THE MARIA GRZEGORZEWSKA UNIVERSITY

Anna Zarazińska-Chromińska

Does a life full of threats generate beliefs in conspiracies? Integrating evolutionary, dispositional, motivational, and situational perspectives

Doctoral dissertation prepared under the supervision of:
Supervisor
Prof. Dr hab. Peter K. Jonason
Co-supervisor
Dr hab. Anna Zajenkowska

Warsaw, 2025

Streszczenie rozprawy doktorskiej

Imiona i nazwisko autora rozprawy: Anna Zarazińska-Chromińska

Stopień / tytuł naukowy oraz imiona i nazwisko promotora rozprawy: Prof. Dr hab. Peter K. Jonason

Stopień / tytuł naukowy oraz imiona i nazwisko promotora/promotorów lub promotora pomocniczego: Dr hab. Anna Zajenkowska

Temat rozprawy doktorskiej: *Czy życie pełne zagrożeń sprzyja wierze w spiski?*

Podejście integrujące perspektywę ewolucyjną, dyspozycyjną, motywacyjną i kontekst sytuacyjny.

Słowa kluczowe: przekonania spiskowe, motywacja, osobowość, percepcja sytuacji, przeciwności losu, teoria historii życia

Streszczenie

W literaturze nad przekonaniami spiskowymi brakuje spójnego ujęcia wyjaśniającego, dlaczego jedne osoby są bardziej podatne na popieranie takich przekonań niż inni. Niniejsza rozprawa wypełnia tę lukę przez porównanie i integrację czterech perspektyw: (1) ewolucyjno-rozwojowej opartej na kalibracji do sygnałów ekologicznych, (2) osobowościowej obejmującej Wielką Piątkę i Mroczną Triadę, (3) motywacyjnej w ujęciu behawioralnych systemów aktywacji i hamowania oraz (4) sytuacyjnej opartej na percepcji cech i sygnałów sytuacji. Program badawczy obejmował trzy badania korelacyjne i dwa eksperymenty. Miary wykorzystane w badaniach uwzględniały ogólne i lokalne (specyficzne treściowo) przekonania spiskowe, cechy osobowości, systemy motywacyjne, postrzeganą niekorzystność warunków ekologicznych (surowość i nieprzewidywalność) oraz cechy sytuacji.

Wyłoniły się trzy stabilne wzorce. Po pierwsze, tam, gdzie porównywaliśmy oba typy przekonań spiskowych, okazało się, że przekonania ogólne były wyższe niż lokalne. Po drugie, krótkotrwałe indukcje surowości i nieprzewidywalności nie podnosiły poziomu przekonań

spiskowych. W analizach łączonych konteksty bezpieczeństwa i surowości dawały wyższe wyniki niż przewidywalność, nieprzewidywalność i warunek neutralny, co sugeruje rolę tonu emocjonalnego i chwilowego zaangażowania. Po trzecie, dane korelacyjne częściowo wspierają ideę kalibracji ekologicznej: przekonania spiskowe rosły wraz z oceną świata jako bardziej surowego, konkurencyjnego i niebezpiecznego, natomiast globalny wskaźnik historii życia nie wiązał się jednoznacznie z naszymi wynikami. Dodatkowo, silniejsze przekonania spiskowe współwystępowały z niższą refleksją analityczną, wyższym napędem dążeniowym, silniejszym poszukiwaniem zabawy oraz spostrzeganiem sytuacji jako bardziej wrogich, zwodniczych, negatywnych, jednocześnie też jako pozytywnych, społecznych, zorientowanych na dobór partnera. Wśród antagonistycznych cech osobowościowych makiawelizm pośredniczył w związku między przeciwnościami losu w dzieciństwie a ogólnymi przekonaniami spiskowymi. Związki ze strategiami radzenia sobie były słabe lub nieistotne, a różnice płci niewielkie i niestabilne. Wstępna ocena lokalnej skali przekonań spiskowych była obiecująca pod względem rzetelności oraz analiz EFA i CFA.

