

UNIVERSITÉ DU QUÉBEC À MONTRÉAL

LA THÉORIE DE L'AUTODÉTERMINATION ET LES SOUVENIRS ÉPISODIQUES : ÉVALUATION DE
L'IMPACT SUR L'ENDOSSEMENT DE THÉORIES DU COMLOT ET LE SOUTIEN DE L'ENGAGEMENT
POLITIQUE NON-NORMATIF

THÈSE

PRÉSENTÉE

COMME EXIGENCE PARTIELLE

DOCTORAT EN PSYCHOLOGIE

PAR

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JUIN 2026

UNIVERSITÉ DU QUÉBEC À MONTRÉAL
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REMERCIEMENTS

Je tiens à remercier mon directeur de recherche, Frédérick Philippe, d'avoir cru en moi dès le départ. Ta confiance et ton appui ont été fondamentaux pour donner vie à ces idées de recherche et pour mon évolution en tant que chercheuse. Je te remercie également pour l'autonomie et la liberté offertes durant ce cheminement, qui m'ont permis de réaliser un parcours à mon image. Je tiens aussi à souligner mes chères collègues de labo. Christine, Iliane et Val, merci pour votre accueil chaleureux. Frelf et Aurélie, merci pour votre précieuse écoute et pour votre enthousiasme constant pour se rassembler.

Je souhaite remercier profondément Marie-Dina Salvione et Emmanuelle Biroteau auprès de qui j'ai appris à ancrer ma recherche et à la transmettre différemment, ainsi qu'à tisser des liens entre recherche et engagement citoyen. Votre sagesse et douceur m'ont accompagnée tout au long de ces années et continuent de m'inspirer.

Alexa, Steph, Yas, Mathieu, Éli, André, Ariane, MP, Nessa et Carlos, vous avez rendu ces années magiques. J'ai adoré en célébrer chacune des petites (et grandes!) étapes avec vous. Merci pour les fous rires, les larmes, les partages et les soirées club social. Votre soutien a été inestimable. Je vais m'ennuyer de me retrouver sous le même toit que vous pour parler de tout et de rien, toujours avec l'excuse facile pour terminer notre journée au Béné ou à l'Idéal.

À mes doux-ces ami-es de vie qui avez illuminé mes journées, avec qui j'ai eu l'opportunité de faire et refaire le monde, et qui, surtout, m'ont soutenue dans les moments où j'en avais le plus besoin. Merci d'avoir rendu la vie plus légère à coups de soupers, de chalets, de terrasses et de danse.

Je souhaite également remercier mes parents pour leur soutien infaillible. Merci papa de m'avoir partagé ta curiosité, ton engouement pour la recherche, mais surtout ton désir de construire des ponts entre les disciplines. Ta confiance m'a éclairé tout au long de ce processus. Merci maman pour ta présence toujours réconfortante, tes mots encourageants et tes histoires de vie. Ce sont elles qui m'ont enseigné la persévérance et le pouvoir de la solidarité et de l'empathie.

À Karim, merci de m'avoir soutenue dans chacune de mes réflexions et d'avoir toujours cru en moi, même dans les moments où je doutais. Ton amour, ta présence, ta confiance et ta patience ont été mes piliers

durant ce parcours, sans oublier chacun des cafés que tu m'as préparés le matin. Merci pour ces petits moments paisibles, que je chéris tant. Une mention spéciale est de mise pour nos minous, qui m'ont accompagnée dans la rédaction à coups de ronrons et de hurlements plaintifs pour des croquettes.

Merci au Conseil de recherches en sciences humaines du Canada et au Ministère de la Défense nationale pour le soutien financier.

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Pour Rita, Lyne et Nina

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LISTE DES ABRÉVIATIONS, DES SIGLES ET DES ACRONYMES

BLT	<i>Bunny and Lion Task</i>
BPNSFS	<i>Basic Psychological Need Satisfaction and Frustration Scale</i>
C19-CB	<i>COVID-19-Related Conspiracy Beliefs</i>
CT	<i>Conspiracy theory</i>
EPC	Engagement politique conventionnel
EPNC	Engagement politique non conventionnel
NPE	<i>Normative political engagement</i>
NNPE	<i>Non-normative political engagement</i>
PR	<i>Psychological reactance</i>
SD	<i>Standard deviation</i>
TC	Théorie du complot

RÉSUMÉ

La présente thèse vise à mieux cerner les facteurs associés au processus motivationnel menant au conspirationnisme et au soutien d'un engagement politique non conventionnel en contexte d'événements sociétaux extrêmes, en employant une approche par les souvenirs. Le premier chapitre de cette thèse conceptualise ce processus motivationnel par la mise en relation du modèle des 3N (Kruglanski *et al.*, 2019), de la théorie de l'autodétermination (Ryan et Deci, 2017) et des connaissances empiriques sur la fonction des souvenirs épisodiques. Spécifiquement, l'endossement de théories du complot est conceptualisé comme une manifestation de schémas cognitifs rigides prenant racine dans l'activation de souvenirs caractérisés par une frustration des besoins psychologiques fondamentaux (autonomie, compétence et appartenance), alors que le soutien d'un engagement politique non conventionnel est considéré comme une manifestation de défiance oppositionnelle déclenchée par l'activation de souvenirs caractérisés par des expériences passées de réactance psychologique.

Les chapitres 2, 3 et 4 de cette thèse présentent trois articles scientifiques. Les recherches afférentes à ces articles ont été réalisées durant la pandémie de COVID-19 et prennent donc en considération ce contexte sociopolitique associé à des restrictions des libertés. Le premier article, publié dans le journal *Frontiers in Psychology*, établit les liens théoriques entre le conspirationnisme, le modèle des 3N et la théorie de l'autodétermination pour favoriser la compréhension de ce phénomène. Le second article (Étude 1 : $N = 141$; Étude 2 : $N = 213$), publié dans *Journal of Personality*, vise à établir la relation entre l'activation de souvenirs encodés avec frustration des besoins psychologiques fondamentaux et l'endossement de théories du complot liées au COVID-19, ainsi qu'à démontrer l'influence immédiate de l'activation de ces souvenirs sur les réactions cognitives et affectives élicitées par une nouvelle théorie du complot créée pour les fins de l'étude. Les résultats montrent qu'en contexte de restriction des libertés, ce sont les souvenirs caractérisés spécifiquement par une frustration du besoin d'autonomie, et non de compétence et d'appartenance, qui prédisent un plus grand endossement de théories du complot liées au COVID-19. Il est également démontré que l'activation subliminale de ces souvenirs intensifie dans l'immédiat les réactions cognitives et affectives face à une nouvelle théorie du complot. Plus précisément, leur activation augmente *in situ* la probabilité d'adhérer à cette nouvelle théorie du complot, de ressentir de la colère suite à sa lecture et de vouloir la propager, comparativement à l'activation subliminale de souvenirs dont l'autonomie est satisfaite et comparativement à l'absence d'activation subliminale de souvenirs. Le dernier article composant cette thèse (Étude 1 : $N = 141$; Étude 2 : $N = 181$), soumis pour publication au journal *Political Behavior*, a pour objectif de démontrer que l'activation de souvenirs encodés avec réactance psychologique influence l'engagement politique non conventionnel et le distingue de l'engagement politique conventionnel. Les analyses montrent en effet que les souvenirs encodés avec réactance psychologique prédisent le soutien d'un engagement politique non conventionnel. Les résultats démontrent aussi que les personnes chez qui l'on active inconsciemment un souvenir de réactance psychologique qui leur est propre soutiennent dans l'immédiat un engagement politique non conventionnel accru pour exprimer leur désaccord avec une politique fictive, comparativement aux personnes chez qui l'on active inconsciemment un souvenir sans réactance psychologique ou chez qui aucun souvenir n'est activé. Dans les deux études, les souvenirs de réactance psychologique ne sont pas associés au soutien d'un engagement politique conventionnel.

Le dernier chapitre de cette thèse met en relation l'ensemble de ces résultats, ainsi qu'élabore quant à leur contribution respective pour éclaircir comment le processus motivationnel lié à l'endossement de théories du complot et au soutien d'un engagement politique non conventionnel prend place dans un

contexte de restriction des libertés. Les fonctions potentiellement compensatoires du conspirationnisme et de l'engagement politique non conventionnel sont également explorées. Les implications et pistes de recherche future sont discutées en dernier lieu.

Mots clés : théories du complot, engagement politique non conventionnel, engagement politique conventionnel, souvenirs, motivation, théorie de l'autodétermination, autonomie, réactance psychologique.

ABSTRACT

This thesis aims to better understand the factors contributing to the motivational process that leads to the endorsement of conspiracy theories and to the support of non-normative political engagement in the context of extreme societal events, using a memory-based approach. The first chapter of this thesis conceptualizes this motivational process by linking the 3N model (Kruglanski et al., 2019), self-determination theory (Ryan and Deci, 2017), and empirical knowledge about the function of episodic memories. Specifically, the endorsement of conspiracy theories is conceptualized as a manifestation of rigid cognitive patterns rooted in the activation of memories encoded with frustrated levels of psychological needs (i.e., autonomy, competence, and relatedness), while support for non-normative political engagement is considered a manifestation of oppositional defiance triggered by the activation of memories characterized by past experiences of psychological reactance.

Chapters 2, 3, and 4 of this thesis present three scientific articles. All three were written during the COVID-19 pandemic and therefore take into account this socio-political context associated with restrictions on freedoms. The first article, published in the journal *Frontiers in Psychology*, establishes the theoretical links between conspiracy theories, the 3N model, and self-determination theory to promote understanding of this phenomenon. The second article (Study 1: $N = 141$; Study 2: $N = 213$), published in *Journal of Personality*, aims to establish the relationship between the activation of memories encoded as need-frustrating and the endorsement of COVID-19-related conspiracy theories, as well as to demonstrate the immediate influence of the activation of these memories on the cognitive and affective reactions elicited by a new conspiracy theory created for the purposes of the study. The results show that in a context of restricted freedoms, it is memories characterized specifically as autonomy-frustrating, rather than competence- and relatedness-frustrating, that predict greater endorsement of COVID-19-related conspiracy theories. It was further demonstrated that subliminal activation of these memories immediately intensifies cognitive and affective reactions to a new conspiracy theory. More specifically, their activation increases the likelihood of adhering to this new conspiracy theory, feeling anger after reading it, and being willing to disseminate it, compared to the subliminal activation of autonomy-satisfying memories and compared to the absence of subliminal activation of memories. The last article in this thesis (Study 1: $N = 141$; Study 2: $N = 181$), submitted for publication to *Political Behavior*, aims to demonstrate that the activation of memories encoded with psychological reactance influences support for non-normative political engagement and distinguishes it from normative political engagement. The analyses show that memories characterized by psychological reactance do indeed predict heightened support for non-normative political engagement. The results also show that people who are unconsciously activated with their own memory of psychological reactance immediately report higher support for non-normative political engagement to express their disagreement with a fictional policy, compared to people who are unconsciously activated with a memory without psychological reactance and compared to people who are not activated with their own memory. In both studies, memories of psychological reactance are not associated with support for normative political engagement.

The final chapter of this thesis brings together all of these findings and elaborates on their contribution to clarifying how the motivational process linked to the endorsement of conspiracy theories and support for non-normative political engagement takes place in a context of restricted freedoms. The potential compensatory functions of conspiracy theories and non-normative political engagement are also explored. Finally, the implications and avenues for future research are discussed.

Keywords : Conspiracy theories, non-normative political engagement, normative political engagement, memories, motivation, self-determination theory, autonomy, psychological reactance.

INTRODUCTION

L'année 2020 a été marquée par une pandémie ayant précipité des changements sociétaux majeurs, notamment la mise en place de mesures sanitaires restreignant les droits et libertés. Bien que ces restrictions aient visé à contenir la propagation du COVID-19 et ainsi protéger la santé de la population, elles ont grandement affecté le tissu social de par leur sévérité et leurs fluctuations, créant un climat d'incertitude. Certains ont vu leurs économies s'envoler ou ont été affectés de ne pouvoir être physiquement auprès de leurs proches, alors que d'autres ont considéré inconcevable qu'un « rhume » puisse mettre en péril leur santé, réagissant avec déni, voire rejet. Cette période a ainsi témoigné d'une recrudescence du mouvement « anti-masques ». Ce mouvement dont les racines remontent à 1918 durant la grippe espagnole (Bélair-Cirino, 2020; Hauser, 2020 ; Navarro, 2020) ne se résume pas au simple rejet du masque comme mesure de protection sanitaire. Il s'agit d'un mouvement polarisé qui se caractérise par une méfiance envers les institutions politiques et scientifiques, généralement basée sur des théories du complot (TCs), ainsi qu'un désir ardent de protéger son autonomie et ses libertés jusqu'à l'adoption, pour certains, de comportements radicaux (Al-Rawi, 2022 ; Hapuhennedige, 2020 ; Péloquin, 2020 ; Radio-Canada, 2020). Effectivement, la crise sanitaire a concorde avec un renforcement de la corrélation entre les TCs et le soutien à la violence, dû à une politisation de ces narratifs (Uscinski *et al.*, 2022). Aujourd'hui, les TCs se définissent comme des narratifs intransigeants qui exposent un ennemi dont il faut se défendre à tout prix, enhardissant certains à s'engager politiquement et à adopter des comportements politiques au nom de ces narratifs. Les comportements politiques émis au nom des TCs peuvent varier, allant d'un engagement politique conventionnel (EPC) selon les normes sociales en place (ex : manifester, signer une pétition, porter un symbole) à un engagement politique non conventionnel (EPNC), dont la violence peut escalader (ex. : vandalisme, faire usage de violence durant une manifestation, etc. ; McCauley et Moskalenko, 2017 ; Uscinski *et al.*, 2022). Les TCs s'inscrivent donc dans la lignée des narratifs idéologiques pouvant mener à la radicalisation violente. Longtemps pathologisée, les données probantes montrent plutôt que la radicalisation violente serait un processus psychologique s'illustrant sur un continuum (Horgan, 2014). La radicalisation violente est définie comme un processus motivationnel compensatoire au cours duquel un individu focalise graduellement ses croyances autour d'une idéologie, dans le cas de la présente thèse des narratifs conspirationnistes, pouvant éventuellement mener à un soutien cognitif et comportemental de la violence (Bélanger *et al.*, 2019; McCauley et Moskalenko, 2017; Schmid, 2013).

Dans le cadre de la présente thèse, il est ainsi considéré que le processus motivationnel menant à l'endossement de TCs découle de la nécessité de combler un sentiment de signification, c'est-à-dire, la nécessité de compenser pour la frustration des trois besoins psychologiques fondamentaux avancés par la théorie de l'autodétermination (autonomie, compétence et appartenance; Bélanger *et al.*, 2019; Ryan et Deci, 2017), alors que l'endossement de comportements radicaux est une réponse compensatoire provenant d'une réactance oppositionnelle face à un contexte restrictif. Cette thèse vise à examiner ce processus compensatoire motivant l'endossement de TCs et d'un EPNC. Dans un premier temps (Chapitre 1), le lecteur est amené à survoler les grandes conceptualisations (traits de personnalité et pathologisation, modèle socioépistémique) et théories (modèle des 3N, théorie de l'autodétermination, réactance psychologique) avancées pour comprendre ces phénomènes, pour ensuite porter son attention sur l'utilité d'adopter une approche par les souvenirs pour examiner ce processus compensatoire. Plutôt que de simplement focaliser sur l'individu, nous proposons d'adopter une approche interactive qui considère que l'individu interagit de façon unique avec son environnement par l'entremise de l'activation de souvenirs. Dans un second temps (Chapitres 2, 3 et 4), trois articles scientifiques sont présentés, soit un premier article théorique, puis deux articles empiriques. Dans un dernier temps (Chapitre 5), l'ensemble des résultats sont mis en relations et leurs implications potentielles théoriques et pratiques sont discutées.

CHAPITRE 1

CONTEXTE THÉORIQUE

La littérature théorique et empirique tentant d'éclaircir les processus psychologiques et motivationnels associés aux théories du complot (TCs) et à l'engagement politique conventionnel (EPC) vs non conventionnel (EPNC) a connu un essor particulier au cours des 10 dernières années (Douglas *et al.*, 2019; Uysal *et al.*, 2024 ; van Prooijen et Douglas, 2018). Malgré le développement de cette littérature, un flou relatif persiste quant à la façon dont les facteurs psychologiques sont impliqués dans le processus motivationnel de l'endossement de TCs et de l'EPNC. Le présent chapitre résume l'état des connaissances à cet effet et introduit l'utilité d'employer une approche par les souvenirs pour comprendre ledit processus motivationnel fondamental et commun à tous, mais dont l'activation est unique à chaque personne.

1.1 Les théories du complot : des narratifs pouvant mener à un engagement politique non conventionnel

1.1.1 Conceptions courantes des théories du complot

Les théories du complot (TCs) sont des narratifs caractérisés par cinq paramètres clefs, soit un modèle (*pattern*), qui implique une alliance (*coalition*) dont les intentions (*agency*) représentent une menace (*threat*) et qui agit sous le couvert de la cachoterie (*secrecy*; van Prooijen et van Vugt, 2018). Spécifiquement, le modèle reflète une élaboration de diverses relations causales entre des événements, des personnes et des objets. Ce modèle sous-entend que des personnes mal intentionnées, généralement en position d'autorité (ex. : figures politiques, compagnies pharmaceutiques, etc.) ou sujettes à des stéréotypes négatifs (ex. : immigrants, femmes, etc.), sont de connivence et forment une alliance. Cette alliance hostile possède un plan menaçant, c'est-à-dire que ce plan est délibérément trompeur et dangereux pour autrui. Finalement, l'élément clef de cachoterie rend particulièrement difficile la démonstration qu'une TC est fausse, contrevenant au principe scientifique fondamental de falsifiabilité (Bowen, 2019 ; van Prooijen et van Vugt, 2018).

Certains chercheurs ont étudié les croyances conspirationnistes sous l'angle des traits de personnalité (Brotherton et Eser, 2015 ; Swami *et al.*, 2016). Par exemple, plusieurs études ont tenté d'établir une relation entre ces croyances et les traits de personnalité évalués par l'entremise du « *Big Five* », soit les traits d'ouverture, de conscienciosité, d'extroversion, d'agréabilité et de névrotisme (ex. : Bruder *et al.*, 2013 ; Swami *et al.*, 2013). Toutefois, une méta-analyse de ces études n'a pas relevé de relations significatives entre l'endossement de TCs et les traits de personnalité du « *Big Five* » (Goreis et Voracek, 2019). D'autres ont

adopté une approche davantage pathologisante de la personnalité en se référant aux catégories diagnostiques du DSM-5. Ainsi, certains ont rapporté que ces croyances corrèlent positivement avec des idéations ou traits de personnalité paranoïdes, ainsi que des traits de personnalité schizotypiques (ex. : Barron *et al.*, 2018 ; Brotherton et Eser, 2015 ; Bruder *et al.*, 2013 ; Darwin *et al.*, 2011 ; van Prooijen *et al.*, 2015). À cet effet, une méta-analyse a conclu que l'hostilité, les traits schizotypiques, ainsi que les éléments de paranoïa et de psychoticisme représentent des corrélats robustes des idéations conspirationnistes (Bowes *et al.*, 2023). Bien que ces résultats soient soutenus par de nombreuses études, l'emploi d'une telle approche peut être remis en question. D'un côté, certains auteurs ont fait la remarque qu'il y a redondance dans la façon dont sont conceptualisés les TCs et les traits de personnalité étudiés préalablement (ex. : schizotypiques, paranoïdes), ce qui les a amenés à questionner la valeur ajoutée de ces résultats (Hart et Graether, 2018 ; Pierre, 2020). D'un autre côté, les croyances en des TCs sont plutôt largement répandues dans la population. En effet, un rapport Léger (2023) estimait que jusqu'à 79% de la population canadienne et 84% de la population des États-Unis croient en au moins une TC, ce qui dénote que croire en une TC relèverait davantage de la normalité que de la pathologie (Pierre, 2020).

Par ailleurs, le modèle socioépistémique à deux composantes de Pierre (2020) avance que la croyance en des TCs découlerait d'une méfiance « généralisée » et justifiée envers les personnes en position d'autorité chez les personnes issues de groupes minoritaires. Ce bris de confiance serait un résultat sociohistorique dû à un débalancement des pouvoirs, aux disparités sociales et au racisme perpétré par les personnes blanches (Heller, 2015 ; Pierre, 2020 ; Thompson *et al.*, 2004). Pierre (2020) réfère à ce phénomène comme la méfiance épistémique, soit une méfiance des connaissances conventionnelles venant d'instances en autorité. Cette méfiance ouvrirait cognitivement la personne à endosser des narratifs en contradiction avec les connaissances promues par les instances en position d'autorité et aurait comme possible conséquence la propagation de désinformation, incluant les TCs (Pierre, 2020). Ce modèle sociologique normalise ainsi l'endossement de TCs pour certains groupes. Pierre (2020) donne en exemple les impacts de l'accumulation historique de disparités en termes de soins de santé et d'expérimentations secrètes (ex : « Tuskegee Experiment entre 1932 et 1979) perpétrées sur les personnes afrodescendantes aux États-Unis, qui affectent aujourd'hui la méfiance épistémique et l'endossement de TCs liées au VIH chez ce groupe. Au Québec, on peut questionner les répercussions sur la méfiance envers les services de santé mentale offerts à l'Institut Allan Memorial de la mise en lumière des expérimentations réalisées sur des personnes y étant institutionnalisées entre 1948 et 1964 à leur insu et financées par la CIA dans le cadre du programme « MK-Ultra » (Desgagné, 2025). Toutefois, la présente thèse s'intéresse plutôt au processus

motivationnel fondamental et commun à tous qui peut contribuer à l'endossement de TCs, au-delà de la présence d'une méfiance justifiée ou non envers les autorités, ainsi qu'à l'engagement politique conventionnel (EPC) vs non conventionnel (EPNC) qui peut en découler.

1.1.2 Regard sur l'engagement politique conventionnel et non conventionnel

Dans l'histoire récente, un croisement de plus en plus important est noté entre les TCs et les actions politiques collectives utilisées au nom de ces narratifs (Bertuzzi, 2021). Des études ont ainsi rapporté que les TCs corrélaient avec le soutien de la violence politique (Uscinski *et al.*, 2022) et avec le soutien de la radicalisation violente (Levinsson *et al.*, 2021), suggérant une politisation des TCs (Moore, 2016). Les actions endossées au nom de ces narratifs peuvent prendre plusieurs formes, certaines reflétant un EPC, car plus répandues et normalisées par les normes sociales (ex. : participer à une manifestation, signer une pétition), alors que d'autres illustrent un EPNC, employant des tactiques de confrontation doublées d'actions plus violentes allant à l'encontre des normes sociales prescrites (ex. : détruire des biens publics, mettre sa propre sécurité à risque dans le cadre d'une activité politique ; Becker et Tausch, 2015 ; Corning et Myers, 2002).

Bien que la proportion de la population qui soutient un EPNC est généralement mineure (McCauley et Moskalenko, 2017), des études ont sonné l'alarme en rapportant que les croyances conspirationnistes sont associées, d'une part, avec une diminution de l'intention d'avoir des comportements d'engagement civique (Jolley et Douglas, 2014b) et de prendre part à des actions politiques conventionnelles et, d'autre part, avec une augmentation de l'intention de prendre part à des actions politiques non conventionnelles (Imhoff *et al.*, 2020; Pummerer, 2022). Les études signalent également que les TCs sont associées à une volonté auto-rapportée d'utiliser la violence et une tendance grandissante à justifier l'usage de la violence (Bowes *et al.*, 2023 ; Jolley et Paterson, 2020 ; Lamberty et Leiser, 2019). Au Québec, durant la pandémie de COVID-19, 13% à 33% des personnes endossant des TCs soutenaient l'usage de comportements violents pour résister aux injustices du gouvernement et 11% à 27% soutenaient l'usage de violence durant des manifestations, comparativement à 8% et 6% respectivement de personnes n'endossant pas de TCs (Carignan *et al.*, 2022). Les résultats rapportés par Carignan *et al.* (2022) reflètent ainsi une susceptibilité à la radicalisation violente chez certaines personnes endossant des TCs.

Bien que l'EPC et l'EPNC peuvent être conçus sur un continuum, la littérature distingue les facteurs motivationnels contribuant à chaque forme d'engagement et leurs conséquences psychologiques (Becker

et Tausch, 2015; Klar et Kasser, 2009). Par exemple, l'intention de prendre part à des formes conventionnelles d'activisme est associée à des niveaux plus élevés de bien-être, d'agentivité et de satisfaction générale, alors que ce n'est pas le cas pour l'intention de prendre part à des formes d'activismes considérées « à risque » (Klar et Kasser, 2009). Au niveau émotionnel, les deux types d'engagements politiques sont liés au spectre de la colère différemment. L'EPC se rattache à une colère réfléchie, durable et manifestée pour une cause politique spécifique, soit une colère qui émane d'un « désir de réconciliation » et qui vise l'amélioration d'un système politique dans le cadre duquel l'individu possède un sentiment de contrôle et de connexion (Becker et Tausch, 2015 ; Tausch *et al.*, 2011). L'EPNC se réfère plutôt au mépris, qui découle d'un manque de contrôle perçu au sein d'un système politique suite à la « non-résolution d'incidents ayant généré de la colère et dont les tentatives pour remédier aux injustices se sont avérées vaines », ce qui peut générer des attributions négatives à l'endroit de ce système et des réactions hostiles, impulsives ou agressives dissociées des normes sociales et qui abolissent l'éventualité de réconciliation et de préservation de la relation au système (Becker et Tausch, 2015). Ainsi, Uysal *et al.* (2024) concluent leur revue de littérature en avançant que le spectre plus agressif de la colère, incluant l'hostilité, la haine et le mépris, joue un rôle important comme prédicteur de l'EPNC.

En bref, croire en des TCs ne signifie pas automatiquement que l'on se radicalise et soutienne un EPNC. Toutefois, les TCs ont été décrites comme un élément de causalité dans l'équation de la radicalisation violente et comme un catalyseur de violence (Bartlett et Miller, 2010; van Prooijen et van Vugt, 2018). Étant donné qu'une proportion significative de personnes endossant de tels narratifs semblent se radicaliser au Québec, nous avons choisi d'examiner le processus motivationnel lié à cette problématique sous l'angle de la radicalisation violente. Pour ce faire, nous empruntons le cadre conceptuel du modèle des 3N (Kruglanski *et al.*, 2019), auquel nous juxtaposons la théorie de l'autodétermination (Ryan et Deci, 2017) et une approche par les souvenirs. D'une part, l'utilisation du modèle des 3N permet d'obtenir une vue d'ensemble du cheminement potentiel d'une personne vers le conspirationnisme et ainsi de structurer l'ordre de priorité des questions sur lesquelles se pencher dans le cadre de la présente thèse. D'autre part, certains concepts clés du modèle des 3N manquent de spécificité. Ceci nuit à l'opérationnalisation du modèle des 3N sur le plan empirique, ce qui est pallié par l'utilisation d'une approche par les souvenirs basée sur la théorie de l'autodétermination.

1.2 Le modèle des 3N

Le modèle des 3N conceptualise les trois piliers du cheminement vers la radicalisation violente, soit le besoin (*Need*), le narratif (*Narrative*) et le réseau (*Network* ; Bélanger *et al.*, 2019; Kruglanski *et al.*, 2019; Weber et Kruglanski, 2016). Selon ce modèle, le cheminement vers la radicalisation violente est enclenché lorsqu'une personne ressent une perte de signification de grande ampleur suite à un événement aversif (ex : ostracisant, injuste, humiliant, etc.; Bélanger *et al.*, 2019; Dugas *et al.*, 2016; Kruglanski *et al.*, 2019). Suite à la perception d'un haut degré de perte de signification, l'individu développerait un *besoin* (*Need*) de signification personnelle, ce qui le motiverait à se mobiliser pour recouvrer et satisfaire ce besoin. Dans le cadre de cette « quête » pour combler ce besoin, l'individu devient à risque d'endosser un nouveau *narratif* (*Narrative*), qui pourrait mener à la violence, et qui serait partagé par un *réseau* (*Network*) d'individus (Bélanger *et al.*, 2019). Le narratif est un système de croyances soutenu par plusieurs personnes, qui justifie ou comble le sentiment de perte de signification et qui identifie les moyens à la disposition de l'individu pour récupérer un sentiment de signification et de liberté, incluant l'utilisation de comportements agressifs envers ceux ne partageant pas ces croyances ou ayant lésé le sentiment de signification de l'individu (Bélanger *et al.*, 2019). Le narratif et le réseau deviennent alors des sources potentielles d'assouvissement du besoin de signification. Appliqué à ce modèle, les TCs sont ainsi une forme de narratif pouvant mener à l'adoption d'un EPNC pour recouvrer ledit besoin de signification (Kruglanski *et al.*, 2022b). Le modèle des 3N identifie et structure trois points pivots théoriques pertinents pour encadrer les recherches effectuées sur le cheminement vers l'endossement de TCs. Dans le cadre de la présente thèse, il est proposé de porter un regard empirique spécifiquement sur le premier point pivot, soit la notion de besoin, pour mieux en comprendre la nature et améliorer l'opérationnalisation du fonctionnement de la perception de perte de signification. Développer les connaissances empiriques à cet effet permettra de mieux informer les recherches subséquentes sur les fonctions des narratifs conspirationnistes et du réseau qui partage ces croyances.

1.2.1 Le besoin de signification

Les auteurs du modèle des 3N ont argumenté que le besoin de signification prend de multiples formes, dont le besoin de contrôle, d'estime de soi, d'autonomie ou de valeur sociale (Kruglanski *et al.*, 2022). Faisant écho au besoin de signification, la recherche portant sur les TCs souligne que l'endossement de ces narratifs peut être motivé par l'incertitude, l'anomie, la menace d'identité du système, l'impuissance, l'ostracisme et la perte de contrôle (Abalakina-Paap *et al.*, 1999; Bruder *et al.*, 2013 ; Federico *et al.*, 2018; Poon *et al.*, 2020 ; van Prooijen et Jostmann, 2013; van Prooijen et Douglas, 2018 ; Whitson et Galinsky, 2008 ; Whitson *et al.*, 2015). Une méta-analyse récente a conclu que le besoin de fermeture, l'ambiguïté

face à l'intolérance, l'impuissance, le manque de contrôle, la faible estime de soi et le besoin d'unicité sont tous des corrélats des croyances conspirationnistes (Bowes *et al.*, 2023). Douglas *et al.* (2017) ont unifié ces résultats diversifiés en les structurant sous la forme de trois besoins fondamentaux que les TCs tentent de combler, soit la motivation existentielle, épistémique et sociale. La motivation existentielle est définie comme le désir de se sentir en sécurité et en contrôle de son environnement quand l'autonomie est menacée et que la personne se sent impuissante (Douglas *et al.*, 2017). La motivation épistémique réfère au fait de vouloir faire sens de son environnement et réduire son sentiment d'incertitude. Finalement, la motivation sociale correspond au besoin d'appartenir et d'estimer un groupe d'affiliation, ainsi que d'être valorisé. Ces trois besoins théoriques peuvent donc être considérés comme les besoins à combler pour recouvrer le sentiment de signification personnelle.

Ces trois besoins motivationnels sous-tendant théoriquement les TCs chevauchent grandement la conception des trois besoins psychologiques fondamentaux avancés par la théorie de l'autodétermination, soit les besoins d'autonomie, de compétence et d'appartenance (Ryan et Deci, 2017). En effet, le besoin existentiel et le besoin d'autonomie réfèrent au besoin de contrôle et de libre action, alors que le besoin épistémique et le besoin de compétence se recoupent par le fait qu'ils réfèrent au besoin de comprendre son environnement. En dernier lieu, le besoin social et le besoin d'appartenance se chevauchent du fait qu'ils réfèrent tous deux au besoin d'identification et de signification sociale.

Bien que les conceptions de Douglas *et al.* (2017) offrent une compréhension davantage concrète de la nature du besoin de signification associé aux narratifs conspirationnistes, un questionnement persiste par rapport à *comment* la perception de perte de signification s'opère dans ce cheminement motivationnel, et ce, de façon unique à chaque personne. À cet effet, la théorie de l'autodétermination présente tout un pan de recherche fondamentale portant sur l'impact de l'activation de souvenirs épisodiques encodés avec différents degrés de frustration des besoins d'autonomie, de compétence et d'appartenance sur le fonctionnement motivationnel, les réactions cognitives et les comportements compensatoires (Philippe, 2022). Ainsi, bien que les trois besoins psychologiques de Douglas *et al.* (2017) aient été théorisés spécifiquement pour comprendre les TCs, les assises empiriques de la théorie de l'autodétermination sont étayées et validées depuis maintenant près de 50 ans (Ryan et Deci, 2017). Les recherches liées à cette théorie ont été réalisées auprès de multiples populations diversifiées du point de vue culturel (ex : Chen *et al.*, 2015 ; Chirkov *et al.*, 2005) et générationnel (ex : Joussemet *et al.*, 2008 ; Miklikowska *et al.*, 2011 ; Tang *et al.*, 2021), ainsi que par l'entremise de devis expérimentaux variés comparativement aux besoins

avancés par Douglas *et al.* (2017), dont les études ont employé principalement des devis corrélationnels. La présente thèse considère donc les trois besoins psychologiques fondamentaux d'autonomie, de compétence et d'appartenance, tels que définis par la théorie de l'autodétermination, à l'origine du besoin de signification motivant l'endossement de TCs et que cette perte de signification est précipitée *via* l'activation de souvenirs encodés avec frustration des besoins d'autonomie, de compétence et d'appartenance. Jumeler la théorie de l'autodétermination et le modèle des 3N, ainsi qu'y incorporer une approche par les souvenirs permet d'opérationnaliser *comment* la perte de signification peut s'opérer chez un individu afin d'améliorer la compréhension de la relation entre *besoin* (*Need*) et *narratif* (*Narrative*) conspirationniste.

1.3 La théorie de l'autodétermination

1.3.1 Les trois besoins psychologiques : éléments fondamentaux de la motivation

Selon la théorie de l'autodétermination, tout humain possède un potentiel de croissance et d'épanouissement par le développement d'une identité dite intégrée. En contrepartie, nous sommes également tout autant vulnérables au mal-être et au développement d'un fonctionnement mésadapté, voire pathologique (Ryan et Deci, 2000a). Cette dualité entre croissance et mal-être prend racine au sein d'un principe simple, c'est-à-dire la satisfaction vs frustration des besoins d'autonomie, de compétence et d'appartenance. La satisfaction du besoin d'autonomie se traduit par un sentiment de volition et se reflète lorsqu'une personne agit de façon authentique par rapport à ses propres désirs, valeurs et intérêts personnels (Ryan, 1995; Ryan et Deci, 2017). La frustration de ce besoin réfère à la perception de coercition et au sentiment d'être contrôlé et restreint ou de ne pas agir et/ou penser de façon congruente avec sa volonté. Pour sa part, la satisfaction du besoin de compétence se traduit par un sentiment de maîtrise et d'efficacité pour interagir avec son environnement, alors que la frustration de ce besoin correspond à l'ébranlement desdits sentiments de maîtrise et d'efficacité, ou encore à un sentiment d'échec. Finalement, le sentiment de bienveillance, de connexion et de contribution envers une personne ou un groupe reflète un besoin d'appartenance satisfait. La frustration du besoin d'appartenance correspond à la perte de connexion et de signification sociale, ainsi que la perception de rejet social et d'ostracisme.

Ces trois besoins sont dits fondamentaux, car universels, mais leur satisfaction varie d'un individu à l'autre selon son environnement social et son contexte culturel développemental (Chen *et al.*, 2015; Ryan et Deci, 2017). Ces besoins incitent à prendre action sur son environnement et à avoir des objectifs (Sheldon et Gunz, 2009). De fait, toute personne tente naturellement de combler ces besoins lorsqu'ils ne sont pas

satisfaits ou sont frustrés, étant donné que leur satisfaction est essentielle pour notre croissance. Ainsi, la satisfaction de ces trois besoins psychologiques est considérée par Ryan et Deci (2017) comme une quête continuelle de l'humain, rappelant la quête de signification du modèle des 3N.

La satisfaction des trois besoins psychologiques est associée au bien-être (Chen *et al.*, 2015; Chirkov *et al.*, 2005; Sheldon *et al.*, 2011), à une meilleure estime de soi (Deci *et al.*, 2000), ainsi qu'au développement de l'empathie (Miklikowska *et al.*, 2011). Il a notamment été démontré que les pratiques parentales soutenant la satisfaction de ces besoins durant l'enfance et l'adolescence mènent au développement de ressources internes, telle la résilience, pour faire face aux situations stressantes une fois adulte (Deci et Ryan, 2000; Neufeld et Malin, 2019; Masten et Tellegen, 2012). De plus, les expériences passées de soutien de ces besoins génèrent une meilleure internalisation et une acceptation authentique des normes sociales et des valeurs significatives au sein de la communauté à laquelle une personne appartient (Vansteenkiste et Ryan, 2013). Au fil du temps, ces expériences laissent place au développement d'une motivation intrinsèque, qui entraîne en retour un engouement et intérêt sincères pour les actions posées, contribuant à l'épanouissement identitaire de la personne (Ryan et Deci, 2000a).

À l'opposé, il est peu surprenant que la frustration des besoins d'autonomie, de compétence et d'appartenance précipite un mal-être et soit associée à des difficultés d'ajustement sur le long terme (Bartholomew *et al.*, 2011; Chen *et al.*, 2015). Lorsque la frustration des besoins est fréquente et que les tentatives pour les combler sont infructueuses de façon répétée, un processus mésadapté s'enclenche et la personne développe des stratégies d'ajustement compensatoires d'ordre cognitif et comportemental (Deci et Ryan, 2000; Vansteenkiste et Ryan, 2013). Mais, l'utilisation de ces stratégies compensatoires ne permet pas de réduire efficacement la valeur frustrante d'une situation et n'aide pas à la maîtrise adéquate du sentiment de satisfaction, ce qui génère une insécurité (Ryan et Deci, 2017 ; Vansteenkiste et Ryan, 2013). En effet, ce processus compensatoire est associé à l'engouement d'objectifs et de comportements sous-tendant une motivation extrinsèque plutôt qu'intrinsèque (Vansteenkiste et Ryan, 2013), soit une motivation liée à des valeurs et des intérêts qui proviennent de sources externes à l'individu et qui ne lui sont donc pas propres (Ryan et Deci, 2017; Sheldon et Kasser, 2008). Au long terme, l'engagement dans des objectifs extrinsèques génère au mieux une satisfaction éphémère des besoins et au pire un maintien de la frustration (Sebire *et al.*, 2009). Dans tous les cas, la satisfaction authentique des besoins est obstruée et la frustration des besoins se chronicise (Vansteenkiste et Ryan, 2103). Des études ont ainsi associé cette chronicisation de la frustration avec une perte de motivation, un fonctionnement

défensif, ainsi qu'une résistance aux normes sociales (Deci et Ryan, 1985; Van Petegem *et al.*, 2012; Vansteenkiste et Ryan, 2013), alors que la motivation extrinsèque est associée aux traits de machiavélisme (McHoskey, 1999) et des attitudes discriminatoires et agressives (Duriez *et al.*, 2007). Avec le temps, ce processus compensatoire mène au développement de stratégies d'ajustement reflétant des schémas rigides sur les plans cognitifs et comportementaux (ex. : percevoir le monde en noir et blanc) et/ou d'une défiance oppositionnelle (Deci et Ryan, 2000; Vansteenkiste et Ryan, 2013). L'endossement de TCs et le soutien d'un EPNC peuvent être conceptualisés comme des manifestations concomitantes de ces processus compensatoires non-ajustés impliquant des patrons cognitifs rigides et des tendances réactionnelles d'opposition.

1.3.2 Théories du complot et engagement politique non conventionnel : des manifestations compensatoires

L'endossement de TCs peut être conceptualisé comme une manifestation de schémas cognitifs rigides prenant racine dans la frustration des besoins psychologiques fondamentaux. Les schémas cognitifs rigides s'illustrent par des patrons de pensées inflexibles, critiques et/ou dichotomiques persistants dans le but de pourvoir un sentiment de sécurité en tentant d'organiser le monde de façon structurée et prévisible (Vansteenkiste et Ryan, 2013). Il est suggéré que ces schémas rigides motivent les gens à tenter coûte que coûte d'atteindre leurs objectifs déterminés extrinsèquement, quitte à mettre en péril leur santé, éthique et valeurs morales (Vansteenkiste *et al.*, 2010; Vansteenkiste et Ryan, 2013).

Pour sa part, l'EPNC peut être conçu comme une conséquence de défiance oppositionnelle, plus spécifiquement comme une résultante de réactance psychologique¹ (Mühlberger et Jonas, 2019). Il s'agit d'une réaction de résistance, voire de défense hostile, envers des figures d'autorité perçues comme menaçantes et coercitives (Van Petegem *et al.*, 2012; Vansteenkiste et Ryan, 2013) et prenant la forme d'affects de colère, incluant l'hostilité et l'agressivité, et de cognitions négatives à l'encontre de la source de menace (Dillard et Shen, 2005; Rains, 2013). La littérature distingue l'état de réactance, qui pousse un

¹ La théorie de l'autodétermination utilise le terme d'autonomie réactive plutôt que de réactance psychologique (Mühlberger et Jonas, 2019). Les deux concepts sont similaires et réfèrent à des réactions émotionnelles colériques et de résistances comportementales lorsque des sources d'autorité coercitives exigent une forme de conformité, le tout dans l'objectif de maintenir et/ou de restaurer des libertés affectées (Brehm, 1966 ; Brehm et Brehm, 1981; Mühlberger et Jonas, 2019; van Petegem *et al.*, 2015). La notion de réactance psychologique ajoute à sa définition un élément cognitif, c'est-à-dire la présence de cognitions négatives à l'encontre de la source de menace (Dillard et Shen, 2005; Rains, 2013). Étant donné que la notion de réactance psychologique possède une spécificité légèrement supérieure à celle d'autonomie réactive et que la littérature portant sur la notion de réactance psychologique est plus exhaustive, nous emploierons le terme « réactance » dans la présente thèse.

individu à agir sur son environnement pour maintenir ou récupérer un sentiment de contrôle (Brehm, 1966; Brehm et Brehm, 1981; Mühlberger et Jonas, 2019), du trait de réactance, qui représente la propension d'une personne d'entrer dans un état de réactance (Brehm et Brehm, 1981; Dillard et Shen, 2005; Hong et Faedda, 1996; Koestner et Losier, 1996). Ce type de stratégie compensatoire est associé à des problématiques extériorisées (Vansteenkiste et Ryan, 2013). La réactance prendrait naissance au sein d'expériences développementales de frustration des besoins, qui sont causées par des figures parentales exigeant conformité et usant de pratiques parentales contrôlantes, ce à quoi certains apprennent à répondre par résistance et opposition aux demandes externes (Van Petegem *et al.*, 2015; Vansteenkiste et Ryan, 2013) ou même par hostilité discriminatoire (Weinstein *et al.*, 2012) et par agressivité (Joussemet *et al.*, 2008). Extrapolé plus largement à la société, l'EPNC peut ainsi être considéré comme une façon mésadaptée de s'ajuster à des figures d'autorité (ex. : gouvernement, Institutions de santé publique, professionnels de la santé) perçues comme coercitives, en externalisant des émotions hostiles négatives par défiance oppositionnelle pour affirmer son contrôle sur son autonomie et sa liberté (Leander *et al.*, 2016; Mühlberger et Jonas, 2019; Smith et Lazarus, 1990).

