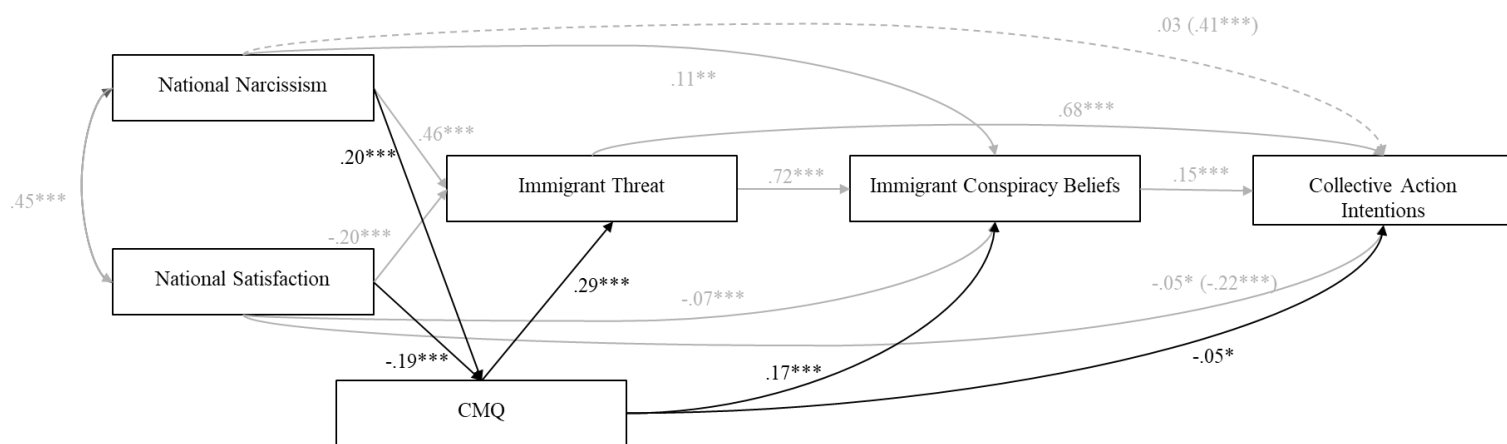
Table 3
Socio-professional category distribution

High socio-professional category	357
Low socio-professional category	327
Inactive	420
Total	1104

Etude 1 – Détail des modèles de médiation

Intentions d’actions collectives

Avec la mentalité conspirationniste (CMQ)



Effets directs

Variable	β	z	p	95% LLCI	95% ULCI
Collective Action ~					
Immigrant Conspiracy Beliefs	.15	4.02	< .001	.08	.23
Threat	.68	19.90	< .001	.61	.75
Ingroup Satisfaction	-.05	-2.15	.032	-.10	-.01
National Narcissism	.03	1.02	.307	-.03	.08
CMQ	-.05	-2.06	.039	-.09	-.002
Immigrant Conspiracy Beliefs ~					
Threat	.72	39.35	< .001	.68	.75
Ingroup Satisfaction	-.07	-3.59	< .001	-.11	-.03
National Narcissism	.11	5.14	< .001	.07	.16
CMQ	.17	8.53	< .001	.13	.21
Threat ~					
Ingroup Satisfaction	-.20	-6.30	< .001	-.26	-.14
National Narcissism	.46	15.05	< .001	.40	.52
CMQ	.29	9.59	< .001	.23	.35
CMQ ~					
Ingroup Satisfaction	-.19	-5.10	< .001	-.27	-.12
National Narcissism	.20	5.48	< .001	.13	.27

Effets indirects

Path	β	z	p	95% LLCI	95% ULCI
National Narcissism → Threat → Collective Action	.31	11.98	< .001	.26	.37
National Narcissism → Immigrant Conspiracy Beliefs → Collective Action	.02	3.17	.002	.01	.03
National Narcissism → Threat → Immigrant Conspiracy Beliefs → Collective Action	.05	3.83	< .001	.03	.08

Ingroup Satisfaction → Threat → Collective Action	-.14	-6.13	< .001	-.18	-.09
Ingroup Satisfaction → Immigrant Conspiracy Beliefs → Collective Action	-.01	-2.73	.006	-.02	-.003
Ingroup Satisfaction → Threat → Immigrant Conspiracy Beliefs → Collective Action	-.02	-3.33	.001	-.04	-.01

Effets totaux

Variable	β	z	p	95% LLCI	95% ULCI
National Narcissism	.41	13.51	< .001	.35	.47
Ingroup Satisfaction	-.22	-6.69	< .001	-.29	-.16

Sans la CMQ

Effets directs

Variable	β	z	p	95% LLCI	95% ULCI
Collective Action ~					
Immigrant Conspiracy Beliefs	.13	3.68	< .001	.06	.20
Threat	.68	21.16	< .001	.62	.74
Ingroup Satisfaction	-.05	-2.09	.036	-.10	-.003
National Narcissism	.03	1.03	.304	-.03	.09
Immigrant Conspiracy Beliefs ~					
Threat	.78	48.66	< .001	.75	.81
Ingroup Satisfaction	-.09	-4.22	< .001	-.13	-.05
National Narcissism	.12	4.90	< .001	.07	.16
Threat ~					
Ingroup Satisfaction	-.26	-7.73	< .001	-.32	-.19
National Narcissism	.52	16.24	< .001	.46	.58

Effets indirects

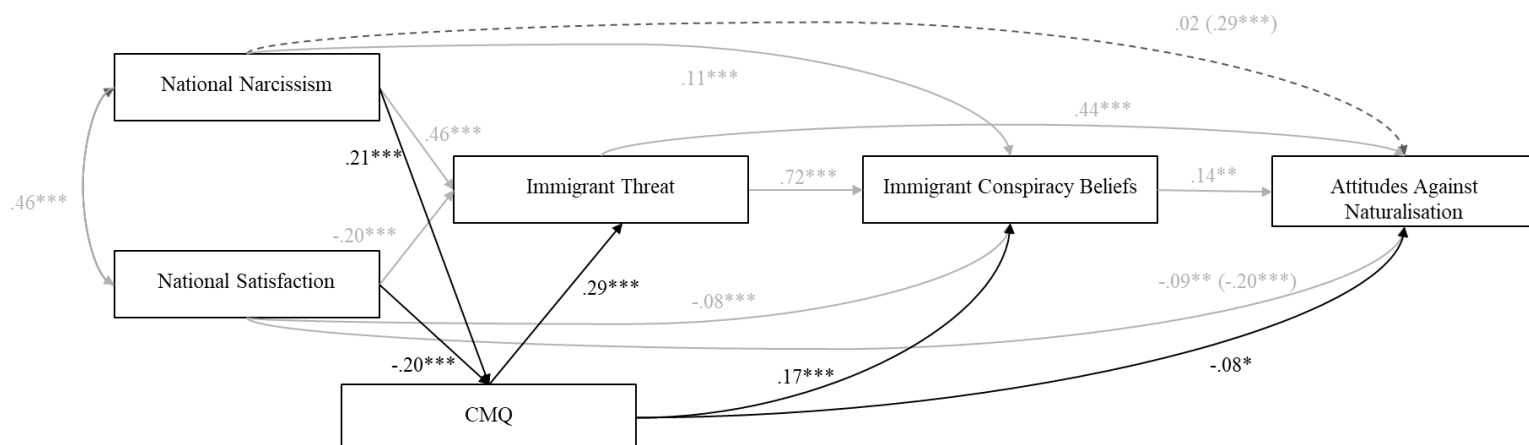
Path	β	z	p	95% LLCI	95% ULCI
National Narcissism → Threat → Collective Action	.35	13.11	< .001	.30	.41
National Narcissism → Immigrant Conspiracy Beliefs → Collective Action	.02	2.90	.004	.01	.03
National Narcissism → Threat → Immigrant Conspiracy Beliefs → Collective Action	.05	3.49	< .001	.02	.08
Ingroup Satisfaction → Threat → Collective Action	-.17	-7.48	< .001	-.22	-.13
Ingroup Satisfaction → Immigrant Conspiracy Beliefs → Collective Action	-.01	-2.85	.004	-.02	-.004
Ingroup Satisfaction → Threat → Immigrant Conspiracy Beliefs → Collective Action	-.03	-3.20	.001	-.04	-.01