Podsumowując, ludzie codziennie oceniają napływające do nich sygnały, a oceny ważności tych sygnałów są kształtowane przez ich rozwój, cechy, motywację i kontekst sytuacyjny. Następnie te oceny prowadzą do osądów, które mogą przyjmować postać przekonań spiskowych. Wartością dodaną pracy jest: (1) integracja czterech podejść, (2) replikacja efektu domenowego polegającego na przewadze miar ogólnych przekonań spiskowych nad miarami lokalnymi, oraz (3) pokazanie granic krótkotrwałych indukcji eksperymentalnych. Rekomendujemy bardziej wiarygodne i angażujące ekspozycje z kontrolą manipulacji oraz bezpośredni pomiar tożsamości i zakorzenienia przy wyjaśnianiu przekonań lokalnych. Przyznajemy także, że poza realizacją zaplanowanych badań autorka rozwijała kompetencje badawcze i organizacyjne. Szczegółowy wykaz tych aktywności zamieszczono na końcu rozprawy.

Summary of the Ph.D. Thesis

Name of the author of the thesis: Anna Zarazińska-Chromińska

Academic title of the doctoral supervisor of the thesis: Prof. Dr hab. Peter K. Jonason

Name of the auxiliary promoter: Dr hab. Anna Zajenkowska

The title of the thesis: *Does a life full of threats generate beliefs in conspiracies? Integrating evolutionary, dispositional, motivational, and contextual perspectives.*

Key words phrases: beliefs in conspiracies, motivation, personality, perceived situation, adversity, life history theory

Abstract

Research on beliefs in conspiracies remains fragmented, with few direct comparisons of competing explanations. This dissertation addresses that gap by comparing and integrating four perspectives: (1) an evolutionary and developmental view based on ecological calibration, (2) a personality perspective that includes the Big Five and antagonistic traits, (3) a motivational systems account that focuses on the Behavioral Activation System (BAS) and the Behavioral Inhibition System (BIS), (4) and a situational account based on perceived situation characteristics and cues. The program comprised three cross-sectional studies and two experiments. Measures covered general and local beliefs in conspiracies, personality traits, BAS and BIS, perceived ecological adversity (harshness and unpredictability), and situational characteristics.

Three robust patterns emerged. First, whenever both domains were assessed, general beliefs in conspiracies were found to be higher than local beliefs in conspiracies. Second, brief inductions of harshness or unpredictability did not increase endorsement. In pooled analyses across Studies 4 and 5, safety and harsh contexts yielded higher endorsement than predictability, unpredictability, and neutral conditions, which points to the role of emotional tone and momentary engagement. Third, correlational evidence partly supported ecological

calibration. Endorsement tracked perceptions of a harsh, competitive, and dangerous world, whereas a global life history speed index showed no clear association. Higher endorsement also co-occurred with lower analytic reflection, higher BAS Drive and BAS Fun Seeking, and a perception of situations as more adversarial, deceptive, and negative, as well as more positive, social, and mating-relevant. Within the context of antagonistic traits, Machiavellianism partially mediated the link between childhood adversity and general beliefs in conspiracies. Links with coping were weak or null, and sex differences were minor and unstable. A locally developed measure showed promising reliability and initial EFA and CFA.

Taken together, people appear to weigh multiple cues, and the weights shaped by development, traits, motivation, and context yield judgments that can manifest as beliefs in conspiracies. The added value of the thesis lies in: (1) integrating four approaches, (2) demonstrating a replicated domain-level effect, whereby general beliefs in conspiracies measures outperform content-specific (local) measures, and (3) delineating the limits of brief, short-term experimental inductions. It recommends more credible and engaging manipulations, along with manipulation checks and direct assessments of identity and embeddedness, when predicting local beliefs. In addition to the empirical work, the author developed her research and organizational skills. A detailed list of these activities is included at the end of the dissertation.

Acknowledgements

"Nothing in life is to be feared. It is only to be understood.

Now is the time to understand more, so that we may fear less."