Pourtant, nous faisons tous face à des situations aversives qui frustrant nos besoins fondamentaux à un moment ou un autre de notre vie, mais nous n'avons pas tous développé des stratégies d'ajustement compensatoires nous menant à endosser des narratifs alternatifs rigides en réponse à l'incertitude causée, ni ne vivons tous l'influence de figures d'autorité avec hostilité et opposition. Un exemple concret est la période de la pandémie de COVID-19, au cours de laquelle la population québécoise a été assujettie à des mesures sanitaires restrictives, qui affectaient les droits et libertés. Seule une portion relativement minime de la population a réagi avec opposition et rigidité en rejetant le narratif principal, niant sa véracité et cherchant à endosser des TCs tout en agissant à l'opposé des mesures sanitaires selon un EPNC. Ceci suggère la présence de facteurs intra-individuels qui façonnent de manière singulière notre subjectivité et distinguent les réactions émotionnelles, cognitives et comportementales compensatoires d'une personne à l'autre (Mischel et Shoda, 1995). Il semble ainsi plutôt y avoir une interaction entre l'environnement et l'individu qui est unique pour chaque personne. À cet effet, chaque individu se construit à travers ses expériences passées, qui sont préservées à travers des souvenirs dont l'importance est spécifique à chacun (Philippe, 2022). En retour, notre environnement active ces souvenirs (Conway et Pleydell-Pearce, 2000 ; Rasmussen et Berntsen, 2009), ce qui influence nos perceptions et guide nos réactions face à un événement (Philippe, 2022). Ceci crée une constante interaction entre l'environnement et l'individu basé sur ses propres expériences passées. Ce principe d'activation mnésique contribue à expliquer pourquoi

deux personnes partageant les mêmes traits de personnalité ou conceptions générales de soi ne perçoivent, n'interprètent et ne réagissent pas nécessairement de la même façon face à une situation. L'utilisation d'une approche basée sur les souvenirs semble ainsi tout indiquée pour examiner l'endossement de TCs et le soutien d'un EPNC en temps de crise sanitaire.

1.4 Une approche par les souvenirs

Nos souvenirs recèlent d'informations sur la façon dont une expérience passée a été vécue et régulée (Conway *et al.*, 2004 ; Philippe *et al.*, 2012). Ils sont évidemment encodés avec les détails factuels de nos expériences passées, mais également avec leurs composantes expérientielles d'ordre sensorielles, cognitives, affectives et comportementales (Conway *et al.*, 2004 ; Rubin, 2006). Ces composantes sont enregistrées au sein de différents systèmes neuronaux du cerveau, notamment les systèmes correspondants aux cinq sens, au langage, aux émotions et aux représentations spatio-temporelles (Rubin, 2006). L'activation d'un souvenir relève ainsi d'une interaction combinée d'un ou de plusieurs de ces systèmes neuronaux, ce qui permet de reconstruire et de raviver les représentations cognitives-affectives-comportementales du souvenir, incluant sa valence émotionnelle, c'est-à-dire à quel point la situation a été vécue positivement ou négativement, sa valeur subjective de satisfaction vs frustration des besoins psychologiques et la présence d'une réaction de réactance (Philippe *et al.*, 2011a ; Rubin, 2006).

Nos souvenirs sont constamment activés par notre environnement et les situations auxquelles nous faisons face, ce qui facilite notre fonctionnement quotidien (Mace et Unlu, 2020; Philippe *et al.*, 2012). Plus précisément, nos souvenirs sont activés en fonction des similarités entre l'événement passé encodé et l'événement présent, que ce soit leurs caractéristiques de surface communes (ex. : éléments visuels ou auditifs, localisation, personnes présentes) ou un chevauchement de thématiques (ex. : être menacé, intimidé, en contrôle, etc. ; Brown et Schopflocher, 1998; Philippe *et al.*, 2011b ; Philippe, 2022; Rasmussen et Berntsen, 2009). Par exemple, Philippe *et al.* (2011b) ont demandé à des participants de se remémorer un souvenir sur la thématique d'être injustement traité ou d'avoir commis une erreur et, deux semaines plus tard, de visionner un extrait vidéo portant spécifiquement sur l'injustice. Cette expérimentation a démontré un appariement entre souvenir et situation injuste, où une plus grande frustration des besoins psychologiques encodée dans le souvenir d'injustice prédisait positivement la réaction de colère envers l'injustice visionnée, ce qui n'était pas le cas pour le souvenir sur la thématique d'avoir commis une erreur (Philippe *et al.*, 2011b). L'activation de nos souvenirs se déroule généralement hors du champ de notre conscience afin que nous puissions rapidement percevoir, interpréter et réagir à notre environnement

basé sur les représentations cognitives-affectives-comportementales qui reflètent nos expériences passées (Conway, 2009; Conway et Pleydell-Pearce, 2000; Kuwabara et Pillemer, 2010; Merson et Pezdek, 2019 ; Philippe *et al.*, 2009 ; Philippe *et al.*, 2011b). En effet, l'activation des souvenirs sert une fonction directive (Pillemer, 2003), c'est-à-dire que l'information cognitive-affective-comportementale qui y est encodée est traitée et utilisée par le cerveau pour momentanément induire des réactions émotionnelles (Philippe *et al.*, 2011b, 2012), guider la prise de décision (Philippe, 2022), et pour informer sur les réponses comportementales appropriées (Biondolillo et Pillemer, 2015; Gino et Desai, 2012) face à une situation. Les interactions entre le contexte et les représentations cognitives-affectives-comportementales du souvenir sont donc stables et uniques à chaque personne, ce qui génère des modèles du type « *si* la situation X survient, *alors* surviendra la réaction Y » (Ayduk et Gyurak, 2008; Mischel et Shoda, 1995).

La satisfaction vs frustration des besoins et la réactance à titre de représentations cognitives-affectives-comportementales encodées dans le souvenir se distinguent respectivement de leur construit jumeau reflétant un état ou des traits généraux de la personne. Lorsqu'il est question de satisfaction vs frustration des besoins psychologiques dans la vie de tous les jours, il s'agit de construits structurels sémantiques liés à la conception du soi, ce qui se traduit par une compréhension conceptuelle de soi et du monde (ex. : je suis une personne intelligente, le gouvernement tente de me contrôler). Ce même construit lié à l'encodage du souvenir est plutôt représentatif d'un moment spécifique auquel le cerveau peut se référer pour déterminer comment évaluer et réagir à une situation précise (Philippe et Bernard-Desrosiers, 2017; Philippe *et al.*, 2011a). De même, la réaction de réactance vécue dans le passé et encodée dans un souvenir ne réfère pas en soi au trait de personnalité. Le trait de personnalité de réactance s'illustre comme un patron stable selon lequel les individus devraient se comporter à travers diverses situations, alors que la réactance encodée dans un souvenir réfère à une réaction parmi un répertoire d'actions disponibles dans une situation donnée (Conway, 2009), ce répertoire d'actions étant propre à chaque individu et modulé par ses expériences passées (Philippe, 2022).

1.5 Application à la pandémie de COVID-19

Durant la pandémie de COVID-19, plusieurs situations nouvelles et inattendues ont été créées par la mise en place de mesures sanitaires (ex. : distanciation sociale, signes de port du masque obligatoire, restriction des activités et loisirs). Ces situations peuvent avoir activé, pour certains, des souvenirs d'événements passés caractérisés par des restrictions de libertés (ex. : parents aux pratiques parentales restrictives, expériences d'ostracisation à l'école, employeurs exigeants). Si les souvenirs activés fréquemment durant

cette période étaient caractérisés par une frustration des besoins psychologiques, les situations devraient avoir été interprétées de façon congruente à cette activation, précipitant un processus compensatoire visant à défendre l'intégrité de la personne. Dans certains cas, cette réaction défensive peut avoir mené à la minimisation, voire le déni de la réalité externe pour favoriser la quête de narratifs alternatifs pour compenser cette expérience frustrante, augmentant conséquemment le risque d'endosser des TCs. Si ces souvenirs étaient marqués par la réactance, la situation devrait alors avoir été perçue comme menaçante et coercitive, motivant une réaction hostile de reprise de contrôle (Rosenberg et Siegel, 2018) et, ce faisant, augmentant le risque d'endosser un EPNC.

1.6 Objectifs et hypothèses

Globalement, la présente thèse vise à explorer l'influence des souvenirs encodés avec frustration des besoins psychologiques sur l'endossement de TCs et du rôle des souvenirs encodés avec réactance sur le soutien de l'EPNC. L'ensemble des articles présentés dans le cadre de cette thèse ont été réalisés durant la pandémie de COVID-19.

Étant donné que le domaine de recherche sur le conspirationnisme a connu un essor plutôt récent, le premier objectif est d'établir les liens théoriques entre le conspirationnisme et la théorie de l'autodétermination afin de favoriser une compréhension concrète du processus motivationnel de ce phénomène et de ses effets sur la santé publique. Cet argumentaire est présenté dans l'Article 1 et sert d'assise conceptuelle pour les objectifs empiriques présentés dans les articles subséquents de la thèse.

L'Article 2 vise deux objectifs. Le premier est d'établir que l'exposition à une situation restrictive peut activer des souvenirs encodés avec une frustration des besoins psychologiques, qui seront prédictifs d'un endossement de TCs liées au COVID-19. Il est ainsi attendu que le rappel d'une situation restrictive au niveau des libertés déclenche chez certaines personnes des souvenirs dont les besoins psychologiques sont encodés comme frustrés, et que leur niveau de frustration prédise un plus grand endossement de TCs liées au COVID-19. Le second objectif est de démontrer l'influence situationnelle de l'activation de souvenirs frustrés sur la réaction à l'égard d'une nouvelle TC liée au COVID-19 (une fausse TC a été créée spécifiquement pour répondre à cet objectif). Spécifiquement, il est attendu que l'activation d'un souvenir frustrant augmente directement (1) la tendance des participants à être en accord avec cette fausse TC, (2) la colère générée par la fausse TC et (3) la volonté de propager cette fausse TC dans son réseau,

comparativement aux personnes activées avec un souvenir satisfaisant et comparativement aux personnes dont aucun souvenir n'est activé.

Finalement, l'Article 3 évalue par l'entremise de deux objectifs la relation entre les souvenirs encodés avec réactance activés par un contexte restrictif et le soutien de l'EPNC avec pour point de comparaison l'EPC. Dans un premier temps, il est proposé que l'activation spontanée d'un souvenir encodé avec réactance lors de l'exposition à une situation décrivant un contexte restrictif prédise un plus grand endossement d'EPNC au nom d'une cause qui est chère au participant. Dans un second temps, l'Article 3 a pour objectif d'évaluer l'influence *in situ* de l'amorçage subliminal d'un souvenir de réactance sur l'endossement d'un EPNC. Il est attendu que l'amorçage subliminal d'un souvenir de réactance incite momentanément un plus grand endossement d'EPNC pour exprimer un désaccord avec une mesure sanitaire fictive comparativement à un groupe contrôle non-amorcé et comparativement aux personnes amorcées avec un souvenir sans réactance. Dans le cadre de ces deux objectifs, aucune relation entre les souvenirs encodés avec réactance et l'EPC n'est attendue.

1.7 Méthode

Afin de réaliser les Articles 2 et 3, deux études ont été effectuées, soit une première utilisant un devis prospectif quasi-expérimental et une seconde employant un devis expérimental impliquant une tâche d'amorçage subliminal du souvenir (nommée *Bunnies and Lions Task* ; BLT). La première étude répond au premier objectif spécifique des Articles 2 et 3, alors que la deuxième étude répond au second objectif spécifique de chacun de ces articles. Chaque étude comporte deux phases séparées d'une semaine. Pour les deux études, la Phase 1 évalue les variables démographiques, les variables contrôles, ainsi qu'un souvenir épisodique suite à la présentation d'une vignette. La Phase 2 évalue les variables dépendantes. Les variables dépendantes sont évaluées séparément afin d'éviter un effet d'amorçage dû au rappel d'un souvenir à la Phase 1. Ces deux études sont détaillées ci-dessous.

1.7.1 Étude 1

1.7.1.1 Participants et procédures

Les participants ($N = 141$) de cette étude ont été recrutés via la circulation de publicités sur les réseaux sociaux entre juin et septembre 2021. Ces publicités visaient les personnes habitant la province du Québec. Les mesures sanitaires durant cette période incluaient notamment le port obligatoire du masque dans les espaces publics, une période d'isolement minimale de trois jours dans un hôtel suite à un voyage, ainsi

que la présentation d'un passeport vaccinal pour entrer dans des espaces publics non-essentiels (Institut National de la Santé du Québec, 2022).

Dans le cadre de la Phase 1 de l'étude, les participants ont complété (1) un questionnaire démographique, (2) le *Basic Psychological Need Satisfaction and Frustration Scale* (Chen *et al.*, 2015) pour évaluer le niveau général de satisfaction vs frustration des besoins psychologiques et (3) le *Hong Psychological Reactance Scale* (Hong et Faedda, 1996) pour évaluer le trait de réactance. Les participants ont ensuite été assignés aléatoirement à la lecture de l'une de trois vignettes décrivant une même situation. Cette situation était relativement commune durant la pandémie de COVID-19, soit une personne nommée Alex qui entre dans une épicerie sans masque. Le degré de sévérité de la conséquence pour cet oubli variait : une première vignette contrôle rapportait qu'Alex a été en mesure d'acheter sa farine, une seconde modérément sévère décrivait qu'Alex a dû quitter l'épicerie sans acheter sa farine et une troisième vignette très sévère rapportait qu'Alex avait subi des menaces et été escorté hors de l'épicerie sans pouvoir acheter sa farine. Suite à la lecture de la vignette assignée, il a été demandé aux participants de décrire un souvenir spontané pour ensuite rapporter la valence du souvenir et évaluer le degré de satisfaction vs frustration des besoins psychologiques dans le souvenir selon la procédure de Philippe *et al.* (2011a). Suite à la complétion de la Phase 1, deux assistantes de recherche ont évalué indépendamment la présence de réactance dans chaque souvenir décrit. Il était considéré que le souvenir était encodé avec réactance lorsque le participant décrivait une expérience marquée par des affects négatifs liés à la colère, un manque de contrôle ou la présence d'impulsivité, ainsi qu'une attitude oppositionnelle reflétant des cognitions défavorables ou une agressivité pour retrouver une forme de contrôle. Tout souvenir catégorisé avec réactance par l'une ou l'autre des assistantes de recherche a été considéré comme encodé avec réactance.

Dans la Phase 2, les participants ont simplement complété un questionnaire évaluant le niveau d'adhésion à des TCs du COVID-19, ainsi que leur niveau d'endossement d'un EPNC vs EPC au nom d'une cause qui leur était importante.

1.7.2 Étude 2

1.7.2.1 Participants et procédure

Les participants ($N = 213$) pour la seconde étude ont été recrutés de juin à août 2022 *via* des publicités partagées sur les réseaux sociaux et visant la province du Québec. Cette période de recrutement a coïncidé avec le début de la 7^{ème} vague de COVID-19, mais également avec la fin officielle de l'état d'urgence

initialement instaurée en mars 2020. Le port du masque n'était ainsi plus obligatoire dans les espaces publics. Une période d'isolation de 5 à 10 jours était toutefois recommandée pour les personnes testant positif au COVID-19. Une nouvelle campagne de vaccination avait été lancée en août 2022.

La Phase 1 de cette deuxième étude comportait un questionnaire démographique, suivi du *Basic Psychological Need Satisfaction and Frustration Scale* et du *Hong Reactance Scale*. Tous les participants ont ensuite lu la vignette très sévère de l'Étude 1 et rapporté un souvenir selon la même procédure, pour ensuite rapporter le niveau de satisfaction et frustration des besoins encodés dans le souvenir. Deux assistantes de recherche ont également évalué la présence de réactance dans le souvenir selon la même procédure décrite pour l'Étude 1.

Les deux phases se sont déroulées à une semaine d'intervalle. Durant cette semaine, six mots clefs descriptifs (ex. : table, amis, ski) et non-émotionnels (ex. : joie, peur, triste n'étaient pas sélectionnés) ont été extraits de chaque souvenir (Philippe et Bernard-Desrosiers, 2017). Les participants ont également été catégorisés en deux groupes : souvenir encodé avec satisfaction des besoins vs souvenir encodé avec frustration des besoins. Ensuite, les participants ont été aléatoirement assignés au groupe sujet à l'amorçage subliminal (expérimental) ou au groupe sans amorçage subliminal (contrôle). Chaque participant du groupe expérimental a été païré aléatoirement avec un participant du groupe contrôle, basé sur la catégorisation du souvenir (satisfait vs frustré). Les participants ont été païrés sur la base de cette variable, étant donné qu'elle est considérée comme une variable d'influence clef pour la prédiction de l'humeur et du bien-être (Houle et Philippe, 2017; Philippe et Bernard-Desrosiers, 2017).

La Phase 2 a débuté par la complétion du BLT (Philippe et Bernard-Desrosiers, 2017). Les participants du groupe expérimental ont ainsi été amorcés avec les six mots clefs de leur propre souvenir, alors que les participants du groupe contrôle ont été amorcés avec les mots clefs du souvenir de leur partenaire (donc non-amorcés). Spécifiquement, le BLT était présenté comme une tâche pour évacuer leurs pensées. Les participants ont complété quatre fois la tâche, au cours de laquelle il leur était demandé de compter le nombre de fois où certains mots d'animaux apparaissaient à l'écran (ex. : LAPIN vs LION). Ces mots étaient interchangeables avec d'autres mots liés aux animaux (ex. : OURS, VACHE) et des non-mots (ex. : JGUIRS) à une vitesse de 1000ms. Ces mots étaient également interchangeables avec les six mots clefs du souvenir, qui eux, apparaissaient à une vitesse de 60ms. Cette tâche monopolise ainsi l'attention de la personne et crée une surcharge cognitive, ce qui permet d'amorcer le souvenir hors du champ de la conscience.

Suite à la complétion du BLT, les participants devaient lire une fausse TC présentée sous la forme d'un message publié sur la plateforme *Twitter* (aujourd'hui dénommée *X*) et y réagir, c'est-à-dire rapporter leur niveau d'accord, de colère et de désir de propager ce message. Les participants devaient ensuite lire une mesure sanitaire gouvernementale fictive et, s'ils étaient en désaccord avec l'instauration de cette mesure, rapporter leur niveau d'endossement d'un EPC vs EPNC pour exprimer ce désaccord.

CHAPITRE 2

CONSPIRACY THEORIES: A PUBLIC HEALTH CONCERN AND HOW TO ADDRESS IT

Ce chapitre est constitué d'un article scientifique rédigé en anglais, qui a été publié dans la revue *Frontiers in Psychology*. L'article scientifique composant ce chapitre vise à approfondir la compréhension des professionnels concernant les théories du complot à travers le modèle des 3N et la théorie de l'autodétermination. Cet article présente également des initiatives potentielles pour intervenir sur les croyances conspirationnistes en période de pandémie en se basant sur des recherches empiriques, de la théorie et d'interventions existantes.

Référence : Leonard, M.-J. et Philippe, F. L. (2021). Conspiracy theories: A public health concern and how to address it. *Frontiers in Psychology*, 12. doi: 10.3389/fpsyg.2021.682931

Conspiracy theories: A public health concern and how to address it

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Funding

This work was supported by the Social Sciences and Humanities Research Council of Canada.

Acknowledgments

We thank Nessa Ghassemi-Bakhtiari for her feedback on this perspective article.

2.1 Abstract

The SARS-CoV-2 pandemic was characterized by a significant increase in the endorsement of conspiracy theories. Conspiracy theories are narratives that can enable and accentuate distrust towards health professionals and authorities. As such, they can lead to violent radicalization and should be considered as a public health issue. This Perspective article aims to further professionals' understanding of conspiracy theories via the 3N model of radicalization and self-determination theory. Based on empirical research, theory, and existing interventions, potential initiatives intended to tackle the issue of conspiracy theories during pandemics are also presented.

Keywords: Conspiracy Theories, Public Health, Self-Determination Theory, Needs, Radicalization.

2.2 Introduction

Increasingly, people around the globe grow tired and frustrated in response to lockdowns and health measures that are meant to counter the ongoing SARS-CoV-2 pandemic. This angst is partly manifested through the increased popularity of conspiracy theories (European Commission, 2020). An international survey carried out in 28 countries revealed that a third of people worldwide believe that “a foreign power/other force” consciously caused the current pandemic (e.g., 18%, 58%, and 26% believe so in the United Kingdom, Bulgaria, and Thailand respectively; Gallup International Association, 2020). Such conspiracy beliefs represent public health issues contributing to the fracture of the trust civilians hold towards government officials and health professionals — a phenomenon that has been observed during other disease outbreaks (Cohn and Kutalek, 2016). The objective of this Perspective article is to improve the understanding of conspiracy theories, discuss how they impact the population, and highlight potential ways to intervene during pandemics based on theory, empirical research, and existing interventions.

We argue that conspiracy theories should be considered as narratives that can lead to violent radicalization and, as such, this phenomenon represents an important public health issue. Conspiracy theories are better understood via the 3N model of radicalization (Kruglanski et al., 2019) and self-determination theory (Ryan and Deci, 2017). The 3N model specifies three pillars in the radicalization process that align with the understanding of conspiracy theories (i.e., *Need*, *Narrative*, and *Network*), while self-determination theory deepens our understanding of the *Need* pillar.

2.3 Conspiracy Theories

Need refers to the motivation to recover significance following its loss due to an adverse event (Kruglanski et al., 2019). Specifically, this significance loss can be conceptualized as the thwarting of three psychological needs found to be universal: competence, autonomy, and relatedness (Ryan and Deci, 2017). Indeed, the satisfaction or frustration of these three psychological needs influences how people perceive and react to an event (Ryan and Deci, 2017). The satisfaction of these psychological needs is considered as a continual quest and when they are not satisfied or are frustrated, people naturally seek to fulfill them (Ryan and Deci, 2017; Sheldon and Gunz, 2009). They are therefore considered as core determinants of motivation that lead one to act on their environment and to carry certain objectives (Ryan and Deci, 2017; Sheldon and Gunz, 2009). Conspiracy theories unfold following an important event that hinders the perception of control of an individual (autonomy), the ability of an individual to make sense of the world (competence), and connectedness to an individual (relatedness; Ryan and Deci, 2017; van Prooijen, 2020).

In 2020, many countries enforced a lockdown for months, a significant event that precipitated economic uncertainty and restrained individual freedom. Many have perceived their basic needs as thwarted as they lost control over their usual occupations, they were cut off from their loved ones, and authorities disseminated mixed messages because they did not (and still do not) fully understand the new virus. Such stressful events are likely to reactivate the recall of past personal life events that were need thwarting in a similar fashion (e.g., experiences of ostracism, natural disasters, or other traumas), thus exacerbating the current need thwarting experience of the pandemic (Philippe and Houle, 2020). A vulnerability to the reactivation of such need thwarting memories can motivate one to retrieve significance by finding compensatory ways to fulfill those needs, making one cognitively receptive to new narratives.

Conspiracy theories are a form of *Narrative*, defined as a shared belief system providing an alternative ideological framework to explain a situation and offer guidance as to how to behave to regain significance, control, and affiliations (Kruglanski et al., 2019). As conspiracy theories are alternative narratives to the *status quo*, people turn to them to compensate for their thwarted needs. Such narratives accentuate the threatening characteristics of demonized outgroups and praise the people who endorse the beliefs and behaviors put forward by the ideology, hence cognitively and behaviorally polarizing believers (Kruglanski et al., 2019). Of note, some authors have suggested that believing in conspiracy theories can be adaptive to survival (van Prooijen, 2020). However, one could argue that such beliefs could be considered adaptive only when they concern real conspiracies and not unjustified conspiracy theories. In the past, some conspiracies were proved to be real, rendering it difficult to distinguish unjustified conspiracy theories from real conspiracies. Unjustified conspiracy theories are not adaptive for the survival, as they can be detrimental to the health of others and the individual (e.g., SARS-CoV-2 being a hoax, vaccines being dangerous, etc.). The European Commission (2020) characterizes real conspiracies as focusing on a specific event or individual, such as an assassination, and based on valid proof and facts brought forward by “whistle-blowers and the media”. The European Commission (2020) adds that whistle-blowers recognize the extent and limitations of their knowledge instead of being rigid and absolute about it. On the other hand, unjustified conspiracy theories are characterized by five distinctive elements: pattern, agency, coalition, threat, and secrecy (van Prooijen and van Vugt, 2018). Such narratives are not parsimonious and detail a pattern establishing causal relationships between multiple events, people, and/or objects (van Prooijen and van Vugt, 2018). These narratives also imply agency, that is, they attribute intentions to malevolent and malicious groups of people who form a coalition and who have a deliberate plan that represents a threat to the ingroup (van Prooijen and van Vugt, 2018). Above all else, these theories are characterized by a secrecy element, which makes them irrefutable.

When one adheres to a narrative, they then seek the presence of like-minded individuals, forming a *Network* (Kruglanski et al., 2019). In the past few months, those who endorsed a conspiracy theory on SARS-CoV-2 connected via social media, creating echo chambers. These echo chambers spread the reinforcement of both individual and collective actions that exacerbated tensions between civilians and impeded the initiatives of authorities to halt the propagation of the virus around the globe, propelling actions such as civil disobedience, maskless demonstrations, or a refusal to get tested and vaccinated.

Conspiracy theories and their associated actions are endorsed to satisfy the thwarted needs and fulfill the lost sense of significance. However, conspiracy theories are not expected to truly satisfy the basic needs, they potentially only temporarily compensate for them. Research has indeed found that when needs are experienced as frustrated, they lead the individual to rigidly engage in activities that appear to overcome some of the insecurities and threats stemming from need frustration, but this engagement falls short of achieving this and often leads to worst consequences (for a review, refer to Vansteenkiste et al., 2020). Empirical data suggest that conspiracy theories may actually cultivate the thwarting of the basic needs, creating a feedback loop in which the person is further reinforced to support and expand their beliefs in conspiracy theories (Douglas et al., 2017; van Prooijen, 2020). For instance, it has been shown that exposure to conspiracy theories decreases the feelings of control and autonomy by increasing perceptions of powerlessness (Douglas et al., 2017; Jolley and Douglas, 2014a; Jolley and Douglas, 2014b). This is not surprising given that, although conspiracy theories offer an alternative explanation to adverse events, they emphasize how individuals cannot have an impact on the *status quo*, possibly further thwarting the need for autonomy. They also highlight how numerous events, people, and objects are interrelated, as well as how the truth is hidden from the public, likely frustrating the sense of competence of individuals. Eventually, conspiracy theories can increase the feeling of being socially alienated, as they underscore how the ingroup is badly treated by the outgroup and how the ingroup is the target of threatening plans. In addition, conspiracy theories are often a source of interpersonal conflicts between conspiracy believers and their non-believers, possibly negatively affecting relationships and friendships and further reinforcing the frustration of the need for relatedness.

2.4 Past Public Health Crises and Conspiracy Theories

Past health crises provide some insights into the development of conspiracy theories concerning viruses. The element of mistrust toward mainstream media, influential figures, authorities, and/or governmental institutions was the most recurring theme reported to facilitate the endorsement and spread of conspiracy

theories throughout past epidemics as various as the Zika (Kou et al., 2017; Smallman, 2018), Ebola (Masumbuko Claude et al., 2019; Vinck et al., 2019), or H1N1 (Smallman, 2015). Many of these virus-related conspiracies revolved around capitalistic ill-intentions among powerful individuals (Smallman, 2015; Smallman, 2018, Masumbuko Claude et al., 2019).

Trust can be modulated by real conspiracies unveiled in the past, past persecutions, and disparities perpetrated by authority figures toward minority groups (Abramowitz et al., 2017; Smallman, 2015; Smallman, 2018; Kou et al., 2017) or by how authorities and institutions are perceived to competently manage an epidemic (Masumbuko Claude et al., 2019). In addition, we argue that mistrust toward institutions and the government could be a pre-epidemic social symptom engendered by past experiences of need frustration (e.g., social ostracism, injustice), which could be triggered or exacerbated by a health crisis and subjectively experienced as mistrust due to the loss of significance. This mistrust could then be further affected by how authorities and policymakers alienate the psychological needs of the population through their management of a health crisis and the enforcement of sociosanitary measures. This lack of trust is to be taken seriously, as it has been associated with a higher risk of not complying with measures and behaviors intended to contain the spread of a virus (e.g., refusing to get vaccinated, avoiding to consult with a health professional, etc. Vinck et al., 2019).

2.5 A Public Health Concern

There is a dire need for official authorities worldwide to tackle this issue, as conspiracy endorsement feeds at least three clear public health concerns. First, the actions perpetuated by conspiracy believers increase the risk of contracting and propagating SARS-CoV-2 among the population, which unsurprisingly puts resource and financial pressures on health care systems. In addition, conspiracy theories can have economic repercussions at an individual level. Individuals of low socioeconomic status can see their financial struggles increase due to influential conspiracy leaders who tend to ask for financial donations to fund their organizations and to continue promoting their alternative narratives. Financial donations are often portrayed by conspiracy narratives as a way to restore the lost sense of significance. Last, people integrating conspiracy theories as core beliefs should be of high concern for governmental representatives and health professionals. Such core beliefs increase the likelihood of one endorsing other conspiracy theories and networks in the long run (van Prooijen, 2020), potentially further bolstering their distrust and rejection of traditional medicine (e.g., vaccines, treatments, basic hygienic measures).

2.6 Potential Initiatives

Policymakers and authorities should be careful to not circulate mixed and confusing messages at a given time (Abramowitz et al., 2017), as past epidemics were marked by the dissemination of ambivalent messages on the virus at play (Kou et al., 2017). However, changing information is not necessarily synonymous with mixed messages (Carlsen and Glenton, 2016). To prevent their information and messages from being considered as mixed, policymakers and authorities should “acknowledge” the presence of uncertainty and that the information disseminated will be adjusted as time goes by (Carlsen and Glenton, 2016). Otherwise, people might consider and interpret mainstream information as misinformation (Ball and Maxmen, 2020). Furthermore, Ball and Maxmen (2020) emphasized that authorities and policymakers should describe the reasons and rationale that “guide” the changed decisions during an epidemic.

We recommend the following societal and individual-level initiatives to defuse conspiracy beliefs and prevent them from cognitively crystalizing in the long run. These initiatives are conceived from empirical studies, professional reports, and successful measures involved in the adequate handling of past epidemics (Baggio et al., 2019; Cohn and Kutalek, 2016; Niang, 2015; Sigfrid et al., 2020). Studies have suggested that increasing the sense of control, perception of transparency, and self-affirmation (i.e., asserting the values, meaning, and feelings of an individual) can decrease the strength of conspiracy beliefs (Carlsen and Glenton, 2016; Douglas et al., 2017; Poon et al., 2020; van Prooijen, 2020; Whitson and Galinski, 2008). There is a consensus among professionals that engaging the population and genuinely listening to their needs, perceptions, and concerns greatly helps to ensure the efficacy of sanitary measures during disease outbreaks (Baggio et al., 2019; Cohn and Kutalek, 2016; Niang, 2015). Indeed, public health measures to contain past Ebola epidemics were varied and included community engagement initiatives (Coltart et al., 2017). Though Coltart et al. (2017) consider it unclear which initiatives worked best, as they were usually implemented at the same time, the authors highlighted that community engagement initiatives seem to act as a catalyst to other initiatives (Coltart et al., 2017). Community engagement measures potentially work by increasing trust toward authorities, therefore increasing compliance and adequate function of other public health measures (Coltart et al., 2017).

Therefore, we first strongly advise state and local governments to invest in the implementation of a “qualitative community feedback mechanism” as was implemented for instance by the Democratic Republic of Congo as an additional measure for Ebola epidemics (Baggio et al., 2019; Nachega et al., 2020). This mechanism collected perceptions and comments of people about the epidemic (i.e., Ebola) to (1) improve trust and engagement of

communities and (2) help officials with feedback to adapt their decisions and priorities in terms of the needs of the community (Baggio et al., 2019). The information collected by the feedback mechanism was afterward coded, analyzed, and shared with the adequate authorities (Baggio et al., 2019). Such a mechanism allows each citizen to feel part of the larger social network and favors community engagement and empowerment, elements identified as key targets during an epidemic to reduce fears and rumours (Baggio et al., 2019; Cohn and Kutalek, 2016; Sigfrid et al., 2020). Therefore, state and local governments should ensure their population the universal access to a feedback mechanism regarding SARS-CoV-2 so that all can demonstrate self-affirmation by expressing their thoughts, perceptions, and questions about the current pandemic (Poon et al., 2020; van Prooijen, 2020). Special advisors should be appointed to oversee the mechanism and the adequate communication between involved parties (Sigfrid et al., 2020). State and local governments should also take the time to publicly and transparently respond to questions and comments raised *via* the feedback mechanism (including recognizing the limitations of government in understanding SARS-CoV-2), thus demonstrating that concerns of civilians are considered in the decision-making process (Baggio et al., 2019; Niang, 2015). The aim should not simply be to convince people of the “truth”, but rather to create a bidirectional communication system allowing a true connection of trust between civilians and officials (O’Malley et al., 2009) and acknowledge the emotional stress induced by the current situation. This type of mechanism would support the needs for autonomy, competence, and relatedness, and would therefore potentially reconnect one with truthful information regarding SARS-CoV-2 (Goldberg and Richley, 2020).

Second, at a micro-level, when health professionals face a person who endorses a conspiracy theory, we strongly recommend them to open a non-judgmental dialogue and instill a sense of trust in the relationship. Given the premise that endorsed conspiracy beliefs are a failed attempt to satisfy thwarted needs, these dialogues represent an opportunity that must be grasped (1) to let the person express their beliefs in a safe environment, (2) to respectfully offer rational counter-arguments if necessary, (3) to rationally explore why the counter-arguments are frustrating and how the conspiracy beliefs could keep one frustrated in terms of autonomy, competence, and/or relatedness, and (4) to investigate healthy ways to fulfill the needs so that the person can reconnect with others (Niang, 2015; Orosz et al., 2016). Such actions have the potential to satisfy the initially thwarted needs, therefore curbing the influence of conspiracy beliefs.

Finally, not all believers in conspiracy theories are on the track to radicalization. Kou et al. (2017) described how “in the face of crisis, people face enormous uncertainty and have urgent information needs”, which translates into important needs for autonomy and competence. Some, in a quest for “collective sensemaking”

(Kou et al. 2017), were only deceived by fake news advertised on social media or were misinformed by a trusted close other (European Commission, 2020). Around the world, some countries tried to counter distrust regarding SARS-CoV-2 by employing fear campaigns that advertised threatening health messages, further frustrating the needs of competence and autonomy (Stolow et al., 2020). Research suggests that these campaigns are ineffective, as they are experienced as controlling and only extrinsically motivate one to comply with the recommended health measures (Williams et al., 1999). They often have a short-term modest effect (Tannenbaum et al., 2015), mostly among people who are already in agreement with the message, but they fail to actually change the behaviors of the target group for which they were developed (Ruiter et al., 2014). Instead, authorities should employ rumor detectors (Baggio et al., 2019) specifically targeting fake news regarding the pandemic (e.g., <https://www.sciencepresse.qc.ca/covid-19>). Such a detector would have the potential to provide tailored information based on the misunderstandings of the population and unfounded rumors not reported *via* the qualitative community feedback mechanism. Based on this detector, authorities could make a weekly review and disseminate it to the media (e.g., editorials and radio stations) to inform the general population and disseminate it to elementary, high school, and college professors to ensure the circulation of adequate and truthful information among youth.

2.7 Getting Policymakers to Implement Changes

At the moment, there is a need to raise awareness of policymakers on the issue of conspiracy endorsement. To do so, we strongly encourage researchers and other professionals working in the field of conspiracy to increase their presence in the media (e.g., *via* radio hosts and journalists) to circulate reliable information and to get the conversation going on the issue of conspiracy endorsement (Burstein, 2003). By raising the salience of the issue and by changing the public opinion on this issue, the chances of getting the attention of policymakers increase (Burstein, 2003). In addition, more articles and materials written in lay language are needed (Economic and Social Research Council, 2021). Such articles and material could be tailored for publishing in daily newspapers known to be read by policymakers (e.g., The Hill Times in Ottawa, Canada). The members of the public who feel concerned by the issue of conspiracy endorsement should be encouraged to lobby and/or solicitate their local or state government representatives *via* emails, phone calls, and in-person meetings to encourage the implementation of preventive initiatives. The civic engagement action of lobbying could even increase the satisfaction of the three psychological needs by rallying members of the public with an objective, providing a sense of self-efficacy, and producing a sense of control within their society.

To increase awareness and highlight the scale of the issue of conspiracy endorsement in the population, we further propose that researchers investigate the societal costs generated by conspiracy endorsement and their associated behaviors. Such societal costs would include the direct costs related to mental health issues and the actions associated with endorsed conspiracy theories, including health services used due to mental and/or physical health issues and their indirect impact on loss of productivity at work and job turnover. The direct costs could be two-fold; on the one hand, people who endorse conspiracy theories are at risk of refusing and avoiding traditional health care services (including refusing vaccines) in favor of alternative medicines, which could have long-term impacts on their health and the spread of viruses in the general population. On the other hand, the development of long-term diseases and/or the development of mental health issues could have a direct economic impact on health care services used (e.g., emergency room visits, hospitalizations, psychiatric hospitalization, and medication use).

The understanding of health professionals on conspiracy theories should also be actualized and updated. Professional orders (i.e., doctors, psychologists, social workers) should encourage health professionals to attend continuous training activities demystifying conspiracy theories and how to address them when confronted with an individual endorsing them.

2.8 Accountability and Transparency

Given the importance of the issue of mistrust towards authorities, the handling of actions perpetrated by governments and health professionals that can reinforce conspiracy theories is to be considered. Indeed, past conspiracies that were revealed as true have served as fuel for the current unjustified conspiracy theories circulating (e.g., Tuskegee experiment, Wikileaks, etc.; Pierre, 2020; Smallman, 2018). To facilitate the implementation of the proposed initiatives and increase trust, authorities and policymakers should support and value the concepts of accountability and transparency (Coltart et al., 2017). Accountability is important to value due to the secrecy element characterizing conspiracy theories. Government officials, medical professionals, researchers, and any other authority figures who perpetrated and/or caused the persecution of a group, intentionally or not, should be publicly held accountable. Covering up past and present faults only risks amplifying the secrecy element of conspiracy theories and reinforcing their endorsement and generalization. The other key element, transparency, has been pointed by multiple authors as a critical principle with which to manage public health concerns, including epidemics, which are events of tremendous uncertainty (Carlsen and Glenton, 2016; O'Malley et al., 2009). Governments holding back information increase the risk that people “collectively generate alternative narratives” (Kou

et al. 2017). Carlsen and Glenton (2016) reported similar conclusions and highlighted the importance of being transparent regarding the rationale of strategies used and the reasons for the decisions taken. Based on their systematic review of qualitative studies, Carlsen and Glenton (2016) believe that “transparency regarding uncertainty” would lead to “compliance with public health strategies”.

2.9 Discussion

The present article asserted that conspiracy theories are narratives that can lead to violent radicalization *via* the thwarting of the universal needs of autonomy, competence, and relatedness. There is a consensus among experts that mistrust toward government representatives and authorities is central to the spreading of conspiracy theories during epidemics. Such mistrust toward authorities and influential figures could reflect the repetitive thwarting of needs. Accordingly, initiatives promoting community engagement are considered essential to ensure compliance with health measures during epidemics and to reduce the prevalence of endorsement of conspiracy theories; however, the best approach to regain trust is unknown (Vinck et al., 2019). The initiatives presented in this article aim to increase community engagement and trust toward authorities by satisfying the needs for autonomy, competence, and relatedness. However, they do require a certain basic level of trust from the population, which is a limitation to their potential efficacy. It is therefore not possible at the moment to determine the level of efficacy of the presented initiatives. To try to ensure their efficacy, governments will have to multiply their voices at various places simultaneously and deliver consistent messages and information. Governments could also collaborate with alternative and local leadership figures present in the population (e.g., athletes, influencers, religious figures, etc.; Coltart et al., 2017; Vinck et al., 2019). We encourage that the implementation of the proposed initiatives is paired up with an assessment of its usefulness and efficacy.

Some governments have already implemented channels of communication through which people can raise their concerns and ask questions (e.g., public consultations with the population and government representative talks including question periods). However, the effectiveness of these channels of communication can be hindered, as some governments do not end up holding their end of the bargain and implement the changes promised. If governments do not listen to their concerns of their population, transparently communicate, and support the satisfaction of the needs of the population for autonomy, competence, and relatedness, one unavoidable consequence is that the endorsement of conspiracy theories will increase and, therefore, negatively affect the public health of their population.