Effets totaux

Variable	β	z	p	95% LLCI	95% ULCI
National Narcissism	.45	14.49	< .001	.39	.51
Ingroup Satisfaction	-.26	-7.64	< .001	-.33	-.19

Attitudes contre la naturalisation

Sans la CMQ



Effets directs					
Variable	β	z	p	95% LLCI	95% ULCI
Attitudes Against Naturalisation ~					
Immigrant Conspiracy Beliefs	.14	2.61	.009	.03	.24
Threat	.44	8.70	< .001	.34	.54
Ingroup Satisfaction	-.09	-2.64	.008	-.15	-.02
National Narcissism	.02	0.62	.533	-.05	.10
CMQ	-.08	-2.55	.011	-.14	-.02
Immigrant Conspiracy Beliefs ~					
Threat	.72	39.24	< .001	.69	.76
Ingroup Satisfaction	-.08	-3.64	< .001	-.12	-.04
National Narcissism	.11	4.90	< .001	.06	.15
CMQ	.17	8.42	< .001	.13	.21
Threat ~					
Ingroup Satisfaction	-.20	-5.77	< .001	-.26	-.13
National Narcissism	.46	14.95	< .001	.40	.52
CMQ	.29	1.23	< .001	.24	.35
CMQ ~					
Ingroup Satisfaction	-.20	-5.67	< .001	-.26	-.13
National Narcissism	.21	5.87	< .001	.14	.28

Effets indirects					
Path	β	z	p	95% LLCI	95% ULCI
National Narcissism → Threat → Attitudes Against Naturalisation	.20	7.35	< .001	.15	.26

National Narcissism → Immigrant Conspiracy Beliefs → Attitude Towards Naturalisation	.01	2.40	.017	.003	.03
National Narcissism → Threat → Immigrant Conspiracy Beliefs → Attitudes Against Naturalisation	.05	2.56	.011	.01	.08
Ingroup Satisfaction → Threat → Attitudes Against Naturalisation	-.09	-4.89	< .001	-.12	-.05
Ingroup Satisfaction → Immigrant Conspiracy Beliefs → Attitudes Against Naturalisation	-.01	-2.25	.025	-.02	-.001
Ingroup Satisfaction → Threat → Immigrant Conspiracy Beliefs → Attitudes Against Naturalisation	-.02	-2.33	.020	-.04	-.003

Effets totaux

Variable	β	z	p	95% LLCI	95% ULCI
National Narcissism	.29	8.20	< .001	.22	.35
Ingroup Satisfaction	-.20	-5.44	< .001	-.27	-.13

Sans la CMQ

Effets directs

Variable	β	z	p	95% LLCI	95% ULCI
Attitudes Against Naturalisation ~					
Immigrant Conspiracy Beliefs	.10	1.90	.057	-.003	.20
Threat	.44	8.54	< .001	.34	.55
Ingroup Satisfaction	-.08	-2.40	.016	-.15	-.02
National Narcissism	.03	0.68	.496	-.05	.10
Immigrant Conspiracy Beliefs ~					
Threat	.78	48.42	< .001	.75	.82
Ingroup Satisfaction	-.09	-4.38	< .001	-.13	-.05
National Narcissism	.11	4.73	< .001	.07	.16

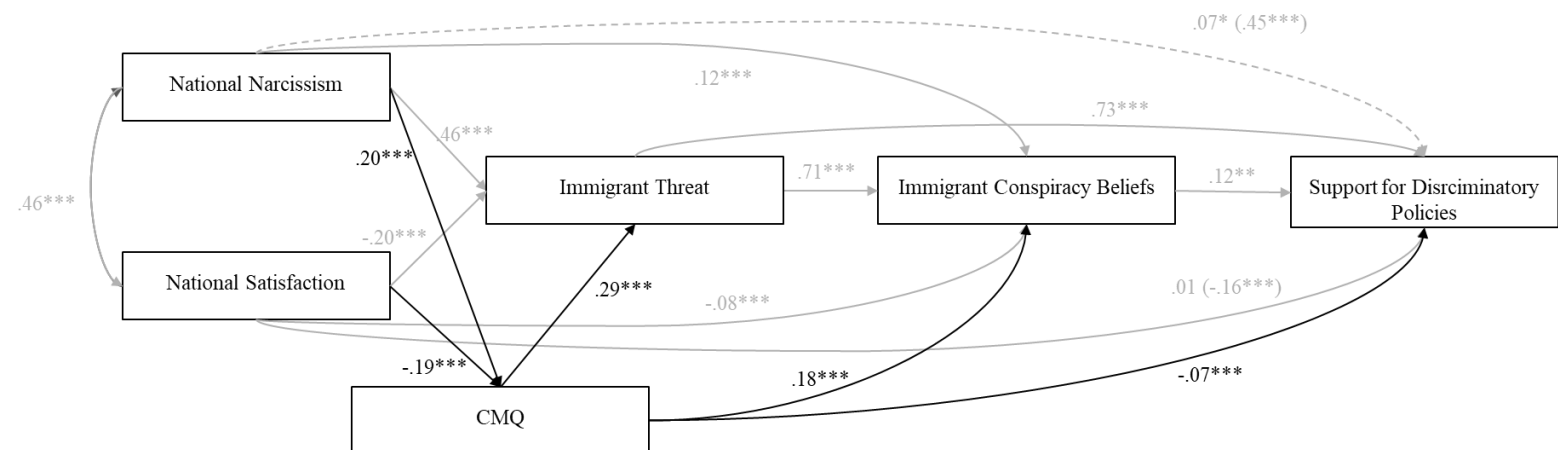
Threat ~					
Ingroup Satisfaction	-.25	-7.66	< .001	-.32	-.19
National Narcissism	.52	16.13	< .001	.46	.58