Maria Skłodowska-Curie

First, I would like to thank everyone who generously shared their time and experience with me and participated in my research. I am convinced that without their contribution and help, this dissertation would not have been possible. Second, I would like to thank my primary supervisor, Professor Peter Karl Jonason. Thank you for continuously challenging me and providing learning opportunities under your guidance. I am grateful for your support and encouragement. Your insightful feedback and high expectations motivated me to push the boundaries of my work. I am also very thankful to my co-supervisor, Associate Professor Anna Zajenkowska. I am grateful to have begun this academic journey with you. Thank you for your guidance and assistance as I took my first steps at the Doctoral School. I also acknowledge The Maria Grzegorzewska University for funding one of the studies presented in this dissertation and for financial assistance that allowed me to participate in academic conferences. These opportunities greatly aided in the growth and sharing of my research. Lastly, I would like to extend my sincere gratitude to my family and friends. Thank you for your patience and support, particularly during these challenging times. I am especially grateful to my Husband, Piotr. Your understanding and love have been my strength and motivation throughout this journey. I am thankful for your support and every cup of tea you made while I worked.

Thank you All.

Content

CHAPTER 1. Introduction

Background and Rationale

Imagine a world without conspiracy theories. Would it be safer or less prone to conflicts, dangers, or social divisions? Not necessarily. Why might that expectation not hold true? Sometimes, beliefs in conspiracies expose real misconduct, keep pressure on institutions for accountability and oversight, help people cope with uncertainty and negative feelings, and provide narrative engagement and social bonding. A world without such narratives would not automatically be perfect. Recognizing these roles does not resolve the issue. Instead, it emphasizes the key question of how and why such beliefs develop and last.

Even with a substantial literature and research findings, our grasp of why beliefs in conspiracies arise remains partial and fragmented. Most research focuses on *who* believes rather than *why* these beliefs form and endure. In this dissertation, we use the term *beliefs in conspiracies* to describe a general inclination to explain significant and consequential events as the coordinated, malicious actions of influential actors and groups (Brotherton et al., 2013; Bruder et al., 2013). Besides measuring general beliefs in conspiracies, we also include local beliefs in conspiracies that are particularly relevant in the Polish context. This will enable us to compare whether the same factors explain both general and specific beliefs in the context.

In contrast, conspiracy theories are detailed stories that bring these beliefs into action in specific situations (Uscinski & Parent, 2014; Douglas et al., 2019). We mainly focus on the core dispositional belief tendency, while recognizing its expression in specific theories (Sutton & Douglas, 2020). This distinction clarifies the boundaries of constructs, measurement choices, and the types of mechanisms we examine.

Conspiracy theories are often seen as engaging stories about secret plots by powerful groups (Aaronovitch, 2010; Douglas et al., 2019). During crises of uncertainty, ambiguity, and fear, they can help understand what is happening (van Prooijen & Douglas, 2017; Kouzy et al.,

2020). In these situations, beliefs in conspiracies may function as a response to psychological needs for control and predictability (Douglas et al., 2017). They are often used to explain major events because they are adaptable stories that people tend to accept, sometimes even with minimal or no evidence (van Prooijen, 2022b). Paradoxically, beliefs in conspiracies can sometimes make someone feel worse rather than better. They often do not reduce but actually increase negative affective states (Liekefett et al., 2023).

However, many people use these beliefs because they explain events, restore a sense of control, and defend identities they care about (Douglas et al., 2019; Kouzy et al., 2020). Moreover, these beliefs may build community for underrepresented and marginalized individuals and create opportunities for political debate on social and political issues (Miller, 2002). Conspiracy theories and beliefs in conspiracies, contrary to common assumptions, may have positive effects, as they strengthen social accountability and the public oversight (Basham, 2003). They encourage greater transparency (Swami & Coles, 2010) and inspire people to mobilize for collective goals to promote social change (Imhoff & Bruder, 2014). Thus, beliefs in conspiracies can be understood as the result of people's attempts to understand social and political reality. Although beliefs in conspiracies can give people a sense of meaning, identity, and a feeling of control (Cichocka et al., 2016; Douglas et al., 2017), it is important to be aware that they can also lead to some negative outcomes. These include increased skepticism about vaccines, mistrust in institutions (Jolley & Douglas, 2014a; Nera et al., 2022), and lower compliance with public health advice (Bierwiaczonek et al., 2020; Imhoff & Lamberty, 2020; Pavela Banai et al., 2022).