2.10 References

- Abramowitz, S., McKune, S. L., Fallah, M., Monger, J., Tehoungue, K., and Omidian, P. A. (2017). The opposite of denial: Social learning at the onset of the Ebola emergency in Liberia. *J Health Commun.* 22, 59-65. doi: 10.1080/10810730.2016.1209599
- Baggio, O., Camara, C. A., and Prue, C. (2019). Bringing community perspectives to decision-making in the Ebola response in the Democratic Republic of Congo. <https://odihpn.org/magazine/bringing-community-perspectives-decision-making-ebola-response-democratic-republic-congo/> [Accessed November 24, 2020].
- Ball, P., and Maxmen, A. (2020). Battling the infodemic. *Nature.* 581, 371-374.
- Burstein, P. (2003). The impact of public opinion on public policy: A review of an agenda. *Polit Res Q.* 56, 29-40.
- Carlsen, B., and Glenton, C. (2016). The swine flu vaccine, public attitudes, and researcher interpretations: A systematic review of qualitative research. *BMC Health Serv Res.* 16, 1-15. doi: 10.1186/s12913-016-1466-7
- Cohn, S., and Kutalek, R. (2016). Historical parallels, Ebola virus disease and Cholera: Understanding community distrust and social violence with epidemics. *PLoS Curr.* 26. doi: 10.1371/currents.outbreaks.aa1f2b60e8d43939b43fbd93e1a63a94.
- Coltart, C. E. M., Lindsey, B., Ghinai, I., Johnson, A. M., and Heymann, D. L. (2017). The Ebola outbreak, 2013-2016: Old lessons for new epidemics. *Phil Trans R Soc B.* 372, 1-24. doi: 10.1098/rstb.2016.0297
- Douglas, K. M., Sutton, R. M., and Cichoka, A. (2017). The psychology of conspiracy theories. *Curr Dir Psychol Sci.* 26, 538-542. doi: 10.1177/0963721417718261
- Economic and Social Research Council. (2021). Influencing policymakers. <https://esrc.ukri.org/research/impact-toolkit/influencing-policymakers/> [Accessed June 8, 2021].
- European Commission. (2020). Identifying Conspiracy Theories. https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/fighting-disinformation/identifying-conspiracy-theories_en [Accessed November 27, 2020].
- Gallup International Association. (2020). The Coronavirus: A Vast Scared Majority Around the World. https://www.gallup-international.com/wp-content/uploads/2020/03/GIA_SnapPoll_2020_COVID_Tables_final.pdf [Accessed November 27, 2020].
- Goldberg, Z. J., and Richley, S. (2020). Anti-vaccination beliefs and unrelated conspiracy theories. *World Affairs.* 183, 105-24. doi: 10.1177/0043820020920554
- Jolley, D., and Douglas, K. M. (2014a). The effects of anti-vaccine conspiracy theories on vaccination intentions. *PLoS One.* 9, e89177. doi: 10.1371/journal.pone.0089177

- Jolley, D., and Douglas, K. M. (2014b). The social consequences of conspiracism: Exposure to conspiracy theories decreases the intention to engage in politics and to reduce one's carbon footprint. *Br J Psychol.* 105, 35–56. doi: 10.1111/bjop.12018
- Kou, Y., Gui, X, Chen, Y., and Pine, K. H. (2017). Conspiracy talk on social media: Collective sensemaking during a public health crisis. *Proc ACM Hum Comput Interact.* 1, 61. doi: 10.1145/3134696
- Kruglanski, A. W., Bélanger, J. J., and Gunaratna, R. (2019). The three pillars of radicalization: Needs, narratives, and networks. New Yourk: Oxford University Press.
- Masumbuko Claude, K., Underschultz, J., and Hawkes, M. T. (2019). Social resistance drives persistent transmission of Ebola virus disease in Eastern Democratic Republic of Congo: A mixed- methods study. *PLoS One.* 14, e0223104. doi: 10.1371/journal.pone.0223104
- Nachege, J. B., Mbala-Kngebeni, P., Otshudiema, J., Mobula, L. M., Preiser, W., Kallay, O., et al. (2020). Responding to the challenge of the dual Covid-19 and Ebola epidemics in the Democratic Republic of Congo - priorities for achieving control. *Am J Trop Med Hyg.* 103, 597–602. doi: 10.4269/ajtmh.20-0642
- Niang, C. (2015). The human factor. *Bull World Health Organ.* 93, 72–73. doi: 10.2471/BLT.15.030215
- O'Malley, P. O., Rainford, J., and Thomson, A. (2009). Transparency during public health emergencies: From rhetoric to reality. *Bull World Health Organ.* 87, 614–618. doi: 10.2471/BLT.08.056689
- Orosz, G., Krekó, P., Paskuj, B., Tóth-Király, I., Böthe, B., and Roland-Lévy, C. (2016). Changing conspiracy beliefs through rationality and ridiculing. *Front Psychol.* 7, 1-9. doi: 10.3389/fpsyg.2016.01525
- Philippe, F. L., and Houle, I. (2020). Cognitive integration of personal or public events affects mental health: Investigating memory networks in a case of natural flooding disaster. *J Pers.* 88, 861–873. doi: 10.1111/jopy.12531
- Pierre, J. M. (2020). Mistrust and misinformation: A two-component, socio-epistemic model of belief in conspiracy theories. *Journal of Social and political Psychology.* 8, 617-641. doi: 10.5964/jspp.v8i2.1362
- Poon, K. T., Chen, Z., and Wong, W. Y. (2020). Beliefs in conspiracy theories following ostracism. *Pers Soc Psychol Bull.* 46, 1234–1246. doi: 10.1177/0146167219898944
- Ruiter, R. A, Kessels, L. T., Peters, G. J., and Kok, G. (2014). Sixty years of fear appeal research: Current state of the evidence. *Int J Psychol.* 49, 63–70. doi: 10.1002/ijop.12042
- Ryan, R. M., and Deci, E. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness. New York: Guilford Press.
- Sheldon, K. M., and Gunz, A. (2009). Psychological needs as basic motives, not just experiential requirements. *J Pers.* 77, 1467– 1492. doi: 10.1111/j.1467-6494.2009.00589.x

- Sigfrid, L., Maskell, K., Bannister, P. G., Ismail, S. A., Collinson, S., Regmi, S., et al. (2020). Addressing challenges for clinical research responses to emerging epidemics and pandemics: A scoping review. *BMC Med.* 18, 1–15. doi: 10.1186/s12916-020-01624-8
- Smallman, S. (2015). Whom do you trust? Doubt and conspiracy theories in the 2009 Influenza pandemic. *Journal of International and Global Studies.* 9, 1-13.
- Smallman, S. (2018). Conspiracy theories and the Zika epidemic. *Journal of International and Global Studies.* 6, 1-24.
- Stolow, J. A., Moses, L. M., Lederer, A. M., and Carter, R. (2020). How fear appeal approaches in COVID-19 health communication may be harming the global community. *Health Educ Behav.* 47, 531–535. doi: 10.1177/1090198120935073
- Tannenbaum, M. B., Hepler, J., Zimmerman, R. S., Saul, L., Jacobs, S., Wilson, K., Abarracín, D. (2015). Appealing to fear: A meta-analysis of fear appeal effectiveness and theories. *Psychol Bull.* 141, 1178–1204. doi: 10.1037/a0039729
- van Prooijen, J. W. (2020). An existential threat model of conspiracy theories. *Eur Psychol.* 25, 16– 25. doi: 10.1027/1016-9040/a000381
- van Prooijen, J. W., and van Vugt, M. (2018). Conspiracy theories: Evolved functions and psychological mechanisms. *Perspec Psychol Sci.* 13, 770-788. doi : 10.1177/1745691618774270
- Vansteenkiste, M., Ryan, R. M., and Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motiv Emot.* 44, 1-31. doi: 10.1007/s11031-019-09818-1
- Vinck, P., Pham, P. N., Bindu, K. K., Bedford, J. and Nilles, E. J. (2019). Institutional trust and misinformation in the response to the 2018-19 Ebola outbreak in North Kivu, DR Congo: A population-based survey. *Lancet Infect Dis.* 19, 529-536. doi: 10.1016/S1473-3099(19)30063-5
- Whitson, J. A., and Galinski, A. D. (2008). Lacking control increases illusory pattern perception. *Science.* 322, 115–7. doi: 10.1126/science.1159845
- Williams, G. C., Cox, E. M., Kouides, R., and Deci, E. L. (1999). Presenting the facts about smoking to adolescents: Effects of an autonomy-supportive style. *Arch Pediatr Adolesc Med.* 153, 959–964. doi: 10.1001/archpedi.153.9.959

CHAPITRE 3

PRIMING NEED-FRUSTRATING MEMORIES SPARKS CONSPIRACY BELIEFS: A SELF-DETERMINATION THEORY PERSPECTIVE

Ce chapitre est constitué d'un article scientifique rédigé en anglais. Cet article a été publié dans *Journal of Personality*. Cet article scientifique examine la valeur prédictive des souvenirs sur l'endossement de TCs sur le COVID-19, lorsque ces souvenirs sont activés par des contextes de restriction des libertés. Une première étude montre une association entre les souvenirs encodés avec frustration de l'autonomie qui sont activés dans le cadre de restrictions des liberté et l'endossement de TCs sur le COVID-19. Une seconde étude montre que l'activation subliminale de souvenirs encodés avec frustration de l'autonomie entraîne dans l'immédiat des réactions plus vives envers une nouvelle (fausse) TC comparativement à l'activation subliminale d'un souvenir encodé avec une autonomie satisfaite et comparativement à un groupe non-activé. Cet article se termine par une discussion sur l'influence des souvenirs encodés avec frustration de l'autonomie sur l'endossement de TCs et suggère que l'endossement de TCs peut résulter, du moins partiellement, de l'interaction entre l'individu (souvenirs) et l'environnement (éléments déclencheurs).

Référence : Leonard, M.-J. et Philippe, F. (2025). Priming need-frustrating memories sparks conspiracy beliefs: A self-determination theory perspective. *Journal of Personality*, 1-17.
<https://doi.org/10.1111/jopy.70032>

Priming Need-Frustrating Memories Sparks Conspiracy Beliefs:
A Self-Determination Theory Perspective

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Conflict of Interest Disclosure. The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding. This research was funded by a grant from the Social Sciences and Humanities Research Council of Canada (Grant/Award Number: 435-2017-1358) and a joint scholarship from the Social Sciences and Humanities Research Council of Canada and the Canadian Ministry of National Defence - MINDS awarded to Marie-Jeanne Leonard.

Data Availability. Data from this research is available at the following link the in Files section: https://osf.io/jpxy3/?view_only=a74a9c0124c24bd38799884a55a8f7c4.

Ethics Approval. The two studies part of this research were approved by the Research Ethics Committee for Student Projects of the Université du Québec à Montréal. This research was not preregistered.

3.1 Abstract

Objective: Memories shape perceptions and decisions in uncertain situations through their encoded levels of autonomy, competence, and relatedness satisfaction or frustration. This research investigated their predictive value on COVID-19 conspiracy theories endorsement, when triggered by freedom-restrictive contexts. **Method:** Study 1 ($N = 141$) randomly exposed participants to a control, moderate, or high freedom-restrictive vignette before describing a memory. Participants reported their endorsement of COVID-19 conspiracy theories a week later. Study 2 ($N = 213$) asked participants to describe a memory after reading a freedom-restrictive vignette. A week later, a yoked control design randomly assigned participants to either be primed with their own memory or with someone else's memory before reacting to a bogus conspiracy theory. **Results:** Study 1 revealed a predictive association specifically between autonomy-frustrating memories triggered by freedom-restrictive vignettes and COVID-19 conspiracy theories endorsement. Study 2 showed that priming autonomy-frustrating memories situationally increased the likelihood of endorsing a bogus conspiracy theory, becoming angered by it, and expressing willingness to disseminate it, compared to a non-primed group and group primed with autonomy-satisfying memories. **Conclusions:** This research highlights the role of autonomy-frustrating memories in endorsing conspiracy theories, suggesting that such endorsement can emerge from the interplay between the individual (memories) and the environment (triggering cues).

Keywords: Conspiracy Theories, Autonomy, Self-Determination Theory, Motivation, Memories.

3.2 Introduction

Extreme societal events—such as wars, climate-related catastrophes, or virus outbreaks—can trigger beliefs in conspiracy theories (CTs; Uscinski & Parent 2014; van Prooijen & Acker, 2015). These events often lead to swift societal shifts, which profoundly affect and challenge the establishment, the *status quo*, and the social norms (van Prooijen & Douglas, 2017). Such destabilizing circumstances can create psychological discomfort. Researchers argue that CTs emerge, in part, as a coping mechanism to manage feelings of uncertainty, lack of control, and the need for closure (e.g., Bowes et al., 2023; Smallman, 2018; van Prooijen & Jostmann, 2013). Most empirical studies on CTs focus on stable person-level variables, using correlational designs to link these traits to beliefs in CTs. However, this approach often overlooks within-person processes, that is, how specific cognitions can be triggered by a specific extreme situation. Indeed, two individuals sharing the same personality traits will not perceive and react similarly in a same situation. There is thus a need to better understand how extreme event-related situations interact with individuals' unique perception of them to influence the endorsement of CTs (Stojanov & Halberstadt, 2020).

The present research suggests using a memory perspective, coupled with self-determination theory (SDT; Ryan & Deci, 2017), to investigate how specific autobiographical memories of past events are triggered by extreme social events to guide individuals towards CTs. In recent history, the COVID-19 pandemic provided a unique opportunity to investigate this potential motivational process in real time within the context of an extreme societal crisis (van Prooijen & Acker, 2015).

3.2.1 About Conspiracy Theories

Five key parameters distinguish CTs: pattern, agency, coalition, threat, and secrecy (van Prooijen & van Vugt, 2018). CTs detail a pattern of causal relationships between events, people, and objects. They imply agency by vilifying ill-intentioned people who form a coalition that has a deliberate and threatening plan. This coalition is usually composed of people in positions of authority (e.g., governments, celebrities) or people subject to negative stereotypes (e.g., immigrants, women; van Prooijen & van Vugt, 2018). Secrecy is always implied in these narratives, making it difficult to disprove them (van Prooijen & Douglas, 2018).

Research pertaining to CTs has highlighted multiple person-level constructs associated with endorsement of such narratives, including uncertainty (van Prooijen & Jostmann, 2013), system identity threat (i.e., perceiving social change as a threat to core values and identity; Federico & et al., 2018), powerlessness (Abalakina-Paap et al., 1999), and lack of control (Whitson & Galinsky, 2008). For instance, Abalakina-Paap

and colleagues (1999) argued that powerlessness was positively correlated with endorsement of CTs because these narratives simultaneously provide an explanation as to why a person feels powerless and an outgroup to blame for this feeling of powerlessness. Using an experimental design, Whitson and Galinsky (2008) manipulated participants' sense of personal control (i.e., participants either recalled a situation in which they had or did not have control) and showed that inducing a lack of control increased conspiracy perceptions. They suggested that lacking control creates a need for structure and that CTs "return the world to a predictable state". Overall, a broad variety of other significant correlates of CTs beliefs have emerged in the past two decades (e.g., need for closure, ambiguity intolerance, lower self-esteem, need for uniqueness; for complete meta-analysis see Bowes et al., 2023). Douglas et al. (2017) proposed to group these constructs into three motives to endorse CTs: epistemic, existential, and social motives. Epistemic motivation refers to the desire to competently predict one's environment and have a stable understanding of it. Existential motivation translates into the desire to feel safe and in control of one's environment. Social motivation corresponds to the need to belong and maintain a positive perception of the self and the in-group (Douglas et al., 2017). Little empirical research has directly examined those motives as their exact measurement is unclear. However, these motivational constructs strongly reflect the three basic psychological needs defined by Self-Determination Theory (SDT). SDT has cumulated over 50 years of empirical background on how those three needs, when frustrated, can motivate certain compensatory behaviors (Ryan & Deci, 2017). To this extent, SDT appears as a fruitful perspective to understand CTs.

3.2.2 Self-Determination Theory

SDT considers the needs for autonomy, competence, and relatedness to be universal and fundamental to fulfill for human growth and well-being (Chen et al., 2015; Ryan & Deci, 2017). Their satisfaction varies from one individual to another depending on their environment and their social context. When one of those needs is frustrated, people instinctively try to regain satisfaction (Sheldon & Gunz, 2009). Autonomy satisfaction corresponds to a sense of volition and acting authentically based on your own desires, values, and personal interests. Autonomy frustration refers to a perception of being controlled and restrained from acting/thinking congruently with one's will. Competence satisfaction translates into a sense of mastery and efficacy, while competence frustration refers to an undermined sense of mastery, a feeling of ineffectiveness, or even a feeling of failure. Lastly, relatedness satisfaction is described as a sense of social connection, significance, and contribution to a person or group. The frustration of relatedness translates into a loss of connection when one is socially rejected or ostracized. Those three needs are therefore considered as the fundamental motivators that lead people to act on their environment and sustain objectives (Ryan & Deci, 2017; Sheldon & Gunz, 2009).

Studies using an SDT framework have shown that need satisfaction is associated with positive outcomes (Sheldon et al., 2011), including well-being, compassion, and better internal resources, such as resilience, to face stressful events (Chen et al., 2015; Chirkov et al., 2005; Neufeld & Malin, 2019; Ryan & Deci, 2000; Ryan & Deci, 2017; Sheldon et al., 2011). At the opposite, frustration of those needs is associated with maladjustment and unhappiness (Bartholomew et al., 2011; Chen et al., 2015). Frequent need frustration hinders the development of internal resources and has behavioral consequences (Sheldon, 2011; Ryan & Deci, 2017). For instance, need frustration during the COVID-19 pandemic was found to negatively affect sleep quality and life satisfaction, as well as to predict depressive and anxiety symptoms (Vermote et al., 2021). Moreover, studies have linked long-term need frustration with loss of motivation, defensive functioning, aggressive attitude, and oppositional behaviors of “resistance to engage in the socially requested activity” (Deci & Ryan, 1985; van Petegem et al., 2012; Vansteenkiste & Ryan, 2013).

Indeed, need frustration motivates the individual to compensate for those needs. When attempts to repair the needs fail and need frustration is repeatedly experienced, a maladaptive compensatory process can unfold (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013). Through this compensatory process, people tend to endorse extrinsic goals rather than goals stemming from their own internal values and preferences (Ryan & Deci, 2017; Sheldon & Kasser, 2008), obstructing authentic satisfaction of the needs (Vansteenkiste & Ryan, 2013). This compensatory process is marked by attempts to accommodate chronic need frustration and can lead to the development of a black-and-white perception of the world, as well as rigid and oppositional behaviors as a mean to cope (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013).

Endorsement of CTs may be a manifestation of co-occurring compensatory reactions involving oppositional behaviors and rigid cognitive patterns (Vansteenkiste & Ryan, 2013). Oppositional behaviors relate to defiant and even hostile defensive reactions following threats of control from perceived authority figures (Vansteenkiste & Ryan, 2013). Based on prior research linking oppositional reactions among adolescents to controlling caregiving figures (e.g., van Petegem et al., 2015; Vansteenkiste et al., 2014), such authority figures can be conceptually extended to governments and public health institutions in the broader societal context, as these entities may also demand compliance with rules in a controlling manner. Additionally, rigid cognitive patterns can arise as a reaction to need frustration (Vansteenkiste & Ryan, 2013). They entail a persistence in inflexible, critical, and dichotomized thinking patterns as a mean to “provide a sense of structure, predictability, and security” (Vansteenkiste & Ryan, 2013). Consequently, the repeated frustration of one or multiple needs could be the root of what sets in motion the pursuit of CTs, via this compensatory process.

Still, we all face aversive events that frustrate these needs and not all of us endorse CTs. Case in point, the COVID-19 pandemic was an extreme event experienced collectively, but while some experienced it as need frustrating and endorsed CTs, others did not seek an alternative narrative. That is because a situation's need-frustrating nature is not determined by its face value, but by our subjective perception, which is shaped by our own personal past experiences (Philippe et al., 2011b).

3.2.2.1 On Memories

Our past experiences are encoded within episodic and autobiographical memories. Memory encoding goes beyond the factual details of a past experience; it also comprises cognitive-affective elements that reflect how the initial situation was experienced (Conway et al., 2004). For instance, these cognitive-affective elements include the emotional valence (i.e., whether the situation was perceived as positive or negative), but also the need-satisfying or need-frustrating quality of the experience (Philippe et al., 2011a). The levels of need satisfaction and frustration encoded within a memory are a distinct construct from that of general everyday need satisfaction and frustration (Philippe et al., 2011a). General everyday levels of need satisfaction and frustration are part of semantic self-knowledge structures, which translate into a conceptual understanding of the self and the world (e.g., I am a good person, the government tries to control me), rather than specific memories on which people rely to determine how to react to a specific situation (Philippe & Bernard-Desrosiers, 2017; Philippe et al., 2011a). As such, memories hold a predictive value to determine how one will perceive, interpret, and act in a given situation, beyond stable person-level variables like standard personality traits or motivational-cognitive dispositions (e.g., need for closure, powerlessness; Bowes et al., 2023; Philippe et al., 2011a; Stojanov & Halberstadt, 2020). Indeed, memory activation, but most importantly the activation of their encoded cognitive-affective elements, is useful in our daily life as it helps us determine how to navigate novel situations.

Memories are triggered when the new situation faced shares similarities with past events encoded as memories, such as a common emotion, an overlapping theme (e.g., being controlled, feeling alone), or a surface feature (e.g., a same location or person; Brown & Schopflocher, 1998; Philippe, 2022; Rasmussen et al., 2015). This activation process usually occurs outside of consciousness so that we can quickly and momentarily appraise and react to our environment (Conway, 2009; Philippe et al., 2011b). Memory activation serves a directive function (Pillemer, 2003) in that its encoded cognitive-affective information is used and processed by the brain to direct perceptions and intentions (Kuwabara & Pillemer, 2010; Merson & Pezdek, 2019), induce emotional reactions (Philippe et al., 2011b, 2012), guide decision making

(Philippe, 2022), as well as inform behavioral responses (Biondolillo & Pillemer, 2015; Gino & Desai, 2012) in a given situation. For instance, Biondolillo & Pillemer (2015) demonstrated that memory valence influences exercise behavior. They assigned participants to either recall a positive memory, a negative memory, or no memory (i.e., control). After a week, those who recalled a positive memory reported having exercised more than controls, while those who recalled a negative memory reported intermediate levels of exercise activity. Philippe and colleagues (2011b) further showed the role of need-frustrating memories on emotional reactions and demonstrated that the impact of need-frustrating memories is theme-specific. In one experiment, the authors asked participants to recall either a memory of being treated unfairly or a memory of having committed a mistake, and, two weeks later, to view a film excerpt on the theme of unfairness. Greater need frustration in the unfair treatment memory—but not in the mistake memory—predicted stronger anger reactions to the film excerpt on unfairness.

If the activated memories are characterized by need frustration, they are more likely to trigger a compensatory motive to defend the person's integrity. In certain instances, as was previously explained, this defensive reaction could take the form of both oppositional-defiant behaviors and rigid thinking patterns (Vansteenkiste & Ryan, 2013). Over time, certain need-frustrating memories may become chronically activated (Philippe et al., 2012), fueling the defensive reaction of opposing the normative narrative and rejecting it, while also rigidly seeking and endorsing alternative ones, as is reflected in the endorsement of CTs.

Applied to the COVID-19 pandemic, several novel situations (e.g., two-meter distancing, mandatory vaccine passport, closure of non-essential businesses) may have triggered memories of past events also characterized by restricted freedoms (e.g., unjustified treatment in school, excessively controlling boss, ostracization). If these triggered memories were need frustrating, then the COVID-19-related restrictive situations may have been interpreted as unfair and alienating, provoking a defensive and oppositional reaction (Vansteenkiste & Ryan, 2013), particularly in locations where the sociosanitary measures were not proportional to the epidemiological situation (Waterschool et al., 2023). For some, it may have prompted a search for an alternative narrative to compensate, potentially resulting in the endorsement of CTs—as these narratives justify experiencing these events as need frustrating. Over time, the repetitive activation of these memories may have crystallized into stable beliefs in CTs.

3.2.3 Needs, Memories, and Conspiracy Theories – An Integrative Model

Overall, it is theorized that events occurring during a societal crisis trigger memories, because both share overlapping features. If the triggered memories are need frustrating, the current event will then be interpreted as such and will lead the person to try to compensate for that lack of need satisfaction as a defensive reaction. Such a compensation can manifest as minimizing or denying the external reality of the current event and finding a different explanation for it that could simultaneously explain both the past and current need-frustrating experiences. Beliefs in CTs often fulfill these criteria and provide a compensation for the frustrated needs. If this theoretical conceptualization holds true, then reminders of a societal crisis that restrict freedom should trigger need-frustrating memories that are predictive of beliefs in CTs. Similarly, priming of these memories should increase beliefs in CTs.

3.2.4 Context of the Present Research

This research was conducted amidst the COVID-19 pandemic. It therefore specifically pertains to CTs related to COVID-19 to increase the external validity of the research (van Prooijen & Acker, 2015). At the time this research took place, the Government of Quebec enforced strict freedom restricting sociosanitary measures (e.g., closed gyms, curfews, limited traveling between regions, vaccination passports to enter establishments). Apart from the great number of COVID-19-related deaths, freedom restriction was the most important aspect of this public health crisis that had significant consequences on the population across all ages. This research therefore focused on reminders of freedom-restrictive situations reflecting the COVID-19 pandemic in the province of Quebec.

3.3 Present Research

The present research had two purposes. First, we intended to show that need-frustrating memories triggered by freedom-restrictive situations are the ones predictive of endorsement of CTs. Second, we suggest that the mere activation of these memories will make individuals more incline to endorse CTs, including new CTs. Study 1 investigated the association between need-frustrating memories and COVID-19 CTs beliefs using a prospective quasi-experimental design. Based on the results of Study 1, Study 2 used an experimental design and assessed whether priming individuals with a need-frustrating memory (vs. a control memory) associated with freedom restriction would momentarily increase individuals' propensity to endorse a bogus COVID-19-related CT. Overall, we hypothesized that memories triggered by restricted freedoms and that were encoded as need-frustrating would predict beliefs in COVID-19 CTs and increase the likelihood of endorsing COVID-19 CTs when primed.

Data from the two studies are available in open access at the following link in the Files section: <https://doi.org/10.17605/OSF.IO/JPXY3>.

3.4 Study 1

Study 1 examined the relationship between need-frustrating memories activated by situations involving freedom restriction and the endorsement of COVID-19 CTs. We posited that reminders of COVID-19-related freedom restrictions would trigger need-frustrating memories in some individuals, and that the level of need frustration in these memories would, in turn, predict COVID-19 CTs endorsement. To test this hypothesis, participants were randomly assigned to read one of three vignettes depicting either no restriction, moderate restriction, or high restriction of freedom. They were then asked to recall a memory in response to the vignette. Accordingly, if the moderate and high restriction vignettes were to activate need-frustrating memories, these memories would be specifically predictive of CTs endorsement. However, the need-frustrating memories activated by a non-restrictive vignette were not expected to be predictive of CTs endorsement. Therefore, we did not expect a main effect of vignette condition on CTs endorsement. Rather, we hypothesized an interaction between memory need frustration and vignette condition in the prediction of CTs endorsement, such that there would be an effect for memory need frustration in the moderate and high freedom restriction vignette conditions, but not in the non-restrictive vignette condition. Importantly, participants were not instructed to recall a specific type of memory. Instead, we examined naturally emerging memories to explore how specific contextual cues (i.e., the vignettes) influence memory activation and subsequent belief endorsement.

Since we did not know whether all three needs (autonomy, competence, relatedness) or only some of the three needs would show the expected effect, we tested each need separately. We controlled for everyday levels of need frustration (referred to as general autonomy, competence, and relatedness) to isolate the specific role of memory need frustration on CTs endorsement. We further controlled for trait reactance as this person-level characteristic was associated with anti-masks attitudes and other negative attitudes towards the COVID-19 virus during the pandemic (Taylor & Asmundson, 2021). Controlling for trait reactance ensured that the effect was likely driven by need frustration in specific memories triggered by a specific context and not by a more general reactive personality. Finally, memory valence was also controlled for to demonstrate that this memory characteristic is not relevant in the context of this research.

3.4.1 Method

3.4.1.1 Participants and Design

A quasi-experimental design with a prospective measure of COVID-19 CTs beliefs was used. Because memory retrieval can induce a powerful situational mood priming effect (Philippe et al., 2015), CTs endorsement was assessed in a separate survey one week later. This guaranteed that no situational priming effect was involved and it isolated the specific, potentially cumulative, and stable influence of need frustration in memories on CTs endorsement. Based on past studies investigating the effect of activating memories (Houle et al., 2018; Philippe et al., 2012), a small-to-medium effect size was expected ($f^2 = .075$). A power analysis indicated that a minimum of 132 participants was necessary to conduct multiple regression analyses with 12 predictors (power = .80, alpha = .05).

Overall, this study included 141 participants from the general population in Quebec, Canada. Participants were 39.88 years old on average ($SD = 10.02$). Overall, 95.0% of the sample identified as White. A total of 61.7% of the sample identified as female and 38.3% identified as male. Household income was reported in the following brackets: less than \$30 000 (13.5%), \$30 000 to \$69 999 (25.6%), \$70 000 to \$109 999 (33.3%), and \$110 000 or more (20.5%). Education level was reported as follows: high school diploma or less (12.1%), college or vocational training (42.6%), bachelor's degree or university certificate (32.6%), or graduate degree (12.8%).

3.4.1.2 Procedure and Materials

3.4.1.2.1 Recruitment Method

Recruitment took place online via advertisements on social media (between June and September 2021). Sociosanitary measures during this recruitment period varied and included mandatory mask wearing in public places, a ban on gatherings of more than nine guests within a residential setting, mandatory three-day isolation in a government-designated hotel upon arrival in the country via air travel, or mandatory proof of vaccination to enter non-essential public spaces (Institut national de santé du Québec, 2022). Participants were invited to complete two online surveys at a one-week interval. All participants were informed about the content of the study and provided their informed consent prior to completing the first online survey. To encourage participation, participants were entered into a draw of three prizes of \$125 after completing the first survey. All participants received a \$15 e-transfer after completing the second survey.

Participants were randomly assigned to read one of three vignettes during the first survey. Each vignette depicted the same situation, but personal freedom restrictions varied (i.e., control, moderate, and high restriction). Afterwards, participants reported the first spontaneous memory elicited by the vignette. COVID-19 CTs endorsement was assessed in a separate survey a week later. This study was approved by the *Research Ethics Committee for Student Projects of the Université du Québec à Montréal*.

3.4.1.2.2 Inclusion Criteria

Participants had to be over the age of 18. A total of 266 participants completed the first survey, but 28 of them were excluded from analyses as they did not properly complete the study (i.e., they did not report a memory or did not follow the memory instructions properly). An additional 30 participants were excluded as they incorrectly answered both quality check questions that were inserted in the first survey to verify proper completion. Of the 208 participants invited to complete the second survey, 67 participants did not complete it (dropout rate of 32%). Final sample included 141 participants.

3.4.1.3 Measures

Participants answered a demographic questionnaire including gender, age, and socio-economic status.

3.4.1.3.1 Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS; Chen et al., 2015)

The BPNSFS assesses everyday satisfaction and frustration for autonomy, competence, and relatedness (e.g.: “I feel insecure about my abilities.”) via 24 items. Participants rated each item on a 5-point Likert scale ranging from 1 (*Completely false*) to 5 (*Completely true*). Satisfaction items were reverse scored. An average score representing global frustration levels was calculated for each need. The BPNSFS has good construct validity (Chen et al., 2015). In this study, the Cronbach’s alphas were adequate, varying between .80 and .88.

3.4.1.3.2 Hong Psychological Reactance Scale (Hong & Faedda, 1996)

This scale assesses trait reactance via 11 items (e.g., “I consider advice from others to be an intrusion”). Each item is rated on a 5-point Likert scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). An average score is calculated. Higher scores represent a higher individual propensity for reactance. The scale has adequate construct validity (Shen & Dillard, 2005). For this sample, the Cronbach alpha was adequate (.83).

3.4.1.3.3 Vignettes

Participants were randomly assigned to read one of three vignettes. All vignettes depicted the same situation where a person named Alex walks into a grocery store without a mask to buy flour. Mask wearing in close spaces was mandatory in Quebec when the study took place. The severity of the consequence for this oversight varied among the vignettes. The high restriction vignette ended with the grocery employee refusing to let Alex purchase the flour, as well as screaming and harassing Alex. The moderate one depicted the employee refusing to let Alex purchase the flour and escorting Alex out of the grocery store. The last vignette (control) described no consequence for Alex who purchased the flour from the employee. Participants completed a manipulation check question to assess the vignettes' effectiveness. They rated "Do you consider that Alex's rights and freedoms have been restrained?" based on a 4-point Likert Scale from 1 (*Not at all*) to 4 (*A lot*).

Afterwards, participants recalled and described a personal episodic memory that came to mind after reading the vignette based on the recall procedure from Philippe and colleagues (2011a). Participants reported an event that occurred on average 10.5 months earlier. All instructions are accessible in the codebook available on OSF: <https://doi.org/10.17605/OSF.IO/JPHY3>.

3.4.1.3.4 Emotional Valence

Participants appraised on a 7-point Likert scale from -3 (*Strongly negative*) to 3 (*Strongly positive*) the emotional valence of their memory via the item "Thinking back to the memory you just described, please indicate whether the event/moment of this memory represents a negative or a positive memory."

3.4.1.3.5 Memory Need Frustration

Participants completed nine items assessing memory levels of need satisfaction and frustration (Philippe et al., 2011a). This scale has shown adequate evidence of validity (Philippe et al., 2011a). Participants rated the items on a 7-point Likert scale ranging between -3 (*Strongly disagree*) and 3 (*Strongly agree*). Sample items include "I felt obliged to do or think in certain ways" for autonomy, "I felt competent or capable" for competence, and "I felt alone" for relatedness. Satisfaction items were reverse scored to compute an average score reflecting memory-specific frustration levels for each need. The Cronbach alphas were acceptable given they were calculated based on only three items per need (McNeish, 2018; autonomy's $\alpha = .61$, competence's $\alpha = .79$, relatedness's $\alpha = .53$). Still, given the low internal consistency of these subscales, we assessed the factorial validity of the scale. A Principal Axis Factoring using a Promax rotation

explored the three-factor structure of the scale. All factor loadings were superior to .40 and all items loaded on the adequate factor, except for one relatedness item which loaded on the autonomy factor. When removing this item, the three-factor structure was maintained, and the results of the study did not change (see syntax in supplementary file on OSF).

3.4.1.3.6 COVID-19-Related Conspiracy Beliefs (C19-CB)

This scale was administered in the second survey and was created for the purpose of this study. It assessed endorsement levels of seven statements reflecting COVID-19 CTs beliefs. These statements reflect common CTs that lacked evidence to support them and that widely circulated at the time recruitment took place (e.g., “The government exaggerates the number of detected COVID-19 cases and COVID-19-related deaths.”; Agence France-Presse, 2020; Duong, 2020; Goodman & Carmichael, 2020; Spring & Wendling, 2020). Participants reported how true they considered the statements to be based on an 11-point Likert scale ranging from 0 (0% - *Definitely false*) to 10 (100% - *Definitely true*). An average score was calculated. The scale had an excellent Cronbach alpha (.95).

A Principal Axis Factoring analysis confirmed the one-factor structure of the scale. The sampling adequacy had a value of .93 based on the Kayser-Meyer-Olkin measure. One factor was extracted with an Eigen value of 5.11. The factor explained 73% of the variance and all factor loadings were superior to .40.

3.4.1.4 Analyses

One-way ANOVAs and post-hoc Bonferroni tests were performed to examine unexpected experimental group differences on general need frustration, trait reactance, memory need frustration, and COVID-19 CTs endorsement. One-way ANOVAs and post-hoc Bonferroni tests were also conducted on freedom restriction perception to confirm that the three vignettes adequately manipulated freedom restriction. Linear hierarchical regressions were executed with COVID-19 CTs endorsement as the outcome. Each memory-specific need (autonomy, competence, and relatedness) was analyzed in a separate model, for a total of three models and the experimental groups were tested as a moderating factor using orthogonal contrasts. First, control variables (i.e., general autonomy, competence, and relatedness frustration, as well as trait reactance, age, gender, and socioeconomic status) were added in Step 1. Memory need frustration (each need examined separately) and orthogonal contrasts were added in Step 2. Specifically, a first contrast examined whether the control group differed in comparison to the moderate and high severity groups (i.e., +2, -1, -1). A second contrast analyzed whether the moderate group was significantly different

from the high severity group (i.e., 0, +1, -1). Interaction terms were also constructed between these contrasts and each need frustration in memories (i.e., Memory Need X Contrast 1, Memory Need X Contrast 2) and added at Step 3. Analyses were conducted using SPSS version 27.

3.4.2 Results

The sample had a median score of 5.00 on the C19-CB. One-way ANOVAs showed no unexpected group differences on the variables assessed before exposure to the vignette (see Table 3.1), suggesting random assignment was successful. There were marginally significant differences for autonomy frustration levels in memories, such that participants in the control group tended to report slightly less autonomy frustration in memories than in the two other groups. However, these differences were non-significant after applying a Bonferroni correction. The manipulation check showed significant group differences for perceptions of freedom restriction. Participants assigned to the moderate and high restriction conditions significantly perceived more freedom restrictions than those in the control condition (see Table 3.1). See Table A in Supporting Information for correlations among all study variables.

Table 3.1 Group Differences by Vignette Severity: Trait Measures, Perceived Freedom Restriction, and Endorsement of COVID-19 Conspiracy Theories

	Control group (<i>N</i> = 50)		Moderate group (<i>N</i> = 47)		High group (<i>N</i> = 44)		<i>df</i>	<i>F</i>	η^2	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
General autonomy frustration	2.65 ^a	0.64	2.56 ^a	0.67	2.75 ^a	0.81	2	0.887	.013	.414
General competence frustration	1.92 ^a	0.79	1.82 ^a	0.65	1.72 ^a	0.65	2	0.887	.013	.414
General relatedness frustration	1.79 ^a	0.68	1.82 ^a	0.67	1.81 ^a	0.78	2	0.032	<.001	.969
Memory autonomy frustration	-0.29 ^a	1.42	0.40 ^a	1.93	0.42 ^a	1.69	2	2.791	.039	.065
Memory competence frustration	-0.82 ^a	1.62	-0.98 ^a	1.63	-0.85 ^a	1.77	2	0.122	.002	.886
Memory relatedness frustration	0.31 ^a	1.25	0.38 ^a	1.43	0.49 ^a	1.62	2	0.197	.003	.821
Trait reactance	2.64 ^a	0.69	2.79 ^a	0.73	2.59 ^a	0.74	2	0.948	.014	.390
Freedom restriction perception	1.68 ^a	1.04	2.79 ^b	1.27	2.80 ^b	1.32	2	13.617	.165	<.001
COVID-19 CTs (T2)	3.95 ^a	3.11	5.00 ^a	3.45	4.56 ^a	3.57	2	1.191	.017	.307

Note. A Bonferroni correction was applied to the analyses to control for multiple comparisons when examining group differences. Means that are significantly different share a different superscript.

CTs = Conspiracy Theories.

T2 = Time 2.

3.4.2.1 General Need Frustration, Trait Reactance, and Demographics

Linear hierarchical regressions showed that at Step 1, endorsement of COVID-19-related CTs was positively predicted by general autonomy frustration, $t(133) = 4.13, p < .001$, but negatively predicted by general competence frustration, $t(133) = -4.56, p < .001$. Trait reactance also positively predicted COVID-19 CTs endorsement, $t(133) = 3.78, p < .001$. Age, gender, and socioeconomic status were unrelated to COVID-19 CTs endorsement (see Table 3.2, as well as Tables B and C in Supporting Information).

Table 3.2 Autonomy Frustration in Memory on Endorsement of COVID-19 Conspiracy Theories

	Unstandardized β	SE	Standardized β	t	p
Step 1					
General autonomy frustration	1.794	.434	.374	4.134	< .001
General competence frustration	-1.954	.428	-.406	-4.562	< .001
General relatedness frustration	-0.342	.430	-.071	-0.796	.428
Trait reactance	1.413	.374	.300	3.778	< .001
Age	0.033	.025	.098	1.340	.183
Gender ^a	0.021	.521	.003	0.039	.969
Socioeconomic status	-0.318	.306	-.076	-1.038	.301
Step 2					
Memory autonomy frustration	0.547	.260	.162	2.102	.037
Contrast 1 ^b	-0.110	.174	-.047	-0.631	.529
Contrast 2 ^c	0.362	.307	.086	1.180	.240
Step 3					
Memory Autonomy Frustration X Contrast 1	-0.403	.191	-.156	-2.106	.037
Memory Autonomy Frustration X Contrast 2	-0.175	.289	-.044	-0.605	.546

^a 0 = Female, 1 = Male.

^b +2 = Control group, -1 = Moderate restriction group, -1 = High restriction group.

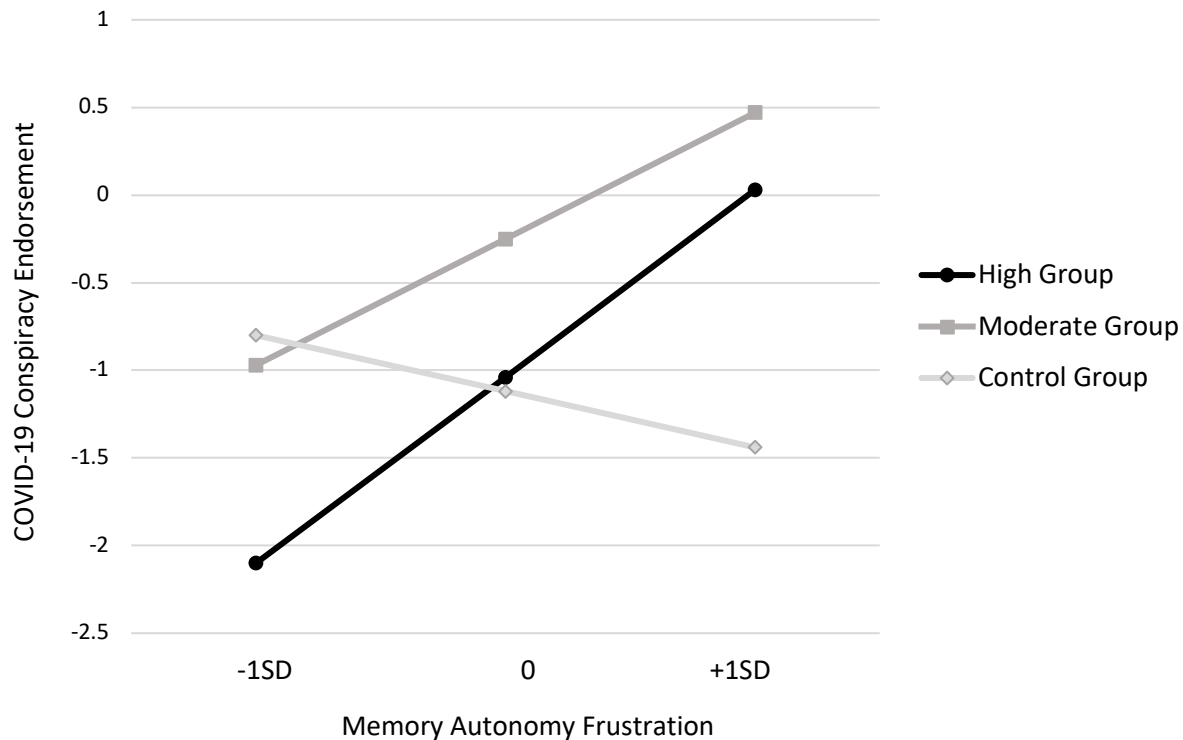
^c 0 = Control group, +1 = Moderate restriction group, -1 = High restriction group.

3.4.2.2 Memory Autonomy Frustration

Inclusion of memory autonomy frustration and of the orthogonal contrasts in the regression model, at Step 2, showed that memory autonomy frustration positively predicted endorsement of CTs. At Step 3, a significant interaction term for Memory Autonomy X Contrast 1 was found, $t(128) = -2.11, p = .037$, indicating that the relationship between memory autonomy frustration and endorsement of COVID-19 CTs for the moderate and high restriction groups significantly differed from that of the control group (Table 3.2). The more the memory reported was encoded as autonomy frustrating, the higher was endorsement of COVID-19 CTs for the moderate and high restriction groups a week later, $t(128) = 2.89, p = .005$ (see

Figure 3.1). The association between memory autonomy frustration and endorsement of COVID-19 CTs was not significant for the control group, $t(128) = -0.62, p = .539$. Finally, the moderate and high restriction groups did not differ against each other, as shown by the non-significance of the interaction term between memory autonomy frustration and the second contrast.

Figure 3.1 Influence of Memory Autonomy Frustration as a Function of the Experimental Conditions on Endorsement of COVID-19 Conspiracy Theories



3.4.2.3 Memory Competence and Relatedness Frustration

The main effects and interaction terms for memory competence and relatedness with the vignette conditions were not significant (see Tables B and C in Supporting Information).

3.4.2.4 Emotional Valence

Controlling for memory valence in all three regression models did not significantly change the initial results, confirming that emotional valence was not driving the effect observed (see Tables D, E, and F in Supporting Information).

3.4.3 Discussion

Overall, Study 1 showed an association between levels of autonomy frustration in memories activated by situations moderately and severely restricting freedoms and COVID-19 CTs endorsement. However, the frustration of competence and relatedness in memories was not predictive of CTs endorsement. Therefore, it appears that the frustration of the need of autonomy in memories is particularly key to CTs endorsement. The frustration of the need for autonomy in life in general was also independently associated with endorsement of COVID-19 CTs. Conversely, lower levels of competence frustration in life in general were associated with endorsement of such CTs. Trait reactance was a significant predictor of CTs endorsement, but also one independent of the memories activated by the context. These results indicate that above general need experiences in one's life and trait reactance, memories which are frustrated in terms of autonomy and that are triggered by a restrictive context have an additional predictive value for the endorsement of CTs within that context.

3.5 Study 2

Based on Study 1's results, Study 2 sought to look into the causal relationship of autonomy-frustrating memories and CTs endorsement in the context of COVID-19. Specifically, Study 2 examined the situational impact of priming autonomy-frustrating memories on peoples' reaction towards a new, albeit bogus, COVID-19 CT created for the purpose of the study. We expected that priming an autonomy-frustrating memory typically triggered by a freedom restrictive context would directly increase participants' tendency of agreeing with, being angered by, and being willing to disseminate a new COVID-19 CT, compared to those primed with their own autonomy satisfying memories or compared to those not primed with their own memory.

All participants read the high freedom-restrictive vignette from Study 1 and subsequently described a memory. A week later, participants were randomly assigned to either be primed with their own memory (experimental condition) or with another participant's memory (yoked control condition). In each condition, we also separated participants who described a need-satisfying memory from those who described a need-frustrating memory to isolate the effect of need frustration. After the priming procedure, participants read a bogus CT and reacted to it (i.e., levels of agreement, anger, and willingness to disseminate it). Although the use of a yoked control design means that individual differences are automatically controlled for, general autonomy frustration was still controlled for to ensure that the specific role of memory autonomy frustration was isolated.

3.5.1 Method

3.5.1.1 Participants and Design

Study 2 used an experimental design involving a memory priming procedure. We used a subliminal priming procedure to mimic the way episodic autobiographical memories typically contribute to decision-making, that is, by being activated outside of conscious awareness (Conway, 2009; Philippe, 2023; Pillemer, 1992). This adaptive system prevents us from becoming consciously overwhelmed by a flood of memories before making a decision or taking action. Based on Philippe and Bernard-Desrosiers (2017) who employed the same priming procedure, a small effect size was expected ($f^2 = .07$). To ensure sensitivity, we used a smaller effect size ($f^2 = .04$) for our power analysis (power = .80, alpha = .05). The power analysis indicated a minimum sample size of 199 participants was necessary for a multiple regression analysis including 4 predictors.