Effets indirects					
Path	β	z	p	95% LLCI	95% ULCI
National Narcissism → Threat → Attitudes Against Naturalisation	.23	7.54	< .001	.17	.29
National Narcissism → Immigrant Conspiracy Beliefs → Attitudes Against Naturalisation	.01	1.80	.072	-.001	.02
National Narcissism → Threat → Immigrant Conspiracy Beliefs → Attitudes Against Naturalisation	.04	1.87	.062	-.002	.08
Ingroup Satisfaction → Threat → Attitudes Against Naturalisation	-.11	-6.01	< .001	-.15	-.08
Ingroup Satisfaction → Immigrant Conspiracy Beliefs → Attitudes Against Naturalisation	-.01	-1.78	.075	-.02	.001
Ingroup Satisfaction → Threat → Immigrant Conspiracy Beliefs → Attitudes Against Naturalisation	-.02	-1.81	.071	-.04	.002

Effets totaux					
Variable	β	z	p	95% LLCI	95% ULCI
National Narcissism	.31	8.81	< .001	.24	.38
Ingroup Satisfaction	-.22	-5.99	< .001	-.29	-.15

Soutien pour les politiques discriminatoires

Avec la CMQ



Effets directs

Variable	β	z	p	95% LLCI	95% ULCI
Support for Discriminatory Policies ~					
Immigrant Conspiracy Beliefs	.12	3.33	.001	.05	.19
Threat	.73	22.88	< .001	.67	.79
Ingroup Satisfaction	.01	0.51	.609	-.03	.05
National Narcissism	.07	2.61	.009	.02	.12
CMQ	-.07	-3.74	< .001	-.11	-.04
Immigrant Conspiracy Beliefs ~					
Threat	.71	38.52	< .001	.68	.75
Ingroup Satisfaction	-.08	-3.79	< .001	-.12	-.04
National Narcissism	.12	5.21	< .001	.07	.16
CMQ	.18	8.77	< .001	.14	.22
Threat ~					
Ingroup Satisfaction	-.20	-5.93	< .001	-.27	-.13
National Narcissism	.46	15.40	< .001	.40	.52
CMQ	.29	1.11	< .001	.23	.34
CMQ ~					
Ingroup Satisfaction	-.19	-5.44	< .001	-.26	-.12
National Narcissism	.20	5.88	< .001	.14	.27

Effets indirects

Path	β	z	p	95% LLCI	95% ULCI
National Narcissism → Threat → Support for Discriminatory Policies	.33	13.35	< .001	.29	.38
National Narcissism → Immigrant Conspiracy Beliefs → Support for Discriminatory Policies	.01	2.80	.005	.004	.02
National Narcissism → Threat → Immigrant Conspiracy Beliefs → Support for Discriminatory Policies	.04	3.21	.001	.02	.06
Ingroup Satisfaction → Threat → Support for Discriminatory Policies	-.15	-5.84	< .001	-.20	-.10
Ingroup Satisfaction → Immigrant Conspiracy Beliefs → Support for Discriminatory Policies	-.01	-2.53	.011	-.02	-.002
Ingroup Satisfaction → Threat → Immigrant Conspiracy Beliefs → Support for Discriminatory Policies	-.02	-2.82	.005	-.03	-.01

Effets totaux

Variable	β	z	p	95% LLCI	95% ULCI
National Narcissism	.45	14.74	< .001	.39	.51
Ingroup Satisfaction	-.16	-4.64	< .001	-.23	-.09

Sans la CMQ**Effets directs**

Variable	β	z	p	95% LLCI	95% ULCI
Support for Discriminatory Policies ~					
Immigrant Conspiracy Beliefs	.08	2.29	.022	.01	.15
Threat	.73	22.24	< .001	.67	.79
Ingroup Satisfaction	.02	0.73	.469	-.03	.05

National Narcissism	.07	2.62	.009	.02	.12
Immigrant Conspiracy Beliefs ~					
Threat	.77	48.85	< .001	.74	.81
Ingroup Satisfaction	-.09	-4.37	< .001	-.14	-.05
National Narcissism	.12	5.14	< .001	.08	.17
Threat ~					
Ingroup Satisfaction	-.26	-7.79	< .001	-.32	-.19
National Narcissism	.52	16.82	< .001	.46	.58

Effets indirects

Path	β	z	p	95% LLCI	95% ULCI
National Narcissism → Threat → Support for Discriminatory Policies	.38	13.64	< .001	.32	.43
National Narcissism → Immigrant Conspiracy Beliefs → Support for Discriminatory Policies	.01	2.10	.035	.001	.02
National Narcissism → Threat → Immigrant Conspiracy Beliefs → Support for Discriminatory Policies	.03	2.25	.024	.004	.06
Ingroup Satisfaction → Threat → Support for Discriminatory Policies	-.19	-7.37	< .001	-.24	-.14
Ingroup Satisfaction → Immigrant Conspiracy Beliefs → Support for Discriminatory Policies	-.01	-2.06	.039	-.02	< .001
Ingroup Satisfaction → Threat → Immigrant Conspiracy Beliefs → Support for Discriminatory Policies	-.02	-2.15	.032	-.03	-.001

Effets totaux

Variable	β	z	p	95% LLCI	95% ULCI
National Narcissism	.49	15.82	< .001	.43	.55

Ingroup Satisfaction	-.20	-5.89	< .001	-.26	-.13
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Etude 3

Analyses des effets d'interactions entre la condition contrôle et la satisfaction envers l'endogroupe

Predictor	β	t	p	95% CI	η^2p
Threat					
Ingroup Satisfaction	-.17	-3.03	.003	[-.27, -.06]	.03
Ingroup Satisfaction x Control	-.02	-0.43	.671	[-.13, .08]	< .001
Control	.09	1.91	.056	[-.002, .19]	.01
Collective Narcissism	.48	8.80	< .001	[.37, .59]	.18
Control x Collective Narcissism	.08	1.40	.161	[-.03, .18]	.01
Immigrant Conspiracy Beliefs					
Ingroup Satisfaction	-.27	-5.05	< .001	[-.37, -.16]	.07
Ingroup Satisfaction x Control	-.07	-1.36	.176	[-.18, .03]	.01
Control	.08	1.71	.087	[-.01, .17]	.01
Collective Narcissism	.52	9.85	< .001	[.42, .63]	.22
Control x Collective Narcissism	.13	2.43	.016	[.02, .23]	.02
Collective Action Intentions					
Ingroup Satisfaction	-.17	-3.19	.002	[-.28, -.07]	.03
Ingroup Satisfaction x Control	-.02	-0.35	.729	[-.13, .09]	< .001
Control	.12	2.49	.013	[.03, .22]	.02
Collective Narcissism	.48	8.72	< .001	[.37, .58]	.18
Control x Collective Narcissism	.07	1.34	.182	[-.03, .18]	.01

Annexe D – Article 4

Matériel de l'Article 4

Victimisation exclusive à propos de l'épidémie de Zika (Exclusive victimhood about the Zika outbreak)

En 2015 au Brésil, est apparue une nouvelle épidémie de Zika. L'infection à virus Zika est une maladie qui s'est répandue à travers la morsure de moustiques infectés mais également sexuellement. Les symptômes sont généralement légers et beaucoup de personnes ne savent pas qu'elles sont infectées. Cependant, l'infection par Zika pendant la grossesse peut provoquer de graves malformations congénitales. Nous vous demandons de répondre aux questions suivantes à partir de votre ressenti et de vos connaissances sur le sujet. Il n'y a pas de bonnes ou de mauvaises réponses, répondez spontanément et le plus honnêtement possible en utilisant l'échelle proposée.