It is also essential to consider who is most likely to hold beliefs in conspiracies. Some evidence that beliefs in conspiracies are linked to specific personality traits, although the results vary across different traits and measures (see Goreis & Voracek, 2019; Bowes et al., 2023). Researchers have linked beliefs in conspiracies to lower trust in institutions (Douglas et al.,

2019), higher levels of schizotypy (Barron et al., 2014), or political extremism across various ideological orientations (van Prooijen et al., 2015). Simultaneously, some argue that these beliefs are a product of adaptation and evolution, relating them to ancient challenges like detecting threats from coalitions and protecting different groups (van Prooijen & van Vugt, 2018; Furnham & Horne, 2022). Together, these literatures highlight the need for an integrated framework that explains when and for whom beliefs in conspiracies offer perceived benefits, how they are evoked, and why they endure.

Theoretical Directions

Through the implementation of this research, we may identify new factors related to beliefs in conspiracies and gather fresh evidence to support our approach. Douglas and colleagues (2019) note that evidence on beliefs in conspiracies is heterogeneous, with results varying across samples and measures and sometimes being contradictory. Extensive literature on beliefs in conspiracies shows that research within the social-cognitive paradigm has been the dominant approach. In comparison, the evolutionary and developmental perspective could make significant contributions to this. With this potential in mind, we organize our account into four complementary lenses and translate each into testable hypotheses.

Accordingly, we organize our account around four complementary perspectives. First, the evolutionary-developmental view based on life history theory suggests that early adversity may calibrate vigilance and trust, which could predispose individuals to threat-focused interpretations. Second, the dispositional approach emphasizes that stable traits, ranging from the Big Five to the antagonistic features of the Dark Triad, may shape baseline trust, suspicion, and social cognition. Third, motivational models derived from the Reinforcement Sensitivity Theory highlight BIS-related threat vigilance and BAS-related approach tendencies as proximal regulators of attention and meaning-making. Fourth, situational characteristics, as captured by

the DIAMONDS taxonomy, especially the perception of adversity, negativity, and deception, as well as ecological cues of harshness or unpredictability, may increase the likelihood of endorsing beliefs in conspiracies. We emphasize that we treat these perspectives as complementary. Taken together, they form our integrative model of beliefs in conspiracies. The complete theoretical development and the mapping of hypotheses to studies will be provided in Chapters 3 and 4.

The approaches presented above: evolutionary-developmental, personality, motivational, and situational, provide integrative lenses on beliefs in conspiracies. Together, they enable us to compare the explanatory reach and determine whether beliefs in conspiracies can be understood as challenges rooted in the development, personality characteristics, motivational systems, or responses to specific situations. In this dissertation, we develop a versatile program that includes both correlational and experimental designs, offering a comprehensive perspective. Each study in the dissertation aims to address specific hypotheses derived from theoretical approaches and previous research in this area, using one or more of the four perspectives explained above. We believe that uncovering new factors and mechanistic links may deepen our understanding of why some people are susceptible to beliefs in conspiracies.

State of the Field and Key Limitations

Prior research on beliefs in conspiracies has identified diverse correlates, including affective, dispositional, and social factors (e.g., Swami & Furnham, 2012; Barron et al., 2014; Douglas et al., 2019; Biddlestone et al., 2020; Stubbersfield, 2021; Fountoulakis et al., 2022). However, most of them were exploratory and descriptive, lacking a clear organizing framework. Furthermore, there is currently limited research on beliefs in conspiracies from an evolutionary perspective (Stubbersfield, 2021), with most studies being correlational in nature.

To date, few studies have systematically examined beliefs in conspiracies using various theoretical frameworks. Our goal is to increase current understanding by providing a multi-perspective explanation of the phenomenon. Instead of concentrating solely on one dominant model or specific factors, such as cognitive biases or individual traits, we will consider multiple factors. Conceptually, beliefs in conspiracies are often viewed as cognitive errors (e.g., Gagliardi, 2023), products of personality dysfunction (e.g., Arnulf et al., 2022), or cultural phenomena (e.g., Adam-Troian et al., 2021). While most of these studies have expanded and produced valuable and insightful findings, the existing body of work still has limitations. Here, we identify and describe some of the limitations of current knowledge in this field.

Specifically, research in this area is primarily descriptive, focusing on cataloging specific beliefs in conspiracies or conspiracy theories (e.g., the death of Princess Diana; Douglas & Sutton, 2008). Moreover, results and conclusions are based on reporting correlations with individual differences, such as personality traits and cognitive abilities (see overview by Goreis & Voracek, 2019). Although this approach uncovers some relevant aspects and insights, we often lack a solid theoretical foundation. Moreover, the main issue is that these mechanisms have rarely been tested directly and examined the psychological processes that shape beliefs in conspiracies (Binnendyk & Pennycook, 2022; Pilch et al., 2023).