A total of 213 participants from the general population in Quebec, Canada, completed the study. Participants were aged of 44.77 years on average ($SD = 12.75$). Overall, 94.4% of the sample identified as White. A total of 42.7% of the sample identified as female and 56.8% identified as male. In this sample, household income was reported in the following brackets: less than \$30 000 (23.5%), \$30 000 to \$69 999 (28.7%), \$70 000 to \$109 999 (23.0%), and \$110 000 or more (19.7%). Education level was reported as follows: high school diploma or less (17.8%), college or vocational training (48.9%), bachelor's degree or university certificate (24.0%), or graduate degree (9.4%).

3.5.1.2 Procedure and Materials

3.5.1.2.1 Recruitment Method

Recruitment took place online via advertisements shared on social media (between June and August 2022). This period coincided with the beginning of the 7th wave of COVID-19, but also with the official end of the state of emergency (initially declared in March 2020). The Government of Quebec also lifted the mask mandate for multiple public spaces (e.g., public transportation, closed spaces) between May and June 2022. The government reinstated random screenings for COVID-19 for flight passengers in July 2022 and launched a new vaccination campaign in August 2022. A five- to ten-day isolation was still recommended when screening positive for COVID-19. Participants were invited to complete two online surveys at a one-week interval. All participants were informed about the content of the study and provided their informed consent prior to the completion of the first survey. Because this study entailed that participants were exposed to false information, a debrief about the deception procedure was added at the end of the second

phase. An additional email explaining the deception procedure was sent to all participants at the end of the study. To encourage participation, participants received a \$5 e-transfer for completing the first phase and a \$10 e-transfer for completing the second phase. This study was approved by the *Research Ethics Committee for Student Projects of the Université du Québec à Montréal*.

3.5.1.2.2 Memory Priming Procedure

During the week between the two study phases, six keywords were extracted from every memory narrative for the priming procedure. The keywords were extracted from the memory description provided by each participant in the first phase. The keywords selected had no emotional value, leaving out words like sad, upset, or happy. Instead, the keywords focused on the factual and perceptual surrounding of the memory (e.g., chair, ski, friends; Philippe & Bernard-Desrosiers, 2017). Selecting such keywords ensures that a participant primed with keywords from their own memory would be primed with its associated characteristics (i.e., autonomy frustration for the purpose of this study), activating the memory and its directive function. Conversely, a participant primed with someone else's memory keywords would not be primed with any memory characteristic or emotion, as the keywords would not reflect any particular memory for them.

Next, participants were randomly yoked based on their level of need satisfaction or need frustration in memory. That is, if one participant had described a need-satisfying memory, this participant was yoked to another participant who had also described a need-satisfying memory. The same yoking procedure was applied for participants having described need-frustrating memories. Each pair of participants then had one participant randomly assigned to the experimental condition and the other one assigned to the control condition. As such, each participant in the experimental condition was yoked to one participant in the control condition who had described the same level of need satisfaction or need frustration in their memories. Participants in the experimental condition were repeatedly primed with the six keywords extracted from their own memory. Participants in the control condition were not primed with their own memory, but with the keywords from their yoked participant's memory instead, resulting in them not being primed with their personal memory. Using such a yoked control design ensured that participants in the experimental and control conditions would be matched on their level of need-satisfying or need-frustrating memory and that the keywords used to prime participants would be the same for both conditions. Given that participants were randomly assigned to the priming or control conditions, all individual differences are controlled for via this experimental design.

The subliminal priming procedure was administered at the beginning of the second phase and executed via the “Bunny and Lion Task” (BLT). This task was presented to participants as a fun task to evacuate their daily thoughts and was completed in four blocks. Participants first practiced the task (15 seconds). They were then asked to do three more blocks of 20 seconds each. For the first block, participants counted the number of times the words “LION” and “BUNNY” appeared separately under the images of a lion and a bunny plush. For the second block, the words “BUNNY” and “CAT” were counted. For the final block, the words “BEAR” and “LION” were counted. These words were randomly and quickly interchanged with (1) other animal names (e.g., GOAT), (2) nonwords (e.g., JRODOL), and (3) the six memory keywords (depending on the participant). This dual task serves as a cognitive load that monopolizes participants’ attention, thus highly reducing the possibility of consciously perceiving the priming keywords. Moreover, the animal words and nonwords were each presented for 1000ms, while the memory keywords were presented for 60ms, which is enough time to prime a memory but not enough for a person to perceive the keywords. All words were written in capital letters in a blue text of 30-point font size.

3.5.1.2.3 Inclusion Criteria

Participants had to be over the age of 18. A total of 370 participants completed Phase 1. Those who did not properly describe a memory ($n = 32$) in Phase 1 and who did not provide their email ($n = 25$) were not contacted for Phase 2. Those who did not answer correctly the two quality check items inserted to validate proper completion of the surveys were excluded ($n = 16$). Of the 297 participants invited to complete Phase 2, 74 did not complete the survey. Of those who completed Phase 2, the participants who made more than three mistakes in the BLT were excluded ($n = 7$) to ensure all respondents completed the task according to the instructions and were adequately primed. A funneled debriefing was used at the end of the survey to ensure that participants were subliminally primed (Philippe & Bernard-Desrosiers, 2017). Participants were asked to report the words they had seen and could recall from the BLT other than the animal words and nonwords. One participant was excluded as they commented that they had read and recognized one of the priming keywords. A second participant was excluded from analyses as they took significantly longer to complete the priming task (i.e., more than 3SD above the mean time). Finally, one participant was an outlier, as the residuals’ scatterplot of the regression model tested showed it at more than 3SD. This was further confirmed by the analysis of influential points in the regression model tested using multivariate $dfbetas$, which was at more than $SE*2/\sqrt{n}$ (Goldstein-Greenwood, 2022). Final sample included 213 participants.

3.5.1.3 Measures

Participants answered the same demographic questionnaire as in Study 1. They also answered the eight items assessing general autonomy satisfaction and frustration from the BPNSFS (Chen et al., 2015). General autonomy satisfaction items were reverse scored to compute an average of general autonomy frustration. In Study 2, the Cronbach's alpha for general autonomy frustration was adequate (.78). After reading the high restriction vignette, participants were asked to spontaneously recall and describe an episodic memory using the same procedure as in Study 1. Participants reported an event that occurred on average 2 years and 7 months prior to the study. Following memory description, participants rated their memory's autonomy frustration levels via the same three items as in Study 1 ($\alpha = .64$).

One week later, participants completed the BLT. They subsequently read the bogus CT and reacted to it. The bogus CT was introduced under the format of a Twitter post and was created by the authors of this paper to ensure that no participant would have prior knowledge about that theory (see complete instructions and bogus Twitter post in the codebook document via this OFS link: <https://doi.org/10.17605/OSF.IO/JPXY3>). The Twitter post warned users of a new CT related to COVID-19. After reading the bogus Twitter post, participants were asked "Do you agree with what the person wrote?" and rated the item on a 4-point Likert Scale from 0 (*Not at all*) to 3 (*A lot*). Due to a floor effect observed for this item, the ratings were recoded in a Yes or No format to conduct more effective analyses, with 0 (*Not at all*) considered as No and the ratings of 1 (*A little*) to 3 (*A lot*) considered as Yes. Participants also rated how angry they were about the information on the Twitter post on a 4-point Likert Scale from 0 (*Not at all*) to 3 (*A lot*). Lastly, participants rated their willingness to disseminate the Twitter post information via two items (i.e., "How much would you like to share this Twitter message on a social network (e.g. Twitter, Facebook, etc.)?" and "How much would you like to warn people around you about the fact that pharmaceutical companies sell vaccines made of water and sugar?"). Again, the items were rated on a 4-point Likert Scale from 0 (*Not at all*) to 3 (*A lot*). An average of both ratings was calculated ($\alpha = .80$).

3.5.2 Analyses

Independent Samples *T*-Tests were performed to examine experimental group differences on general autonomy frustration and memory autonomy frustration. Next, a multivariate logistic hierarchical regression was conducted on the item about agreement with the bogus CT. Linear hierarchical regressions were conducted on anger elicited by the bogus CT and willingness to disseminate the information as outcomes. The same model was used on all three outcomes. Memory autonomy frustration and priming conditions were

entered in the first step. At the second step, the interaction term for Memory Autonomy X Priming Condition was added. Even though we used a yoked control design, additional analyses including general autonomy frustration as a control variable in a third step were performed on the three outcomes to further confirm the specific role of memory autonomy frustration. Results from these additional analyses are reported in Supporting Information (<https://doi.org/10.17605/OSF.IO/JPXY3>). Analyses were performed using SPSS version 27.

3.5.3 Results

Independent Samples *T*-Tests showed no group differences for general autonomy frustration, $t(211) = -0.37$, $p = .714$ and memory autonomy frustration, $t(211) = 0.82$, $p = .412$.

3.5.3.1 Agreement

Results of the logistic regression analysis at Step 2 showed a significant Memory Autonomy X Priming Condition interaction ($p = .031$). Simple effects analysis of this interaction revealed that for every 1-point increase in memory autonomy frustration levels for the primed condition, the odds of agreeing with the bogus CT increased by a factor of 1.62 ($p = .023$). This was not the case for the control condition ($p = .46$; see Table 3.3 and Figure 3.2).

3.5.3.2 Anger

The linear hierarchical regression showed a significant interaction term for Memory Autonomy X Priming Condition, $t(209) = 2.36$, $p = .019$ (See Table 3.3). Simple effects analysis showed that in the priming condition, the more the memory primed was autonomy frustrating, the more the participants were angered by the bogus CT, $t(209) = 3.60$, $p < .001$ (see Figure 3.2). No such association was found in the control condition, $t(209) = 0.28$, $p = .78$.

3.5.3.3 Willingness to Disseminate Information

Given the residuals of that variable were positively skewed, the outcome was transformed using a logarithmic equation. The linear hierarchical regression carried out showed a significant interaction term for Memory Autonomy X Priming Condition, $t(209) = 2.30$, $p = .023$ (see Table 3.3). Simple effects analysis showed that in the priming condition, the more the memory primed was autonomy frustrating, the more

the participants reported being willing to disseminate the bogus CT, $t(209) = 2.50, p = .013$ (see Figure 3.2). No such association was found for the control condition, $t(209) = -0.74, p = .46$.

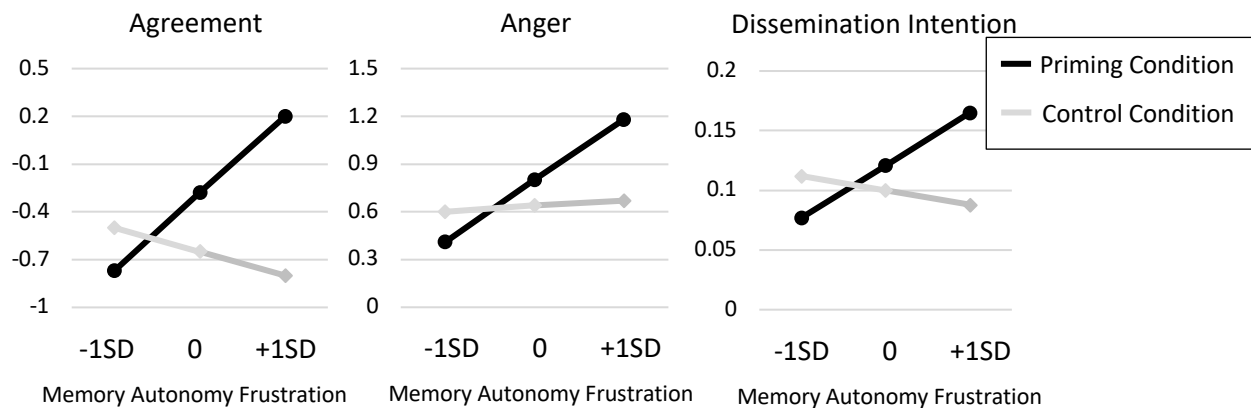
Table 3.3 Memory Autonomy Frustration by Priming Conditions on Reactions to Bogus Conspiracy Theory

	Unstandardized β	SE	Wald	OR	p
Agreement					
Step 1					
Memory autonomy frustration	0.167	.144	1.355	1.182	.244
Priming condition ^a	0.380	.283	1.799	1.463	.180
Step 2					
Memory Autonomy X Priming Condition	0.634	.294	4.635	1.884	.031
	Unstandardized β	SE	Standardized β	t	p
Anger					
Step 1					
Memory autonomy frustration	0.205	.076	.184	2.710	.007
Priming condition ^a	0.159	.151	.071	1.053	.294
Step 2					
Memory Autonomy X Priming Condition	0.352	.150	.222	2.356	.019
Willingness to disseminate information					
Step 1					
Memory autonomy frustration	0.015	.012	.085	1.230	.220
Priming condition ^a	0.021	.025	.059	0.855	.393
Step 2					
Memory Autonomy X Priming Condition	0.056	.025	.220	2.297	.023

$N = 213$

^a 0 = Control condition, 1 = Priming condition.

Figure 3.2 Memory Autonomy Frustration X Priming Conditions Interaction on Bogus Conspiracy Theory



3.5.3.4 Additional Analyses

Significance of the Memory Autonomy X Priming Condition interaction was maintained after controlling for general autonomy frustration for the outcomes of agreeing with the bogus CT ($p = .045$), being angered by it ($p = .021$), and being willing to disseminate it ($p = .030$). General autonomy frustration was not a significant predictor of any of the three outcomes (see Table G in Supporting Information, <https://doi.org/10.17605/OSF.IO/JPXY3>).

3.5.4 Discussion

Study 2 added to the results of Study 1 regarding the association between memory autonomy frustration and endorsement of CTs. It showed that situationally priming an autonomy-frustrating memory increases a person's tendency to agree with a new CT, to be angered by it, and to be willing to disseminate it compared to a person not primed or primed with an autonomy-satisfying memory. These results underscore the direct role of autonomy-frustrating memories on the process of endorsing more and more CTs. Triggering of autonomy-frustrating memories seems to activate a defensive reaction that translates into an openness to new non-normative narratives, in this case COVID-19-related CTs, and in amplifying an anger reaction when exposed to such new and alternative narratives. These results add to our understanding of the motivational process involved in the endorsement and spread of CTs.

3.6 General Discussion

The present research investigated the motivational process that leads to the endorsement of CTs. Specifically, we looked into whether the activation of need-frustrating memories by reminders of freedom

restricting situations would predict higher endorsement of COVID-19-related CTs and whether priming those memories would predict agreement with a new (bogus) CT, would elicit heightened anger, and would influence people's willingness to disseminate the CT.

The results revealed that it is specifically autonomy-frustrating memories triggered by situations highly or moderately restricting freedoms that impacts the endorsement of CTs, with increased memory autonomy frustration being associated with higher stable endorsement of COVID-19-related CTs. Results further showed that situationally activating autonomy-frustrating memories leads individuals to endorse a new CT, to be angered by it, and to be willing to circulate it. Memories characterized by competence or relatedness frustration were not found to predict endorsement of CTs. However, lower everyday levels of competence frustration were related to CTs endorsement, while increased everyday levels of autonomy frustration were associated with higher endorsement of CTs. Trait reactance was also associated with greater endorsement of CTs.

Overall, beyond a person-level view of the endorsement of CTs, the present studies also bring into focus the importance of considering the way specific past experiences have been encoded in memory. Specifically, the results cast light on the direct role autonomy-frustrating memories activated by a freedom restrictive environment play in the endorsement of CTs during an extreme societal event such as the COVID-19 pandemic. This process can at the very least partially explain how individuals dive in CTs and spread them as part of a compensatory mechanism and why this is more likely to occur throughout extreme societal events that restrict individuals' freedom.

3.6.1 Trait Reactance

Trait reactance refers to one's general tendency to perceive their freedom of choice as restrained and threatened by external influences and to subsequently become motivated to regain control over their actions by defyingly engaging in them (Brehm, 1966; Hong & Faedda, 1996). Individuals high in trait reactance are therefore more likely to exhibit oppositional reactions when they experience their autonomy as undermined, including rejecting rules and regulations, or denying threats (Brehm, 1966; van Petegem et al., 2015). Finding that trait reactance was associated with greater endorsement of COVID-19 CTs is congruent with past research pertaining to the COVID-19 pandemic. For instance, reactance was associated with increased anti-masks attitudes (Taylor & Asmundson, 2021), as well as "denial of COVID-19 as a public health threat" (McGuire & Ball, 2022). Endorsing COVID-19-related CTs entails a denial of the information communicated

by public health officials and a rejection of the normative narrative. As reactance has been linked with increased propensities to be in a state of autonomy frustration and to defy parental requests among adolescents (van Petegem et al., 2015), endorsing CTs could be conceptualized as a defensive and oppositional reaction among adults prone to reactance (Brehm, 1966; Vansteenkiste & Ryan, 2013).

3.6.2 General Competence Frustration

Feelings of failure, uncertainty, and inefficacy reflect competence frustration (Chen et al., 2015; Ryan et Deci, 2017), whereas reduced uncertainty and increased sense of mastery are associated with lower frustration (Ryan & Deci, 2017). Extreme societal crises can undermine the need for competence by generating complex, large-scale consequences (e.g., financial, social, or psychological consequences) on individuals (Douglas et al., 2019; Leman & Cinnirella, 2013). During the COVID-19 pandemic, rapidly evolving and sometimes conflicting information provided by official authorities (Capurro et al., 2021) likely contributed to uncertainty and diminished feelings of efficacy. In this context, endorsing CTs may have provided some individuals with a more coherent and definite understanding of the sanitary situation, thereby serving as a strategy to alleviate competence frustration and facilitate meaning-making (Douglas et al., 2017). Others may have perceived themselves as independently knowledgeable prior to the pandemic, already holding distrustful beliefs toward scientific and political institutions (e.g., beliefs such as vaccines being harmful, the existence of the deep state, or Pizzagate; Douglas et al., 2017). For these individuals, reliance on alternative information sources may have sustained their sense of competence during the crisis without their sense of competence being initially frustrated (Gagliardi, 2025; Ryan & Deci, 2017) and COVID-19 CTs may simply have integrated a pre-existing conspiracist mindset. This shows that, in certain circumstances, one need may be protected (competence) at the expense of another need (greater autonomy frustration). This exemplifies well why balanced need satisfaction has been found important for well-being (Sheldon & Niemiec, 2006).

3.6.3 General Autonomy Frustration

Autonomy frustration translates into the perception of being coerced, controlled, and forced to act and think incongruently with our own will and values (Ryan, 1995; Ryan et Deci, 2017). Few studies have investigated the association between constructs reflecting general autonomy frustration and CTs endorsement (Stojanov & Halberstadt, 2020). These existing studies investigated multiple person-level sub-forms of autonomy frustration, such as perceptions of powerlessness and lack of personal control or political control (e.g., Abalakina-Paap et al., 1999; Kofta et al., 2020; Rothschild et al., 2012; Sullivan et al.,

2010; Whitson & Galinsky, 2008). Finding a positive association between general everyday autonomy frustration and beliefs in COVID-19 CTs in Study 1 is therefore congruent with these past studies. This finding supports the notion that those with general conceptions of their self as lacking control and volitional power seem drawn to CTs, possibly in a failed attempt to see themselves as having some degree of agency. Indeed, CTs offer the illusion of unveiling a structured world in which the individual has pseudo-control as they can “predict” the future, providing the impression of protecting their sense of autonomy (Leonard & Philippe, 2021; van Prooijen & Douglas, 2017; Whitson et al., 2019). Still, this finding does not explain how the motivational compensatory process of endorsing CTs takes place for a specific individual. To our knowledge, no prior research has dug deeper into this question and looked at it as an interaction between the individual and environmental stimuli.

3.6.4 Autonomy-Frustrating Memories as a Key Variable

The present research showed that autonomy-frustrating memories may lie at the motivational root of believing in CTs, by mobilizing a person to endorse a CT, react angrily to it, and show willingness to disseminate it. Indeed, autonomy-frustrating memories hold a distinct motivational value. When triggered by shared characteristics with an environmental cue, such memories serve the function of quickly assessing the situation and guiding decision-making about how to react (Brown & Schopflocher, 1998; Klein et al., 2002). Study 2 supports this notion by consistently showing that general autonomy frustration was not a predictor for the situational reactions to a bogus CT. Using an experimental design, Study 2 demonstrated the *in situ* influence of activating autonomy-frustrating memories and differentiated its motivational effect from that of general autonomy frustration. Specifically, it is the activation of autonomy-frustrating memories and not general levels of autonomy frustration that seems to drive ones’ reactions to CTs in a specific moment (i.e., agreement, anger, and willingness to disseminate a CT). Hence, although two individuals may hold similar levels of autonomy frustration in their everyday life, it is their activated autonomy-frustrating memories that will impact their reactions in each moment. Autonomy-frustrating memories have a practical role in that they warn of a situation that poses a potential threat to one’s integrity (Bélanger et al., 2019; van Prooijen, 2020). The activation of these autonomy-frustrating memories can therefore trigger an oppositional reaction to protect one’s integrity (Philippe, 2022), serving a goal-approach function to address situations perceived as alienating and unjust (Pillemer, 2003; Vansteenkiste & Ryan 2013), and neutralize the threat. Such neutralization can take multiple forms, including the endorsement of alternative narratives to the *status quo* to compensate and justify both the past and current autonomy-frustrating experiences triggered.

Periods of swift societal changes, like the COVID-19 pandemic, entail experiencing unprecedented and unforeseen challenging situations, such as those related to sociosanitary measures, which restricted personal freedoms to hinder the spread of the virus (Maison et al., 2021). It is hence no surprise that these unprecedented situations were appraised via the activation of memories of past events to inform decision making (Rasmussen et al., 2015). Our results showed that certain people react to these restrictive freedom situations with a defensive nature due to the activation of autonomy-frustrating memories, guiding them to sometimes question, deny, or reject the *status quo* and endorse alternative non-normative narratives (i.e., COVID-19 CTs in the context of the present research). We further showed that priming these memories directly increased participants' risk of agreeing, being angered, and being willing to spread a new CT as a compensatory means to protect themselves. With time, the repetitive activation of these autonomy-frustrating memories may turn chronic, crystalizing the defensive reaction, and stabilizing CTs endorsement so as to defend oneself and cope against perceived control and coercion (Douglas et al., 2017; Philippe, 2022; Rasmussen et al., 2015; Ryan & Deci, 2017; van Prooijen, 2020). As an attempt to further accommodate for chronic autonomy-frustrating experiences, people may start embracing the behaviors and recommendations outlined by CTs (e.g., avoid vaccination, endorse non-normative political engagement, make donations to certain organizations, etc.). For instance, beliefs in CTs were found to negatively affect identified motivation towards vaccination during the COVID-19 pandemic (Van Oost et al., 2022). This compensatory process would contribute to further obstructing authentic satisfaction of the need for autonomy (Vansteenkiste & Ryan, 2013), as the person would not be adopting self-determined/autonomous goals resulting from their own internal values and preferences (Ryan & Deci, 2017; Sheldon & Kasser, 2008).

3.6.5 Usefulness of Conspiracy Theories

CTs are enticing alternative narratives to a *status quo* marked by perceived alienating situations, as they justify and explain a person's defensive and oppositional reaction in such situations by blaming a vilified outgroup that threateningly acts in secret (Abalakina-Paap et al., 1999; Douglas et al., 2017; van Prooijen & van Vugt, 2018; van Prooijen, 2020). From an evolutionary standpoint, some have suggested that CTs serve to "increase people's chances of self-preserving by removing the threat associated with the hostile coalition" (van Prooijen & van Vugt, 2018). CTs' usefulness therefore translates into the protection of a sense of autonomy by shaping the environment into an unambiguous and organized system (Landau et al., 2015). By offering an alternative explanation, albeit a complicated one, of what is "truly" going on, CTs justify the perception of autonomy frustration and make the world a predictable place (Douglas et al.,

2017; van Prooijen, 2020). This explanation provides a compensatory satisfaction of autonomy (Douglas et al., 2017), as it creates the illusion of being able to predict the future, feel in control of the environment, and have a sense of influence over the world (Greenaway et al., 2013; Nyhan & Zeitzoff, 2018; Rothschild et al., 2012; Sullivan et al., 2010; Whitson & Galinsky, 2008).

3.6.6 Limitations

The present research is subject to limitations. First, the sample was recruited using a non-probabilistic method and the participants represent a specific population, that is, mostly white French speaking Québécois who experienced specific sociosanitary measures during the COVID-19 pandemic. The results are therefore to be generalized with high caution. Second, there is a selection bias as some people who endorse COVID-19-related CTs might have been too mistrusting of the scientific community to participate in the research. Third, the CTs assessed are specifically related to COVID-19, limiting the generalizability of the results. Fourth, various covariates were not considered in our models. Future studies should consider including other potential covariates known to be linked with endorsement of CTs (e.g., lower self-esteem or need for uniqueness; Bowes et al., 2023), as they could also moderate the effect of memories on CTs. Fifth, this research captured the short-term, but not the long-term effects of memory activation on believing in CTs. Longitudinal studies examining autonomy-frustrating memories' impact on endorsement of CTs would provide a better understanding of the direction of the effect in real-world settings. Moreover, we encourage researchers to investigate the predictive impact of autonomy-frustrating memories on the endorsement of alternative CTs in other societal contexts. We suspect that the memories chronically activated during the pandemic, as well as those formed and encoded during this period, to still be triggered by situational contexts in the present day and affect people's endorsement of certain CTs on the long-term. Sixth, the research designs used in this research consider that the memories recalled by the participants were frequently spontaneously activated in their everyday lives outside of their consciousness (Conway, 2009; Philippe, 2023). Future research could further consider sampling the naturally occurring thought flow processes following exposure to vignettes. This would allow to determine whether participants also consciously recall autonomy-frustrating memories when they engage in their thought flow, and if so, to test whether those consciously recalled memories are predictors of endorsement of CTs compared to other thoughts.

3.7 Conclusion

Our findings make a relevant contribution to understanding CTs by showing a compensatory motivational mechanism through which these narratives are endorsed and disseminated by individuals. While other

studies showed that decreased personal control increases conspiracy beliefs in multiple contexts (e.g., climate change, political conflict; Nyhan & Zeitzoff, 2018; Rothschild et al., 2012), the present research shows how individuals interact with their environment during this process.

It is important to question our society's own responsibility in exacerbating the activation of autonomy-frustrating memories among people prone to it. Indeed, individuals, the media, and the press vilified the individuals who expressed vaccine hesitancy during the COVID-19 pandemic. Moreover, due to heightened stress during this period, certain individuals had vivid controlling reactions (e.g., screaming, bullying) when witnessing others not following COVID-19 sociosanitary restrictions (consciously or not). Based on the concept of mutual radicalization (Moghaddam, 2018), this may have reinforced the activation of autonomy-frustrating memories and pushed individuals to further endorse CTs, diving deeper into these narratives. This leaves the question of whether we, as individuals part of society, also represent contributing factors to this process.

3.8 References

- Abalakina-Paap M., Stephan W. G., Craig T., Gregory L. (1999). Beliefs in conspiracies. *Political Psychology*, 20(3), 637–647.
- Agence France-Presse. (2020, 22 mai). Près de la moitié des Canadiens dupés par des théories du complot ou des croyances trompeuses sur la COVID-19. LeDevoir.
<https://www.ledevoir.com/societe/579354/pres-de-la-moitie-des-canadiens-dupes-par-des-theories-du-complot-sur-la-covid-19>
- Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., Bosch, J., & Thøgersen-Ntoumani, C. (2011). Self-determination theory and diminished functioning: The role of interpersonal control and psychological need thwarting. *Personality and Social Psychology Bulletin*, 37(11), 1459–1473.
<https://doi.org/10.1177/0146167211413125>
- Bélanger, J. J., Moyano, M., Muhammad, H., Richardson, L., Lafrenière, M.-A. K., McCaffery, P., Framand, K. et Nociti, N. (2019). Radicalization leading to violence: A test of the 3N model. *Frontiers in Psychiatry*, 10(42). <https://doi.org/10.3389/fpsy.2019.00042>
- Biondillo, M. J. et Pillemer, D. B. (2015). Using memories to motivate future behaviour: An experimental exercise intervention. *Memory*, 23(3), 390–402.
<https://doi.org/10.1080/09658211.2014.889709>
- Bowes, S. M., Costello, T. H., & Tasimi, A. (2023). The conspiratorial mind: A meta-analytic review of motivational and personological correlates. *Psychological Bulletin*, 149(56), 259-293.
<https://doi.org/10.1037/bul0000392>
- Brehm, J. W. (1966). *A Theory of Psychological Reactance*. New York, NY: Academic Press.
- Brown, N. R. & Schopflocher, D. (1998). Event clusters: An organization of personal events in autobiographical memory. *Psychological Science*, 9(6), 470–475. <https://doi.org/10.1111/1467-9280.00087>
- Capurro, G., Jardine, C. G., Tustin, J., & Driedger, M. (2021). Communicating scientific uncertainty in a rapidly evolving situation: A framing analysis of Canadian coverage in early days of COVID-19. *BMC Public Health*, 21(1), 2181. <https://doi.org/10.1186/s12889-021-12246-x>
- Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E., van der Kaap-Deeder, J., Duriez, B., Lens, W., Matos, L., Mouratidis, A., Ryan, R. M., Sheldon, K. M., Soenens, B., van Petegem, S., & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion*, 39(2), 216-236. <https://doi.org/10.1007/s11031-014-9450-1>
- Chirkov, V. I., Ryan, R. M., & Willness, C. (2005). Cultural context and psychological needs in Canada and Brazil: Testing a self-determination approach to the internalization of cultural practices, identity, and well-being. *Journal of Cross-Cultural Psychology*, 36, 423– 443.
<https://doi.org/10.1177/0022022105275960>
- Conway, M. A. (2009). Episodic memories. *Neuropsychologia*, 47(11), 2305–2313.
<https://doi.org/10.1016/j.neuropsychologia.2009.02.003>

- Conway, M. A., Singer, J. A., & Tagini, A. (2004). The self and autobiographical memory: Correspondence and coherence. *Social Cognition*, 22(5), 491–529. <https://doi.org/10.1521/soco.22.5.491.50768>
- Deci, E. L. et Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York, NY: Plenum Press.
- Deci, E. L. & Ryan, R. M. (2000). The “What” and “Why” of goal pursuit: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268.
https://doi.org/10.1207/S15327965PLI1104_01
- Douglas, K. M., Sutton, R. M., & Cichoka, A. (2017). The psychology of conspiracy theories, *Current Directions in Psychological Science*, 26(6), 538–542. <https://doi.org/10.1177/0963721417718261>
- Duong, D. (2020, 1 mai). The latest COVID-19 conspiracy theories, explained. Healthing.ca.
<https://www.healthing.ca/diseases-and-conditions/coronavirus/the-latest-covid-19-conspiracy-theories-explained-with-evidence>
- Federico, C. M., Williams, A. L., & Vitriol, J. A. (2018). The role of system identity threat in conspiracy theory endorsement. *European Journal of Social Psychology*, 48(7), 927–938.
<https://doi.org/10.1002/ejsp.2495>
- Gagliardi, L. (2025). The role of cognitive biases in conspiracy beliefs: A literature review. *Journal of Economic Surveys*, 39(1), 32–65. <https://doi.org/10.1111/joes.12604>
- Gino, F. & Desai, S. D. (2012). Memory lane and morality: How childhood memories promote prosocial behavior. *Journal of Personality and Social Psychology*, 102(4), 743–758.
<https://doi.org/10.1037/a0026565>
- Goldstein-Greenwood, J. (2022, July 29). Detecting Influential Points in Regression with DFBETA(S). University of Virginia Library. <https://library.virginia.edu/data/articles/detecting-influential-points-in-regression-with-dfbetas>
- Goodman, J. et Carmichael, F. (2020). Coronavirus: ‘Deadly masks’ claims debunked. BBC.
<https://www.bbc.com/news/53108405>
- Greenaway, K. H., Louis, W. R., & Hornsey, M. J. (2013). Loss of control increases belief in precognition and belief in precognition increases control. *PLoS ONE*, 8(8), e71327.
<https://doi.org/10.1371/journal.pone.0071327>
- Hong, S.-M., & Faedda, S. (1996). Refinement of the Hong Psychological Reactance Scale. *Educational and Psychological Measurement*, 56(1), 173–182.
<https://doi.org/10.1177/0013164496056001014>
- Houle, I. et Philippe, F. (2017). Need satisfaction in episodic memories impacts mood at retrieval and well-being over time. *Personality and Individual Differences*, 105, 194–199.
<http://dx.doi.org/10.1016/j.paid.2016.09.059>
- Houle, I., Philippe, F. L., Lecours S. et Roulez, J. (2018). Networks of self-defining memories as a contributing factor to emotional openness. *Cognition and Emotion*, 32(2), 363–370.
<https://doi.org/10.1080/02699931.2017.1284045>

- Institut national de santé du Québec (2022, October 5th). Ligne du temps COVID-19 au Québec. <https://www.inspq.qc.ca/covid-19/donnees/ligne-du-temps>
- Klein, S., Cosmides, L., Tooby, J., & Chance, S. (2002). Decisions and the evolution of memory: Multiple systems, multiple functions. *Psychological Review*, 109, 306–329. <https://doi.org/10.1037//0033-295X.109.2.306>
- Kofta, M., Soral, W., & Bilewicz, M. (2020). What breeds conspiracy antisemitism? The role of political uncontrollability and uncertainty in the belief in Jewish conspiracy. *Journal of Personality and Social Psychology*, 118(5), 900–918. <https://doi.org/10.1037/pspa0000183>
- Kuwabara, K. J. et Pillemer, D. B. (2010). Memories of past episodes shape current intentions and decisions. *Memory*, 18(4), 365–374. <https://doi.org/10.1080/09658211003670857>
- Landau, M. J., Kay, A. C., & Whitson, J. A. (2015). Compensatory control and the appeal of a structured world. *Psychological Bulletin*, 141(3), 694–722. <https://doi.org/10.1037/a0038703>
- Leman, P. J. & Cinnirella, M. (2013). Beliefs in conspiracy theories and the need for cognitive closure. *Frontiers in Psychology*, 4(378), 1–10. <https://doi.org/10.3389/fpsyg.2013.00378>
- Leonard, M.-J. & Philippe, F. (2021). Conspiracy theories: A public health concern and how to address it. *Frontiers in Psychology*, 12(682931). <https://doi.org/10.3389/fpsyg.2021.682931>
- Maison, D., Jaworska, D., Adamczyk, D., & Affeltowicz, D. (2021). The challenges arising from the COVID-19 pandemic and the way people deal with them: A qualitative longitudinal study. *PLOS ONE*, 16(10), e0258133. <https://doi.org/10.1371/journal.pone.0258133>
- McGuire, N. H. & Ball, H. (2022). Extending psychological reactance theory to include denial of threat and media sharing intentions as freedom restoration behavior. *Communication Research Reports*, 39(3), 136–146. <https://doi.org/10.1080/08824096.2022.2058480>
- McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological Methods*, 23(3), 412–433. <https://doi.org/10.1037/met0000144>
- Merson, B. et Pezdek, K. (2019). Target-related autobiographical memories affect dietary intake intentions. *Memory*, 27(10), 1438–1450. <https://doi.org/10.1080/09658211.2019.1674335>
- Moghaddam, F. (2018). Mutual radicalization: How groups and nations drive each other to extremes. APA Press.
- Neufeld, A. & Malin, G. (2019). Exploring the relationship between medical student basic psychological need satisfaction, resilience, and well-being: A quantitative study. *BMC Medical Education*, 19(405), 1–8. <https://doi.org/10.1186/s12909-019-1847-9>
- Nyhan, B. & Zeitzoff, T. (2018). Conspiracy and misperception belief in the Middle East and North Africa. *Journal of Politics*, 80(4). <http://dx.doi.org/10.1086/698663>
- Philippe, F., (2022). Episodic memories as proxy or independent representations: A theoretical review and an empirical test of distinct episodic memories on work outcomes. *New Ideas in Psychology*, 64, 100913. <https://doi.org/10.1016/j.newideapsych.2021.100913>

- Philippe, F. L. & Bernard-Desrosiers, L. (2017). The odyssey of episodic memories: Identifying the paths and processes through which they contribute to well-being. *Journal of Personality*, 85(4), 518-529. <https://doi.org/10.1111/jopy.12257>
- Philippe, F. L., Bouizegarene, N., Guilbault, V., Rajotte, G., & Houle, I. (2015). The chicken or the egg? Systematic investigation of the effect of order of administration of memory questionnaires and well-being scales. *Memory*, 23, 1056-1069. <https://doi.org/10.1080/09658211.2014.953547>
- Philippe, F. L., Koestner, R., Beaulieu-Pelletier, G. et Lecours, S. (2011a). The role of need satisfaction as a distinct and basic psychological component of autobiographical memories: A look at well-being. *Journal of Personality*, 79(5), 905-938. <https://doi.org/10.1111/j.1467-6494.2010.00710.x>
- Philippe, F. L., Koestner, R., Beaulieu-Pelletier, G., Lecours, S. et Lekes, N. (2012). The role of episodic memories in current and future well-being. *Personality and Social Psychology Bulletin*, 38(4), 505-519. <https://doi.org/10.1177/0146167211429805>
- Philippe, F. L., Koestner, R., Lecours, S., Beaulieu-Pelletier, G. et Bois, K. (2011b). The role of autobiographical memory networks in the experience of negative emotions: How our remembered past elicits our current feeling. *Emotion*, 11(6), 1279-1290. <https://doi.org/10.1037/a0025848>
- Rasmussen, A. S., Ramsgaard, S. B., & Berntsen, D. (2015). Frequency and functions of involuntary and voluntary autobiographical memories across the day. *Psychology of Consciousness: Theory, Research, and Practice*, 2(2), 185-205. <https://psycnet.apa.org/doi/10.1037/cns0000042>
- Rothschild, Z. K., Landau, M. J., Sullivan, D., & Keefer, L. A. (2012). A dual-motive model of scapegoating: Displacing blame to reduce guilt or increase control. *Journal of Personality and Social Psychology*, 102(6), 1148-1163. <https://doi.org/10.1037/a0027413>
- Ryan, R. M. (1995). Psychological need and the facilitation of integrative processes. *Journal of Personality*, 63(3), 397-427. <https://doi.org/10.1111/j.1467-6494.1995.tb00501.x>
- Ryan, R. M. & Deci, E. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness. New York, NY: Guilford Press.
- Ryan, R. M. & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *American Psychologist*, 55(1), 68-78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Smallman, S. (2018) Conspiracy theories and the Zika epidemic. *Journal of International Global Studies*. 9(2), 1-13.
- Sheldon, K. M. (2011). Integrating behavioral-motive and experiential-requirement perspectives on psychological needs: A two process model. *Psychological Review*, 118(4), 552-569. <https://doi.org/10.1037/a0024758>
- Sheldon, K. M., Cheng, C., & Hilpert, J. (2011). Understanding well-being and optimal functioning: Applying the multilevel personality in context (MPIC) model. *Psychological Inquiry*, 22(1), 1-16. <http://dx.doi.org/10.1080/1047840X.2011.532477>

- Sheldon, K. M. & Gunz, A. (2009). Psychological needs as basic motives, not just experiential requirements. *Journal of Personality*, 77(5), 1467– 1492. <https://doi.org/10.1111/j.1467-6494.2009.00589.x>
- Sheldon, K. M. & Kasser, T. (2008). Psychological threat and extrinsic goal striving. *Motivation & Emotion*, 32, 37-45. <http://dx.doi.org/10.1007/s11031-008-9081-5>
- Sheldon, K. M., & Niemiec, C. P. (2006). It's not just the amount that counts: Balanced need satisfaction also affects well-being. *Journal of Personality and Social Psychology*, 91(2), 331–341. <https://doi.org/10.1037/0022-3514.91.2.331>
- Shen, L., & Dillard, J. P. (2005). Psychometric properties of the Hong Psychological Reactance Scale. *Journal of Personality Assessment*, 85(1), 74-81. https://doi.org/10.1207/s15327752jpa8501_07
- Stojanov, A. & Halberstadt, J. (2020). Does lack of control lead to conspiracy beliefs? A meta-analysis. *European Journal of Social Psychology*, 50(5), 955-968. <https://doi.org/10.1002/ejsp.2690>
- Taylor, S. & Asmundson, G.J.G. (2021) Negative attitudes about facemasks during the COVID-19 pandemic: The dual importance of perceived ineffectiveness and psychological reactance. *PLoS ONE*, 16(2), e0246317. <https://doi.org/10.1371/journal.pone.0246317>
- Uscinski, J. E. & Parent, J. M. (2014). American conspiracy theories. New York, NY: Oxford University Press.
- van Petegem, S., Soenens, B., Vansteenkiste, M., & Beyers, W. (2015). Rebels with a cause? Adolescent defiance from the perspective of reactance theory and self-determination theory. *Child Development*, 86(3), 903-918. <https://doi.org/10.1111/cdev.12355>
- van Petegem, S., Vansteenkiste, M. et Beyers, W. (2012). The jingle-jangle fallacy in adolescent autonomy in the family: In search of an underlying structure. *Journal of Youth and Adolescence*, 42, 994-1014. <https://doi.org/10.1007/s10964-012-9847-7>
- van Prooijen, J.-W. (2020). An existential threat model of conspiracy theories. *European Psychologist*, 25(1), 16-25. <https://doi.org/10.1027/1016-9040/a000381>
- van Prooijen, J.-W. & Acker, M. (2015). The influence of control on belief in conspiracy theories: Conceptual and applied extensions. *Applied Cognitive Psychology*, 29, 753-761. <https://doi.org/10.1002/acp.3161>
- van Prooijen, J. W. & Douglas, K. M. (2017). Conspiracy theories as part of history: The role of societal crisis situations. *Memory Studies*, 10(3), 323-333. <https://doi.org/10.1177/1750698017701615>
- van Prooijen, J. W. & Douglas, K. M. (2018). Belief in conspiracy theories: Basic principles of an emerging research domain. *European Journal of Social Psychology*, 48, 897-908. <https://doi.org/10.1002/ejsp.2530>
- van Prooijen, J. W. & Jostmann, N. B. (2013). Belief in conspiracy theories: The influence of uncertainty and perceived morality. *European Journal of Social Psychology*, 43, 109-115. <https://doi.org/10.1002/ejsp.1922>

- van Prooijen, J. W. & van Vugt, M. (2018). Conspiracy theories: Evolved functions and psychological mechanisms. *Perspectives on Psychological Science*, 13(6), 770-788. <https://doi.org/10.1177%2F1745691618774270>
- Vansteenkiste, M. & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, 23(3), 263–280. <https://doi.org/10.1037/a0032359>
- Vansteenkiste, M., Soenens, B., van Petegem, S., & Duriez, B. (2014). Longitudinal associations between adolescent perceived style of parental prohibition and oppositional defiance and internalization. *Developmental Psychology*, 50, 229–236. <https://doi.org/10.1037/a0032972>
- Van Oost, P., Yzerbyt, V., Schmitz, M., Vansteenkiste, M., Luminet, O., Morbée, S., Van den Bergh, O., Waterschoot, J., Klein, O. (2022). The relation between conspiracism, government trust, and COVID-19 vaccination intentions: The key role of motivation. *Social Science & Medicine*, 301, 114926. <https://doi.org/10.1016/j.socscimed.2022.114926>.
- Vermote, B., Waterschoot, J., Morbée, S., Van der Kaap-Deeder, J., Schrooyen, C., Soenens, B., Ryan, R., & Vansteenkiste, M. (2022). Do psychological needs play a role in times of uncertainty? Associations with well-being during the COVID-19 crisis. *Journal of Happiness Studies*, 23(1), 257-283. <https://doi.org/10.1007/s10902-021-00398-x>.
- Waterschoot, J., Morbée, S., Van den Bergh, O., Yzerbyt, V., Raemdonck, E., Brisbois, M., Schmitz, M., Klein, O., Luminet, O., Oost, P. V., & Vansteenkiste, M. (2023). How the stringency of the COVID-19 Restrictions influences motivation for adherence and well-being: The critical role of proportionality. *International Journal of Health Policy and Management*, 12, 8021. <https://doi.org/10.34172/ijhpm.2023.8021>
- Whitson, J. A. & Galinsky, A. D. (2008). Lacking control increases illusory pattern perception. *Science*, 322(5898), 115-117. <https://doi.org/10.1126/science.1159845>
- Whitson, J. A., Kim, J., Wang, C. S., Menon, T., & Webster, B. D. (2019). Regulatory focus and conspiratorial perceptions: The importance of personal control. *Personality and Social Psychology Bulletin*, 45(1), 3-15. <https://doi.org/10.1177/0146167218783191>

CHAPITRE 4

PATHWAY TO NON-NORMATIVE POLITICAL ENGAGEMENT: THE ROLE OF PSYCHOLOGICAL REACTANCE IN EPISODIC MEMORIES

Ce chapitre est constitué d'un article scientifique rédigé en anglais, qui a été soumis pour publication au journal *Political Behavior* en 2025. L'article scientifique présenté dans ce chapitre explore la relation entre les souvenirs caractérisés par la réactance et l'EPNC en comparaison à l'EPC. La première étude montre que les souvenirs caractérisés par la réactance prédisent un plus grand EPNC une semaine plus tard. La seconde étude montre que l'activation subliminale d'un souvenir caractérisé par la réactance augmente dans l'immédiat le risque qu'une personne soutienne un EPNC pour exprimer un désaccord avec l'État comparativement à l'activation d'un souvenir sans réactance ou aux groupes contrôles (non-activés avec leur propre souvenir). Les deux études n'indiquent pas que les souvenirs caractérisés par la réactance ont une influence sur le soutien d'un EPC. Cet article ouvre une discussion sur l'activation chronique de souvenirs caractérisés par la réactance comme élément motivationnel qui participe à distinguer l'EPNC de l'EPC.