1. Les Français ont plus souffert de l'épidémie de Zika que les autres pays du monde
2. En général, le traumatisme lié à l'épidémie de Zika a été plus grave pour la France que pour les autres pays du monde
3. Globalement, les victimes françaises de l'épidémie de Zika n'ont pas reçu autant d'attention que les victimes d'autres pays
4. La souffrance en France liée à l'épidémie de Zika est différente de celle des autres pays
5. La souffrance en France liée à l'épidémie de Zika est unique dans l'histoire
6. Aucun autre pays n'a souffert comme la France de l'épidémie de Zika

Note. Items 1 to 3 were intended to measure competitive victimhood (adapted from Noor et al., 2008). Items 4 to 6 were intended to measure exclusive victimhood (adapted from Vollhardt et al., 2016).

Croyances conspirationnistes à propos de l'épidémie de Zika (Zika conspiracy beliefs)

1. L'épidémie de Zika a été causée par la diffusion de moustiques génétiquement modifiés
2. Le virus Zika était une forme de contrôle de la population
3. Le virus Zika était une création des industries pharmaceutiques pour créer de la demande pour un vaccin ou un médicament
4. Le virus Zika a été créé pour saboter les Jeux Olympiques d'été de 2016 au Brésil
5. Le virus Zika était une arme bactériologique utilisée contre la population sud-américaine

Note. Items 3 and 4 were adapted from Klofstad et al. (2019). Items 1, 2, and 5 were adapted from Piltch-Loeb et al. (2019).

Inquiétude à propos de l'épidémie de Zika (concern about the Zika outbreak)

Lorsque vous pensez à l'épidémie de Zika, vous êtes :

« Pas du tout inquiet » ; « Pas trop inquiet » ; « Ni inquiet ni pas inquiet » ; « Plutôt inquiet » ;
« « Très inquiet »

Connaissances sur l'épidémie de Zika (knowledge about the Zika outbreak)

Selon vous, votre niveau de connaissances générales sur l'épidémie de Zika est :

« Très bas » ; « Plutôt bas » ; « Moyen » ; « Plutôt élevé » ; « Très élevé »

Analyses supplémentaires de l'Article 4

Table S1

Correlations, Means and Standard Deviations for Measured Variables (Differentiating Zika Conspiracy Beliefs Targeting the Ingroup and Outgroups)

	<i>Mean</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.
1. National narcissism	3.25	0.76	-							
2. Ingroup satisfaction	3.96	0.91	.46***	-						
3. Zika conspiracy beliefs targeting the ingroup	2.02	1.01	.17***	-.14***	-					
4. Zika conspiracy beliefs targeting outgroups	2.28	1.01	.16***	-.13***	.89***					
5. Exclusive victimhood about the Zika outbreak	2.15	0.82	.23***	-.09**	.56***	.59***				
6. Concern about the Zika outbreak	2.56	1.08	.18***	-.02	.31***	.31***	.38***			
7. Knowledge about the Zika outbreak	1.83	0.94	.11***	.03	.08**	.08**	.10***	.21***		
8. CMQ	7.19	1.94	.12***	-.10**	.36***	.29***	.15***	.09**	-.04	
9. Age	47.1	16.4	.28***	.16***	-.06	-.01	-.02	-.01	-.06*	.01

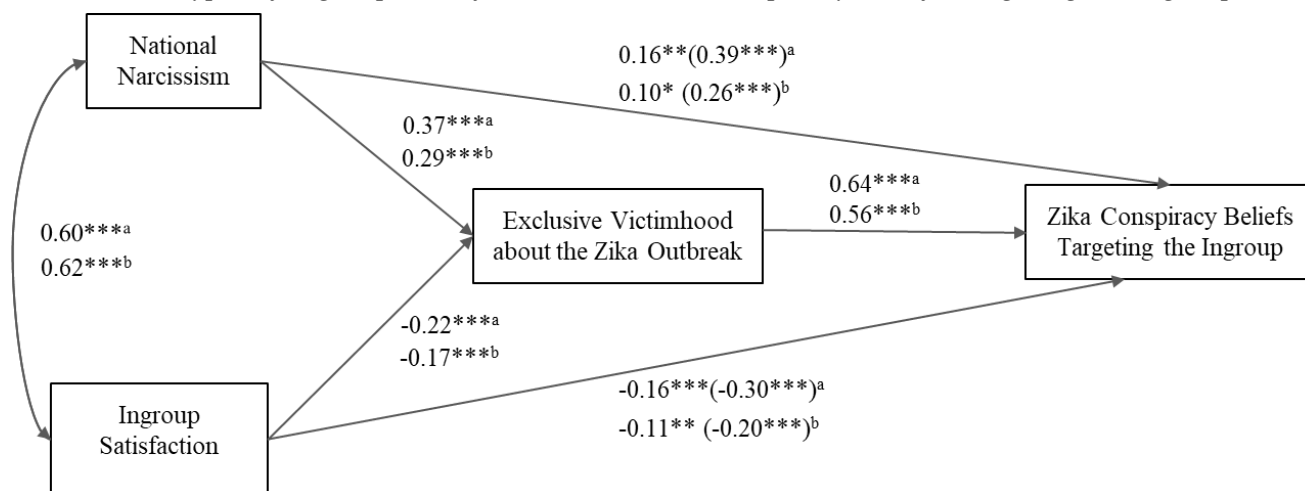
Note. $N = 1104$. All variables were measured using a 5-point Likert scale except for CMQ (11 points).

CMQ = Conspiracy Mentality Questionnaire.

* $p < .05$ ** $p < .01$ *** $p < .001$.