Next, some studies indirectly adopt a "pathologizing view" by portraying people with beliefs in conspiracies as irrational or outliers (Leveaux, 2022; Wagner-Egger et al., 2022), which frames the issue in a stigmatizing way rather than exploring standard psychological processes that could contribute to such beliefs. Additionally, most available evidence comes from correlational studies (see overview by Goreis & Voracek, 2019; Pilch et al., 2023), which limit the ability to examine causal mechanisms. To our knowledge, experimental studies are seldom conducted on beliefs in conspiracies (but see Kovic & Füchslin, 2018; Huang & Whitson, 2020; Meuer et al., 2021). It is important to emphasize that such studies are essential

for understanding whether cognitive biases, like agency detection or confirmation bias, play a role in forming beliefs in conspiracies or if social and ecological factors are more influential. Additionally, many studies focus on specific conspiracies (see Appendix G1 for a complete list), such as those related to COVID-19 and vaccinations, and the Jewish conspiracy (Kofta & Sedek, 2005; Freeman et al., 2022; Taubert et al., 2024), rather than examining the underlying psychological systems that drive beliefs in conspiracies.

From our perspective, focusing on individual variables can be too limiting. Such a narrow focus restricts generalization across various forms of beliefs in conspiracies and impedes the creation of a unified theoretical framework. Accordingly, we adopt a comparative program that combines correlational and experimental methods to identify the psychological mechanisms underpinning beliefs in conspiracies and to test predictions derived from our four approaches.

Contribution and the Novelty of the Approach

In light of the aforementioned limitations and omissions in previous research, we designed a multi-perspective research project aimed at providing a more comprehensive understanding of beliefs in conspiracies. This dissertation situates these beliefs within a broader psychological context. Our approach combines multiple methods and analysis levels. We seek to broaden current understanding by integrating these perspectives into a unified framework.

Furthermore, we aim to move beyond simple descriptions to develop a deeper understanding of the processes behind beliefs in conspiracies. Our goal is to go beyond fragmented explanations by introducing an evolutionary perspective on beliefs in conspiracies. We focus on life history theory as one potential, but not the only, explanation for these beliefs. Life history theory helps us understand how harsh and unpredictable ecological conditions, along with life history strategies, might shape beliefs in conspiracies. Previous research in

evolutionary psychology suggests that beliefs in conspiracies might serve adaptive functions, such as increasing vigilance against intergroup threats and strengthening ingroup bonds during ecological adversity (Neuberg et al., 2010; van Prooijen & van Vugt, 2018). However, most of these findings are theoretical in nature. Our research builds on this by empirically testing whether perceptions of or experimentally induced harshness and unpredictability influence beliefs in conspiracies, thus connecting evolutionary theories with psychometric and experimental evidence. We want to emphasize that this approach connects ecological conditions, developmental experiences, and individual factors to psychological outcomes associated with beliefs in conspiracies.

From our perspective, this is an expansion of previous studies. We would like to emphasize that our project incorporates the concept of life history theory as one of several explanatory perspectives. Moreover, instead of examining it in isolation, we aim to understand the phenomenon through different lenses. Another innovation is to combine various perspectives, such as evolutionary-developmental, personality, motivational, and situational. This path allows us to empirically test the pattern and magnitude of correlations across the four perspectives, highlighting points of convergence and divergence. It also provides an opportunity to determine whether beliefs in conspiracies are best understood as adaptive calibrations to ecological conditions (evolutionary-developmental), expressions of stable dispositions (personality), outcomes of basic motivational sensitivities (BIS and BAS), or flexible, situationally evoked responses, and to assess how these accounts differ in explanatory reach across individuals and contexts. Moreover, we hope that this approach, explained as an integrative research strategy, provides a more nuanced understanding of when and for whom beliefs in conspiracies arise and persist.