Pathway to Non-Normative Political Engagement:
The Role of Psychological Reactance in Episodic Memories

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Conflict of Interest Disclosure. The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding. This research was funded by a grant from the Social Sciences and Humanities Research Council of Canada (Grant/Award Number: 435-2017-1358) and a joint scholarship from the Social Sciences and Humanities Research Council of Canada and the Canadian Ministry of National Defence - MINDS awarded to Marie-Jeanne Leonard.

Data Availability. Data from this research is available at the following link the in Files section: https://osf.io/drz3w/?view_only=10f86602b203475bb730ec5a6ee8ad5f. This research was not preregistered.

Ethics Approval. The studies reported in this article received ethical approval by the Research Ethics Committee for Student Projects of the Université du Québec à Montréal (certificate 2020-2748 and certificate 2022-3666).

4.1 Abstract

Dissatisfaction with Institutions, governments, or the *status quo* can be expressed via normative (e.g., sign a petition) and non-normative (e.g., destroy public property) political engagement. The type of political engagement endorsed may be influenced by memories rooted in psychological reactance, as chronic memory activation is known to shape cognitions and behaviors. We conducted two studies during the COVID-19 pandemic to investigate the impact of activating memories characterized by psychological reactance on normative and non-normative political engagement, while also controlling for psychological reactance traits. Study 1 randomly exposed participants ($N = 141$) to one of three vignettes varying in freedom restriction before describing a memory. Analyses showed that memories characterized by psychological reactance predicted higher non-normative political engagement a week later. Study 2 used an experimental yoked control design ($N = 181$) and demonstrated that priming individuals with their own psychological reactance memory situationally heightened their endorsement of non-normative political engagement compared to individuals primed with a non-psychological reactance memory or compared to control groups (i.e., individuals not primed with their own personal memory). Psychological reactance memories did not affect normative political engagement in either study. Chronic activation of memories characterized by psychological reactance therefore represents a pivotal motivational element that distinctly facilitates non-normative political engagement from normative political engagement.

Keywords: Non-Normative Political Engagement, Normative Political Engagement, Psychological Reactance, Memories, Motivation, Personality.

4.2 Introduction

In the past decade, a rise in non-normative political engagement (NNPE) has been observed, drawing attention to the critical nature of this form of collective action (Bakowski, 2023). Notable examples include the 5G towers burnings (Satariano & Alba, 2020), the USA Capitol Assault (Kydd, 2021), or the UK riots against immigrants and refugees (Carroll, 2024). While extensive research exists on normative political action, NNPE has received less attention (Uysal et al., 2024). A potential distinguishing factor between normative and non-normative actions is psychological reactance (PR) — a motivational state triggered by perceived loss of freedom, which drives people to resist perceived control to regain subjective agency (Brehm, 1966; Rosenberg & Siegel, 2018). However, PR has typically been conceived as a stable trait, whereas individuals typically display non-normative actions in response to perceived threats that are context-dependent rather than consistent over time. Thus, there seems to be a specific Person X Contextual Threat interaction leading individuals to endorse non-normative political actions. Using a memory perspective, we examined whether memories of past PR experiences, reactivated by a novel context involving a threat to freedoms, could explain the endorsement of NNPE.

4.2.1 Normative vs Non-Normative Political Engagement

Collective actions can take many forms. Some are more conventional (e.g., signing a petition or participate in a demonstration), while others involve more confrontational tactics with underlying violent tones (e.g., taking part in an activity at the risk of one's personal safety or damaging public property; Becker & Tausch, 2015; Corning & Myers, 2002). The present research uses the term normative political engagement (NPE) to refer to the endorsement of conventional forms of actions that comply with the broad social structures and legal norms in a given state (Imhoff et al., 2020; Wright et al., 1990). The term non-normative political engagement (NNPE) covers the endorsement of unconventional actions that defy and infringe on those norms and structures (Tausch et al., 2011; Wright et al., 1990). These unconventional actions are considered to involve “direct challenges, use of force or physical opposition”, including “conflict between the protestors and police, realistic threat or expectation of police intervention to the action, and/or following legal sanctions due to participation”, as conceptualized by Uysal et al. (2024).

While NPE and NNPE can be regarded as part of the same continuum of collective actions that increase in violence (McCauley & Moskalenko, 2017; Uysal et al., 2024), both ends of this continuum are considered distinct outcomes (Becker & Tausch, 2015; Klar & Kasser, 2009). Indeed, NPE and NNPE are not associated with the same psychological consequences. Klar & Kasser (2009) reported that intentions to partake in

conventional activism is associated with higher levels of well-being, positive affect, agency, and life satisfaction, whereas high risk activism was not. Moreover, NPE and NNPE seem to differently involve the emotional spectrum of anger. NPE is linked to anger as “long-lasting feelings toward a particular political issue or offender” (Becker & Tausch, 2015; Tausch et al., 2011), whereas anger associated with NNPE includes “spontaneous in situ anger and frustration and the impulsive aggressive behaviours that follow” (Becker & Tausch, 2015).

Perception of injustice also seems a factor at play in NNPE. Klar & Kasser (2009) suggested that heightened perceptions of hopelessness and injustice may drive “high-risk activists” toward more radical and illegal actions. Supporting this claim, a systematic review on NNPE indicated that among the five main predictors, perceived injustice and anger-related emotions (including contempt, anger, hostility) play key roles (Uysal et al., 2024). At the intersection of these cognitive and emotional factors predicting NNPE lies the notion of PR (Rains, 2013).

4.2.2 Psychological Reactance

People inherently believe to have control and freedom over certain behaviors, but the specificity of their perceived significance varies across individuals (e.g., freedom of speech, the right to unionize; Brehm & Brehm, 1981). When people perceive their expected rights and liberties as threatened, restricted, or eliminated by an external entity or person, they may seek to restore them due to a motivation called PR (Brehm & Brehm, 1981). PR is a form of motivation characterized by a dual nature, combining negative affect (i.e., anger, hostility, aggressivity) and negative cognitions (e.g., “they don’t respect my freewill”, “I’ll show them”) directed toward the perceived source of threat to freedom (Dillard & Shen, 2005; Rains, 2013). The literature further distinguishes two conceptualizations of PR: state and trait. State PR is a motivational state that can arise following a threat to freedom of choice or after feeling controlled and that prompts individuals to maintain and recover their threatened freedoms (Brehm, 1966; Brehm & Brehm, 1981; Mühlberger & Jonas, 2019). Trait PR is a personality trait and can be regarded as a person’s proneness of entering a state of PR (Dillard & Shen, 2005; Hong & Faedda, 1996). The premise of such stable traits is that they are enduring over time and generate relatively consistent and predictable behavioral reactions.

Multiple freedom-restoring behaviors can emerge from PR. A common one is politically-oriented behaviors, such as noncompliance with set rules, norms, or sociosanitary measures (Ball & Wozniak, 2021;

Taylor & Asmundson, 2021) and aggressive reactions (Mühlberger & Jonas, 2019), including radical activist behaviors (Bélanger et al., 2021) and violent extremism (Bélanger et al., 2020). These forms of NNPE may serve as a way of coping with perceived injustice, while simultaneously externalizing and alleviating hostile emotions through the assertion of control and reinforcement of one's sense of autonomy and freedom (Leander et al., 2016; Mühlberger & Jonas, 2019; Smith & Lazarus, 1990). However, whether conceptualized as a trait, state, or behavioral response, what triggers PR in one individual and not in another within a same freedom-restricting situation remains unclear.

The literature has shown that people with similar personality traits do not necessarily react identically across situations, suggesting the presence of an individual-level factor that uniquely shapes one's subjective experience in specific situations (Mischel & Shoda, 1995). Indeed, two people with high PR traits may not manifest freedom-restoring behaviors (referenced as NNPE) in the same situations and with the same intensity (Mühlberger & Jonas, 2019). Likewise, many individuals could experience a freedom-restricting situation and only a few would display PR. For example, during the COVID-19 pandemic, most governments worldwide instituted restrictive sociosanitary measures that significantly hindered people's freedom of choice and action. Yet, and despite sociocultural differences, only a minority of the population across countries displayed opposing attitudes or defiant actions. Therefore, it seems that a Person X Contextual Threat interaction could better explain how PR can lead to NNPE in certain contexts. Considering that memories of past events (episodic and autobiographical memories) serve as the building blocks of identity, while being highly sensitive to external cues and contexts (Philippe, 2022), a memory-based perspective appears well-founded for investigating this question.

4.2.3 Memory Activation

Our memories are constantly fired up by external cues from our environment, consciously or not (Mace & Unlu, 2020; Philippe et al., 2012). Such external cues activate specific memories based on shared elements, such as common surface features (e.g., visual element, location, auditory detail) or a similar topic (e.g., being threatened, scared, free; Brown & Schopflocher, 1998; Rasmussen & Berntsen, 2009). This memory activation process enables quick assessments and rapid reactions based on our past personal experiences when encountering new, unknown, or unexpected situations (Conway & Pleydell-Pearce, 2000; Philippe et al., 2009).

Each memory holds an array of information regarding how a person specifically experienced a past event (Philippe et al., 2012). These experiential characteristics include the affect associated with the event, the arousal originally experienced, and the actions taken at the time. When a situation triggers a memory, these experiential characteristics momentarily inform us on how to react to the current situation based on past experiences. Hence, memories' experiential characteristics play a crucial role in situationally shaping, guiding, and influencing decision making and behaviors in the given situation that reactivates the memory (Biondolillo & Pillemer, 2015; Gino & Desai, 2012; Houle & Philippe, 2017; Kuwabara & Pillemer, 2010; Merson & Pezdek, 2019; Philippe et al., 2012; Philippe & Bernard-Desrosiers, 2017). If a PR state was experienced during a past event, it can become encoded in the memory of that event, as emotion and action. Therefore, when this PR-characterized memory is later reactivated by a new situation (e.g., a freedom-restrictive situation), individuals may be more likely to display PR-aligned reactions.

In the context of the COVID-19 pandemic, which was marked by restricted personal freedoms, multiple situations may have acted as triggers for PR memories. These situational triggers could range from the restrictive public health messages that circulated (Ball & Wozniak, 2021), to having to wear a mask in public spaces (Taylor & Asmundson, 2021), or to being forced to train at home due to gym closures (Mühlberger & Jonas, 2019). If these restrictions did activate PR memories, the triggering environment was likely perceived as hostile and threatening to personal freedom (Philippe et al., 2011). This perception possibly prompted the reaction of seeking to regain freedom and control over the situation (Rosenberg & Siegel, 2018), thereby increasing one's risk of endorsing NNPE to achieve that goal. Hence, we propose that PR memory activation explains *how* the state of PR is generated and associated with endorsement of NNPE.

4.2.4 Sociohistorical Context of the Present Research

Whether collective actions are regarded as conventional, violent, or fringe depends on temporal and sociohistorical contexts (Uysal et al., 2024), rendering it essential to outline the context in which this research occurred.

The present research took place during the historical period of the COVID-19 pandemic in Canada between Summer 2021 and 2022. This period was characterized by intense social influence from governmental authorities, which implemented strict sociosanitary measures. These measures fluctuated based on the number of COVID-19 cases, resulting in constantly shifting social norms (e.g., mandatory vaccination proof

to access public spaces, social distancing, social isolation; Institut national de santé publique du Québec, 2022).

Although the proportion of the population who endorses NNPE is generally relatively low (McCauley & Moskalenko, 2017), the COVID-19 pandemic period witnessed a surge of polarized collective actions, particularly associated with conspiracy movements (Bertuzzi, 2021). While some of these actions were “peaceful” and conventional, others had radical undertones, such as the Freedom Convoy protest in Canada (Public Safety Canada, 2022), or even had a violent nature, such as the Capitol Assault in the USA (Kydd, 2021). Beliefs in conspiracy theories were found to correlate with increased support for political violence (Uscinski et al., 2022) and to be associated with support for violent radicalization (Levinsson et al., 2021), suggesting a politicization of conspiracy theories (Moore, 2016) and contributing to radical movements in recent times. Additionally, endorsing conspiracy theories was associated with decreased intentions to take part in NPE and with increased intentions to participate in NNPEt (Imhoff et al., 2020; Pummerer, 2022). A report portraying the situation of conspiracy beliefs at the time in the province of Quebec indicated that between 13% and 33% of conspiracy believers supported the use of violence to fight injustice from the government and between 11% and 27% supported the use of violence during political demonstrations, compared to 8% and 6% of non-conspiracy believers respectively (Carignan et al., 2022). We considered that conspiracy believers likely had increased odds of having PR memories triggered when experiencing the never-before seen freedom-restricting situations resulting from the COVID-19 sociosanitary measures, contextually increasing their likelihood of endorsing NNPE. Therefore, in this research, we decided to recruit a sample of conspiracy believers to increase our probability of recruiting individuals ready to embrace NNPE and hence test our hypothesis.

4.3 Present Research

It is theorized that freedom-restricting contexts can trigger memories of past experiences with similar features. If the memory triggered by the context is encoded as a PR experience, the person should interpret the situation accordingly, rendering them at risk of endorsing NNPE-related actions. If this motivational process holds true in a COVID-19 pandemic context, then individuals for whom reminders of freedom-restricting sociosanitary measures trigger PR memories should show greater endorsement of NNPE, not NPE. In contrast, non-restricting reminders should not trigger PR memories and are therefore not hypothesized to predict either form of engagement.

Study 1, a prospective study, evaluated whether individuals who spontaneously thought of PR memories after reading a freedom-restricting vignette would typically report a greater endorsement of NNPE for a personal cause. Study 2 used an experimental design to look into the *in situ* influence of priming or not individuals with a PR memory on endorsing NNPE. Across both studies, we expected that the triggering of accessible PR memories would predict increased endorsement of NNPE. We did not expect to find this prediction for NPE. All codebooks and datasets for this research are available on OSF: https://osf.io/drz3w/?view_only=10f86602b203475bb730ec5a6ee8ad5f.

4.4 Study 1

Study 1 investigated the association between PR memories and endorsement of NPE and NNPE within a prospective design. We theorized that, for some individuals, PR memories were frequently triggered during the COVID-19 pandemic due to a social context characterized by freedom restriction. Over time, this chronic activation of PR memories would have shaped and solidified greater endorsement of NNPE in a stable fashion. Thus, participants who spontaneously report a PR memory in response to a freedom restrictive context should typically report greater NNPE. To test this, participants were randomly assigned to read one of three vignettes depicting the same situation, but involving different levels of freedom restriction (i.e., no restriction, moderate, or high restriction levels). Following exposure, participants recalled and described a memory. One week later, they rated their endorsement levels of NPE and NNPE to defend a cause important to them. A one-week interval separated the two surveys to rule out the alternative explanation that describing a PR memory only creates a priming effect that temporarily increases the likelihood of endorsing NNPE.

We hypothesized that reading the most restrictive vignettes (as opposed to the control vignette) would activate some people's chronically accessible PR memories—memories that, when triggered by environmental cues, can influence support for NNPE. In other words, the more the vignettes emphasized severe restrictions of freedom, the more likely they would elicit PR memories. These triggered PR memories were expected to predict stronger endorsement of NNPE over time. No main effect of the vignette condition was anticipated on NNPE, as we did not expect that simply reading a vignette depicting restrictions would increase reports of NNPE one week later. Rather, the vignettes served as triggers, activating those PR memories that typically guide people's behavioral intentions toward NNPE. This design allowed us to collect a very specific Person X Context (freedom-restricting) measure. This process was not expected to predict NPE.

PR trait was controlled to demonstrate the unique impact of PR memories on NNPE. COVID-19-related conspiracy beliefs were also evaluated to: (1) confirm that most of the sample endorsed those beliefs, (2) demonstrate their association with PR memories, and (3) show that conspiracy beliefs do not fully account for the observed effects on our outcome variables, confirming that the effects are driven by PR memories and not by conspiracy beliefs.

4.4.1 Method

4.4.1.1 Participants and Design

Study 1 used a quasi-experimental design with a prospective measure of the endorsement of NPE and NNPE. We anticipated a medium effect size ($\eta_p^2 = .075$), as found in past studies on memories with prospective outcomes (e.g., Houle & Philippe, 2018; Philippe et al., 2017). The power analysis (power = .80, alpha = .05) indicated that a minimum sample size of 123 participants was required to perform two-way ANCOVA tests with six groups, 3 (Vignette groups: no restriction, moderate restriction, high restriction) X 2 (Memory type: PR vs non-PR) and two covariates (PR trait and NPE vs NNPE depending on outcome examined).

4.4.1.2 Inclusion Criteria

Participants were required to be at least 18 years old. A total of 266 participants were initially recruited. Participation was considered incomplete if participants did not report a main memory or did not provide a proper description of the memory ($n = 28$ excluded). Two quality check items were included to ensure that participants correctly completed the surveys. Participants who answered both items incorrectly were excluded ($n = 30$). Moreover, those who did not provide a contact email or opted out from T2 could not be invited to complete it ($n = 19$). Among those invited to complete T2, 48 did not participate (dropout rate of 25%). The dropouts did not differ from the completers, except on age, with dropouts being older ($M = 43.71$, $SD = 9.84$) compared to the completers ($M = 39.84$, $SD = 10.04$), $t(187) = 2.33$, $p = .021$, $d = 0.39$.

The final sample was composed of 141 participants living in the province of Quebec. On average, participants were 39.88 years old ($SD = 10.02$), 61.7% identified as female, and a majority reported being White (95.0%). Overall, 52.5% of the sample had an annual revenue of less than \$90 000 and 54.6% of the sample did not have a university degree or certificate.

4.4.1.3 Procedure and Materials

4.4.1.3.1 Recruitment Method

Advertisements were posted on social media between June and September 2021. As explained in the introduction, efforts were made to increase the likelihood of recruiting COVID-19 conspiracy believers. To do so, the advertisements targeted, for instance, people who interacted with conservative political content, engaged with populist-minded newspapers and news channels, and who recently returned from travel during a period when non-essential travel was discouraged. These advertisements were also addressed to people dissatisfied with the sociosanitary measures (e.g., “Do you have any doubts about COVID-19? Do you want to say something about the lockdown measures?”). Participants were informed about the content of the study and provided their informed consent before accessing the questionnaires. They completed two online surveys at a one-week interval. This study received ethical approval by the *Research Ethics Committee for Student Projects of the Université du Québec à Montréal*.

4.4.1.3.2 Procedure

Participants were randomly assigned to read one of three vignettes. The three vignettes portrayed the same situation, but levels of personal freedom restrictions were altered (i.e., control, moderate, or severe condition). Following exposure to the vignette, participants reported the first spontaneous memory triggered by the condition. Endorsement of NPE and NNPE was assessed one week later at T2. Participants had a chance to win one of three \$125 prizes for completing T1. Every participant who completed T2 received a \$15 CAD e-transfer.

4.4.1.4 Measures

T1 included a demographic questionnaire (i.e., gender, ethnicity, age, annual revenue, level of education).

4.4.1.4.1 Hong Psychological Reactance Scale (Hong & Faedda, 1996)

This questionnaire assesses PR traits and is composed of 11 items (e.g., “I get angry when my freedom of choice is restricted.”). Participants rated the items on a 5-point Likert scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). An average score was computed, with a higher score indicating a greater propensity for PR. The scale has adequate construct validity (Dillard & Shen, 2005). In this study, the Cronbach’s alpha was .83.

4.4.1.4.2 Freedom-Restriction Vignettes

Participants were randomly assigned to one of three experimental conditions involving reading a vignette describing a similar situation in which a person named Alex enters a grocery store to purchase flour with no mask on¹. The severity of the consequence for this omission varied by condition: in the control condition, Alex faced no consequence and purchased the flour; in the moderate condition, Alex was denied the flour and escorted out of the store by the staff; and in the severe condition, Alex was refused the flour, but also harassed and shouted at.

4.4.1.4.3 Episodic Memory

After reading the assigned vignette, participants recalled and described an episodic memory that came to mind after reading the vignette, based on the recall procedure from Philippe et al. (2011). The full memory instructions are available in the codebook for Study 1 on OSF: https://osf.io/drz3w/?view_only=10f86602b203475bb730ec5a6ee8ad5f

4.4.1.4.4 Psychological Reactance in Memories

Two research assistants independently assessed the presence of PR in the recalled memory. A memory was considered to be encoded with PR if it described an experience marked by anger-related negative affects (i.e., anger, hostility, aggressiveness, contempt), a lack of control or impulsivity, and an oppositional attitude expressed through unfavorable cognitions and/or aggressive behaviors aimed at restoring a sense of control or freedom (Mühlberger & Jonas, 2019). A score of 0 indicated the absence of PR and a score of 1 indicated its presence in the memory. If either research assistant detected PR, the memory was assigned a score of 1 to maximize sensitivity and ensure that the full spectrum of PR was included in analyses (McHugh, 2012). The inter-rater agreement between the assistants was very good ($\kappa = .92, p < .001$).

4.4.1.4.5 COVID-19-Related Conspiracy Beliefs Questionnaire (Leonard & Philippe, 2025)

At T2, participants completed a 7-item scale to measure beliefs in common COVID-19 conspiracy theories at the time the study took place (e.g., “The government is exaggerating the number of Covid-19 cases detected and the number of deaths due to Covid-19”). Participants rated to what extent they believed each item to be true based on an 11-point Likert scale going from 0 (0% - *Certainly not*) to 10 (100% -

¹ At the time Study 1 took place, wearing a mask indoor was mandatory in Quebec.

Certain). An average score was computed, higher scores reflecting increased COVID-19-related conspiracy beliefs. The scale had a Cronbach alpha of .95.

4.4.1.4.6 Normative vs Non-Normative Political Engagement

Participants completed an 8-item scale assessing their endorsement of NPE and NNPE. This scale was inspired from the *Activism Orientation Scale* (Corning & Myers, 2002), which has two factors: conventional activist behaviors (i.e., NPE) and high-risk activist behaviors (i.e., NNPE). Participants were asked to think of a cause or opinion they care about and to report how likely they were to engage in different activities to advocate and support this cause/opinion. NPE was assessed via four items (i.e., “Sign a petition to defend your cause/opinion”, “Participate in a demonstration to defend your cause/opinion”, “Wear a symbol or add a symbol on your social media profile in the name of your cause/opinion”, and “Donate money to an organization that defends your cause/opinion”). NNPE was assessed via four items (i.e., “Participate in an activity to defend your cause/opinion, where there is a possibility of confrontation with the police or arrest”, “Participate in an activity where your personal safety may be at risk in order to defend your cause/opinion”, “Degrade or destroy public or private property to support your cause/opinion”, and “Physically block access to a building or public space to support your cause/opinion”). Participants rated the items on a 7-point Likert scale ranging from 1 (*Absolutely not*) to 7 (*Absolutely*). An average score was calculated for each factor.

A Principal Analysis Factor with an OBLIMIN rotation was performed. The sampling adequacy had a value of .76 based on the Kayser-Meyer-Olkin measure. The two extracted factors explained 46% of the variance and all factor loadings were above .37. No cross loadings above .35 were detected. A NPE item (i.e., “Donate money to an organization or group that defends your cause/point of view”) loaded on the NNPE factor. Two averages were therefore computed for the NPE factor: one including this item and one without it (see Analyses section). The Cronbach alpha for NPE including the item was of .60, while it was of .59 when excluding the item. The Cronbach alpha for NNPE was of .78.

4.4.1.5 Analyses

The distribution of the outcomes showed that NPE was negatively skewed, while NNPE was positively skewed. A squared transformation was therefore applied to NPE and a square root transformation was applied to NNPE.

Chi-Square Test of Independence and Independent Samples *t*-Tests were used to explore group differences between those who described a PR memory vs a non-PR memory for age, gender, annual revenue, education level, COVID-19 conspiracy beliefs, and PR trait. A Chi-square Test of Independence also assessed the effect of condition assignment on the activation of PR memories.

Two-way ANCOVA models examined the interaction of Conditions X Memory PR on NPE and NNPE to test our hypothesis of interest. PR trait was controlled for. Moreover, given NPE and NNPE were highly correlated ($r = .59, p < .001$), each was controlled for in all analyses depending on the outcome being examined. Therefore, when NPE was the outcome, NNPE was included as a control variable, and vice versa.

Additional sensitivity analyses were conducted on the demographic variables that significantly differed between those who reported a PR vs non-PR memory. First, for each significant demographic variable, separate univariate ANCOVA models were performed, including PR memories and the demographic variable, to show that these demographic variables did not independently predict NNPE. Two-way ANCOVAs were also conducted for each significant demographic variable to test the interactions between the demographic variable and PR memories on NNPE, ensuring the robustness of our primary model.

Regarding NPE, all analyses were conducted on both versions of the outcome (i.e., including and excluding the item Donate) and yielded similar results. The results reported in this article pertain to NPE including the item Donate. The results without the item Donate were the same and are consigned in Supplemental Material (accessible here: https://osf.io/drz3w/?view_only=10f86602b203475bb730ec5a6ee8ad5f). All analyses were conducted using SPSS version 27.

4.4.2 Results

4.4.2.1 PR and Conditions

Overall, 10.6% of the sample reported a PR memory. Independent Samples *t*-Tests showed that those who described a PR memory reported more COVID-19 conspiracy beliefs ($M = 7.63, SD = 2.00$) compared to those who did not describe a PR memory ($M = 4.12, SD = 3.14$), $t(139) = -5.89, p < .001, d = -1.09$. Those who described a PR memory also had higher PR traits ($M = 3.14, SD = 0.76$) compared to those who did not describe a PR memory ($M = 2.62, SD = 0.70$), $t(139) = -2.73, p = .007, d = -0.75$. No significant group differences were found for age, $t(139) = -1.14, p = .26$, education level, $t(139) = 1.34, p = .18$, and annual revenue, $t(139) = 1.33, p = .19$. A Chi-Square Test of Independence showed a significant interaction between gender and PR

memories, $\chi^2(1, N = 141) = 5.72, p = .017, \phi = .201$, where 66.7% of those who reported a PR memory were men and 33.3% were women. A last Chi-Square Test of Independence showed no significant effect of conditions on reporting PR memories, $\chi^2(2, N = 141) = 1.77, p = .41$, contrary to our hypothesis. See Table A in supplemental material for correlations among study variables.

A first ANCOVA showed no significant interaction between Conditions X Memory PR on NNPE, $F(2, 133) = 0.42, p = .66, \eta_p^2 = .006$. However, there was a significant main effect of PR memories predicting higher NNPE levels compared to non-PR memories, $F(1, 133) = 4.15, p = .044, \eta_p^2 = .030$. There was no significant main effect of conditions, $F(2, 133) = 0.19, p = .83, \eta_p^2 = .003$. PR trait positively predicted NNPE, $F(1, 133) = 8.08, p = .005, \eta_p^2 = .057$. Univariate analyses of this model confirmed a significant main effect of PR memories on NNPE, $F(1, 135) = 4.24, p = .041, \eta_p^2 = .030$, and showed that conditions had no effect on this outcome, $F(2, 135) = 0.18, p = .84, \eta_p^2 = .003$ (see Table 4.1). It seems the gradation in freedom restriction severity did not produce the anticipated experimental effect on activating PR memories, as all three vignettes appeared to remind participants of restricted freedoms similarly. However, as hypothesized, PR memories did predict a greater endorsement of NNPE.

A second ANCOVA showed no significant interaction term for Conditions X Memory PR on NPE, $F(2, 133) = 0.43, p = .65, \eta_p^2 = .006$. Univariate analyses of this model indicated no significant main effect of memory PR, $F(1, 135) = 1.17, p = .28, \eta_p^2 = .009$, and conditions, $F(2, 135) = 1.11, p = .33, \eta_p^2 = .016$, on NPE. See Table 4.1 for details and Table B in supplemental material.

Table 4.1 Two-Way ANCOVA Results of Conditions and Memory PR on Non-Normative Political Engagement and on Normative Political Engagement: Study 1

	<i>df</i>	<i>F</i>	<i>p</i>	η_p^2
Non-normative political engagement				
Normative political engagement	1	59.25	<.001	.305
PR trait	1	8.71	.004	.061
Memory PR ^a	1	4.24	.04	.030
Conditions	2	0.18	.84	.003
Non-normative political engagement (with interaction)				
Normative political engagement	1	58.58	<.001	.306
PR trait	1	8.08	.005	.057
Memory PR	1	4.15	.04	.030
Conditions	2	0.19	.83	.003
Conditions X Memory PR	2	0.42	.66	.006
Normative political engagement				
Non-normative political engagement	1	59.25	<.001	.305
PR trait	1	0.29	.59	.002
Memory PR	1	1.17	.28	.009
Conditions	2	1.11	.33	.016
Normative political engagement (with interaction)				
Non-normative political engagement	1	58.58	<.001	.306
PR trait	1	0.42	.52	.003
Memory PR	1	0.82	.37	.006
Conditions	2	0.88	.42	.013
Conditions X Memory PR	2	0.43	.65	.006

^a 0 = Non-PR memories, 1 = PR memories.

4.4.2.2 Sensitivity Analyses

4.4.2.2.1 COVID-19 Conspiracy Beliefs

Controlling for COVID-19 conspiracy beliefs did not change the previous results, as memory PR was still a significant predictor of NNPE, $F(1, 137) = 4.37, p = .039, \eta_p^2 = .031$. No significant interaction terms were found for COVID-19 Conspiracy Beliefs X Memory PR on NNPE, $F(1, 136) = 0.24, p = .63, \eta_p^2 = .002$. For more details, see Table C in supplemental material.

4.4.2.2.2 Gender

Controlling for gender did not change our initial results and memory PR still predicted NNPE, $F(1, 137) = 4.14, p = .044, \eta_p^2 = .029$. The interaction term for Gender X Memory PR was not significant on NNPE, $F(1, 136) = 0.09, p = .76, \eta_p^2 = .001$. See Table D in supplemental material for more information.

4.4.3 Discussion

Contrary to our expectations, participants did not report more PR memories in the more freedom restrictive conditions. One explanation for this null result is that all vignettes pertained to someone not wearing a mask in the grocery store and only the consequences experienced by the protagonist differed across the vignettes. Thus, all vignettes reminded of a freedom-restrictive norm (i.e., you should wear a mask at a grocery store). This seemed sufficient to trigger PR memories across all conditions, regardless of the consequences experienced by the protagonist. However, as hypothesized, PR memories were specifically predictive of NNPE one week later and not of NPE. PR trait was also a predictor of NNPE, but one independent of the effect of the memories triggered by the vignettes. These results highlight two different pathways that can lead to NNPE: one from trait and one from the chronic activation of PR memories. Both appear to play a unique role in the motivational process of NNPE.

4.5 Study 2

The findings from Study 1 suggest that the chronic activation of PR memories results in a stable endorsement of NNPE, but not NPE. Study 2 sought to demonstrate the *in situ* impact of activating PR memories on NNPE vs NPE among people who oppose government-imposed norms. An experimental design was employed, requiring participants to complete two surveys at a one-week interval. At T1, all participants read the severe freedom restriction vignette used in Study 1 before recalling and describing a memory. The severe freedom restriction vignette was selected out of the three vignettes from Study 1 to optimize the design and maximize the likelihood of detecting significant effects, as it contained the most freedom restricting elements likely to elicit PR memories. At T2, participants were randomly assigned to one of two experimental conditions: participants were either subliminally primed with their own memory described at T1 (experimental condition) or primed with someone else's memory from T1 (control condition). The design was thus a 2 (Memories: PR vs non-PR memory) X 2 (Groups: experimental vs. control condition) model. The participants then reported whether they agreed with a fabricated statement about the government's intention to implement a new sociosanitary measure in the future. Those who disagreed with the measure reported their endorsement levels of NPE and NNPE to express their disagreement with this fabricated sociosanitary measure. PR trait was controlled for to isolate the functional role of PR memories.

We hypothesized that those primed with their own PR memory would report higher levels of NNPE compared to those primed with their own non-PR memory and compared to those assigned to the control conditions. No such results were expected for NPE as the outcome.

4.5.1 Method

4.5.1.1 Participants and Design

Based on the results of Philippe et al. (2012), which used a similar priming methodology, we anticipated a medium effect size ($\eta_p^2 = .081$). To ensure sensitivity, a smaller effect size was used ($\eta_p^2 = .045$) and a minimum sample size of 169 participants was required according to a power analysis to perform 2 X 2 ANCOVAs with four groups and two covariates (power = .80, alpha = .05).

4.5.1.2 Inclusion Criteria

Participants were required to be at least 18 years old. Initial sample size was composed of 370 participants. Again, those who did not adequately describe a memory at T1 ($n = 32$) were not invited for T2. Participants who did not provide an email ($n = 25$) could not be contacted for T2 either. In addition, T1 included two quality check questions. If participants incorrectly responded to both, they were excluded from analyses ($n = 16$). Of the participants invited at T2, 74 participants did not participate (25% attrition rate). At T2, participants who made more than three mistakes in the priming task were excluded from analyses to guarantee adequate priming ($n = 7$). Lastly, 34 participants indicated agreement with the fabricated statement about the government implementing a new sociosanitary measure. As a result, these participants did not complete the measure assessing endorsement of normative and non-normative political engagement, which was intended to capture disagreement with the statement.

To confirm that the priming procedure was subliminal, a funneled debriefing was administered at the end of T2 (Philippe & Bernard-Desrosiers, 2017). Participants reported any words from the priming task that they could recall apart from animal words or non-words (see Bunnies and Lions Task below). One participant was excluded from analyses because they reported having read one of the memory keywords that was subliminally primed.

The final sample was composed of 181 participants from the general population in Quebec. The sample had an average age of 44.55 years ($SD = 12.43$) and predominantly indicated being White (93.9%). Overall, 39.8% of the sample reported that their gender was female and 60.2% reported it to be male. Overall, 50.8% of the sample reported an annual revenue of less than \$70 000 CAD and 68% of the sample did not have a university degree or certificate.

4.5.1.3 Procedure and Materials

4.5.1.3.1 Recruitment Method

Participants were recruited via publicities posted on social media between June and August 2022. Additional efforts were made to increase recruitment of conspiracy believers in this study with the aim to collect more PR memories than in Study 1. The advertisement messages that circulated on social media stated: “Against sociosanitary measures? We want to hear from you!”, “Doubting what the government is saying? We want to hear from you!”, “Sceptic about COVID-19? We want to hear from you!”, “Conspiracist? We want to hear you!”, or “We are looking for people with a critical mind and able to doubt prescribed norms regarding COVID! Take part in our paid survey!”. Participants provided their informed consent before accessing the first online survey. They completed two online surveys at a one-week interval. To increase participation, participants were offered a \$5 CAD e-transfer after completing the first survey and an additional \$10 CAD e-transfer after completing the second survey. This study received ethical approval by the *Research Ethics Committee for Student Projects of the Université du Québec à Montréal*.

4.5.1.3.2 Study Procedure

At T1, participants read the severe freedom restriction vignette from Study 1 before describing a memory via the same recall procedure used in Study 1. During the one-week period separating T1 from T2, the first author extracted six keywords from every memory description provided at T1. The extracted keywords had to be descriptive and contextual to the environment of the memory (e.g., table, friends, chairlift) and keywords of emotional value were not selected (e.g., pain, happy, pissed off; Philippe & Bernard-Desrosiers, 2017).

A yoked control design was used at T2 to randomly assign participants to the experimental or control memory priming conditions. Each experimental participant was randomly paired (i.e., yoked) with a control participant, based on whether they rated their memory as need-satisfying or frustrating (i.e., based on the three basic needs of autonomy, competence, relatedness described by self-determination theory, Ryan & Deci, 2017). Need satisfaction was chosen as the pairing variable because it is a central characteristic of memories—one that reliably predicts mood, situational well-being effects, and actions, providing a more precise indicator than valence (Houle & Philippe, 2018; Philippe & Bernard-Desrosiers, 2017). In this sample, non-PR memories were more need-frustrating ($M = -0.35$, $SD = 1.30$) than PR memories ($M = 0.10$, $SD = 1.15$), $t(179) = -2.42$, $p = .016$, $d = -0.36$. Thus, adjusting the two groups for need

satisfaction/frustration was critical to ensure that the observed effects were not due to this variable (for similar adjustment procedures, see Philippe et al., 2012; Philippe & Bernard-Desrosiers, 2017).

All participants completed the memory priming procedure, namely the Bunnies and Lions Task, which took place at the beginning of T2. Participants assigned to the experimental condition were primed with the six keywords retrieved from their own memory, whereas participants from the control condition were primed with the six keywords from their yoked participant's memory. As such, they were not primed with their own memory, but primed with the memory of another participant who described a memory encoded with a similar level of need satisfaction or frustration. This yoking design avoids potential mood priming effects based on the valence of the keywords used (since the same keywords are used for one participant in each group) and controls for potential individual differences between groups.

After the priming procedure, participants read the following fictitious measure before indicating whether they would agree or not with it: "Imagine the government announcing that from now on, wearing masks and washing hands are firmly mandatory in all enclosed spaces for at least the next 5 years (2027²). The government justifies this measure on the grounds that worldwide data show that Covid-19 will persist and that its dangerousness will remain high." Those who disagreed filled out a questionnaire assessing whether they would partake in NPE and NNPE actions to oppose such measure. Those who agreed skipped this questionnaire and were not analyzed in this study, ensuring that only participants who perceived their freedom as hypothetically restricted were analyzed.

4.5.1.3.3 The Bunnies and Lions Task

This subliminal priming procedure was presented to the participants as a fun exercise to evacuate daily thoughts (Philippe & Bernard-Desrosiers, 2017). This task has four rounds. Participants start the task with a 15-second practice round followed by three rounds of 20 seconds each. At each round, participants are asked to count the number of times certain animal words appear on the screen under the images of a stuffed lion and bunny. Specifically, they are first asked to count the number of times the words "LION" and "BUNNY" appear, then the words "BUNNY" and "CAT", and finally the words "BEAR" and "LION". The words are randomly swapped with (1) other animal words (e.g., COW, DOG), (2) nonwords (e.g., JRODOL), and (3) the six memory keywords depending on the assigned condition. All words are displayed in 30-point

² Study 2 ran in 2022.

font size blue capital letters and appear on the screen for 1000ms, except for the memory keywords, which appear for 60ms. The duration of 60ms is sufficient for subliminal priming, but insufficient for conscious appraisal of the keywords. Moreover, the duality of the task enables a cognitive load that monopolizes attention while completing the task, decreasing to a minimum the risk of consciously perceiving the keywords (Philippe & Bernard-Desrosiers, 2017).

4.5.1.4 Measures

For T1, the same demographic questionnaire as in Study 1 was used. Participants then completed the *Hong Psychological Reactance Scale* (Hong & Faedda, 1996; Cronbach alpha of .85). After reading the severe freedom restriction vignette, participants recalled and described a memory following the same procedure as in Study 1. Participants also rated nine items on a 7-point Likert scale ranging between -3 (*Strongly disagree*) and 3 (*Strongly agree*) to assess memory need satisfaction and frustration (Philippe et al., 2011). The scores were averaged (Cronbach alpha of .77) and then dichotomized (i.e., need frustrating vs need satisfying). As in Study 1, two research assistants further evaluated the presence of PR in the memory. The inter-rater agreement was adequate ($\kappa = .80, p < .001$).

At T2, participants completed the Bunnies and Lions Task before reading the fictive sociosanitary measure previously reported and answering the item “Would you approve or disapprove of such a measure?”. Those who reported disapproving were prompted with the question “To what extent would you be prepared to take part in the following actions to show opposition to this measure and put a stop to it?” to complete the NPE and NNPE items used in Study 1. Participants rated the items based on a sliding scale ranging from 1 (*Not at all*) to 100 (*Absolutely*). A Principal Analysis Factor with an OBLIMIN rotation was performed. The sampling adequacy had a value of .85 based on the Kayser-Meyer-Olkin measure. The two extracted factors explained 51% of the variance and all factor loadings were above .51. In Study 2, the Cronbach alphas were of .76 for the NPE factor (e.g., “Sign a petition against this measure”) and of .79 for the NNPE factor (e.g., “Degrade or destroy public or private property to show that you are against this measure”).

4.5.1.5 Analyses

Outcome distribution showed that NPE was negatively skewed and that NNPE was positively skewed. A squared transformation was applied to NPE, while a square root transformation was applied to NNPE.

Group differences between those who reported a memory encoded with PR vs not were explored for age, annual revenue, level of education, gender, and PR trait via Chi-Square Tests of Independence and Independent Samples *t*-Tests. A Chi-Square Test of Independence also examined the presence of priming groups differences on PR memories.

Two-way ANCOVAs were conducted to assess the effect of priming a memory encoded with PR on NPE and NNPE. The model investigated a Priming Groups X Memory PR interaction on NPE and NNPE. As in the first study, each model controlled for the other outcome (i.e., NPE or NNPE) as the two outcomes were correlated ($r = .69, p < .001$). PR trait was also controlled for to demonstrate that the significance of the interaction term was maintained. No other control variables were included given the yoked control design. Analyses were conducted using SPSS version 27.

4.5.2 Results

Overall, 44.2% of the sample recalled a PR memory. Those who recalled PR vs non-PR memories did not differ in terms of age, $t(179) = 0.03, p = .97$, education level, $t(179) = 1.60, p = .11$, annual revenue, $t(177) = -0.61, p = .55$, or PR trait, $t(179) = -1.47, p = .14$. No group differences were found for gender, $\chi^2(1, N = 181) = 1.37, p = .24$. Lastly, a Chi-Square Test of Independence analysis showed no group differences for PR memories between the control vs primed groups, $\chi^2(1, N = 181) = .11, p = .74$, thus ensuring that random assignment was successful. See Table E in supplemental material for correlations among study variables.

A first ANCOVA showed no significant main effects of PR memory, $F(1, 176) = 3.74, p = .055, \eta_p^2 = .021$, and priming groups, $F(1, 176) = 0.17, p = .68, \eta_p^2 = .001$ on NNPE. There was, however, a significant interaction term for Priming Groups X Memory PR, $F(1, 176) = 8.18, p = .005, \eta_p^2 = .044$. This effect showed that those primed with a PR memory reported increased NNPE compared to their counterpart in the control group, $F(1, 176) = 4.79, p = .030, \eta_p^2 = .026$, and compared to those primed with non-PR memories, $F(1, 176) = 11.61, p < .001, \eta_p^2 = .062$ (See Figure 4.1 and Table 4.2). Significance was maintained for the Priming Groups X Memory PR interaction after controlling for PR trait (see Table F in supplemental material). PR trait was not significantly associated with NNPE, $F(1, 175) = 2.85, p = .093, \eta_p^2 = .016$.