Figure S1

The mediating Role of Exclusive Victimhood about the Zika Outbreak in the Relationship Between Types of Ingroup Identification and Zika Conspiracy Beliefs Targeting the Ingroup

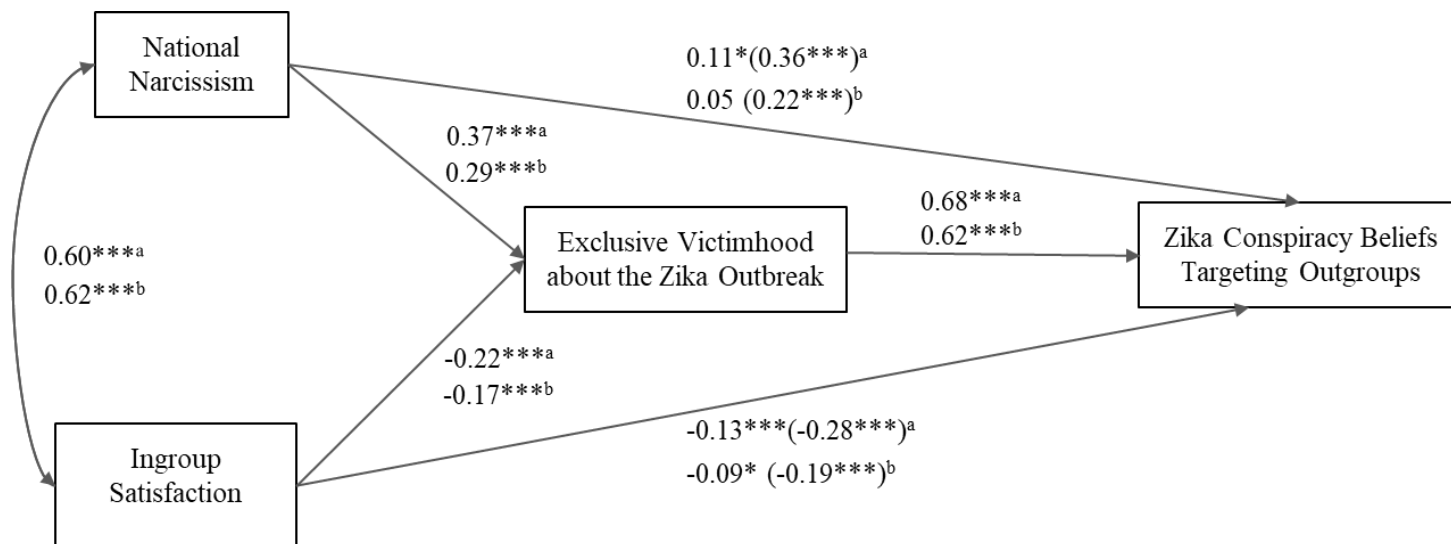


Note. ^amediation model not controlling for covariates, ^bmediation model controlling for covariates. Coefficients presented are unstandardized coefficients. Coefficients placed within parentheses are total effects. Paths for covariates are not reported for clarity.

** $p < .01$ *** $p < .001$.

Figure S2

The mediating Role of Exclusive Victimhood about the Zika Outbreak in the Relationship Between Types of Ingroup Identification and Zika Conspiracy Beliefs Targeting Outgroups



Note. ^amediation model not controlling for covariates, ^bmediation model controlling for covariates. Coefficients presented are unstandardized coefficients. Coefficients placed within parentheses are total effects. Paths for covariates are not reported for clarity.

** $p < .01$ *** $p < .001$.

Annexe E - Etude Supplémentaire 1

Matériel d'induction de la victimisation compétitive/non-compétitive/contrôle

Fin 2019 en Chine, un nouveau coronavirus est apparu, le SARS-CoV-2, qui a provoqué la pandémie de maladie à coronavirus 2019 (COVID-19) qui fait actuellement des milliers de morts.

Le tableau ci-dessous présente le bilan officiel du **nombre de cas positifs, de guérisons et de morts lié au COVID-19** dans un certain nombre de pays au **02/11/2020** (source: Ministère de la santé).

Nous sommes intéressés par votre **capacité à lire et à extraire de l'information dans ce type de tableau.**

Pour chaque pays, la première colonne liste le nombre de cas positifs, la deuxième colonne indique le nombre de guérisons et, enfin, la dernière colonne répertorie le nombre de décès.

Pour toutes les conditions : Quel est le nombre de **morts** du COVID-19 en **France** ?

Veillez classer les pays suivants, **du plus grand nombre de morts (1) au moins grand nombre de morts (3)**, en déplaçant les pays à l'aide de votre souris :

Condition victimisation compétitive : Allemagne/France/Belgique

Condition victimisation non-compétitive : Inde/France/Brésil

Entre ces deux pays, lequel compte **le plus de cas positifs** ?

Condition victimisation compétitive : France/Iran

Condition victimisation non-compétitive : France/Russie

Entre ces deux pays, lequel compte **le plus de morts** ?


















Condition victimisation compétitive : Espagne/France

Condition victimisation non-compétitive : Etats-Unis/France

Entre ces deux pays, lequel compte **le plus de guérisons** ?

Condition victimisation compétitive : France/Colombie

Condition victimisation non-compétitive : France/Egypte

Lieu	Cas ↕	Guérisons	Décès
 États-Unis	9 282 358 + 74 113	-	230 937 + 427
 Inde	8 229 313 + 46 963	7 544 798	122 607 + 470
 Brésil	5 545 705 + 10 100	4 980 942	160 104 + 190
 Russie	1 655 038 + 18 665	1 236 033	28 473 + 245
 France	1 413 915 + 45 570	118 227	37 019 + 231
 Espagne	1 185 678	150 376	35 878
 Argentine	1 173 520 + 6 609	985 303	31 140 + 138
 Colombie	1 083 321 + 9 137	977 804	31 515 + 201
 Royaume-Uni	1 034 914 + 23 254	-	46 717 + 162
 Mexique	929 392 + 4 430	786 516	91 895 + 142
 Pérou	902 503 + 2 408	825 197	34 476
 Afrique du Sud	726 823 + 1 371	655 330	19 411 + 135
 Italie	709 335 + 29 905	292 380	38 826 + 208
 Iran	628 780 + 7 719	491 247	35 738 + 434
 Allemagne	552 060 + 14 177	363 545	10 541 + 29
 Chili	511 864 + 1 608	488 166	14 247 + 40
 Irak	475 288	402 782	10 966
 Belgique	441 018 + 16 915	-	11 737 + 173
 Égypte	107 736	99 555	6 278

Echelles de Mesures

Victimisation Compétitive à propos de la Pandémie de COVID-19 (competitive victimhood about COVID-19).

1. Les Français ont plus souffert de la pandémie de COVID-19 que les autres pays du monde
2. En général, le traumatisme lié à la pandémie de COVID-19 a été plus grave pour la France que pour les autres pays du monde
3. Globalement, les victimes françaises de la pandémie de COVID-19 n'ont pas reçu autant d'attention que les victimes d'autres pays

Victimisation Exclusive à propos de la Pandémie de COVID-19 (exclusive victimhood about COVID-19).