This project advances the literature by clarifying the psychological foundations of beliefs in conspiracies and by offering both theoretical integration and greater empirical precision. In conclusion, this dissertation contributes to the field in several key ways:

1. Contributes new knowledge and a deeper understanding of the phenomenon of beliefs in conspiracies.
2. Examines beliefs in conspiracies through an evolutionary view and life history theory.
3. Complements the dominant socio-cognitive perspective by adding an evolutionary and integrative approach.
4. Considers essential factors such as early adversity, coping strategies, personality traits, motivational systems, situational characteristics, and life history strategies.
5. Applies correlational and experimental methods to strengthen the methodological diversity of the field.
6. Conceptualizes beliefs in conspiracies as responses to ecological cues.
7. Integrates life history theory with other approaches.

Overall, this dissertation proposes an integrative framework for studying beliefs in conspiracies. It draws on evolutionary, personality, motivational, and situational perspectives to provide new insights into the psychological processes behind beliefs in conspiracies. We emphasize that this integrative model is conceptual rather than purely empirical. Each study offers partial evidence to support the framework. However, the dynamic interaction among developmental, dispositional, motivational, and situational factors still needs to be tested in future multilevel or longitudinal studies.

The dissertation is divided into two main parts: a theoretical review and an empirical section. The introduction described above is part of Chapter 1. In this chapter, we also provide a brief overview of the research program. Chapter 2 introduces the theoretical framework on beliefs in conspiracies, defines the concept, and explains the mechanisms behind these beliefs.

It also discusses the social impact of beliefs in conspiracies. In Chapter 3, we outline approaches and factors that may be important for understanding beliefs in conspiracies, which are incorporated into our theoretical framework. Chapter 4 describes the overall research goals, research questions, general hypotheses, and details about data collection and analysis. Chapters 5, 6, and 7 present three correlational studies (Studies 1-3), each with specific research questions and predictions. We also describe the methods, results, and conclusions for these studies. The following chapters, Chapters 8 and 9, introduce two experimental studies (Studies 4 and 5). As with the previous chapters, we specify the research questions and predictions, along with methods, results, and discussions. Chapter 10 presents pooled analyses of Studies 4 and 5. In Chapter 11, we provide a general discussion summarizing all the studies included in the dissertation. In this chapter, we discuss research limitations and gaps in our work. We also propose future directions and practical implications. Additionally, we include appendices with instruments and extra tables for interested readers.

CHAPTER 2. Psychological Foundations of Beliefs in Conspiracies: Literature Review

Definitions and Conceptualizations

Beliefs in conspiracies suggest that major events result from secret, malevolent collaboration for private gain against the public good (Uscinski & Parent, 2014; Douglas, Sutton, & Cichocka, 2017; van Prooijen & van Vugt, 2018). These secret groups aim to seize power, violate rights, and conceal vital information (Uscinski et al., 2016). Importantly, a key feature of beliefs in conspiracies is their self-sealing nature. They are resistant to falsification, meaning that counter-evidence is frequently reinterpreted as additional proof (Sunstein & Vermeule, 2009). Every attempt to disprove them is usually seen as more evidence supporting the conspiracy. There is evidence of small but consistent longitudinal evidence showing that beliefs in certain types of conspiracies predict a higher chance of believing in others (Williams et al., 2025).

Taken together, this resistance to falsification and generalization makes it crucial to distinguish between beliefs in conspiracies and documented conspiracies (Uscinski & Parent, 2014; Douglas et al., 2017). Conspiracies are factual instances of collusion confirmed by empirical evidence. By contrast, beliefs in conspiracies, which often rely on indirect evidence, are difficult to disprove and typically lack empirical support (Uscinski & Parent, 2014). Overall, this review focuses on beliefs in conspiracies as a psychological construct, excluding verified conspiracies by definition.