Figure 4.1 Two-way ANCOVA Results of Psychological Reactance Memories as a Function of Priming Conditions on Non-Normative Political Engagement: Study 2

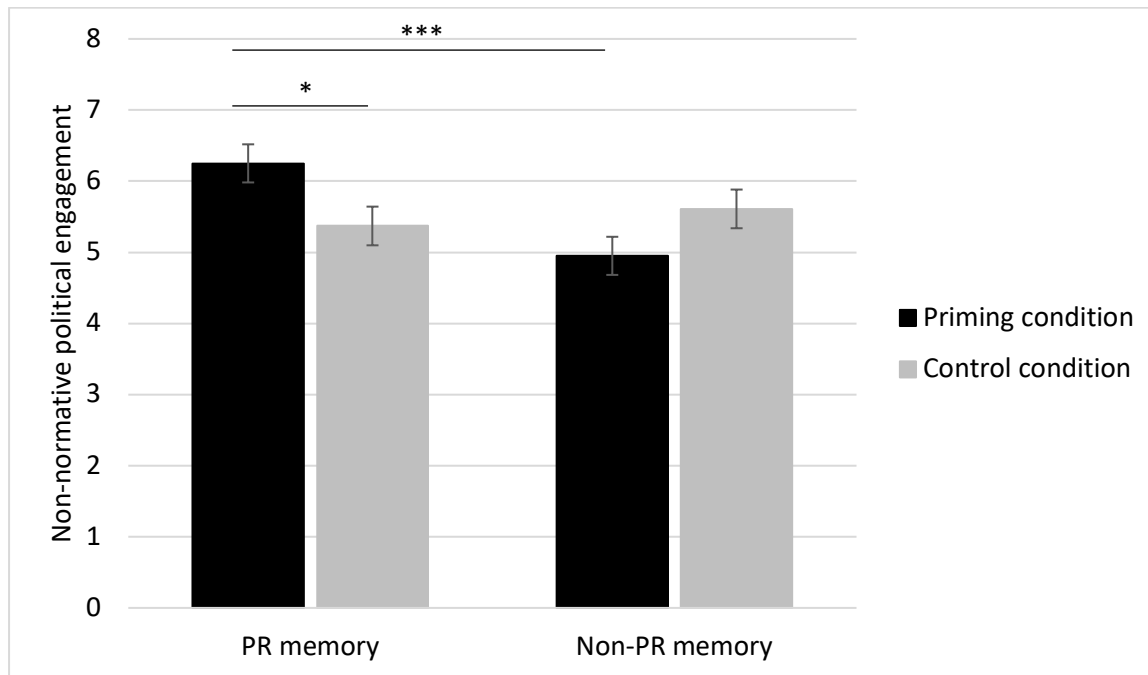


Table 4.2 Two-way ANCOVA Results of Psychological Reactance Memories as a Function of Priming Conditions on Non-Normative Political Engagement and on Normative Political Engagement: Study 2

	<i>df</i>	<i>F</i>	<i>p</i>	η_p^2
Non-normative political engagement (with interaction)				
Normative political engagement	1	153.95	<.001	.467
Memory PR ^a	1	3.74	.06	.021
Priming Groups ^b	1	0.17	.68	.001
Memory PR X Priming Groups	1	8.18	.005	.044
Normative political engagement (with interaction)				
Non-normative political engagement	1	153.95	<.001	.467
Memory PR	1	0.07	.79	<.001
Priming Groups	1	0.03	.85	<.001
Memory PR X Priming Groups	1	1.89	.17	.011
Normative political engagement				
Non-normative political engagement	1	152.37	<.001	.463
Memory PR	1	0.09	.77	<.001
Priming Groups	1	0.13	.72	.001

^a 0 = Non-PR memories, 1 = PR memories.

^b 0 = Priming group, 1 = Control group.

A second ANCOVA analysis with NPE as the outcome indicated no main effects for PR memory, $F(1, 176) = 0.07$, $p = .79$, $\eta_p^2 < .001$, and for priming groups, $F(1, 176) = 0.03$, $p = .85$, $\eta_p^2 < .001$, nor did it indicate a significant interaction for Priming Groups X Memory PR, $F(1, 176) = 1.89$, $p = .17$, $\eta_p^2 = .011$. For further details, see Table 4.2. Controlling for PR trait did not change the results (see Table E in supplemental material). Univariate analyses of this model indicated no significant main effect of PR memory, $F(1, 177) = 0.09$, $p = .77$, $\eta_p^2 < .001$, or of priming groups, $F(2, 135) = 0.13$, $p = .72$, $\eta_p^2 = .001$, on NPE. See Table 4.2 and Table F in supplemental material for details.

4.5.3 Discussion

Study 2 refined our understanding of the association between PR memories and NNPE, by demonstrating that the automatic *in situ* activation of such memories directly increases the risk of a person endorsing actions that deviate from social norms. As in Study 1, no association was found between PR memories and NPE. These results show that NNPE can be driven by the activation of memories characterized by hostile affects and aggressiveness, whereas NPE is not. Memories encoded with PR therefore represent an individual factor that distinguishes pathways between both types of political engagement. Moreover, memories hold a specific motivational value compared to PR trait, explaining that two people with PR trait

may not constantly react the same way in all situations. Specifically, it is the activation of PR memories and not PR traits themselves that seems to steer actions in a specific and defined moment, at least when it comes to NNPE.

4.6 General Discussion

The present research investigated the impact of activating past PR experiences encoded as memories on NNPE vs NPE. Specifically, the findings demonstrate that PR-encoded memories represent a unique motivational factor that predicts NNPE—one that goes beyond PR trait. To our knowledge, this is the first research to investigate PR as a motivational state using a memory approach.

While we expected that more freedom-restrictive reminders would be more likely to activate PR-encoded memories, findings from Study 1 showed no interaction between our experimental conditions and the activation of PR memories on the outcomes. All freedom-restrictive reminders appeared to activate PR memories, possibly because each vignette evoked the mask mandate. This simple reminder seemed sufficient to trigger PR memories for some participants. Hence, Study 1 showed that individuals who possess PR memories that can be reactivated by any freedom-restrictive reminder tend to report greater NNPE. This prospective association was found over a week, ensuring that the effect was not due to the situational reactivation of a PR memory. Rather, this result reflects a broader tendency: individuals who possess such memories are potentially more likely to have them repeatedly triggered by freedom-restrictive contexts—gradually increasing their propensity to endorse NNPE. No such association was found for NPE. Congruent with past research, PR trait was positively associated with NNPE. Its effect was independent of PR memories, suggesting that several cognitive mechanisms underlie NNPE.

While Study 1 investigated the stable, cumulative effect of possessing PR memories—that are presumably frequently triggered by cues of freedom-restrictive contexts—on NNPE, Study 2 specifically investigated the immediate, situational effect of activating PR memories. It examined whether priming PR memories would situationally prompt endorsement of NNPE vs NPE. Study 2 confirmed the direct and causal impact of PR memories on NNPE. The experiment demonstrated that priming individuals with their own PR memory situationally led them to more strongly endorse NNPE compared to individuals primed with a non-PR memory or compared to control groups (i.e., individuals not primed with their own memory). Again, this association was not found for NPE. In Study 2, PR trait was not associated with political engagement.

4.6.1 Memories as a Source of Motivation

The memory-based approach adopted in this research highlights individual differences in experiencing PR (Brehm, 1966; Reynolds-Tylus, 2019). The findings suggest that the activation of PR-encoded memories exerts a motivational influence over NNPE, both *in situ* and over time. Memory activation serves as a generative model that informs on the repertoire of actions available in a specific situation (Conway, 2009). This repertoire is unique to each individual and is modulated by their past experiences, due to the information encoded within the memories (Philippe, 2022). When the memory activated is encoded with PR, a PR motivational state is triggered, and the individual is immediately prompted to act accordingly. Given PR is defined as a composite of negative cognitions and hostile anger, it is not surprising that PR memory activation favors endorsement of aggressive and high-risk political goal-pursuit behaviors (Dillard & Shen, 2005; Mühlberger & Jonas, 2019; Reynolds-Tylus, 2019) over normative and activist ones to restore freedom (Bartusevičius et al., 2023; Rains, 2013; Steindl et al., 2015). These findings extend past empirical literature that linked PR to lower adherence to COVID-19 socio-sanitary measures (Ball & Wozniak, 2021), unsafe health behaviors (Miller et al., 2006; Miller & Quick, 2010), and support for ideological violence (Bélanger et al., 2020). We propose that it may be memories of past events encoded with PR that, when reactivated by a new context, guide individuals to adopt non-normative behaviors. If such memories are central to this process, then this opens new avenues for clinical and social interventions targeting PR-encoded memories.

4.6.2 Memories as Distinct from Personality, Yet Contributing to it

In theory, personality traits represent stable individual variables that lead to predictable behaviors (e.g., Paunonen, 2003). However, a lingering issue is that a single personality trait can lead to a wide array of behavioral outcomes depending on the situation experienced, making it harder to predict behavioral patterns based on personality traits alone (Dingess & Wilt, 2020). Mischel & Shoda (1995) explained this variability by the presence of cognitive-affective units (e.g., affects, encodings, expectancies), which are specific to each person and activated by situational features. The interaction between the context and the activated cognitive-affective units is consistent, stable, and unique to each person, producing “if... then... signature” behavioral patterns (Ayduk & Gyurak, 2008; Mischel & Shoda, 1995). Specific situations therefore elicit corresponding behavioral responses depending on the cognitive-affective units activated, as a “reflection of the personality system itself” (Mischel & Shoda, 1995). In this research, PR-encoded memories are construed as an instance of these cognitive-affective units that, when activated by environmental cues, reactivate the memory’s PR component as a relevant action response in the current situation—thereby guiding the person toward greater

NNPE within that specific context. Conversely, PR trait represents the consistent patterns through which individuals feel, think, and behave during their lives. This research revealed an alternative individual dynamic pattern in which NNPE is situationally predicted by PR memory activation. PR traits therefore represent a baseline individual factor predicting broad orientations in political engagement over time, while PR memories explain the situational individual differences between NPE and NNPE. As such, it is not so much personality traits that guide behavioral intentions in each situation, but in part the accessible cognitive-affective units, in this case the PR-encoded memories activated (Mischel & Shoda, 1995; Philippe, 2022). Thus, although individuals can share similar personality (PR) traits, their PR-encoded memories represent the active ingredient in a situation that will guide NNPE.

The finding that individuals who possess PR memories chronically activated by freedom-restrictive reminders typically endorse more NNPE suggests that the resulting PR motivation is not just an immediate, fleeting response. Rather, it can contribute to the development of abstract self-aspects and personality over time (Singer & Salovey, 1993). Chronically reactivated PR memories may frequently lead people to experience a PR state, which fosters related emotions (e.g., hostility), cognitions (e.g., they try to control me), and behaviors (e.g., aggressive actions). Over time, as people consistently observe themselves reacting this way, they may begin to construct a self-concept and personality aligned with statements such as “I must protect my freedoms at all costs; restrictions make me angry” (Hong & Faedda, 1996). Thus, memories can guide behavioral intentions in specific situations, independently of personality traits, while also contributing to shape those traits over time (Philippe, 2022).

4.6.3 Implications and Future Research Directions

Study 1 yielded no significant interaction between experimental conditions and PR memory activation. The mention of the mandatory mask in the control vignette seemed sufficient to prompt a PR memory for some participants, even though the protagonist was only scowled at and still allowed to complete their groceries. This suggests that in a socio-political context like the COVID-19 pandemic, constant exposure to freedom restrictions can readily elicit PR memories, regardless of whether the restricting situation resolved positively or of the severity of the consequence for not complying with the socio-sanitary measures (Ball & Wozniak, 2021; Rosenberg & Siegel, 2018). Further research is needed to confirm that PR memories are easily reactivated by any freedom restriction reminders and to assess whether enduring residual freedom restriction cues (e.g., signs mandating mask wearing in hospitals) still activate PR memories years after the COVID-19 pandemic, thereby potentially exerting lasting influences on NNPE.

Moreover, our findings are congruent with past research suggesting that NPE and NNPE represent two different behavioral pathways with distinctive motivational roots (e.g., Bélanger et al., 2020). Although our results do not inform on the motivational dynamics of NPE, we encourage future research to adopt a memory-based approach to identify motivational characteristics encoded in episodic memories that drive NPE.

Lastly, although our findings relate to NNPE endorsement and not to the direct partake in aggressive actions, expressing favourable attitudes towards such actions normalizes them (Godin & Kok, 1996; Gøtzsche-Astrup et al., 2020; Kaczkowski et al., 2020). Such favourable attitudes should be cautiously considered, as they are a precursor for creating conditions in which individuals vulnerable to PR memory activation may be intentionally targeted to elicit a PR state and encourage partaking in non-normative political actions. Individuals are not impermeable to their environment, otherwise past PR experiences would not be so easily triggered. Rather, individuals develop through interactions with others and within society as a structured system. Therefore, identifying the specific external social influences, particularly in contexts of crisis, that foster PR cues is essential to move beyond an exclusively individual-oriented perspective and inform on additional intervention avenues. For instance, during the COVID-19 pandemic, individuals were frequently reminded of their restricted freedoms via media coverage, omnipresent symbols (e.g., masks, social distancing; Ball & Wozniak, 2021; Mishi et al., 2024), or officials who tended to use a dogmatic and controlling language to communicate public health information, which is known to prompt PR (Clayton, 2022; Reynolds-Tylus, 2019). In a world that faces growing risks of societal crises (pandemics, climate-related catastrophes, etc.), it becomes necessary to examine how societies manage populations and identify which practices are most likely to trigger PR memories.

4.6.4 Limitations

This research has several limitations. First, the small sample of participants reporting PR memories across three experimental groups in Study 1 restricted statistical power. This led us to more heavily focus recruitment on conspiracy believers for Study 2 (since those who reported PR memories in Study 1 tended to endorse more conspiracy theories) and to only use the severe freedom-restricting vignette to maximize the likelihood of participants reporting PR memories. Although recruiting conspiracy believers was relevant for the context and purposes of this research, it lowered our findings' generalizability. While controlling for conspiracy beliefs did not affect PR memories' effect on NNPE, additional research is needed to generalize our results to other social groups. Another limitation is that Study 1's experimental conditions did not

produce the expected results. It is therefore not possible to rule out the possibility that people report fewer PR memories after reading a control vignette that is non-restrictive and that those PR memories do not predict NNPE. A refined experimental design using vignettes with and without freedom restrictions is needed, instead of vignettes depicting varying consequence severity. Lastly, although two independent research assistants assessed the presence of PR in memories, a self-report questionnaire assessing PR state could be adapted to allow participants to subjectively rate the intensity of PR in their own memories—potentially increasing variability in PR memory scores.

4.7 Conclusion

The present research unveiled a dynamic motivational mechanism, differentiating NNPE from NPE, using a memory-based approach. The findings contribute to the broader literature on PR, motivation, and endorsement of political actions, shedding light on how past experiences shape present-day hostility and reactance to perceived external constraints.

4.8 References

- Ayduk, Ö. & Gyurak, A. (2008). Applying the cognitive-affective processing systems approach to conceptualizing rejection sensitivity. *Social and Personality Psychology Compass*, 2(5), 2016-2033. <https://doi.org/10.1111/j.1751-9004.2008.00143.x>
- Ball, H., & Wozniak, T. R. (2021). Why do some Americans resist COVID-19 prevention behavior? An analysis of issue importance, message fatigue, and reactance regarding COVID-19 messaging. *Health Communication*, 37(14), 1812-1819. <https://doi.org/10.1080/10410236.2021.1920717>
- Bakowski, P. (2023). *United States: Domestic violent extremism on the rise*. European Parliamentary Research Service. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/754561/EPRS_BRI(2023)754561_EN.pdf
- Bartusevičius, H., van Leeuwen, F., & Petersen, M. B. (2023). Political repression motivates anti-government violence. *Royal Society Open Science*, 10(221227), 1-18. <https://doi.org/10.1098/rsos.221227>
- Becker, J. C., & Tausch, N. (2015). A dynamic model of engagement in normative and non-normative collective action: Psychological antecedents, consequences, and barriers. *European Review of Social Psychology*, 26(1), 43-92. <https://doi.org/10.1080/10463283.2015.1094265>
- Bélanger, J. J., Nisa, C. F., Schumpe, B. M., Gurmu, T., Williams, M. J., & Putra, I. E. (2020). Do counter-narratives reduce support for ISIS? Yes, but not for their target audience. *Frontiers in Psychology*, 11(1059), 1-11. <https://doi.org/10.3389/fpsyg.2020.01059>
- Bélanger, J. J., Schumpe, B. M., Nisa, C. F., & Moyano, M. (2021). When countermessaging backfires: The role of obsessive passion in psychological reactance. *Motivation Science*, 7(1), 83-95. <https://doi.org/10.1037/mot0000206>
- Bertuzzi, N. (2021). Conspiracy theories and social movements studies: A research agenda. *Sociology Compass*, 15(12), e12945. <https://doi.org/10.1111/soc4.12945>
- Biondillo, M. J., & Pillemer, D. B. (2015). Using memories to motivate future behaviour: An experimental exercise intervention. *Memory*, 23(3), 390-402. <https://doi.org/10.1080/09658211.2014.889709>
- Brehm, J. W. (1966). *A Theory of Psychological Reactance*. New York, NY: Academic Press.
- Brehm, S. S., & Brehm, J. W. (1981). *Psychological reactance: A theory of freedom and control*. New York, NY: Academic Press.
- Brown, N. R. & Schopflocher, D. (1998). Event clusters: An organization of personal events in autobiographical memory. *Psychological Science*, 9(6), 470-475. <https://doi.org/10.1111/1467-9280.00087>
- Carignan, M. È., Morin, D., Daxhelet, M. L., Bédard, S., Champagne-Poirier, O., Choquette, E., Aliaga, G., Khennache, Y., & Kamela, E. K. (2022). *Le mouvement conspirationniste au Québec: Leaders,*

discours et adhésion. Chaire UNESCO en prévention de la radicalisation et de l'extrémisme violents. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://chaireunesco-prev.ca/wp-content/uploads/2022/06/UNESCO-PREV_RapportRecherche_MEI_final.pdf

- Carroll, R. (2024, August 7th). "My thoughts about the city have changed": Belfast residents consider future after riots. *The Guardian*. <https://www.theguardian.com/uk-news/article/2024/aug/07/my-thoughts-about-the-city-have-changed-belfast-residents-consider-future-after-riots>
- Clayton, R. B. (2022) On the psychophysiological and defensive nature of psychological reactance theory. *Journal of Communication*, 72(4), 461-475. <https://doi.org/10.1093/joc/jqac016>
- Conway, M. A. (2009). Episodic memories. *Neuropsychologia*. 47(11), 2305-2313. <https://doi.org/10.1016/j.neuropsychologia.2009.02.003>
- Conway, M., & Pleydell-Pearce, C. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review*, 107, 261–288. <https://doi.org/10.1037//0033-295X.107.2.261>
- Corning, A. F., & Myers, D. J. (2002). Individual orientation toward engagement in social action. *Political Psychology*, 23(4), 703–729. <https://doi.org/10.1111/0162-895X.00304>
- Dillard, J. P., & Shen, L. (2005) On the nature of reactance and its role in persuasive health communication. *Communication Monographs*, 72(2), 144-168. <https://doi.org/10.1080/03637750500111815>
- Dingess, A. & Wilt, J. (2020). Cognitive-affective processing system (CAPS). In B. J. Carducci, C. S. Nave, J. S., Mio, & R. E., Riggio (Eds.), *The Wiley encyclopedia of personality and individual differences* (pp. 129-133). John Wiley & Sons Ltd. <https://doi.org/10.1002/9781119547143>
- Gino, F., & Desai, S. D. (2012). Memory lane and morality: How childhood memories promote prosocial behavior. *Journal of Personality and Social Psychology*, 102(4), 743–758. <https://doi.org/10.1037/a0026565>
- Godin, G. & Kok G. (1996). The theory of planned behaviour: A review of its applications to health-related behaviours. *American Journal of Health Promotion*, 11(2), 87-98. <https://doi.org/10.4278/0890-1171-11.2.87>
- Gøtzsche-Astrup, O., van den Bos, K., & Hogg, M. A. (2020). Radicalization and violent extremism: Perspectives from research on group processes and intergroup relations. *Group Processes & Intergroup Relations*, 23(8), 1127-1136. <https://doi.org/10.1177/1368430220970319>
- Hong, S.-M., & Faedda, S. (1996). Refinement of the Hong Psychological Reactance Scale. *Educational and Psychological Measurement*, 56(1), 173–182. <https://doi.org/10.1177/0013164496056001014>
- Houle, I. et Philippe, F. (2017). Need satisfaction in episodic memories impacts mood at retrieval and well-being over time. *Personality and Individual Differences*, 105, 194-199. <http://dx.doi.org/10.1016/j.paid.2016.09.059>

- Houle, I., Philippe, F. L., Lecours S., & Roulez, J. (2018). Networks of self-defining memories as a contributing factor to emotional openness. *Cognition and Emotion*, 32(2), 363-370. <https://doi.org/10.1080/02699931.2017.1284045>
- Imhoff, R., Dieterle, L., & Lamberty, P. (2020). Resolving the Puzzle of Conspiracy Worldview and Political Activism: Belief in Secret Plots Decreases Normative but Increases Nonnormative Political Engagement. *Social Psychological and Personality Science*, 12(1), 71-79. <https://doi.org/10.1177/1948550619896491>
- Institut national de santé du Québec (2022, October 5th). *Ligne du temps COVID-19 au Québec*. <https://www.inspq.qc.ca/covid-19/donnees/ligne-du-temps>
- Kaczkowski W., Swartout, K. M., Branum-Martin, L., Horgan, J. G., & Lemieux, A. F. (2020). Impact of perceived peer attitudes and social network diversity on violent extremist intentions. *Terrorism and Political Violence*, 34(8), 1530-1548. <https://doi.org/10.1080/09546553.2020.1808466>
- Klar, M., & Kasser, T. (2009). Some benefits of being an activist: Measuring activism and its role in psychological well-being. *Political Psychology*, 30(5), 755-777. <https://doi.org/10.1111/j.1467-9221.2009.00724.x>
- Kuwabara, K. J., & Pillemer, D. B. (2010). Memories of past episodes shape current intentions and decisions. *Memory*, 18(4), 365–374. <https://doi.org/10.1080/09658211003670857>
- Kydd, A. H. (2021). Decline, radicalization and the attack on the US Capitol. *Violence*, 2(1), 3-23. <https://doi.org/10.1177/26330024211010043>
- Leander, N. P., vanDellen, M. R., Rachl-Willberger, J., Shah, J., Fitzsimons, G. J., & Chartrand, T. L. (2016). Is freedom contagious? A self-regulatory model of reactance and sensitivity to deviant peers. *Motivation Science*, 2(4), 256–267.
- Leonard, M.-J. & Philippe, F. (2025). Priming need-frustrating memories sparks conspiracy beliefs: A self-determination theory perspective. *Journal of Personality*, 1-17. <https://doi.org/10.1111/jopy.70032>
- Levinsson, A., Miconi, D., Li, Z., Frounfelker, R. L., Rousseau, C. (2021). Conspiracy theories, psychological distress, and sympathy for violent radicalization in young adults during the covid-19 pandemic: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 18, 7846. <https://doi.org/10.3390/ijerph18157846>
- Mace, J. H., & Unlu, M. (2020). Semantic-to-autobiographical memory priming occurs across multiple sources: Implications for autobiographical remembering. *Memory & Cognition*, 48(6), 931–941. <https://doi.org/10.3758/s13421-020-01029-1>
- McCauley, C., & Moskaleiko, S. (2017). Understanding political radicalization: The two-pyramids model. *American Psychologist*, 72(3), 205–216. <https://doi.org/10.1037/amp0000062>
- McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica (Zagreb)*, 22(3), 276-282.

- Merson, B., & Pezdek, K. (2019). Target-related autobiographical memories affect dietary intake intentions. *Memory*, 27(10), 1438-1450. <https://doi.org/10.1080/09658211.2019.1674335>
- Miller, C. H., Burgoon, M., Grandpre, J. R., & Alvaro, E. M. (2006). Identifying principal risk factors for the initiation of adolescent smoking behaviors: the significance of psychological reactance. *Health Communication*, 19(3), 241–252. https://doi.org/10.1207/s15327027hc1903_6
- Miller, C. H., & Quick, B. L. (2010). Sensation seeking and psychological reactance as health risk predictors for an emerging adult population. *Health Communication*, 25(3), 266–275. <https://doi.org/10.1080/10410231003698945>
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, 102(2), 246-268. <https://doi.org/10.1037/0033-295X.102.2.246>
- Mishi, S., Mushonga, F. B., Anakpo, G. (2024). The use of fear appeals for pandemic compliance: A systematic review of empirical measurement, fear appeal strategies and effectiveness. *Heliyon*, 10(9). <https://doi.org/10.1016/j.heliyon.2024.e30383>
- Moore, A. (2016). Conspiracy and conspiracy theories in democratic politics. *Critical Review*, 28(1), 1-23. <https://doi.org/10.1080/08913811.2016.1178894>
- Mühlberger, C., & Jonas, E. (2019). Reactance theory. In Kai Sassenberg & Michael L. W. Vliek (Eds.), *Social psychology in action* (pp. 79-94). Springer Nature Switzerland AG. https://doi.org/10.1007/978-3-030-13788-5_6
- Paunonen, S. (2003). Big five factors of personality and replicated predictions of behavior. *Journal of Personality and Social Psychology*, 84(2), 411–424. <https://doi.org/10.1037/0022-3514.84.2.411>
- Philippe, F., (2022). Episodic memories as proxy or independent representations: A theoretical review and an empirical test of distinct episodic memories on work outcomes. *New Ideas in Psychology*, 64, 100913. <https://doi.org/10.1016/j.newideapsych.2021.100913>
- Philippe, F. L., & Bernard-Desrosiers, L. (2017). The odyssey of episodic memories: Identifying the paths and processes through which they contribute to well-being. *Journal of Personality*, 85(4), 518-529. <https://doi.org/10.1111/jopy.12257>
- Philippe, F. L., Koestner, R., Beaulieu-Pelletier, G., & Lecours, S. (2011). The role of need satisfaction as a distinct and basic psychological component of autobiographical memories: A look at well-being. *Journal of Personality*, 79(5), 905-938. <https://doi.org/10.1111/j.1467-6494.2010.00710.x>
- Philippe, F. L., Koestner, R., Beaulieu-Pelletier, G., Lecours, S., & Lekes, N. (2012). The role of episodic memories in current and future well-being. *Personality and Social Psychology Bulletin*, 38(4), 505-519. <https://doi.org/10.1177/0146167211429805>
- Public Safety Canada. (June 7th, 2022). February 14, 2022 *Declaration of Public Order Emergency: Explanation pursuant to subsection 58(1) of the Emergencies Act*. Government of Canada. <https://www.publicsafety.gc.ca/cnt/trnsprnc/brfng-mtrls/prlmntry-bndrs/20220625/10-en.aspx>

- Pummerer, L. (2022). Belief in conspiracy theories and non-normative behavior. *Current Opinion in Psychology*, 47, 101394. <https://doi.org/10.1016/j.copsyc.2022.101394>
- Rains, S. A. (2013). The nature of psychological reactance revisited: A meta-analytic review. *Human Communication Research*, 39, 47-73. <https://doi.org/10.1111/j.1468-2958.2012.01443.x>
- Rasmussen, A. S., & Berntsen, D. (2009). The possible functions of involuntary autobiographical memories. *Applied Cognitive Psychology*, 23(8), 1137-1152. <https://doi.org/10.1002/acp.1615>
- Reynolds-Tylus, T. (2019) Psychological reactance and persuasive health communication: A review of the literature. *Frontiers in Communication*, 4(56). <https://doi.org/10.3389/fcomm.2019.00056>
- Reynolds-Tylus, T., & Schill, D. (2022) An application of psychological reactance theory to college student voter registration and mobilization, *Journal of Political Marketing*, 21(3-4), 259-271, <https://doi.org/10.1080/15377857.2022.2099584>
- Rosenberg, B., & Siegel, J. T. (2018). A 50-year review of psychological reactance theory: Do not read this article. *Motivation Science*, 4(4), 281-300. <https://doi.org/10.1037/mot0000091>
- Satariano, A., & Alba, D. (2020, April 11th). Burning cell towers, out of baseless fear they spread the Virus. *The New York Times*. <https://www.nytimes.com/2020/04/10/technology/coronavirus-5g-uk.html>
- Smith, C. A. & Lazarus, R. S. (1990). Chapter 23: Emotion and adaptation. In L. A. Pervin (Ed.), *Handbook of personality: Theory and research* (p. 609-637). Guilford, New York.
- Steindl, C., Jonas, E., Sittenthaler, S., Traut-Mattausch, E., & Greenberg, J. (2015). Understanding psychological reactance: New developments and findings. *Zeitschrift für Psychologi*, 223(4), 205–214. <https://doi.org/10.1027/2151-2604/a000222>
- Tausch, N., Becker, J. C., Spears, R., Christ, O., Saab, R., Singh, P., & Siddiqui, R. N. (2011). Explaining radical group behavior: Developing emotion and efficacy routes to normative and nonnormative collective action. *Journal of Personality and Social Psychology*, 101(1), 129–148. <https://doi.org/10.1037/a0022728>
- Taylor, S., & Asmundson, G. J. G. (2021). Negative attitudes about facemasks during the COVID-19 pandemic: The dual importance of perceived ineffectiveness and psychological reactance. *PLoS ONE*, 16(2), e0246317. <https://doi.org/10.1371/journal.pone.0246317>
- Uscinski, J., Enders, A., Diekman, A., Funchion, J., Klofstad, C., Kuebler, S., Murthi, M., Premaratne, K., Seelig, M., Verdear, D., & Wuchty, S. (2022). The psychological and political correlates of conspiracy theory beliefs. *Scientific Reports*, 12, 21672. <https://doi.org/10.1038/s41598-022-25617-0>
- Uysal, M. S., Saavedra, P., & Drury, J. (2024). Beyond normative and non-normative: A systematic review on predictors of confrontational collective action. *British Journal of Social Psychology*, 63, 1385-1409. <https://doi.org/10.1111/bjso.12735>

Wright, S. C., Taylor, D. M., & Moghaddam, F. M. (1990). Responding to membership in a disadvantaged group: From acceptance to collective protest. *Journal of Personality and Social Psychology*, 58(6), 994-1003. <https://doi.org/10.1037/0022-3514.58.6.994>

CHAPITRE 5

DISCUSSION GÉNÉRALE

La présente thèse s'est intéressée au processus motivationnel menant à l'endossement de TCs et au soutien d'un EPNC et, plus spécifiquement, à *comment* ce processus peut prendre place. À cette fin, une approche par les souvenirs incorporant les principes de la théorie de l'autodétermination a été intégrée aux principes du modèle des 3N.

Le premier article visait à établir les liens théoriques entre le conspirationnisme et la théorie de l'autodétermination de manière à favoriser la compréhension de ce phénomène et à concevoir des avenues d'intervention possibles. Le second article avait pour objectifs (1) d'établir une relation entre l'activation de souvenirs encodés avec frustration des besoins psychologiques dans un contexte de restriction des libertés et l'endossement accru de TCs liées au COVID-19 et (2) de démontrer la possibilité d'une influence immédiate de ces souvenirs, c'est-à-dire que l'activation de ces souvenirs contribuerait à augmenter dans l'immédiat l'endossement d'une nouvelle TC, l'intensité de la colère élicitée par cette TC et le désir de la propager. Le troisième et dernier article visait (3) à démontrer que, pour certains individus, l'exposition à un contexte de restrictions des libertés activerait des souvenirs encodés avec réactance, lesquels seraient prédictifs d'un endossement accru d'EPNC et non d'EPC, ainsi que (4) d'établir que l'amorçage subliminal d'un souvenir encodé avec réactance accentuerait *in situ* l'endossement d'un EPNC et non d'un EPC.

Le présent chapitre met en relation l'ensemble des résultats présentés dans la thèse. Dans un premier temps, une synthèse des éléments théoriques abordés et des résultats rapportés est présentée. Dans un deuxième temps, les contributions théoriques et empiriques à la théorie de l'autodétermination sont approfondies, en soulignant d'abord l'apport unique d'une approche par les souvenirs pour comprendre le processus motivationnel menant au conspirationnisme et à l'EPNC. La fonction compensatoire des TCs et de l'EPNC est ensuite discutée, de même que les effets de l'activation chronique des souvenirs et la modulation de la frustration de l'autonomie en narratifs de vie. L'applicabilité théorique du modèle présenté à d'autres TCs est également explorée. Dans un troisième et dernier temps, des propositions pour orienter les futures recherches sont abordées, de même que les limites de la thèse.

5.1 Synthèse des résultats de la thèse

Le premier article présenté dans le Chapitre 2 de la thèse s'est centré sur la conception du conspirationnisme comme un phénomène pouvant mener à la radicalisation violente en se basant sur le modèle des 3N (Kruglanski *et al.*, 2019), auquel a été intégrée la théorie de l'autodétermination (Ryan et Deci, 2017). Les TCs ont été définies comme une forme de narratif idéologique pouvant mener à l'endossement d'un EPNC suite à la précipitation d'une quête de signification. Il était initialement présumé que cette quête de signification peut prendre racine dans l'activation de souvenirs encodés avec une frustration des besoins d'autonomie, de compétence et d'appartenance. Toutefois, à la lumière des résultats présentés dans le second article du Chapitre 3, il s'avère que la quête de signification se reflète dans l'activation de souvenirs encodés spécifiquement avec frustration du besoin d'autonomie.

En effet, les résultats présentés dans le Chapitre 3 soutiennent partiellement le premier objectif de la thèse. Ils montrent qu'en contexte de restriction des libertés, ce sont les personnes sujettes à l'activation de souvenirs encodés avec frustration de l'autonomie, et non d'appartenance et de compétence, qui endossent un plus haut niveau de TCs liées au COVID-19. Ainsi, un niveau plus élevé de frustration de l'autonomie encodé prédit un endossement accru de TCs une semaine plus tard, et ce, au-delà du niveau quotidien général de frustration de l'autonomie et du trait de réactance, qui sont également des prédicteurs. Un niveau général inférieur de frustration du besoin de compétence est également associé à un endossement plus sévère de TCs. Le second objectif de cet article est validé ; l'activation subliminale de souvenirs encodés avec frustration de l'autonomie entraîne dans l'immédiat des réactions plus vives envers une nouvelle (fausse) TC comparativement à l'activation subliminale d'un souvenir encodé avec une autonomie satisfaite et comparativement à un groupe non-activé. Spécifiquement, les personnes activées subliminalement avec un souvenir encodé avec frustration de l'autonomie rapportent davantage être en accord avec une nouvelle TC, expriment une colère plus sévère et indiquent un plus grand désir de propager cette nouvelle TC. Dans ce cas-ci, le niveau général de frustration du besoin d'autonomie n'influence pas les réactions des personnes suite à la lecture d'une nouvelle TC.

Les résultats présentés dans le Chapitre 4 confirment partiellement le troisième objectif de la thèse, étant donné que l'exposition à des situations décrivant des restrictions plus sévères ne générât pas davantage de souvenirs encodés avec réactance comparativement à l'exposition à la situation contrôle, tel qu'initialement prévu. En fait, il semble que l'activation de souvenirs encodés avec réactance soit sensible à tout rappel de restriction des libertés, même subtile. En retour, l'activation de ces souvenirs prédit un plus grand EPNC, et

ce, indépendamment du trait de réactance. Aucune association de ce type n'a été constatée pour l'EPC. Le dernier objectif examiné a affiné notre compréhension de la relation directe entre les souvenirs encodés avec réactance et l'EPNC, en démontrant que l'activation subliminale de ces souvenirs augmente dans l'immédiat le risque qu'une personne soutienne un EPNC pour exprimer un désaccord avec l'État. Encore une fois, cette activation n'a pas eu d'effet sur le soutien de l'EPC. Ainsi, ces résultats distinguent partiellement l'engrenage motivationnel de l'EPNC vs l'EPC et démontrent que l'EPNC est stimulé par l'activation de souvenirs d'événements passés caractérisés par des réactions hostiles et agressives. De plus, ces résultats soutiennent que les souvenirs ont une valeur motivationnelle qui leur est propre dans le cadre de nos réactions spontanées, étant donné que le trait de réactance n'avait pas d'effet sur l'EPNC dans cette expérimentation.

Globalement, les présentes études mettent en évidence le rôle que peuvent jouer nos souvenirs pour amorcer et influencer l'endossement de TCs et le soutien d'un EPNC à titre de réponses compensatoires, et ce, au-delà de nos traits de personnalités et de nos conceptions générales de soi stables. Ces résultats sont congruents avec les études passées démontrant que les représentations cognitives-affectives-comportementales des souvenirs sont des facteurs prédicteurs de nos réactions dans des situations spécifiques, car elles contextualisent la personne face à diverses situations passées (Conway *et al.*, 2004 ; Mishel et Shoda, 1995). Ceci offre une explication à l'effet que deux personnes aux profils psychologiques globalement similaires peuvent réagir de façons diamétralement opposées dans une même situation. Ainsi, certaines personnes peuvent réagir aux situations restrictives par une attitude défensive et compensatoire dû à l'activation de souvenirs encodés avec frustration de l'autonomie et/ou avec réactance, ce qui contribue à expliquer non seulement des variances inter-individuelles, mais également intra-individuelles. Ces résultats reflètent un processus dynamique modulé par le vécu unique de chacun, qui est ravivé dans le présent.

5.2 Contributions et implications

5.2.1 Les souvenirs comme base motivationnelle

Au-delà des vulnérabilités interpersonnelles liées à l'endossement de TCs et d'un EPNC, l'approche par les souvenirs permet d'explorer des vulnérabilités intra-individuelles alternatives pour ces phénomènes. Plus spécifiquement, les souvenirs encodés avec frustration de l'autonomie et/ou avec réactance sont démontrés comme des facteurs contribuant au processus motivationnel du conspirationnisme et de l'EPNC respectivement.

Les caractéristiques encodées dans le souvenir, ici frustration de l'autonomie et réactance, mènent à des conséquences cognitivo-comportementales différentes, car ces caractéristiques constituent des représentations cognitives-affectives-comportementales distinctes, qui élicitent conséquemment des réponses spécifiques (Mishel et Shoda, 1995 ; Rubin, 2006). Lorsque ces représentations cognitives-affectives-comportementales sont activées par notre cerveau, elles permettent de faire sens de l'environnement actuel, de l'interpréter, ainsi que d'informer sur les réactions appropriées dans une situation donnée, le tout basé sur nos réactions passées.

Appliqué aux TCs, c'est la frustration du besoin d'autonomie qui est la composante cognitive-affective du souvenir qui semble propulser leur endossement, du moins en partie, et non la frustration du besoin de compétence et d'appartenance. Ces souvenirs sont marqués par une dissonance entre ce que l'environnement externe exige et les valeurs et désirs internes de la personne, qui se sent brimée dans ses choix et actions (Deci et Ryan, 2000). Ces souvenirs jouent le rôle de sonnette d'alarme pour indiquer la présence d'une menace envers son autonomie et d'un risque sur sa volition, ce qui génère en retour un sentiment d'insécurité dans le présent (Philippe, 2022 ; Vansteenkiste et Ryan, 2013). Ainsi, face à une situation, l'activation de souvenirs encodés avec frustration de l'autonomie fragilise le sentiment de contrôle, facilite la perception de coercition et précipite l'interprétation de la situation comme étant hostile (Philippe, 2023 ; Philippe *et al.*, 2011b). Dans le cadre de cette thèse, il est montré que ces souvenirs contribuent à prédire l'endossement de TCs au fil du temps, en plus de démontrer que leur activation inconsciente contribue à engendrer instantanément un risque accru d'endosser une nouvelle TC, d'y réagir avec colère et de désirer prendre action en la propageant auprès de son entourage. Il semble ainsi que l'activation de ces souvenirs motive une quête compensatoire d'autonomie qui peut se manifester par une ouverture cognitive à de nouvelles TCs.

La nature motivationnelle de l'EPNC, pour sa part, se joue dans les souvenirs encodés avec réactance. Bien que la réactance partage des similarités avec la frustration de l'autonomie par rapport à la notion de perte de contrôle et de sentiment de coercition, la nature subjective de ces variables demeure distincte (Dillard et Shen, 2005 ; Mühlberger et Jonas, 2019 ; Vansteenkiste et Ryan, 2013). En effet, la réactance est vécue et rapportée avec une moins grande frustration subjective des besoins psychologiques (Leonard *et al.*, soumis pour publication). Il semble que la réactance donne lieu à une prise d'action oppositionnelle active et impulsive, ce qui laisse place à une extériorisation de l'inconfort (Leander *et al.*, 2016; Mühlberger et Jonas, 2019; Smith et Lazarus, 1990). Une telle extériorisation évacue l'inconfort interne, de par

l'impression immédiate de reprise de contrôle sur l'insécurité initiale (Leander *et al.*, 2016; Robertson *et al.*, 2012 ; Steindl *et al.*, 2015). Les souvenirs encodés avec réactance semblent donc agir comme un répertoire de référence pour exprimer ses émotions négatives et ses cognitions hostiles. Il semble que pour certains, ce répertoire est disponible à tout moment, même lors de situations objectivement peu restrictives, afin de se défendre de toutes contraintes et injustices potentielles, tel que démontré par l'activation subliminale de souvenirs encodés avec réactance qui précipite *in situ* un soutien accru d'EPNC.

Les souvenirs encodés avec frustration de l'autonomie et avec réactance semblent faciliter un processus d'ajustement compensatoire mésadapté de par le fait qu'ils contribuent à générer une ouverture cognitive (1) au rejet, et même au déni du *statu quo*, pour favoriser l'endossement de TCs et (2) au soutien de l'usage de comportements oppositionnels et agressifs pour neutraliser un contexte vécu comme aliénant et injuste. Ces souvenirs ne semblent donc pas favoriser un ajustement reflétant une acceptation authentique de son pouvoir d'action véritable face à une situation et envers des figures d'autorité restrictives (Philippe, 2022 ; Robertson *et al.*, 2012 ; Vansteenkiste et Ryan, 2013).

Évidemment, l'activation inconsciente de souvenirs encodés avec frustration de l'autonomie et/ou avec réactance joue un rôle partiel au sein de ces processus motivationnels compensatoires. Ces processus compensatoires sont complexes et peuvent être propulsés par d'autres facteurs qui n'ont pas été pris en compte et observés dans le cadre de la présente thèse.

5.2.2 La fonction compensatoire des théories du complot et de l'engagement politique non conventionnel

Endosser des TCs pourrait servir la fonction de compenser pour la frustration générée par les souvenirs encodés avec une frustration de l'autonomie en offrant potentiellement un sentiment de sécurité, certitude et contrôle (Biddleston *et al.*, 2025 ; Deci et Ryan, 2000), aussi futile que ce sentiment puisse être (Jolley et Douglas, 2014b ; van Prooijen, 2020). Effectivement, les narratifs conspirationnistes ont cette qualité d'expliquer la valeur frustrante d'une situation et, ce faisant, de justifier l'individu dans son expérience aversive, autant présente que passée (Douglas *et al.*, 2017 ; van Prooijen, 2020 ; Vansteenkiste et Ryan, 2013). Cette justification inflexible repose, en partie, sur le fait de démoniser et blâmer un groupe pour l'inconfort ressenti, éclipsant possiblement les éléments personnels appartenant à l'individu qui peuvent contribuer à son état (Goertzel, 2010 ; van Prooijen, 2020) et sur lesquels l'individu a réellement un pouvoir d'action.