1. La souffrance en France liée à la pandémie de COVID-19 est différente de celle des autres pays
2. La souffrance en France liée à la pandémie de COVID-19 est unique dans l'histoire
3. Aucun autre pays n'a souffert comme la France de la pandémie de COVID-19

Annexe F – Article 5

Analyses supplémentaires de l'Article 5

Table S1

Summary of the Categorized Tweets Depending on Days of the Tournament

Day	Total	Conspiracy		Skeptic		Defiant		Unclassified	
	<i>N</i>	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
14/06	16	0	0	3	19	0	0	13	81
15/06	6	0	0	0	0	0	0	6	100
16/06	67	3	4	18	27	19	28	27	40
17/06	19	2	11	0	0	3	16	14	74
18/06	49	4	8	8	16	13	27	24	49
19/06	62	12	19	12	19	0	0	38	61
20/06	66	14	21	8	12	9	14	35	53
21/06	67	14	21	16	24	5	7	32	48
22/06	97	22	23	25	26	12	12	38	39
23/06	87	27	31	31	36	10	11	19	22
24/06	40	13	33	14	35	4	10	9	23
25/06	540	149	28	61	11	245	45	85	16
26/06	656	375	57	62	9	137	21	82	13
27/06	210	89	42	18	9	32	15	71	34
28/06	193	116	60	11	6	22	11	44	23
29/06	44	13	30	5	11	5	11	21	48
30/06	38	10	26	5	13	3	8	20	53
01/07	54	15	28	12	22	9	17	18	33
02/07	24	3	13	4	17	0	0	17	71
03/07	50	7	14	18	36	10	20	15	30
04/07	27	2	7	8	30	3	11	14	52
05/07	9	1	11	2	22	1	11	5	56
06/07	37	8	22	5	14	14	38	10	27
07/07	16	4	25	3	19	1	6	8	50
08/07	5	0	0	0	0	2	40	3	60
09/07	10	0	0	0	0	2	20	8	80
10/07	15	1	7	3	20	2	13	9	60
11/07	16	4	25	3	19	3	19	6	38
12/07	12	3	25	1	8	1	8	7	58
13/07	13	1	8	2	15	0	0	10	77
14/07	9	1	11	1	11	1	11	6	67
15/07	214	23	11	43	20	70	33	78	36
Total	2768	936	34	402	15	638	23	792	29

Note. *N* = 2,768.

Table S2
Categorized Tweets Depending on a Distribution by Matches

Hashtag	Total	Conspiracy		Skeptic		Defiant		Unclassified	
	<i>N</i>	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
RUSSKA	3	0	0	1	33	0	0	2	67
PORESP	5	2	40	1	20	0	0	2	40
IRNMAR	2	0	0	0	0	0	0	2	100
FRAAUS	33	3	9	6	18	6	18	18	55
PERDEN	2	0	0	1	50	0	0	1	50
ARGISL	1	1	100	0	0	0	0	0	0
CRONGA	2	1	50	0	0	0	0	1	50
CRCSRB	1	0	0	0	0	1	100	0	0
BRASUI	23	2	9	3	13	0	0	18	78
GERMEX	1	0	0	0	0	0	0	1	100
ENGTUN	33	4	12	7	21	6	18	16	48
SWEKOR	5	1	20	1	20	0	0	3	60
COLJPN	1	1	100	0	0	0	0	0	0
SENPOL	3	0	0	1	33	0	0	2	67
EGYRUS	5	2	40	2	40	0	0	1	20
PORMAR	47	23	49	10	21	8	17	6	13
IRNESP	10	5	50	0	0	2	20	3	30
DENAUS	9	2	22	3	33	0	0	4	44
ARGCRO	4	1	25	1	25	0	0	2	50
BRACRC	13	0	0	2	15	2	15	9	69
NGAISL	6	3	50	0	0	0	0	3	50
SERSUI	32	14	44	9	28	6	19	3	9
BELTUN	3	2	67	0	0	0	0	1	33
SWEGER	31	15	48	13	42	1	3	2	6
ENGPAN	9	2	22	2	22	0	0	5	56
JPNSEN	1	1	100	0	0	0	0	0	0
IRNPOR	85	27	32	27	32	13	15	18	21
SKAEGY	1	0	0	1	100	0	0	0	0
ESPMAR	223	99	44	12	5	85	38	27	12
URURUS	1	0	0	0	0	0	0	1	100
NGAARG	305	228	75	22	7	17	6	38	12
KORGER	27	3	11	3	11	2	7	19	70
MEXSWE	6	1	17	2	33	1	17	2	33
SERBRA	1	1	100	0	0	0	0	0	0
SENCOL	69	49	71	3	4	7	10	10	14
JPNPOL	3	2	67	0	0	1	33	0	0
ENGBEL	1	0	0	1	100	0	0	0	0
FRAARG	4	0	0	0	0	0	0	4	100
URUPOR	2	0	0	0	0	1	50	1	50
ESPRUS	19	8	42	6	32	2	11	3	16
DENCRO	1	0	0	0	0	0	0	1	100
BRAMEX	3	0	0	2	67	0	0	1	33
BELJPN	2	1	50	0	0	0	0	1	50

Hashtag	Total	Conspiracy		Skeptic		Defiant		Unclassified	
	<i>N</i>	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
SWESUI	1	0	0	1	100	0	0	0	0
COLENG	31	9	29	13	42	4	13	5	16
URUFRA	1	0	0	0	0	1	100	0	0
BRABEL	12	3	25	3	25	5	42	1	8
SWEENG	2	0	0	1	50	0	0	1	50
FRABEL	4	0	0	2	50	2	50	0	0
CROENG	10	1	10	4	40	3	30	2	20
FRACRO	119	14	12	25	21	32	27	48	40
Total	1218	531	44	191	16	208	17	288	24

Note. Only includes tweets for which the match referred to could be retrieved ($n = 1,218$). Tweets referring to more than two matches were duplicated ($n = 65$). Matches are presented by their official hashtags. See supplementary materials for the corresponding team names.

Table S3

Categorized Tweets Depending on Distribution by Matches

Hashtags	Playing Teams
RUSSKA	Russia - Saudi Arabia
PORESP	Portugal - Spain
IRNMAR	Iran - Morocco
FRAAUS	France - Australia
PERDEN	Peru - Denmark
ARGISL	Argentina - Island
CRONGA	Croatia - Nigeria
CRCSRB	Costa Rica - Serbia
BRASUI	Brazil - Switzerland
GERMEX	Germany - Mexico
ENGTUN	England - Tunisia
SWEKOR	Sweden - South Korea
COLJPN	Colombia - Japan
SENPOL	Senegal - Poland
EGYRUS	Egypt - Russia
PORMAR	Portugal - Morocco
IRNESP	Iran - Spain
DENAUS	Denmark - Australia
ARGCRO	Argentina - Croatia
BRACRC	Brazil - Costa Rica
NGAISL	Nigeria - Island
SERSUI	Serbia - Switzerland
BELTUN	Belgium - Tunisia
SWEGER	Sweden - Germany
ENGPAN	England - Panama
JPNSEN	Japan - Senegal
IRNPOR	Iran - Portugal
SKAEGY	Saudi Arabia - Egypt
ESPMAR	Spain - Morocco

URURUS	Uruguay - Russia
NGAARG	Nigeria - Argentina
KORGER	South Korea - Germany
MEXSWE	Mexico - Sweden
SERBRA	Serbia - Brazil
SENCOL	Senegal - Colombia
JPNPOL	Japan - Poland
ENGBEL	England - Belgium
FRAARG	France - Argentina
URUPOR	Uruguay - Portugal
ESPRUS	Spain - Russia
DENCRO	Denmark - Croatia
BRAMEX	Brazil - Mexico
BELJPN	Belgium - Japan
SWESUI	Sweden - Switzerland
COLENG	Colombia - England
URUFRA	Uruguay - France
BRABEL	Brazil - Belgium
SWEENG	Sweden - England
FRABEL	France - Belgium
CROENG	Croatia - England
FRACRO	France - Croatia

Table S4*Popularity Indexes of the Categories*

Category of Tweets	Replies		Retweets		Likes	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Conspiracy	0.39	2.90	1.24	10.5	2.82	19.5
Skeptic	0.41	1.56	0.52	2.76	2.62	15.8
Defiant	0.22	1.17	1.40	16.5	3.18	37.4
Unclassified	0.53	2.84	1.61	17.4	4.07	32.2
Total	0.39	2.42	1.28	13.7	3.23	28

Note. $N = 2,768$.