We observe that research on beliefs in conspiracies uses a wide variety of operationalizations and measures. Some measures ask individuals about specific narratives, such as the September 11th attacks in the U.S., vaccination, the COVID-19 pandemic, or climate change (Wood et al., 2012; Lewandowsky et al., 2013; Romer & Jamieson, 2020). Meanwhile, other measures aim to assess a general tendency to believe in conspiracies. Notably, the Generic Conspiracist Beliefs Scale (Brotherton et al., 2013), the 5-item version of the same

scale (Dagnall et al., 2023; Kay & Slovic, 2023), the Conspiracy Mentality Questionnaire (Bruder et al., 2013), and the Conspiracy Mentality Scale (Imhoff & Bruder, 2014) are often used to measure beliefs in a generic form. In contrast, specific conspiracy theories are measured using tools such as the Vaccine Conspiracy Beliefs Scale (Shapiro et al., 2016), the HIV Conspiracy Theory Scale (Bogart & Bird, 2003), or the Belief in Conspiracy Theories Inventory (Swami et al., 2010). There are claims that conspiracy mentality, described as both a general orientation and beliefs in specific conspiracies, is both separate and interconnected, with evidence pointing to two ways these are linked (Imhoff, 2024; Sutton et al., 2024; Trella et al., 2024). Debates continue about what exactly these measures are intended to assess. Most researchers emphasize that participants in studies using these tools evaluate the plausibility of imagined scenarios rather than endorsing clearly false claims. This complicates construct coverage, cross-cultural equivalence (Drinkwater et al., 2020; Dagnall et al., 2023), and the interpretation of scores as either representing institutional distrust or vulnerability to misinformation (Bruder et al., 2013; Imhoff & Bruder, 2014; Swami et al., 2017; Goreis & Voracek, 2019; Pennycook & Rand, 2019).

Importantly, surveys across countries show that a significant part of the public supports at least one type of conspiracy theory, yet the content and prevalence differ depending on the context (Freeman et al., 2022; Hornsey & Pearson, 2022; McCarthy, 2024; Stockemer & Bordeleau, 2024). In Poland, surveys and panels also indicated strong support for beliefs in conspiracies. These beliefs, both regarding the content of the narratives and their dissemination, vary based on the period and the specific conspiracy theory, such as during the pandemic or global conflicts (Czech & Ścigaj, 2020; Oleksy et al., 2021). Notably, in the Polish context, the overall “conspiracy mentality” is a key factor related to attitudes and behaviors, and can take on collective forms rooted in group identity and intergroup conflict (Soral et al., 2018; Marchlewska et al., 2019).

With respect to demographics, we see mostly modest and inconsistent effects in different settings. There is evidence that beliefs in conspiracies relate to sex, age, socioeconomic status, education, and ideology. However, these connections are not definitive and are not always replicated. Some evidence indicates that beliefs in conspiracies may be linked to lower education levels, economic inequality, and greater ideological extremism (Goertzel, 1994; van Prooijen et al., 2015; Hornsey & Pearson, 2022). We acknowledge that evidence about sex differences is mixed because some studies report no sex differences across beliefs in conspiracies (Uscinski & Parent, 2014), some find that men hold stronger beliefs in conspiracies (Freeman & Bentall, 2017), and others observe that women are more prone to such beliefs (Popoli & Longus, 2021). In addition, some previous research emphasizes the important role of culture, as certain societies are more vulnerable to specific types of beliefs in conspiracies related to historical experiences or political actions (Adam-Troian et al., 2021).

Psychological Mechanisms Behind Beliefs in Conspiracies

To explain why people endorse such beliefs, it helps to examine the mechanisms that sustain them. Usually, cognitive biases in processing information, especially proportionality bias, cause distorted conclusions, making these beliefs more appealing. When major world events occur, like the COVID-19 pandemic or global conflicts, they are more likely to promote beliefs in conspiracies (Leman & Cinnirella, 2007; van Prooijen & van Dijk, 2014; Stein et al., 2021).

A common taxonomy, proposed by Douglas and colleagues (2017, 2019), categorizes mechanisms into epistemic, existential, and social motives. Epistemic motives involve seeking knowledge and certainty (Douglas & Sutton, 2023). From this viewpoint, well-established biases and heuristics, such as illusory pattern perception, agency detection, and proportionality bias, cause people to interpret complex events as intentional rather than accidental (Douglas et