Dans un contexte comme celui de la pandémie de COVID-19, qui fut marqué par l'incertitude, les changements constants et la nouveauté, une TC peut constituer un point de repère intransigeant pour ceux dont l'autonomie est vécue comme frustrée. Cette stratégie d'ajustement rigide semble offrir certitude, étant résistante aux informations contradictoires (Lukić *et al.*, 2019 ; van Prooijen et Douglas, 2017 ; Wood *et al.*, 2012). Cette stratégie peut également protéger de la dissonance cognitive, étant donné que les informations incohérentes relevées entre le narratif et l'environnement perçu comme coercitif sont facilement classées comme mensongères et faisant partie du complot (Gagliardi, 2023 ; van Prooijen, 2022). Ainsi, grâce à ces narratifs inflexibles, il ne serait pas nécessaire de s'adapter et d'intégrer rapidement de nouvelles informations parfois contradictoires durant une crise sanitaire. Cette semblance de stabilité pourrait être maintenue par la modélisation d'un monde structuré et sans ambiguïté, dont le véritable fonctionnement est « révélé » par les TCs. Les TCs semblent ainsi réduire la complexité d'événements contrariants à des explications simples et sans nuances, référant constamment à une menace cachée (van Prooijen, 2020 ; van Prooijen et Douglas, 2017). Cette « vérité » implacable insufflerait un sentiment de contrôle en peignant une situation initialement complexe et instable comme cohérente et prévisible, offrant l'illusion de pouvoir déjouer des menaces et ainsi protéger son autonomie. Elles ont ainsi le potentiel de pallier à l'insécurité générée par les souvenirs encodés avec un besoin d'autonomie frustré.

En effet, les TCs pourraient agir d'échappatoire provisoire pour éviter de réfléchir sur la valeur frustrante de l'expérience. Il est attendu qu'un tel évitement nuise à l'acceptation de l'insécurité générée par les souvenirs encodés avec frustration de l'autonomie activés lors de situations qui nécessitent que l'on se conforme aux exigences d'autorités externes. Ainsi, les TCs peuvent être considérées comme des stratégies compensatoires, car elles pourraient agir comme frein à un ajustement adapté en neutralisant l'inconfort *via* une dissociation du *statu quo* (Vansteenkiste et Ryan, 2013). Cet évitement généré par les TCs, en retour, préviendrait possiblement une satisfaction authentique et durable du besoin d'autonomie. Au mieux, l'autonomie serait compensée temporairement par un sentiment de contrôle superficiel et éphémère, jusqu'à la prochaine situation restrictive activant à nouveau un souvenir encodé avec une frustration de l'autonomie (Leonard et Philippe, 2021; van Prooijen et Douglas, 2017; Sebire *et al.*, 2009). Au pire, l'endossement de TCs accroîtrait la frustration de l'autonomie en rappelant l'impuissance à démanteler un système menaçant et œuvrant dans le secret, soulignant la saillance du manque de contrôle et augmentant la frustration de l'autonomie (Denault *et al.*, 2026 ; Jolley et Douglas, 2014a, b).

Pour sa part, le soutien de l'EPNC semble être une manifestation de réactance. Dans ce cas, l'EPNC pourrait être une façon mésadaptée de s'ajuster à la perception de libertés injustement affectées en externalisant par défiance oppositionnelle des émotions hostiles négatives pour affirmer son contrôle et sa liberté (Leander *et al.*, 2016; Mühlberger et Jonas, 2019; Smith et Lazarus, 1990). L'EPNC permettrait ainsi un détachement et rejet des narratifs prescriptifs des figures d'autorités composant la société (ex : professionnels de la santé, institutions gouvernementales, etc.), ce que l'EPC ne permettrait pas entièrement. Effectivement, bien que l'EPC soit une prise d'action permettant d'exprimer son désaccord, ce type d'engagement citoyen s'inscrit dans le champ comportemental cautionné et normalisé par le *statu quo* (Corning et Myers, 2002 ; Uysal *et al.*, 2024). Dû à sa nature oppositionnelle et provocatrice, l'EPNC est à l'opposé de l'EPC. Non seulement l'EPNC permet d'exprimer son désaccord, il défie de surcroît les conventions établies par le *statu quo* (Tausch *et al.*, 2011; Uysal *et al.*, 2024). L'EPNC semble ainsi donner lieu à un affranchissement de la maîtrise de soi et à l'évacuation impulsive et immédiate des émotions hostiles. Cette forme d'engagement semble aussi entraîner une extériorisation des cognitions négatives en assurant une reprise de pouvoir sur l'objet externe coercitif. Ce type de stratégie d'ajustement devrait permettre une neutralisation des affects négatifs et une diminution de l'inconfort, sans toutefois être durable (Becker & Tausch, 2015 ; Robertson *et al.*, 2012 ; Vansteenkiste et Ryan, 2013).

Effectivement, il est attendu que le soutien accru de l'EPNC ne permette pas une réflexion et une assimilation des éléments à l'origine de son propre état de réactance, étant donné qu'il s'agit d'une réponse en réplique à l'environnement. En l'absence de réflexion et d'acceptation, le soutien d'un EPNC ne pourrait pas être basé sur des valeurs authentiques propres à la personne et sur une motivation intrinsèque, entravant ainsi la croissance personnelle (Klar et Kasser, 2009 ; Vansteenkiste et Ryan, 2013). L'EPNC serait ici associé à une domination transitoire sur l'environnement, plutôt qu'une stratégie de conciliation. Au lieu de favoriser un soulagement pérenne des expériences aversives présentes et passées, cette forme de réactance devrait entraîner une escalade des situations aversives (Mühlberger et Jonas, 2019 ; Steindl *et al.*, 2015). En effet, l'EPNC en soi est généralement rencontrée avec répression par les instances gouvernementales et peut créer des situations interpersonnelles conflictuelles (Onursal et Hobbs, 2025). Ces répercussions devraient être la source d'activation de souvenirs de réactance supplémentaires.

5.2.3 L'effet boule de neige de la chronicisation des souvenirs

L'activation de souvenirs a non seulement un effet motivationnel immédiat, mais également un effet qui perdure dans le temps (Leonard et Philippe, accepté pour publication ; Leonard *et al.*, soumis pour publication).

Cet effet dans le temps peut être dû à une activation fréquente de ces souvenirs, qui s'articulerait éventuellement en une boucle de rétroaction entre souvenirs et réactions compensatoires, qui se chronicise (Deci et Ryan, 2000; Vansteenkiste et Ryan, 2013). En retour, cette boucle de rétroaction accentuerait la sensibilité aux signaux environnementaux aptes à amorcer ces souvenirs et renforcerait la sévérité des réactions compensatoires, contribuant à la polarisation de l'individu et freinant sa croissance personnelle.

Effectivement, l'activation fréquente de souvenirs encodés avec autonomie frustrée risque de créer un effet boule de neige, c'est-à-dire que la chronicisation de ces souvenirs pourrait déclencher une spirale négative ascendante (*bottom-up*), qui rigidifierait les croyances conspirationnistes et amplifierait les perceptions inflexibles d'un monde dont il faut se méfier. En retour, les TCs sont susceptibles d'elles-mêmes cultiver un état de frustration de l'autonomie en activant des souvenirs encodés avec un besoin d'autonomie frustrée, dû au langage utilisé et au narratif mis de l'avant (Douglas *et al.*, 2017 ; Jolley et Douglas, 2014a, b). À force d'être activée, la puissance de cette relation bidirectionnelle pourrait s'intensifier, renforçant graduellement la conviction qu'il faut s'affranchir du *statu quo*, généralisant la méfiance et cristallisant la conception de soi comme devant défendre son intégrité à tout prix face aux manipulations de l'État et des personnes bénéficiant du maintien du *statu quo*. En tentant d'accommoder une sensibilité accrue aux expériences frustrant l'autonomie, l'adhérence rigide aux TCs pourrait générer des objectifs et comportements défensifs par motivation extrinsèque, obstruant une satisfaction durable et authentique du besoin d'autonomie (Ryan et Deci, 2017 ; van Petegem *et al.*, 2015). L'obstruction chronique des besoins étant un facilitant pour le développement d'un fonctionnement défensif oppositionnel, voire agressif envers l'environnement social (Deci et Ryan, 1985 ; Duriez *et al.*, 2007 ; van Petegem *et al.*, 2012 ; Vansteenkiste et Ryan, 2013), il est attendu que les objectifs et comportements émis extrinsèquement maintiennent la frustration de l'individu (van Petegem *et al.*, 2015), favorisent graduellement le retrait d'un soutien à l'EPC et génèrent, pour certains, des situations activant des souvenirs de réactance.

Pour les individus ayant appris à évacuer leur frustration envers les exigences externes avec réactance, une seconde boucle de rétroaction peut également se mettre en place, où l'activation de souvenirs encodés avec réactance se chronicise et l'EPNC qui en résulte augmente la susceptibilité de l'individu de se retrouver dans des situations aversives, voire dangereuses (ex : arrestation, conflits interpersonnels, etc.). En retour, la multiplication de ces instances peut s'encoder en des souvenirs de réactance, accentuant possiblement la sensibilité à interpréter l'environnement externe comme restrictif et coercitif (Philippe, 2022 ; Rosenberg et Siegel, 2018 ; Steindl *et al.*, 2015). Bien que ces souvenirs sont considérés comme moins frustrants au niveau

des besoins psychologiques comparativement aux souvenirs de non-réactance (Leonard *et al.*, soumis pour publication), la croissance personnelle risque de demeurer obstruée. Effectivement, les souvenirs encodés avec réactance semblent amener la personne à agir en réaction à un inconfort plutôt que par motivation intrinsèque. L'EPNC pourrait favoriser en retour le maintien des émotions hostiles, étant donné que ces émotions ne seraient pas intégrées. Ceci pourrait risquer d'accentuer progressivement les cognitions négatives envers les figures d'autorité (ex. : les règles ne s'appliquent pas à moi, on tente de me dominer, ma colère me permet de reprendre le contrôle, etc.) et de renforcer l'endossement d'actions de plus en plus extrêmes (Deci et Ryan, 2000 ; Vansteenkiste et Ryan, 2013 ; Singer et Salovey, 1993).

5.2.4 Les narratifs de vie modulés par la frustration du besoin d'autonomie

Il semble que la frustration du besoin d'autonomie soit un phénomène dynamique et subjectif lorsqu'observé en relation au contexte de vie (Vansteenkiste et Ryan ; 2013). Distinguer le construit de la frustration générale de l'autonomie de son construit homologue encodé au sein d'un souvenir permet de distinguer deux formes de vulnérabilité individuelle (Philippe et Bernard-Desrosiers, 2017; Philippe *et al.*, 2011a). D'un côté, la frustration générale de l'autonomie telle qu'évaluée dans la présente thèse illustre une vulnérabilité interpersonnelle, qui différencie les individus davantage sensibles à la détection d'éléments environnementaux perçus comme coercitifs. D'un autre côté, les souvenirs encodés avec frustration de l'autonomie semblent représenter une vulnérabilité intrapersonnelle modulée selon le contexte sociohistorique et personnel de chaque personne (Vansteenkiste et Ryan, 2013). Les souvenirs sont activés automatiquement lorsqu'ils partagent des similarités avec l'événement à interpréter (ex : être bousculé dans un escalier, être contraint de déménager dû à des rénovictions, fonds insuffisants sur une carte de crédit). Ces similarités peuvent être des caractéristiques de surface, incluant des éléments visuels ou auditifs (ex : cris de peur, symboles visuels), la localisation (ex : station de métro, milieu de travail), la présence de personnes (ex : membres de la famille ou personnes significatives pour l'individu), ou encore des thématiques (ex : position d'infériorité hiérarchique, victimisation familiale ; Philippe, 2022; Rasmussen et Berntsen, 2009). Au fil du temps, les souvenirs encodés et activés ont tendance à se regrouper autour de thèmes centraux (ex : être ostracisé par sa communauté, être victime de traitements injustes, devoir se protéger à tout prix) et peuvent s'agréger en narratifs de vie qui reflètent des structures identitaires générales de divers chapitres d'une vie (ex : être nouvellement parent durant la pandémie de COVID-19, ma carrière en développement de logiciels à l'aire de l'intelligence artificielle ; Conway *et al.*, 2004).

Ainsi, les narratifs de vie sont composés d'un amalgame de souvenirs, parfois encodés avec frustration de l'autonomie, d'attitudes stables et d'attentes globales par rapport à soi, son entourage et le monde qui sont, pour certains, fondamentalement ancrées dans le contrôle, la coercition et la contrainte (Conway *et al.*, 2004). Il est possible que certains narratifs de vie s'engorgent de plus en plus de souvenirs additionnels encodés avec frustration de l'autonomie, tout en éclipsant l'intégration de souvenirs réflexifs encodés avec satisfaction de l'autonomie. Ces narratifs de vie seraient ainsi marqués par une frustration de l'autonomie sous-jacente et contribueraient également au phénomène de compensation discuté préalablement, qui, en réponse à la valeur frustrante d'une expérience, mène à un engagement dans des réponses cognitives et comportementales par évitement ou par gain de récompenses externes, plutôt que par « acceptation et compréhension de normes et valeurs sociales » (Vansteenkiste et Ryan, 2013).

Toutefois, ces narratifs de vie pourraient évoluer si la personne s'engage à accepter la valeur frustrante d'événements passés et y porter un regard réflexif, qui soutient l'intégration de nouvelles expériences vécues avec satisfaction de l'autonomie. À force d'intégrer des souvenirs encodés avec satisfaction de l'autonomie, un narratif de vie pourrait progresser vers des structures identitaires associées à un sentiment général de volition et d'authenticité dans ses choix et graduellement privilégier l'accumulation de nouvelles expériences encodées avec satisfaction de l'autonomie.

5.2.5 Applicabilité à d'autres théories du complot

Les TCs peuvent être groupées selon leur thème principal (ex : inconduites gouvernementales, médecine/santé, partisanerie républicaine vs démocrate, etc. ; Enders *et al.*, 2021). La présente thèse repose sur l'étude de TCs relatives à la santé, et ce, dans un contexte socio-historique alimenté par des restrictions sur les libertés individuelles. Le modèle théorique employé indique que la frustration du besoin d'autonomie encodée dans les souvenirs est une variable d'influence significative au sein de ce type de TCs. Qu'en est-il toutefois de la transposabilité de ces résultats aux TCs de thématiques alternatives ?

D'un côté, il est possible que l'influence des souvenirs encodés avec frustration de l'autonomie soit un facteur contribuant à l'endossement d'autres variétés de TCs. Après tout, les études montrent que croire en une TC augmente le risque d'en croire une seconde (Williams *et al.*, 2025). De plus, les TCs ont tendance à migrer et à s'intégrer au sein d'autres TCs dont les thématiques sont différentes, ce qui en amplifie la complexité (Faehrmann et Zech, 2023). Par exemple, les TCs liées au COVID-19 ont intégré les TCs reliées au « Deepstate » du mouvement QAnon et actuellement les TCs du « Grand Remplacement »

s'incorporent aux narratifs de la manosphère (Faehrmann et Zech, 2023). Ainsi, il ne serait pas surprenant que l'interaction entre situation de restriction des libertés et souvenirs encodés avec frustration de l'autonomie soit un élément motivationnel qui participe à guider l'endossement de TCs alternatives dont les thématiques touchent d'autres sphères.

Toutefois, la saillance et la signification attachées aux TCs varient dans le temps en fonction des événements locaux et internationaux (Enders *et al.*, 2021). Bien que l'incertitude et la méfiance sous-tendent toutes les TCs, il est également probable que les résultats obtenus montrant une interaction entre situation et souvenir puissent varier en fonction de la thématique de la TC. En effet, Enders *et al.* (2021) suggèrent que les causes et conséquences des TCs varient selon leur thématique. Ainsi, il est possible que les souvenirs encodés avec frustration des besoins d'appartenance et de compétence soient des facteurs qui contribuent à d'autres types de TCs dans le cadre de contextes sociohistoriques alternatifs, dont la thématique diffère de celle de restriction des libertés (ex : instabilité économique, épidémie d'isolement à l'aire des réseaux sociaux) et qui exigent une interprétation et adaptation immédiate et efficace à d'autres types d'éléments de nouveauté. Par exemple, un contexte sociétal marqué par une prédominance de l'isolement social pourrait favoriser la survenue de situations de rejet interpersonnel et l'activation de souvenirs encodés avec frustration du besoin d'appartenance pour certains individus, ce qui pourrait résulter en un plus grand endossement de TCs d'ordre masculiniste. Un autre exemple serait qu'un contexte de vie marqué par l'exposition médiatique à des menaces nationalistes et des événements mondiaux distants, qui se répercutent dans le quotidien d'un individu (ex : coût du pétrole et de l'épicerie) pourrait activer des souvenirs encodés avec frustration de la compétence et mener à un endossement de TCs davantage politiques afin de faire sens de son environnement (ex : deepstate, QAnon). Bref, la présente thèse n'est pas en mesure de se positionner sur ces possibilités et davantage de recherche est nécessaire pour brosser un tableau complet des relations entre situations, souvenirs, besoins frustrés et TCs au sein de contextes diversifiés.

5.3 Implications potentielles et recherches futures

Les résultats présentés dans cette thèse mettent de l'avant l'interaction entre l'individu et son environnement pour mieux comprendre *comment* le processus motivationnel du conspirationnisme et de l'EPNC prend place. Ces résultats offrent l'occasion de s'intéresser aux implications potentielles autant pour le modèle des 3N que pour l'individu et pour la société.

Sur le plan du modèle des 3N, il est recommandé de poursuivre l'évaluation empirique de son application au cheminement vers l'endossement de TCs en y incorporant la théorie de l'autodétermination, afin de mieux cerner les boucles de rétroaction qui pourraient alimenter les trois piliers. Ainsi, nous secondons la question soulevée par Kruglanski *et al.* (2019) et invitons à examiner comment et pourquoi les narratifs importent dans le cheminement de la radicalisation violente. Par exemple, l'endossement de TCs permet-il éventuellement de satisfaire le besoin d'autonomie et, si tel est le cas, comment s'explique cette satisfaction (ex : validation expérientielle, facilitation du développement d'un réseau, prise d'action encouragée, etc.) ? À l'opposé, les TCs alimentent-elles elles-mêmes la perte de signification par l'activation de souvenirs encodés avec frustration de l'autonomie (ou autres besoins) et contribuent-elles ainsi à nourrir la frustration générale de ce besoin sur le long-terme ? Deuxièmement, nous proposons de poursuivre l'évaluation de la relation entre narratif et réseau, plus particulièrement d'examiner si l'endossement de TCs contribue à satisfaire le besoin d'appartenance par le développement d'un cercle social. À cet effet, basé sur une étude réalisée chez des adolescent·e·s qui a mis en lumière que la mentalité conspirationniste est temporellement associée à une frustration du besoin d'appartenance, il est attendu que les TCs nuisent à ce besoin chez l'adulte également (Denault *et al.*, 2026). De plus, il serait pertinent d'évaluer les fonctions du réseau associé à l'endossement de TCs. Ce réseau favorise-t-il des expériences satisfaisantes sur le plan des besoins psychologiques ou contribue-t-il à vivre des expériences qui seront ensuite encodées sous forme de souvenirs frustrants au niveau de l'autonomie ? Finalement, il serait intéressant d'examiner si un EPNC se traduit par des actions réelles et si cet engagement devient un moyen pour développer un réseau en offrant des occasions de socialisation. En retour, ce réseau encouragerait-il un EPNC de plus en plus extrême et augmenterait-il le risque de vivre des situations interpersonnelles restrictives, qui faciliteraient le rappel fréquent de souvenirs encodés avec réactance, ce qui en accentueraient la saillance ? Ces questions ne représentent qu'une portion des éléments du modèle des 3N à examiner sous une lentille empirique. Obtenir davantage de réponses par rapport au fonctionnement des trois piliers permettra de mieux comprendre les leviers de changement à notre disposition pour prévenir et intervenir au sein du cheminement vers l'endossement de TCs et de l'EPNC qui peut y être associé.

Sur le plan individuel, la question demeure à savoir comment les gens peuvent apprendre à intégrer et intérioriser les souvenirs encodés avec frustration de l'autonomie et avec réactance afin de favoriser une plus grande ouverture émotionnelle aux situations restrictives frustrantes (Houle *et al.*, 2018). Pour y répondre, la mise en place d'études examinant les mécanismes d'intégration de souvenirs aversifs de

l'enfance et comment cette intégration influence en retour les croyances conspirationnistes et l'EPNC est de mise. Étant donné que nous savons que les souvenirs sont malléables, il pourrait être intéressant d'appliquer les connaissances empiriques sur la reconsolidation mnésique pour explorer le potentiel d'interventions axées sur l'exploration et la reconsolidation de ces souvenirs en psychothérapie (Farrel et Mahood, 2022). Des approches comme la thérapie des schémas ou la thérapie des systèmes familiaux internes pourraient également être explorées pour leur utilisation des souvenirs dans la pratique. De telles approches pourraient soutenir la reconnaissance et l'observation des effets de l'activation de la frustration de l'autonomie, ainsi que l'élaboration d'un sens par rapport aux répercussions de leurs expériences passées sur leur présent (Thimm, 2024). L'emploi d'une approche mentalisante pourrait favoriser l'exploration des sentiments d'insécurité et de coercition qui résultent de certaines expériences dans l'ici et maintenant, de même que pour explorer l'activation d'un état de réactance (Bateman et Fonagy, 2012). Ainsi, une telle approche pourrait soutenir l'intégration d'émotions négatives inconfortables et hostiles, ainsi que de perceptions rigides de coercition, qui génèrent une réaction impulsive de reprise de pouvoir et/ou d'évitement dans le cadre de situations interpersonnelles restrictives. Dans l'ensemble, préconiser une approche qui facilite le développement de stratégies d'ajustement prônant la compréhension, la réflexivité et l'intégration des expériences de frustration de l'autonomie de façon durable, ainsi que l'actualisation des expériences passées à la lumière de nouvelles interprétations soutenues en psychothérapie pourraient être intéressants. Porter l'attention sur les expériences passées de l'individu plutôt que sur ses croyances pourrait également favoriser l'empathie des psychologues, qui peuvent se sentir confrontés et se montrer résistants aux narratifs conspirationnistes.

Les interventions visant la prévention et la réduction des croyances conspirationnistes qui sont présentement en développement s'adressent principalement aux capacités de traitement de l'information et sont globalement orientées vers les interventions d'innoculation d'informations, d'activation subliminale de la capacité de pensée analytique ou encore la persuasion par narratifs anecdotiques (O'Mahony *et al.*, 2023). Ces interventions prennent la forme de lectures, jeux en ligne et vidéos, et sont généralement développées pour les adultes (ex : Appel *et al.*, 2025 ; Banas et Miller, 2013; Swami *et al.*, 2014). Il est suggéré que les futures interventions explorées examinent la possibilité d'intégrer une approche mentalisante et soient adaptées pour les personnes de tous âges. Par exemple, le développement d'un jeu vidéo ou de publicités incluant des dialogues impliquant les notions d'observation et la compréhension de ses propres états mentaux, de ceux d'autrui et de comment ces états mentaux interagissent pourrait être testé sur les capacités de mentaliser certaines expériences frustrant le besoin d'autonomie. Un autre élément à

considérer serait l'élaboration d'un programme scolaire visant le développement des capacités de communication interpersonnelle basées sur les principes de la communication non-violente (Rosenberg, 2011). Une telle approche permettrait le développement d'une meilleure connaissance de soi par l'exploration des besoins non-comblés et des émotions associées, et favoriserait ainsi les capacités à communiquer ces éléments de façon efficace dans le cadre de conflits. Ces principes de communication augmentent les chances que l'individu frustré voit la satisfaction de ses besoins restaurée dans le cadre de situations interpersonnelles.

Au-delà d'une focalisation sur l'individu, il importe de porter un regard critique sur la façon dont nos pratiques de gestion de crise peuvent contribuer à ces processus, étant donné que nous sommes voués à vivre à nouveau des événements de crises majeures, qu'elles soient de nature sanitaire, climatique ou politique. Notamment, durant la pandémie de COVID-19, le gouvernement provincial du Québec a tenté de faire respecter les mesures sanitaires en employant un langage dogmatique et contrôlant, ainsi que par le déploiement de campagnes publicitaires basées sur la peur. Ce type de campagne publicitaire est démontré comme inefficace, n'engendrant pas de changements comportementaux chez les individus visés par ces messages (Ruiter *et al.*, 2014 ; Rosenberg et Siegel, 2018). Ces publicités sont plutôt vécues comme contrôlantes (Williams *et al.*, 1999) et pourraient contribuer à activer des souvenirs encodés avec frustration de l'autonomie et avec réactance. Elles représentent ainsi un risque potentiel pour générer un effet rebond de réactance, c'est-à-dire que les personnes visées agissent à l'opposé de ce qui est prescrit dans la publicité (Mühlberger et Jonas, 2019 ; Reynolds-Tylus, 2019 ; Rosenberg et Siegel, 2018). Des alternatives à ce style de communication sont à explorer.

De plus, nous encourageons vivement la mise en place d'espaces de dialogues publics et de ponts de communication entre les instances gouvernementales, la communauté scientifique et la population. D'une part, faciliter l'expression de questionnements de la part d'individus endossant des TCs pourrait aider à diminuer la rigidité de ces croyances avec le temps, étant donné que l'affirmation de soi est un élément contribuant à diminuer la sévérité de l'endossement de TCs (Poon *et al.*, 2020 ; van Prooijen, 2020). D'autre part, les personnes représentantes d'instances gouvernementales et de la communauté scientifique se doivent de se présenter dans de tels espaces avec transparence et avec une écoute authentique des questions, inquiétudes et besoins exprimés. Tel qu'exploré dans le Chapitre 2, ces systèmes de communication bidirectionnelle entre l'État et la population pourraient améliorer la confiance et l'engagement de la communauté par une amélioration de la satisfaction authentique du besoin

d'autonomie et par une diminution de l'insécurité générée par des changements sociétaux rapides en temps de crise, tout en encourageant l'acceptation de l'incertitude (Baggio *et al.*, 2019 ; Sigfrid *et al.*, 2020). Finalement, nous proposons de favoriser la mise en place d'un système axé sur la solidarité lors de crises sociétales extrêmes. Encourager l'entraide pourrait être une autre avenue pour favoriser un sentiment de contrôle et combler l'autonomie.

5.4 Limites

Il importe d'interpréter les résultats présentés dans cette thèse en fonction des limites associées aux méthodologies utilisées. Premièrement, les échantillons des études sont teintés par la méthode de recrutement et le contexte sociohistorique de la pandémie de COVID-19. Les échantillons recrutés sont principalement composés de personnes blanches, francophones et vivant au Québec. Avant que ces résultats puissent être généralisés, ils devront être validés via des études portant sur des échantillons plus larges, issus de communautés variées et se développant dans des contextes sociohistoriques différents. De plus, un biais de sélection doit être pris en compte, étant donné que les personnes ayant des croyances conspirationnistes particulièrement sévères pourraient avoir été trop méfiantes envers la communauté scientifique et universitaire pour participer aux études. Il serait pertinent de faire un effort de recrutement auprès d'organismes et milieux cliniques offrant des services de psychothérapie auprès de personnes polarisées afin de répliquer les résultats, et ce, en incluant des TCs qui ne sont pas liées au virus de COVID-19. Ceci permettrait une plus grande généralisation des résultats. De plus, la méthodologie utilisée dans le cadre de la première étude prospective n'évalue pas les effets au long terme de l'activation de souvenirs. Des études longitudinales évaluant l'évolution de l'impact des souvenirs encodés avec frustration de l'autonomie et des souvenirs encodés avec réactance devraient être mises en place. À cet effet, il serait pertinent d'examiner la trajectoire des souvenirs formés durant la période de COVID-19. Nous suspectons que ces souvenirs sont encore actifs aujourd'hui et qu'ils peuvent être activés par des symboles résiduels de cette pandémie présents dans notre quotidien (ex : symboles de port du masque en milieu hospitalier, couvertures journalistiques, séries télévisées portant sur cette période, etc.).

CONCLUSION

Globalement, la présente thèse a souligné l'importance de considérer le conspirationnisme et l'EPNC comme résultants d'un processus motivationnel compensatoire, qui est dynamique. Ce processus dynamique démontre que l'activation d'expériences passées influence notre présent en fonction de leurs similarités avec notre environnement. Spécifiquement, les personnes pour lesquelles un environnement restrictif active des souvenirs encodés avec frustration du besoin d'autonomie sont plus à risque d'endosser des TCs, alors que l'activation de souvenirs encodés avec réactance, peu importe la sévérité des restrictions dans l'environnement, génère un plus grand soutien à l'EPNC. L'approche par les souvenirs étant universelle à tous, toute personne ayant des souvenirs encodés avec frustration de l'autonomie et des souvenirs encodés avec réactance se retrouve à risque de rejeter le *statu quo* pour endosser des narratifs conspirationnistes et un EPNC si elle fait face à un environnement qui active ces souvenirs.

ANNEXE A

CERTIFICATS D'APPROBATION ÉTHIQUE POUR LES ÉTUDES 1 ET 2 DE LA THÈSE



No. de certificat : 2020-2748
Date : 2026-05-13

CERTIFICAT D'APPROBATION ÉTHIQUE RENOUVELLEMENT

Le Comité d'éthique de la recherche pour les projets étudiants impliquant des êtres humains (CERPE FSH) a examiné le projet de recherche suivant et le juge conforme aux pratiques habituelles ainsi qu'aux normes établies par la *Politique No 54 sur l'éthique de la recherche avec des êtres humains* (avril 2020) de l'UQAM.

Titre du projet : Les attitudes envers la société et le sentiment d'appartenance : une étude longitudinale

Nom de l'étudiant : Marie-Jeanne Léonard

Programme d'études : Doctorat en psychologie

Direction(s) de recherche : Frédérick Philippe

Modalités d'application

Toute modification au protocole de recherche en cours de même que tout événement ou renseignement pouvant affecter l'intégrité de la recherche doivent être communiqués rapidement au comité.

La suspension ou la cessation du protocole, temporaire ou définitive, doit être communiquée au comité dans les meilleurs délais.

Le présent certificat est valide pour une durée d'un an à partir de la date d'émission. Au terme de ce délai, un rapport d'avancement de projet doit être soumis au comité, en guise de rapport final si le projet est réalisé en moins d'un an, et en guise de rapport annuel pour le projet se poursuivant sur plus d'une année au plus tard un mois avant la date d'échéance (**2027-05-13**) de votre certificat. Dans ce dernier cas, le rapport annuel permettra au comité de se prononcer sur le renouvellement du certificat d'approbation éthique.



Sophie Gilbert
Professeure, Département de psychologie
Présidente du CERPE FSH

CERTIFICAT D'APPROBATION ÉTHIQUE RENOUVELLEMENT

Le Comité d'éthique de la recherche pour les projets étudiants impliquant des êtres humains (CERPE FSH) a examiné le projet de recherche suivant et le juge conforme aux pratiques habituelles ainsi qu'aux normes établies par la *Politique No 54 sur l'éthique de la recherche avec des êtres humains* (avril 2020) de l'UQAM.

Titre du projet : La théorie de l'autodétermination et les souvenirs épisodiques : évaluation de l'impact sur l'endossement de théories du complot et le soutien de l'engagement politique non-normatif

Nom de l'étudiant : Marie-Jeanne Léonard

Programme d'études : Doctorat en psychologie

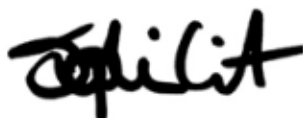
Direction(s) de recherche : Frédéric Philippe

Modalités d'application

Toute modification au protocole de recherche en cours de même que tout événement ou renseignement pouvant affecter l'intégrité de la recherche doivent être communiqués rapidement au comité.

La suspension ou la cessation du protocole, temporaire ou définitive, doit être communiquée au comité dans les meilleurs délais.

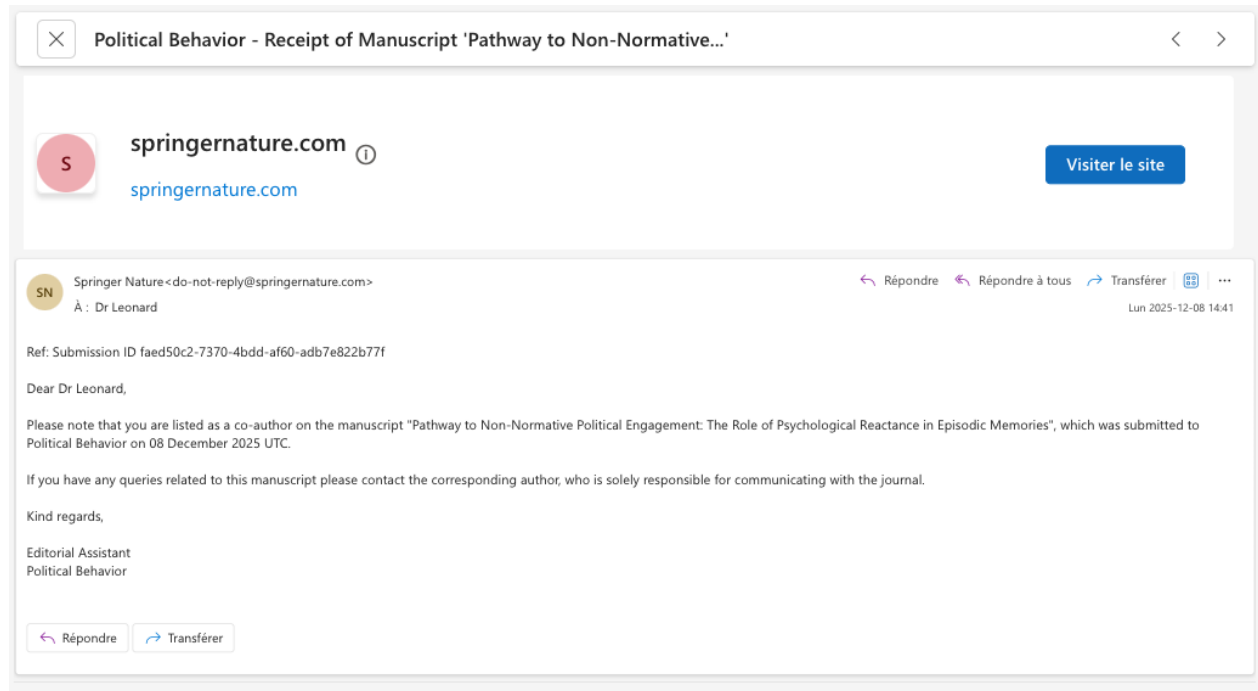
Le présent certificat est valide pour une durée d'un an à partir de la date d'émission. Au terme de ce délai, un rapport d'avancement de projet doit être soumis au comité, en guise de rapport final si le projet est réalisé en moins d'un an, et en guise de rapport annuel pour le projet se poursuivant sur plus d'une année au plus tard un mois avant la date d'échéance (**2027-05-12**) de votre certificat. Dans ce dernier cas, le rapport annuel permettra au comité de se prononcer sur le renouvellement du certificat d'approbation éthique.



Sophie Gilbert
Professeure, Département de psychologie

ANNEXE B

PREUVE DE SOUMISSION DE L'ARTICLE 3



RÉFÉRENCES

- Abalakina-Paap M., Stephan W. G., Craig T. et Gregory L. (1999). Beliefs in conspiracies. *Political Psychology*, 20(3), 637–647.
- Abramowitz, S., McKune, S. L., Fallah, M., Monger, J., Tehoungue, K. et Omidian, P. A. (2017). The opposite of denial: Social learning at the onset of the Ebola emergency in Liberia. *Journal of Health Communications*. 22, 59-65. <https://doi.org/10.1080/10810730.2016.1209599>
- Al-Rawi, A., Siddiqi, M. Wenham, C. et Smith, J. (2022). The gendered dimensions of the anti-mask and anti-lockdown movement on social media. *Humanities and Social Sciences Communications*. 9(418). <https://doi.org/10.1057/s41599-022-01442-8>
- Agence France-Presse. (22 mai 2020). Près de la moitié des Canadiens dupés par des théories du complot ou des croyances trompeuses sur la COVID-19. LeDevoir, Société. <https://www.ledevoir.com/societe/579354/pres-de-la-moitie-des-canadiens-dupes-par-des-theories-du-complot-sur-la-covid-19>
- Appel, R.E., Roozenbeek, J., Rayburn-Reeves, R., Basol, M., Corbin, J., Compton, J. et van der Linden, S. (2025). Psychological inoculation improves resilience to and reduces willingness to share vaccine misinformation. *Scientific Reports*, 15(29830). <https://doi.org/10.1038/s41598-025-09462-5>
- Ayduk, Ö. et Gyurak, A. (2008). Applying the cognitive-affective processing systems approach to conceptualizing rejection sensitivity. *Social and Personality Psychology Compass*, 2(5), 2016-2033. <https://doi.org/10.1111/j.1751-9004.2008.00143.x>
- Baggio, O., Camara, C. A. et Prue, C. (2019). Bringing Community Perspectives to Decision-Making in the Ebola Response in the Democratic Republic of Congo. Disponible en ligne: <https://odihpn.org/magazine/bringing-community-perspectives-decision-making-ebola-response-democratic-republic-congo/>.
- Bakowski, P. (2023). *United States: Domestic violent extremism on the rise*. European Parliamentary Research Service. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/754561/EPRS_BRI(2023)754561_EN.pdf
- Ball, P., and Maxmen, A. (2020). Battling the infodemic. *Nature*. 581, 371-374
- Ball, H. et Wozniak, T. R. (2021). Why do some Americans resist COVID-19 prevention behavior? An analysis of issue importance, message fatigue, and reactance regarding COVID-19 messaging. *Health Communication*, 37(14), 1812-1819. <https://doi.org/10.1080/10410236.2021.1920717>
- Banas, J. A. et Miller, G. (2013). Inducing resistance to conspiracy theory propaganda: Testing inoculation and metainoculation strategies, *Human Communication Research*, 39(2), 184 – 207. <https://doi.org/10.1111/hcre.12000>

- Barron, D., Furnham, A., Weis, L., Morgan, K. D., Towell, T. et Swami, V. (2018). The relationship between schizotypal facets and conspiracist beliefs via cognitive processes. *Psychiatry Research*, 259, 15–20. <https://doi.org/10.1016/j.psychres.2017.10.001>
- Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., Bosch, J. et Thogersen-Ntoumani, C. (2011). Self-determination theory and diminished functioning: The role of interpersonal control and psychological need thwarting. *Personality and Social Psychology Bulletin*, 37(11), 1459–1473. <https://doi.org/10.1177/0146167211413125>
- Bartlett, J. et Miller, C. (2010). The power of unreason: Conspiracy theories, extremism and counter-terrorism. Demos.
- Bartusevičius, H., van Leeuwen, F. et Petersen, M. B. (2023). Political repression motivates anti-government violence. *Royal Society Open Science*, 10(221227), 1-18. <https://doi.org/10.1098/rsos.221227>
- Becker, J. C. et Tausch, N. (2015). A dynamic model of engagement in normative and non-normative collective action: Psychological antecedents, consequences, and barriers. *European Review of Social Psychology*, 26(1), 43-92. <https://doi.org/10.1080/10463283.2015.1094265>
- Bélair-Cirino, M. (19 septembre 2020). Qui sont les antimasques?. Le Devoir, Société. <https://www.ledevoir.com/societe/586270/qui-sont-les-antimasques>
- Bélanger, J. J., Moyano, M., Muhammad, H., Richardson, L., Lafrenière, M.-A. K., McCaffery, P., Framand, K. et Nociti, N. (2019). Radicalization leading to violence: A test of the 3N model. *Frontiers in Psychiatry*, 10(42). <https://doi.org/10.3389/fpsy.2019.00042>
- Bélanger, J. J., Nisa, C. F., Schumpe, B. M., Gurmu, T., Williams, M. J. et Putra, I. E. (2020). Do counter-narratives reduce support for ISIS? Yes, but not for their target audience. *Frontiers in Psychology*, 11(1059), 1-11. <https://doi.org/10.3389/fpsyg.2020.01059>
- Bélanger, J. J., Schumpe, B. M., Nisa, C. F. et Moyano, M. (2021). When countermessaging backfires: The role of obsessive passion in psychological reactance. *Motivation Science*, 7(1), 83-95. <https://doi.org/10.1037/mot0000206>
- Bertuzzi, N. (2021). Conspiracy theories and social movements studies: A research agenda. *Sociology Compass*, 15(12), e12945. <https://doi.org/10.1111/soc4.12945>
- Biddlestone, M., Green, R., Douglas, K. M., Azevedo, F., Sutton, R. M. et Cichocka, A. (2025). Reasons to believe: A systematic review and meta-analytic synthesis of the motives associated with conspiracy beliefs. *Psychological Bulletin*, 151(1), 48–87. <https://doi.org/10.1037/bul0000463>
- Biondillo, M. J. et Pillemer, D. B. (2015). Using memories to motivate future behaviour: An experimental exercise intervention. *Memory*, 23(3), 390–402. <https://doi.org/10.1080/09658211.2014.889709>
- Bowen, J. (2019). Unfalsifiability. Dans R. Arp, S. Barbone et M. Bruce (Eds.), *Bad Arguments: 100 of the most important fallacies in Western philosophy* (pp. 403-406). Wiley Blackwell. <https://doi.org/10.1002/9781119165811.ch99>

- Bowes, S. M., Costello, T. H. et Tasimi, A. (2023). The conspiratorial mind: A meta-analytic review of motivational and personological correlates. *Psychological Bulletin*, 149(5-6), 259-293. <https://doi.org/10.1037/bul0000392>
- Brehm, J. W. (1966). *A Theory of Psychological Reactance*. Academic Press.
- Brehm, S. S. et Brehm, J. W. (1981). *Psychological reactance: A theory of freedom and control*. Academic Press.
- Brotherton, R. et Eser, S. (2015). Bored to fears: Boredom proneness, paranoia, and conspiracy theories. *Personality and Individual Differences*, 80, 1–5. <https://doi.org/10.1016/j.paid.2015.02.011>
- Brown, N. R. et Schopflocher, D. (1998). Event clusters: An organization of personal events in autobiographical memory. *Psychological Science*, 9(6), 470–475. <https://doi.org/10.1111/1467-9280.00087>
- Bruder, M., Haffke, P., Neave, N., Nouripanah, N. et Imhoff, R. (2013). Measuring individual differences in generic beliefs in conspiracy theories across cultures: Conspiracy mentality questionnaire. *Frontiers in Psychology*, 4, 225. <https://doi.org/10.3389/fpsyg.2013.00225>
- Burstein, P. (2003). The impact of public opinion on public policy: A review of an agenda. *Political Research Quarterly*, 56, 29-40.
- Capurro, G., Jardine, C. G., Tustin, J. et Driedger, M. (2021). Communicating scientific uncertainty in a rapidly evolving situation: A framing analysis of Canadian coverage in early days of COVID-19. *BMC Public Health*, 21(1), 2181. <https://doi.org/10.1186/s12889-021-12246-x>
- Carignan, M. È., Morin, D., Daxhelet, M. L., Bédard, S., Champagne-Poirier, O., Choquette, E., Aliaga, G., Khennache, Y et Kamela, E. K. (2022). Le mouvement conspirationniste au Québec: Leaders, discours et adhésion. Chaire UNESCO en prévention de la radicalisation et de l'extrémisme violents. chrome-extension://efaidnbmnnnipccajpcgiclfindmkaj/https://chaireunesco-prev.ca/wp-content/uploads/2022/06/UNESCO-PREV_RapportRecherche_MEI_final.pdf
- Carlsen, B. et Glenton, C. (2016). The swine flu vaccine, public attitudes, and researcher interpretations: A systematic review of qualitative research. *BMC Health Services Research*, 16, 1-15. <https://doi.org/10.1186/s12913-016-1466-7>
- Carroll, R. (7 août 2024). "My thoughts about the city have changed": Belfast residents consider future after riots. *The Guardian*. <https://www.theguardian.com/uk-news/article/2024/aug/07/my-thoughts-about-the-city-have-changed-belfast-residents-consider-future-after-riots>
- Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E., van der Kaap-Deeder, J., Duriez, B., Lens, W., Matos, L., Mouratidis, A., Ryan, R. M., Sheldon, K. M., Soenens, B., van Petegem, S. et Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion*, 39(2), 216-236. <https://doi.org/10.1007/s11031-014-9450-1>
- Chirkov, V. I., Ryan, R. M. et Willness, C. (2005). Cultural context and psychological needs in Canada and Brazil: Testing a self-determination approach to the internalization of cultural practices, identity, and well-being. *Journal of Cross-Cultural Psychology*, 36, 423– 443. <https://doi.org/10.1177/0022022105275960>