Supplementary Figures

Figure S1

Distribution of the Number of Tweets per Category for each World Cup Days, including the “unclassified tweets” category

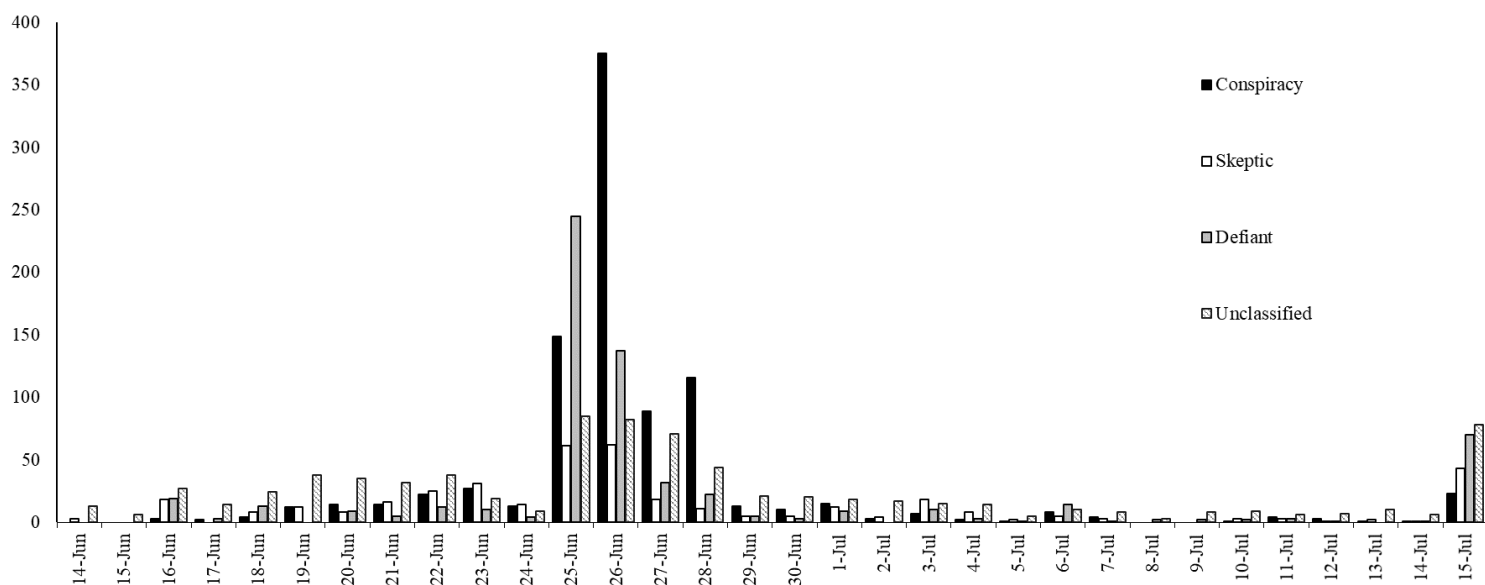
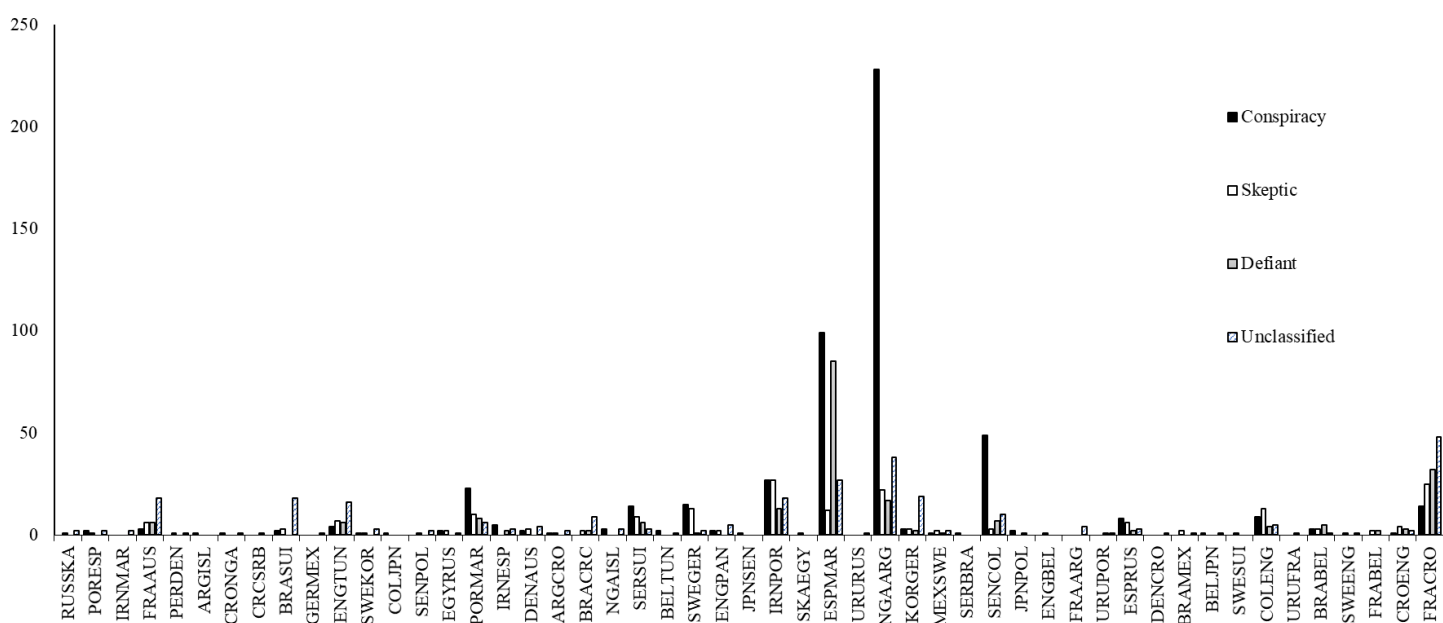


Figure S2

Distribution of the Number of Tweets per Category for each Retrieved Matches of the Tournament, including the “unclassified tweets” category



Annexe G – Matériel de l'étude supplémentaire 2

Narcissisme collectif envers l'équipe (team narcissism)

Version française

1. L'équipe de France de football mérite un traitement de faveur
2. Je ne serai satisfait que lorsque l'équipe de France de football obtiendra la reconnaissance qu'elle mérite
3. Cela me met très en colère lorsque d'autres personnes critiquent l'équipe de France de football
4. L'Euro serait bien meilleur si l'équipe de France de football y jouait un rôle majeur
5. Peu de gens semblent pleinement comprendre l'importance de l'équipe de France de football

Version anglaise

1. The England national football team deserves special treatment
2. I will never be satisfied until the England national football team gets the recognition it deserves
3. It really makes me angry when others criticize the England national football team
4. If the England national football team had a major say in the Euro, the tournament would be a better place
5. Not many people seem to fully understand the importance of the England national football team

Identification sécurisée envers l'équipe (secure team identification)

Version française

1. Je me vois comme un supporter de l'équipe de France de football
2. Je suis heureux d'être un supporter de l'équipe de France de football
3. Je suis fortement attaché à l'équipe de France de football
4. Je m'identifie à l'équipe de France de football

Version anglaise

1. I see myself as a supporter of the English national football team
2. I am pleased to be a supporter of the English national football team
3. I feel strong ties with the England national football team
4. I identify with the England national football team

Croyances conspirationnistes sur le football (football conspiracy beliefs)

Version française

1. L'arbitrage à assistance vidéo (VAR) est utilisé en réalité dans le but d'éliminer certaines équipes qui dérangent
2. Le vainqueur de l'Euro 2021 a été décidé en secret avant le début de la compétition en fonction d'enjeux économiques et politiques
3. Certaines équipes sont victimes de déstabilisation intentionnelle de la part de médias corrompus

4. Certains résultats de match sont dus au fait que les organisateurs de l'Euro ne veulent pas contrarier certains groupes très puissants

Version anglaise

1. The real purpose behind Video Assistant Referee (VAR) is to eliminate unwelcomed teams from the tournament
2. The winner of the Euro 2021 has been secretly decided before the tournament started based on economic and political criteria
3. Some teams are victims of intentional destabilisation from corrupted media
4. Some match results are due to the fact that Euro organizers do not want to upset some very powerful groups

Menace perçue à propos de l'élimination (perceived threat about the elimination)

Version française

L'élimination de l'Euro 2021 menace la réputation de l'équipe de France de football

Version anglaise

The elimination of the England national football team from the Euro 2021 threatens their reputation

Victimisation compétitive à propos de l'élimination (competitive victimhood about the elimination)

Version française

1. En général, le traumatisme lié à l'élimination de l'Euro 2021 est plus important pour les supporters de l'équipe de France que pour les supporters des autres équipes
2. Globalement, l'équipe de France de football n'a pas reçu autant de respect que les autres équipes lors de son élimination de l'Euro 2021
3. En moyenne, l'équipe de France de football a subi plus de critiques que les autres équipes lors de son élimination de l'Euro 2021

Version anglaise

1. In general, the trauma of the elimination from the Euro 2021 has been more severe for supporters of the England national football team than for supporters of other teams
2. Overall, the England national football team has not received as much respect as other teams following its elimination from the Euro 2021
3. On average, throughout its elimination from the Euro 2021, the England national football team has received more critics than the other teams

Exemple de mise en forme de la question « filler » (vagues 2, 3, 4)

Qu'avez-vous pensé de la performance de l'équipe de France de football lors du match contre la Suisse ?

Donnez votre évaluation globale de chacun des quatre postes ainsi que de la gestion tactique du sélectionneur (5 étoiles = performance parfaite).

Gardien	★ ★ ★ ★ ★
Défense	★ ★ ★ ★ ★
Milieu	★ ★ ★ ★ ★
Attaque	★ ★ ★ ★ ★
Sélectionneur	★ ★ ★ ★ ★

Annexe H – Traductions françaises et sources des utilisées dans l'avant-propos

« Coronavirus: American biological warfare against Russia and China »

Traduction : Coronavirus : La guerre biologique américaine contre la Russie et la Chine

Source : <https://nationalinterest.org/blog/buzz/some-russia-think-coronavirus-us-biological-weapon-121731>

« Do you remember the North Korean leader promised a Christmas present for America, back in December? Could it be they got together with China, and this is that present? »

Traduction : Vous vous souvenez que le leader Nord-Coréen a promis un cadeau de Noël pour l'Amérique, en décembre dernier? Se pourrait-il qu'ils se soient mis d'accord avec la Chine, et que ce soit ce cadeau ?

Source : <https://thehill.com/homenews/media/487494-jerry-falwell-jr-says-coronavirus-is-north-korea-china-weapon-to-hurt-trump>

« It might be US army who brought the epidemic to Wuhan.»

Traduction : C'est peut-être l'armée américaine qui a amené l'épidémie à Wuhan.

Source : <https://twitter.com/zlj517/status/1238111898828066823>

« The coronavirus was inoculated by the gringos »

Traduction : Le coronavirus a été inoculé par les gringos.

Source : <https://www.noticiasbarquisimeto.com/el-coronavirus-lo-inocularon-los-gringos-constituyente-elvis-mendez/>

« We know who is behind this whole plandemic »

Traduction : Nous savons qui est derrière cette plandémie.

Source : <https://notesfrompoland.com/2021/07/19/jews-are-behind-the-pandemic-chant-crowd-at-polish-anti-vaccine-protest/>

« Qatar is Corona »

Traduction : Le Qatar est le Corona

Source : <https://www.mei.edu/publications/covid-19-prompts-spread-disinformation-across-mena>

« #CoronaJihad »

Traduction : Djihad du Corona

Source : <https://www.newsweek.com/indias-coronavirus-outbreak-stokes-islamophobia-muslims-blamed-spreading-infection-1496011>

« Zionist elements developed a deadlier strain of coronavirus against Iran »

Traduction : Des éléments sionistes ont développé une souche de coronavirus plus mortelle contre l'Iran

Source : <https://www.jpost.com/Middle-East/Iran-News/Irans-regime-pushes-antisemitic-conspiracies-about-coronavirus-620212>

« Iran bears direct responsibility for the outbreak of corona infection »

Traduction : L'Iran porte une responsabilité directe dans l'épidémie d'infection à coronavirus

Source : <https://www.mei.edu/publications/covid-19-prompts-spread-disinformation-across-mena>

« U.S. President Donald Trump targeted the city with coronavirus to damage its culture and honor »

Traduction : Le président américain Donald Trump a ciblé la ville avec le coronavirus pour porter atteinte à sa culture et à son honneur.

Source : <https://en.radiofarda.com/a/iran-cleric-blames-trump-for-coronavirus-outbreak-in-religious-city/30449087.html>

« A foreign virus »

Traduction : Un virus étranger

Source : <https://edition.cnn.com/2020/03/11/politics/coronavirus-trump-foreign-virus/index.html>

Note : une grande partie de ces Sources, ainsi que d'autres exemples, peuvent être trouvée sur les pages Wikipédia Françaises et Anglaises « Désinformation sur la pandémie de Covid-19 ».