- Clayton, R. B. (2022) On the psychophysiological and defensive nature of psychological reactance theory. *Journal of Communication*, 72(4), 461-475. <https://doi.org/10.1093/joc/jqac016>
- Cohn, S. et Kutalek, R. (2016). Historical parallels, Ebola virus disease and Cholera: Understanding community distrust and social violence with epidemics. *PLoS Currents*. 26. <https://doi.org/10.1371/currents.outbreaks.aa1f2b60e8d43939b43fbd93e1a63a94>
- Coltart, C. E. M., Lindsey, B., Ghinai, I., Johnson, A. M. et Heymann, D. L. (2017). The Ebola outbreak, 2013-2016: Old lessons for new epidemics. *Philosophical Transactions of the Royal Society B*. 372, 1-24. <https://doi.org/10.1098/rstb.2016.0297>
- Conway, M. A. (2009). Episodic memories. *Neuropsychologia*, 47(11), 2305–2313. <https://doi.org/10.1016/j.neuropsychologia.2009.02.003>
- Conway, M. et Pleydell-Pearce, C. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review*, 107, 261–288. <https://doi.org/10.1037//0033-295X.107.2.261>
- Conway, M. A., Singer, J. A. et Tagini, A. (2004). The self and autobiographical memory: Correspondence and coherence. *Social Cognition*, 22(5), 491–529. <https://doi.org/10.1521/soco.22.5.491.50768>
- Corning, A. F. et Myers, D. J. (2002). Individual orientation toward engagement in social action. *Political Psychology*, 23(4), 703–729. <https://doi.org/10.1111/0162-895X.00304>
- Darwin, H., Neave, N. et Holmes, J. (2011). Belief in conspiracy theories. The role of paranormal belief, paranoid ideation and schizotypy. *Personality and Individual Differences*, 50, 1289–1293. <https://doi.org/10.1016/j.paid.2011.02.027>
- Deci, E. L. et Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. Plenum Press.
- Deci, E. L. et Ryan, R. M. (2000). The “What” and “Why” of goal pursuit: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01
- Denault, A.-S., Leonard, M.-J., Ghassemi-Bakhtiari, N. et Philippe, F. L. (2026). Caught in the loop : Basic psychological need frustration and conspiracy mentality in adolescence. *Journal of Adolescence*, e70131. <https://doi.org/10.1002/jad.70131>
- Desgagné, M.-L. (31 juillet 2025). La Cour supérieure autorise l’action collective. LaPresse, Actualités. <https://www.lapresse.ca/actualites/2025-07-31/projet-mk-ultra-sur-le-lavage-de-cerveau/la-cour-superieure-autorise-l-action-collective.php>
- Dillard, J. P. et Shen, L. (2005) On the nature of reactance and its role in persuasive health communication. *Communication Monographs*, 72(2), 144-168. <https://doi.org/10.1080/03637750500111815>
- Dingess, A. et Wilt, J. (2020). Cognitive-affective processing system (CAPS). Dans B. J. Carducci, C. S. Nave, J. S., Mio, & R. E., Riggio (Dir.), *The Wiley encyclopedia of personality and individual differences* (pp. 129-133). John Wiley & Sons Ltd. <https://doi.org/10.1002/9781119547143>

- Douglas, K. M., Sutton, R. M. et Cichoka, A. (2017). The psychology of conspiracy theories. *Current Directions in Psychological Science*, 26(6), 538-542. <https://doi.org/10.1177/0963721417718261>
- Douglas, K. M., Uscinski, J. E., Sutton, R. M., Cichoka, A., Nefes, T., Ang, C. S. et Deravi, F. (2019). Understanding conspiracy theories. *Political Psychology*, 40(1), 3-35. <https://doi.org/10.1111/pops.12568>
- Dugas, M., Bélanger, J. J., Moyano, M., Schumpe, B. M., Kruglanski, A. W., Gelfand, M. J., Touchton-Leonard, K. et Nociti, N. (2016). The quest for significance motivates self-sacrifice. *Motivation science*, 2(1), 15-32. <https://doi.org/10.1037/mot0000030>
- Duong, D. (1 mai 2020). The latest COVID-19 conspiracy theories, explained. Healthing.ca. <https://www.healthing.ca/diseases-and-conditions/coronavirus/the-latest-covid-19-conspiracy-theories-explained-with-evidence>
- Duriez, B., Vansteenkiste, M., Soenens, B. et De Witte, H. (2007). The social costs of extrinsic relative to intrinsic goal pursuits: Their relation with social dominance and racial and ethnic prejudice. *Journal of Personality*, 75, 757–782. <https://doi.org/10.1111/j.1467-6494.2007.00456.x>
- Economic and Social Research Council. (2021). Influencing policymakers. <https://esrc.ukri.org/research/impact-toolkit/influencing-policymakers/> [Accédé le 8 juin 2021].
- Enders, A. M., Uscinski, J. E., Klofstad, C. A., Seelig, M. I., Wuchty, S., Murthi, M. N., Premaratne, K. et Funchion, J. R. (2021). Do Conspiracy Beliefs Form a Belief System? Examining the Structure and Organization of Conspiracy Beliefs. *Journal of Social and Political Psychology*, 9(1), e5649. doi: 10.5964/jspp.5649
- European Commission. (2020). Identifying Conspiracy Theories. https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/fighting-disinformation/identifying-conspiracy-theories_en [Accédé le 27 novembre 2020].
- Faehrmann, A. et Zech, S. (30 novembre 2023). The Great Replacement in the Manosphere: Implications for terrorism. Global Network on Extremism & Technology, 16 Days. <https://gnet-research.org/2023/11/30/the-great-replacement-in-the-manosphere-implications-for-terrorism/>
- Farrell, K. et Mahood, Q. (2022). Reconsolidation and consolidation therapies for the treatment and prevention of Post-Traumatic Stress Disorder. *Canadian Journal of Health Technologies*, 2(5).
- Federico, C. M., Williams, A. L. et Vitriol, J. A. (2018). The role of system identity threat in conspiracy theory endorsement. *European Journal of Social Psychology*, 48(7), 927–938. <https://doi.org/10.1002/ejsp.2495>
- Gagliardi, L. (2025). The role of cognitive biases in conspiracy beliefs: A literature review. *Journal of Economic Surveys*, 39(1), 32-65. <https://doi.org/10.1111/joes.12604>
- Gallup International Association. (2020). The Coronavirus: A Vast Scared Majority Around the World. https://www.gallup-international.com/wp-content/uploads/2020/03/GIA_SnapPoll_2020_COVID_Tables_final.pdf [Accédé le 27 novembre 2020].

- Gino, F. et Desai, S. D. (2012). Memory lane and morality: How childhood memories promote prosocial behavior. *Journal of Personality and Social Psychology*, 102(4), 743–758.
<https://doi.org/10.1037/a0026565>
- Godin, G. et Kok G. (1996). The theory of planned behaviour: A review of its applications to health-related behaviours. *American Journal of Health Promotion*, 11(2), 87-98.
<https://doi.org/10.4278/0890-1171-11.2.87>
- Goertzel, T. (2010). Conspiracy theories in science. *EMBO Reports*, 11(7), 493–499.
<https://doi.org/10.1038/embor.2010.84>
- Goldberg, Z. J. et Richley, S. (2020). Anti-vaccination beliefs and unrelated conspiracy theories. *World Affairs*. 183, 105–24. <https://doi.org/10.1177/0043820020920554>
- Goldstein-Greenwood, J. (29 juillet2022). Detecting Influential Points in Regression with DFBETA(S). University of Virginia Library. <https://library.virginia.edu/data/articles/detecting-influential-points-in-regression-with-dfbetas>
- Goodman, J. et Carmichael, F. (2020). Coronavirus: ‘Deadly masks’ claims debunked. BBC.
<https://www.bbc.com/news/53108405>
- Goreis, A. et Voracek, M. (2019) A systematic review and meta-analysis of psychological research on conspiracy beliefs: Field Characteristics, measurement instruments, and associations with personality traits. *Frontiers in Psychology*. 10(205). <https://doi.org/10.3389/fpsyg.2019.00205>
- Gøtzsche-Astrup, O., van den Bos, K. et Hogg, M. A. (2020). Radicalization and violent extremism: Perspectives from research on group processes and intergroup relations. *Group Processes & Intergroup Relations*, 23(8), 1127-1136. <https://doi.org/10.1177/1368430220970319>
- Greenaway, K. H., Louis, W. R. et Hornsey, M. J. (2013). Loss of control increases belief in precognition and belief in precognition increases control. *PLoS ONE*, 8(8), e71327.
<https://doi.org/10.1371/journal.pone.0071327>
- Hapuhennedige, S. (2020). Public health experts are learning from Canada’s anti-mask protests. *Canadian Medical Association Journal*, 192(42), 1274-1275,
<https://doi.org/10.1503/cmaj.1095901>
- Hart, J. et Graether, M. (2018). Something’s going on here: Psychological predictors of belief in conspiracy theories. *Journal of Individual Differences*, 39, 229-237.
<https://doi.org/10.1027/1614-0001/a000268>
- Hauser, C. (2020, 3 août). The mask slackers of 1918. The New York Times.
<https://www.nytimes.com/2020/08/03/us/mask-protests-1918.html>
- Heller, J. (2015). Rumors and realities: Making sense of HIV/AIDS conspiracy narratives and contemporary legends. *American Journal of Public Health*, 105, e43-e50.
<https://doi.org/10.2105/AJPH.2014.302284>

- Hong, S.-M. et Faedda, S. (1996). Refinement of the Hong Psychological Reactance Scale. *Educational and Psychological Measurement*, 56(1), 173–182. <https://doi.org/10.1177/0013164496056001014>
- Houle, I. et Philippe, F. (2017). Need satisfaction in episodic memories impacts mood at retrieval and well-being over time. *Personality and Individual Differences*, 105, 194-199. <http://dx.doi.org/10.1016/j.paid.2016.09.059>
- Houle, I., Philippe, F. L., Lecours, S. et Roulez, J. (2018). Networks of self-defining memories as a contributing factor to emotional openness. *Cognition and Emotion*, 32, 363-370. <https://doi.org/10.1080/02699931.2017.1284045>
- Horgan, J. (2014). *The psychology of terrorism* (2e éd.). Routledge.
- Imhoff, R., Dieterle, L. et Lamberty, P. (2020). Resolving the Puzzle of Conspiracy Worldview and Political Activism: Belief in Secret Plots Decreases Normative but Increases Nonnormative Political Engagement. *Social Psychological and Personality Science*, 12(1), 71-79. <https://doi.org/10.1177/1948550619896491>
- Institut national de santé du Québec (5 octobre 2022). Ligne du temps COVID-19 au Québec. <https://www.inspq.qc.ca/covid-19/donnees/ligne-du-temps>
- Klein, S., Cosmides, L., Tooby, J. et Chance, S. (2002). Decisions and the evolution of memory: Multiple systems, multiple functions. *Psychological Review*, 109, 306–329. <https://doi.org/10.1037//0033-295X.109.2.306>
- Koestner, R. et Losier G. F. (1996). Distinguishing reactive versus reflective autonomy. *Journal of Personality*, 64(2), 465–494. <https://doi.org/10.1111/j.1467-6494.1996.tb00518.x>
- Kofta, M., Soral, W. et Bilewicz, M. (2020). What breeds conspiracy antisemitism? The role of political uncontrollability and uncertainty in the belief in Jewish conspiracy. *Journal of Personality and Social Psychology*, 118(5), 900-918. <https://doi.org/10.1037/pspa0000183>
- Kuwabara, K. J. et Pillemer, D. B. (2010). Memories of past episodes shape current intentions and decisions. *Memory*, 18(4), 365–374. <https://doi.org/10.1080/09658211003670857>
- Jolley, D. et Douglas, K. M. (2014a). The effects of anti-vaccine conspiracy theories on vaccination intentions. *PLoS One*, 9, e89177. <https://doi.org/10.1371/journal.pone.0089177>
- Jolley D. et Douglas, K. M. (2014b). The social consequences of conspiracism: Exposure to conspiracy theories decreases intentions to engage in politics and to reduce one’s carbon footprint. *British Journal of Psychology*, 105, 35-56. <https://doi.org/10.1111/bjop.12018>
- Jolley, D. et Paterson, J. L. (2020). Pylons ablaze: Examining the role of 5G COVID-19 conspiracy beliefs and support for violence. *British Journal of Social Psychology*, 59(3), 628–640. <https://doi.org/10.1111/bjso.12394>
- Joussemet, M., Vitaro, F., Barker, E. D., Côté, S., Nagin, D., Zoccolillo, M. et Tremblay, R. E. (2008). Controlling parenting and physical aggression during elementary school. *Child Development*, 79, 411–425. <https://doi.org/10.1111/j.1467-8624.2007.01133.x>

- Kaczkowski W., Swartout, K. M., Branum-Martin, L., Horgan, J. G. et Lemieux, A. F. (2020). Impact of perceived peer attitudes and social network diversity on violent extremist intentions. *Terrorism and Political Violence*, 34(8), 1530-1548. <https://doi.org/10.1080/09546553.2020.1808466>
- Klar, M. et Kasser, T. (2009). Some benefits of being an activist: Measuring activism and its role in psychological well-being. *Political Psychology*, 30(5), 755-777. <https://doi.org/10.1111/j.1467-9221.2009.00724.x>
- Kou, Y., Gui, X, Chen, Y. et Pine, K. H. (2017). Conspiracy talk on social media: Collective sensemaking during a public health crisis. *Proceedings of the ACM on Human-Computer Interaction*. 1, 61. <https://doi.org/10.1145/3134696>
- Kruglanski, A. W., Bélanger, J. J. et Gunaratna, R. (2019). The three pillars of radicalization: Needs, narratives, and networks. Oxford University Press.
- Kruglanski, A. W., Molinario, E., Ellenberg, M. et Di Cicco, G. (2022). Terrorism and conspiracy theories: A view from the 3N model of radicalization. *Current Opinion in Psychology*, 47(101396). <https://doi.org/10.1016/j.copsyc.2022.101396>
- Kuwabara, K. J. et Pillemer, D. B. (2010). Memories of past episodes shape current intentions and decisions. *Memory*, 18(4), 365–374. <https://doi.org/10.1080/09658211003670857>
- Kydd, A. H. (2021). Decline, radicalization and the attack on the US Capitol. *Violence*, 2(1), 3-23. <https://doi.org/10.1177/26330024211010043>
- Landau, M. J., Kay, A. C. et Whitson, J. A. (2015). Compensatory control and the appeal of a structured world. *Psychological Bulletin*, 141(3), 694-722. <https://doi.org/10.1037/a0038703>
- Lamberty, P. et Leiser, D. (2019). Sometimes you just have to go in— Conspiracy beliefs lower democratic participation and lead to political violence. *PsyArXiv*. <https://doi.org/10.31234/osf.io/bdrxc>
- Leander, N. P., vanDellen, M. R., Rachl-Willberger, J., Shah, J., Fitzsimons, G. J. et Chartrand, T. L. (2016). Is freedom contagious? A self-regulatory model of reactance and sensitivity to deviant peers. *Motivation Science*, 2(4), 256–267.
- Léger. (2023). Report: Belief in conspiracy theory (chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://leger360.com/wp-content/uploads/2024/04/Leger_Conspiracy_Theories_Canada-US.pdf)
- Leman, P. J. et Cinnirella, M. (2013). Beliefs in conspiracy theories and the need for cognitive closure. *Frontiers in Psychology*, 4(378), 1-10. <https://doi.org/10.3389/fpsyg.2013.00378>
- Leonard, M.-J. et Philippe, F. (2021). Conspiracy theories: A public health concern and how to address it. *Frontiers in Psychology*, 12(682931). <https://doi.org/10.3389/fpsyg.2021.682931>
- Leonard, M.-J. et Philippe, F. (2025). Priming need-frustrating memories sparks conspiracy beliefs: A self-determination theory perspective. *Journal of Personality*, 1-17. <https://doi.org/10.1111/jopy.70032>

- Leonard, M.J., Thuot-Jolicoeur A. et Philippe, F. (soumis pour publication). Pathway to non-normative political engagement: The role of psychological reactance autobiographical memories. Manuscript soumis pour publication à *Political Behavior*.
- Levinsson, A., Miconi, D., Li, Z., Frounfelker, R. L. et Rousseau, C. (2021). Conspiracy theories, psychological distress, and sympathy for violent radicalization in young adults during the covid-19 pandemic: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 18, 7846. <https://doi.org/10.3390/ijerph18157846>
- Lukić, P., Žeželj, I. et Stanković, B. (2019) How (ir)rational is it to believe in contradictory conspiracy theories?. *Europe's Journal of Psychology*, 15(1), 94-107. <https://doi.org/10.5964/ejop.v15i1.1690>.
- Mace, J. H. et Unlu, M. (2020). Semantic-to-autobiographical memory priming occurs across multiple sources: Implications for autobiographical remembering. *Memory & Cognition*, 48(6), 931–941. <https://doi.org/10.3758/s13421-020-01029-1>
- Maison, D., Jaworska, D., Adamczyk, D. et Affeltowicz, D. (2021). The challenges arising from the COVID-19 pandemic and the way people deal with them: A qualitative longitudinal study. *PLOS ONE*, 16(10), e0258133. <https://doi.org/10.1371/journal.pone.0258133>
- Masten, A. S. et Tellegen, A. (2012). Resilience in developmental psychopathology: Contributions of the Project Competence Longitudinal Study. *Development and Psychopathology*, 24, 345–362. <https://doi.org/10.1017/S095457941200003X>
- Masumbuko Claude, K., Unterschultz, J. et Hawkes, M. T. (2019). Social resistance drives persistent transmission of Ebola virus disease in Eastern Democratic Republic of Congo: A mixed- methods study. *PLoS One*. 14, e0223104. <https://doi.org/10.1371/journal.pone.0223104>
- McCauley, C. et Moskalenko, S. (2017). Understanding political radicalization: The two-pyramids model. *American Psychologist*, 72(3), 205–216. <https://doi.org/10.1037/amp0000062>
- McGuire, N. H. et Ball, H. (2022). Extending psychological reactance theory to include denial of threat and media sharing intentions as freedom restoration behavior. *Communication Research Reports*, 39(3), 136-146. <https://doi.org/10.1080/08824096.2022.2058480>
- McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica (Zagreb)*, 22(3), 276-282.
- McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological Methods*, 23(3), 412-433. <https://doi.org/10.1037/met0000144>
- Merson, B. et Pezdek, K. (2019). Target-related autobiographical memories affect dietary intake intentions. *Memory*, 27(10), 1438-1450. <https://doi.org/10.1080/09658211.2019.1674335>
- Miklikowska, M., Duriez, B. et Soenens, B. (2011). Family roots of empathy-related characteristics: The role of perceived maternal and paternal need support in adolescence. *Developmental Psychology*, 47, 1342–1352. <https://doi.org/10.1037/a0024726>

- Miller, C. H., Burgoon, M., Grandpre, J. R. et Alvaro, E. M. (2006). Identifying principal risk factors for the initiation of adolescent smoking behaviors: the significance of psychological reactance. *Health Communication*, 19(3), 241–252. https://doi.org/10.1207/s15327027hc1903_6
- Miller, C. H. et Quick, B. L. (2010). Sensation seeking and psychological reactance as health risk predictors for an emerging adult population. *Health Communication*, 25(3), 266–275. <https://doi.org/10.1080/10410231003698945>
- Mischel, W. et Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, 102(2), 246–268. <https://doi.org/10.1037/0033-295X.102.2.246>
- Mishi, S., Mushonga, F. B. et Anakpo, G. (2024). The use of fear appeals for pandemic compliance: A systematic review of empirical measurement, fear appeal strategies and effectiveness. *Heliyon*, 10(9). <https://doi.org/10.1016/j.heliyon.2024.e30383>
- Moghaddam, F. (2018). Mutual radicalization: How groups and nations drive each other to extremes. APA Press.
- Moore, A. (2016). Conspiracy and conspiracy theories in democratic politics. *Critical Review*, 28(1), 1-23. <https://doi.org/10.1080/08913811.2016.1178894>
- Mühlberger, C. et Jonas, E. (2019). Reactance theory. Dans Kai Sassenberg & Michael L. W. Vliek (Eds.), *Social psychology in action* (pp. 79-94). Springer Nature Switzerland AG. https://doi.org/10.1007/978-3-030-13788-5_6
- Nachega, J. B., Mbala-Kngebeni, P., Otshudiema, J., Mobula, L. M., Preiser, W., Kallay, O., et al. (2020). Responding to the challenge of the dual Covid-19 and Ebola epidemics in the Democratic Republic of Congo - priorities for achieving control. *The American journal of Tropical Medicine and Hygiene*. 103, 597–602. <https://doi.org/10.4269/ajtmh.20-0642>
- Navarro, J. A. (13 juillet 2020). Mask resistance during a pandemic isn't new - in 1918 many Americans weed 'slackers'. The Conversation. <https://theconversation.com/mask-resistance-during-a-pandemic-isnt-new-in-1918-many-americans-were-slackers-141687>
- Neufeld, A. et Malin, G. (2019). Exploring the relationship between medical student basic psychological need satisfaction, resilience, and well-being: A quantitative study. *BMC Medical Education*, 19(405), 1-8. <https://doi.org/10.1186/s12909-019-1847-9>
- Niang, C. (2015). The human factor. *Bulletin of World Health Organization*. 93, 72–73. <https://doi.org/10.2471/BLT.15.030215>
- Nyhan, B. et Zeitzoff, T. (2018). Conspiracy and misperception belief in the Middle East and North Africa. *Journal of Politics*, 80(4). <http://dx.doi.org/10.1086/698663>
- O'Mahony, C., Brassil, M., Murphy, G., Linehan, C. (2023). The efficacy of interventions in reducing belief in conspiracy theories: A systematic review. *PLoS One*, 43, e0280902. <https://doi.org/10.1371/journal.pone.0280902>

- O'Malley, P. O., Rainford, J. et Thomson, A. (2009). Transparency during public health emergencies: From rhetoric to reality. *Bulletin of World Health Organization*, 87, 614–618. <https://doi.org/10.2471/BLT.08.056689>
- Onursal, D. et Hobbs, A. (2025). The Dynamics of Protest Radicalization. *Terrorism and Political Violence*, 1–20. <https://doi.org/10.1080/09546553.2025.2504014>
- Orosz, G., Krekó, P., Paskuj, B., Tóth-Király, I., Böthe, B. et Roland-Lévy, C. (2016). Changing conspiracy beliefs through rationality and ridiculing. *Frontiers in Psychology*, 7, 1-9. <https://doi.org/10.3389/fpsyg.2016.01525>
- Paunonen, S. (2003). Big five factors of personality and replicated predictions of behavior. *Journal of Personality and Social Psychology*, 84(2), 411–424. <https://doi.org/10.1037/0022-3514.84.2.411>
- Péloquin, T. (26 septembre 2020). Les différents visages des antimasques. LaPresse, <https://www.lapresse.ca/actualites/covid-19/2020-09-26/les-differents-visages-des-antimasques.php>
- Philippe, F. (2022). Episodic memories as proxy or independent representations: A theoretical review and an empirical test of distinct episodic memories on work outcomes. *New Ideas in Psychology*, 64, 100913. <https://doi.org/10.1016/j.newideapsych.2021.100913>
- Philippe, F. (2023). How life events are integrated into the self as memories: A memory approach to need satisfaction and emotion regulation. Dans *The Oxford handbook of self-determination theory* (Oxford University Press, p. 20). <https://doi.org/10.1093/oxfordhb/9780197600047.013.13>
- Philippe, F. L. et Bernard-Desrosiers, L. (2017). The odyssey of episodic memories: Identifying the paths and processes through which they contribute to well-being. *Journal of Personality*, 85(4), 518-529. <https://doi.org/10.1111/jopy.12257>
- Philippe, F. L., Bouizegarene, N., Guilbault, V., Rajotte, G. et Houle, I. (2015). The chicken or the egg? Systematic investigation of the effect of order of administration of memory questionnaires and well-being scales. *Memory*, 23, 1056-1069. <https://doi.org/10.1080/09658211.2014.953547>
- Philippe, F. L. et Houle, I. (2020). Cognitive integration of personal or public events affects mental health: Investigating memory networks in a case of natural flooding disaster. *Journal of Personality*, 88, 861–873. <https://doi.org/10.1111/jopy.12531>
- Philippe, F. L., Koestner, R., Beaulieu-Pelletier, G. et Lecours, S. (2011a). The role of need satisfaction as a distinct and basic psychological component of autobiographical memories: A look at well-being. *Journal of Personality*, 79(5), 905-938. <https://doi.org/10.1111/j.1467-6494.2010.00710.x>
- Philippe, F. L., Koestner, R., Beaulieu-Pelletier, G., Lecours, S. et Lekes, N. (2012). The role of episodic memories in current and future well-being. *Personality and Social Psychology Bulletin*, 38(4), 505-519. <https://doi.org/10.1177/0146167211429805>
- Philippe, F. L., Koestner, R., Lecours, S., Beaulieu-Pelletier, G. et Bois, K. (2011b). The role of autobiographical memory networks in the experience of negative emotions: How our remembered past elicits our current feeling. *Emotion*, 11(6), 1279-1290. <https://doi.org/10.1037/a0025848>

- Philippe, F. L., Lecours, S. et Beaulieu-Pelletier, G. (2009). Resilience and positive emotions : Examining the role of emotional memories. *Journal of Personality*, 77, 139-175.
- Pierre, J. M. (2020). Mistrust and misinformation: A two-component, socio-epistemic model of belief in conspiracy theories. *Journal of Social and Political Psychology*, 8(2), 617–641. <https://doi.org/10.5964/jspp.v8i2.1362>
- Pillemer, D. B. (2003). Directive functions of autobiographical memory: The guiding power of the specific episode. *Memory*, 11, 193–202. <https://doi.org/10.1080/09658210244000360>
- Poon, K. T., Chen, Z. et Wong, W. Y. (2020). Beliefs in conspiracy theories following ostracism. *Personality and Social Psychology Bulletin*, 46, 1234–1246. <https://doi.org/10.1177/0146167219898944>
- Public Safety Canada. (7 juin 2022). February 14, 2022 *Declaration of Public Order Emergency: Explanation pursuant to subsection 58(1) of the Emergencies Act*. Government of Canada. <https://www.publicsafety.gc.ca/cnt/trnsprnc/brfng-mtrls/prlmntry-bndrs/20220625/10-en.aspx>
- Pummerer, L. (2022). Belief in conspiracy theories and non-normative behavior. *Current Opinion in Psychology*, 47, 101394. <https://doi.org/10.1016/j.copsyc.2022.101394>
- Radio-Canada (29 novembre 2020). Manifestations anti-masque: résultat d’une mauvaise communication, dit un chercheur. <https://ici.radio-canada.ca/nouvelle/1753251/desinformation-holdup-coronavirus-covid-19-vaccin>
- Rains, S. A. (2013). The nature of psychological reactance revisited: A meta-analytic review. *Human Communication Research*, 39, 47-73. <https://doi.org/10.1111/j.1468-2958.2012.01443.x>
- Rasmussen, A. S., & Berntsen, D. (2009). The possible functions of involuntary autobiographical memories. *Applied Cognitive Psychology*, 23(8), 1137-1152. <https://doi.org/10.1002/acp.1615>
- Rasmussen, A. S., Ramsgaard, S. B. et Berntsen, D. (2015). Frequency and functions of involuntary and voluntary autobiographical memories across the day. *Psychology of Consciousness: Theory, Research, and Practice*, 2(2), 185-205. <https://psycnet.apa.org/doi/10.1037/cns0000042>
- Reynolds-Tylus, T. (2019) Psychological reactance and persuasive health communication: A review of the literature. *Frontiers in Communication*, 4(56). <https://doi.org/10.3389/fcomm.2019.00056>
- Reynolds-Tylus, T. et Schill, D. (2022) An application of psychological reactance theory to college student voter registration and mobilization, *Journal of Political Marketing*, 21(3-4), 259-271, <https://doi.org/10.1080/15377857.2022.2099584>
- Robertson, T., Daffern, M. et Bucks, R. S. (2012). Emotion regulation and aggression. *Aggression and Violent Behavior*, 17(1), 72-82. <https://doi.org/10.1016/j.avb.2011.09.006>
- Rosenberg, M. B. (2011). *Les Ressources Insoupçonnées de la colère*. Éditions Jouvence
- Rosenberg, B. et Siegel, J. T. (2018). A 50-year review of psychological reactance theory: Do not read this article. *Motivation Science*, 4(4), 281-300. <https://doi.org/10.1037/mot0000091>

- Rothschild, Z. K., Landau, M. J., Sullivan, D. et Keefer, L. A. (2012). A dual-motive model of scapegoating: Displacing blame to reduce guilt or increase control. *Journal of Personality and Social Psychology*, 102(6), 1148-1163. <https://doi.org/10.1037/a0027413>
- Ruiter, R. A., Kessels, L. T., Peters, G. J. et Kok, G. (2014). Sixty years of fear appeal research: current state of the evidence. *International Journal of Psychology*, 49, 63–70. <https://doi.org/10.1002/ijop.12042>
- Ryan, R. M. (1995). Psychological need and the facilitation of integrative processes. *Journal of Personality*, 63(3), 397-427. <https://doi.org/10.1111/j.1467-6494.1995.tb00501.x>
- Ryan, R. M. et Deci, E. L. (2000a). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry*, 11, 319–338. https://doi.org/10.1207/S15327965PLI1104_03
- Ryan, R. M. et Deci, E. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness. Guilford Press.
- Satariano, A. et Alba, D. (11 avril 2020). Burning cell towers, out of baseless fear they spread the Virus. *The New York Times*. <https://www.nytimes.com/2020/04/10/technology/coronavirus-5g-uk.html>
- Schmid, A. P. (2013). Radicalisation, de-radicalisation counter-radicalisation: A conceptual discussion and literature review. Repéré à www.icct.nl
- Sebire, S. J., Standage, M. et Vansteenkiste, M. (2009). Examining intrinsic versus extrinsic exercise goals: Cognitive, affective, and behavioral outcomes. *Journal of Sport & Exercise Psychology*, 31, 189–210.
- Sheldon, K. M. (2011). Integrating behavioral-motive and experiential-requirement perspectives on psychological needs: A two process model. *Psychological Review*, 118(4), 552-569. <https://doi.org/10.1037/a0024758>
- Sheldon, K. M., Cheng, C. et Hilpert, J. (2011). Understanding well-being and optimal functioning: Applying the multilevel personality in context (MPIC) model. *Psychological Inquiry*, 22(1), 1–16. <http://dx.doi.org/10.1080/1047840X.2011.532477>
- Sheldon, K. M. et Gunz, A. (2009). Psychological needs as basic motives, not just experiential requirements. *Journal of Personality*, 77(5), 1467– 1492. <https://doi.org/10.1111/j.1467-6494.2009.00589.x>
- Sheldon, K. M. et Kasser, T. (2008). Psychological threat and extrinsic goal striving. *Motivation & Emotion*, 32, 37-45. <http://dx.doi.org/10.1007/s11031-008-9081-5>
- Sheldon, K. M. et Niemiec, C. P. (2006). It's not just the amount that counts: Balanced need satisfaction also affects well-being. *Journal of Personality and Social Psychology*, 91(2), 331–341. <https://doi.org/10.1037/0022-3514.91.2.331>
- Shen, L. et Dillard, J. P. (2005). Psychometric properties of the Hong Psychological Reactance Scale. *Journal of Personality Assessment*, 85(1), 74-81. https://doi.org/10.1207/s15327752jpa8501_07

- Sigfrid, L., Maskell, K., Bannister, P. G., Ismail, S. A., Collinson, S., Regmi, S. *et al.* (2020). Addressing challenges for clinical research responses to emerging epidemics and pandemics: a scoping review. *BMC Med*, 18(190).
- Smallman, S. (2015). Whom do you trust? Doubt and conspiracy theories in the 2009 Influenza pandemic. *Journal of International and Global Studies*. 9, 1-13.
- Smallman, S. (2018). Conspiracy theories and the Zika epidemic. *Journal of International and Global Studies*. 6, 1-24.
- Smith, C. A. et Lazarus, R. S. (1990). Chapter 23: Emotion and adaptation. Dans L. A. Pervin (Dir.), *Handbook of personality: Theory and research* (p. 609-637). Guilford.
- Steindl, C., Jonas, E., Sittenthaler, S., Traut-Mattausch, E. et Greenberg, J. (2015). Understanding psychological reactance: New developments and findings. *Zeitschrift für Psychologi*, 223(4), 205–214. <https://doi.org/10.1027/2151-2604/a000222>
- Stojanov, A. et Halberstadt, J. (2020). Does lack of control lead to conspiracy beliefs? A meta-analysis. *European Journal of Social Psychology*, 50(5), 955-968. <https://doi.org/10.1002/ejsp.2690>
- Stolow, J. A., Moses, L. M., Lederer, A. M. et Carter, R. (2020). How fear appeal approaches in COVID-19 health communication may be harming the global community. *Health Education and Behavior*. 47, 531–535. <https://doi.org/10.1177/1090198120935073>
- Swami, V., Pietschnig, J., Tran, U. S., Nader, I. W., Stieger, S. et Voracek, M. (2013). Lunar lies: the impact of informational framing and individual differences in shaping conspiracist beliefs about the moon landings. *Applied Cognitive Psychology*, 27, 71–80. <https://doi.org/10.1002/acp.2873>
- Swami, V., Voracek, M., Stieger, S., Tran, U. S. et Furnham, A. (2014). Analytic thinking reduces belief in conspiracy theories. *Cognition*, 133, 572–585. <https://doi.org/10.1016/j.cognition.2014.08.006>
- Swami, V., Weis, L., Lay, A., Barron, D. et Furnham, A. (2016). Associations between belief in conspiracy theories and the maladaptive personality traits of the personality inventory for DSM-5. *Psychiatry Research*, 236, 86–90. <https://doi.org/10.1016/j.psychres.2015.12.027>
- Tang, M., Wang, D. et Guerrien, A. (2021). The contribution of basic psychological need satisfaction to psychological well-being via autonomous motivation among older adults: A cross-cultural study in China and France. *Frontiers in Psychology*, 12, 734461. <https://doi.org/10.3389/fpsyg.2021.734461>
- Tannenbaum, M. B., Hepler, J., Zimmerman, R. S., Saul, L., Jacobs, S., Wilson, K. et Abarracín, D. (2015). Appealing to fear: A meta-analysis of fear appeal effectiveness and theories. *Psychological Bulletin*. 141, 1178–1204. <https://doi.org/10.1037/a0039729>
- Tausch, N., Becker, J. C., Spears, R., Christ, O., Saab, R., Singh, P. et Siddiqui, R. N. (2011). Explaining radical group behavior: Developing emotion and efficacy routes to normative and nonnormative collective action. *Journal of Personality and Social Psychology*, 101(1), 129–148. <https://doi.org/10.1037/a0022728>

- Taylor, S. et Asmundson, G. J. G. (2021). Negative attitudes about facemasks during the COVID-19 pandemic: The dual importance of perceived ineffectiveness and psychological reactance. *PLoS ONE*, 16(2), e0246317. <https://doi.org/10.1371/journal.pone.0246317>
- Thimm, J.C. (2024). Predicting psychological need satisfaction and frustration from early maladaptive schemas and DSM-5 and ICD-11 personality traits. *Current Psychology*, 43, 21083–21095. <https://doi.org/10.1007/s12144-024-05889-7>
- Thompson, H. S., Validmarsdottir, H. B., Winkel, G., Jandorf, L. et Redd, W. (2004). The group-based Medical Mistrust Scale: Psychometric properties and association with breast cancer screening. *Preventive Medicine*, 38, 209-218. <https://doi.org/10.1016/j.ypmed.2003.09.041>
- Uscinski, J., Enders, A., Diekman, A., Funchion, J., Klofstad, C., Kuebler, S., Murthi, M., Premaratne, K., Seelig, M., Verdear, D. et Wuchty, S. (2022). The psychological and political correlates of conspiracy theory beliefs. *Scientific Reports*, 12, 21672. <https://doi.org/10.1038/s41598-022-25617-0>
- Uscinski, J. E. et Parent, J. M. (2014). *American conspiracy theories*. Oxford University Press.
- Uysal, M. S., Saavedra, P. et Drury, J. (2024). Beyond normative and non-normative: A systematic review on predictors of confrontational collective action. *British Journal of Social Psychology*, 63, 1385-1409. <https://doi.org/10.1111/bjso.12735>
- Van Oost, P., Yzerbyt, V., Schmitz, M., Vansteenkiste, M., Luminet, O., Morbée, S., Van den Bergh, O., Waterschoot, J. et Klein, O. (2022). The relation between conspiracism, government trust, and COVID-19 vaccination intentions: The key role of motivation. *Social Science & Medicine*, 301, 114926. <https://doi.org/10.1016/j.socscimed.2022.114926>
- van Petegem, S., Soenens, B., Vansteenkiste, M. et Beyers, W. (2015). Rebels with a cause? Adolescent defiance from the perspective of reactance theory and self-determination theory. *Child Development*, 86(3), 903-918. <https://doi.org/10.1111/cdev.12355>
- van Petegem, S., Vansteenkiste, M. et Beyers, W. (2012). The jingle-jangle fallacy in adolescent autonomy in the family: In search of an underlying structure. *Journal of Youth and Adolescence*. *Journal of Youth and Adolescence*, 42, 994-1014. <https://doi.org/10.1007/s10964-012-9847-7>
- van Prooijen, J. W. (2020). An existential threat model of conspiracy theories. *European Psychologist*, 25(1), 16-25. <https://doi.org/10.1027/1016-9040/a000381>
- van Prooijen, J. W. (2022). Psychological benefits of believing conspiracy theories. *Current Opinion in Psychology*, 47, 101352. <https://doi.org/10.1016/j.copsyc.2022.101352>
- van Prooijen, J.-W. et Acker, M. (2015). The influence of control on belief in conspiracy theories: Conceptual and applied extensions. *Applied Cognitive Psychology*, 29, 753-761. <https://doi.org/10.1002/acp.3161>
- van Prooijen, J. W. et Douglas, K. M. (2017). Conspiracy theories as part of history: The role of societal crisis situations. *Memory Studies*, 10(3), 323-333. <https://doi.org/10.1177/1750698017701615>

- van Prooijen, J. W. et Douglas, K. M. (2018). Belief in conspiracy theories: Basic principles of an emerging research domain. *European Journal of Social Psychology*, 48, 897-908. <https://doi.org/10.1002/ejsp.2530>
- van Prooijen, J. W. et Jostmann, N. B. (2013). Belief in conspiracy theories: The influence of uncertainty and perceived morality. *European Journal of Social Psychology*, 43, 109-115. <https://doi.org/10.1002/ejsp.1922>
- van Prooijen, J. W., Krouwel, A. P. M. et Pollet, T. V. (2015). Political extremism predicts belief in conspiracy theories. *Social Psychological and Personality Science*, 6, 570-578. doi:10.1177/1948550614567356
- van Prooijen, J. W. et van Vugt, M. (2018). Conspiracy theories: Evolved functions and psychological mechanisms. *Perspectives on Psychological Science*, 13(6), 770-788. <https://doi.org/10.1177%2F1745691618774270>
- Vansteenkiste, M., Mouratidis, A. et Lens, W. (2010). Detaching reasons from aims: Fair play and well-being in soccer as a function of pursuing performance-approach goals for autonomous or controlling reasons. *Journal of Sport & Exercise Psychology*, 32, 217-242.
- Vansteenkiste, M., Soenens, B., van Petegem, S. et Duriez, B. (2014). Longitudinal associations between adolescent perceived style of parental prohibition and oppositional defiance and internalization. *Developmental Psychology*, 50, 229-236. <https://doi.org/10.1037/a0032972>
- Vansteenkiste, M. et Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, 23(3), 263-280. <https://doi.org/10.1037/a0032359>
- Vansteenkiste, M., Ryan, R. M. et Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motivation and Emotion*. 44, 1-31. <https://doi.org/10.1007/s11031-019-09818-1>
- Vermote, B., Waterschoot, J., Morbée, S., Van der Kaap-Deeder, J., Schrooyen, C., Soenens, B., Ryan, R. et Vansteenkiste, M. (2022). Do psychological needs play a role in times of uncertainty? Associations with well-being during the COVID-19 crisis. *Journal of Happiness Studies*, 23(1), 257-283. <https://doi.org/10.1007/s10902-021-00398-x>.
- Vinck, P., Pham, P. N., Bindu, K. K., Bedford, J. et Nilles, E. J. (2019). Institutional trust and misinformation in the response to the 2018-19 Ebola outbreak in North Kivu, DR Congo: A population-based survey. *The Lancet Infectious Diseases*. 19, 529-536. [https://doi.org/10.1016/S1473-3099\(19\)30063-5](https://doi.org/10.1016/S1473-3099(19)30063-5)
- Waterschoot, J., Morbée, S., Van den Bergh, O., Yzerbyt, V., Raemdonck, E., Brisbois, M., Schmitz, M., Klein, O., Luminet, O., Oost, P. V. et Vansteenkiste, M. (2023). How the stringency of the COVID-19 Restrictions influences motivation for adherence and well-being: The critical role of proportionality. *International Journal of Health Policy and Management*, 12, 8021. <https://doi.org/10.34172/ijhpm.2023.8021>

- Weinstein, N., Ryan, W. S., DeHaan, C. R., Przybylski, A. K., Legate, N. et Ryan, R. M. (2012). Parental autonomy support and discrepancies between implicit and explicit sexual identities: Dynamics of self-acceptance and defense. *Journal of Personality and Social Psychology*, 102, 815– 832. doi:10.1037/a0026854
- Williams, G. C., Cox, E. M., Kouides, R. et Deci, E. L. (1999). Presenting the facts about smoking to adolescents: effects of an autonomy-supportive style. *Archives of Pediatrics & Adolescent Medicine*, 153, 959–964. doi: 10.1001/archpedi.153.9. 959
- Williams, M. N., Marques, M.D., Kerr, J.R., Hill, S.R., Ling, M. et Clarke, E.J.R. (2025), Does Developing a Belief in One Conspiracy Theory Lead a Person to be More Likely to Believe in Others?. *European Journal of Social Psychology*, 55, 554-564. <https://doi.org/10.1002/ejsp.3153>
- Whitson, J. A. et Galinski, A. D. (2008). Lacking control increases illusory pattern perception. *Science*, 322(5898), 115-117. <https://doi.org/10.1126/science.1159845>
- Whitson, J. A., Galinsky, A. D. et Kay, A. (2015). The emotional roots of conspiratorial perceptions, system justification, and belief in the paranormal. *Journal of Experimental Social Psychology*, 56, 89–95. <https://doi.org/10.1016/j.jesp.2014.09.002>
- Whitson, J. A., Kim, J., Wang, C. S., Menon, T. et Webster, B. D. (2019). Regulatory focus and conspiratorial perceptions: The importance of personal control. *Personality and Social Psychology Bulletin*, 45(1), 3-15. <https://doi.org/10.1177/0146167218783191>
- Whitson, J. A., Kim, J., Wang, C. S., Menon, T. et Webster, B. D. (2019). Regulatory focus and conspiratorial perceptions: The importance of personal control. *Personality and Social Psychology Bulletin*, 45(1), 3-15. <https://doi.org/10.1177/0146167218783191>
- Wood, M. J., Douglas, K. M. et Sutton, R. M. (2012). Dead and alive: Beliefs in contradictory conspiracy theories. *Social Psychological and Personality Science*, 3, 767–773.
- Wright, S. C., Taylor, D. M. et Moghaddam, F. M. (1990). Responding to membership in a disadvantaged group: From acceptance to collective protest. *Journal of Personality and Social Psychology*, 58(6), 994-1003. <https://doi.org/10.1037/0022-3514.58.6.994>