al., 2017, 2019; van Prooijen et al., 2018; van Prooijen, 2020). The proportionality bias, for example, assumes that major events must have equally significant, intentional causes (Leman & Cinnirella, 2007), like a hoax, intrigue, or a bioweapon (Imhoff & Lamberty, 2020). The scale of these events often encourages holding beliefs in conspiracies, particularly when faced with ambiguity (van Prooijen & van Dijk, 2014; Douglas et al., 2017). Likewise, confirmation bias is the tendency to seek out, interpret, and remember evidence that supports existing beliefs or expectations, while ignoring evidence that contradicts them (Nickerson, 1998; French et al., 2023). Additionally, research indicates that selective exposure within echo chambers and "information cocoons" amplifies confirmation bias by directing users toward content that confirms their views and away from disconfirming information (Zhou & Shen, 2021; Gagliardi, 2025; Liu et al., 2025). Beliefs in conspiracies are linked to a tendency to perceive intentionality and agency in various situations (Douglas et al., 2016), even when those qualities are absent (Heider & Simmel, 1944). Individuals who endorse beliefs in conspiracies often see false patterns and find meaningful links in random or unrelated data, events, or actions (van der Tempel & Alcock, 2015; van Prooijen et al., 2018). Some evidence suggests that those with lower levels of analytical thinking and critical reasoning are more susceptible to beliefs in conspiracies (Swami et al., 2014; Ståhl & van Prooijen, 2018; Pennycook & Rand, 2019). Overall, beliefs in conspiracies tend to reinforce themselves because selective information processing favors attitude-consistent content and dismisses disconfirming evidence. Confirmation bias maintains belief persistence (Nickerson, 1998; Taber & Lodge, 2006), corrections frequently fail to change views (Lewandowsky et al., 2012; Ecker et al., 2022), and echo chamber effects amplify exposure to similar claims (Bessi et al., 2015; Del Vicario et al., 2016; Douglas et al., 2017).

The second class of motives concerns existential motives, which relate to control, autonomy, and safety (Douglas & Sutton, 2023). People who feel powerless and lose control of

their lives might restore perceived control through beliefs in conspiracies. These theories provide individuals with a means to challenge official narratives and believe they possess a more accurate understanding of events (Douglas et al., 2019). This is particularly clear when people face a lack of control (Whitson & Galinsky, 2008) or system identity threat (Federico et al., 2018). Notably, these motives are closely connected to epistemic motives. In uncertain situations, individuals with a strong need for cognitive closure often turn to beliefs in conspiracies to find clear and definitive explanations (Marchlewska et al., 2018). Beliefs in conspiracies are also linked to a desire for meaning in life (Schöpfer et al., 2023). Moreover, the existential class of motives is closely tied to social-identity motives. A desire for uniqueness and to stand out from others modestly yet reliably predicts beliefs in conspiracies. Growing feelings of uniqueness can increase beliefs in conspiracies, suggesting these beliefs act as narratives that shape identity (Imhoff & Lamberty, 2017; Lantian et al., 2017).

The third category of motives is social. This type involves the desire to build a favorable self-image and boost one's standing within one's own group (Douglas & Sutton, 2023). Importantly, beliefs in conspiracies often bolster ingroup image and externalize blame to outgroups (Cichocka et al., 2016; Biddlestone et al., 2022; Hornsey et al., 2023; Endtricht & Kanol, 2024), aligning with populist or cynical worldviews (Castanho Silva et al., 2017). Therefore, beliefs in conspiracies are more common in environments marked by political division, intergroup conflicts and tension, and lower trust in institutions (Imhoff & Bruder, 2014; Soral et al., 2018; van Prooijen, 2020). These phenomena may be reinforced by social networks, groups, and online echo chambers, which promote selective exposure and the dissemination of misinformation (Bakshy et al., 2015; Bessi et al., 2015; Cinelli et al., 2021).

Taken together, the reviewed mechanisms show how existential, epistemic, and social motives can promote and maintain beliefs in conspiracies. Importantly, these motives are not

isolated but interact with broader biases in information processing and situational factors, such as societal crises or perceived threats to the ingroup.

Relevance and Social Impact

We examine beliefs in conspiracies because a significant portion of the population believes in conspiracy theories and shares them (Sunstein & Vermeule, 2009; van Prooijen & van Vugt, 2018; Jabkowski et al., 2025). Importantly, this pattern is also observed in Poland, where the significance of these theories is increasing (Czech & Ścigaj, 2020; Oleksy et al., 2021; Report of LBM UW, 2024).[1] We can describe their importance at both the individual and social levels.

At the individual level, beliefs in conspiracies change civic and prosocial activities. These beliefs are associated with decreases in voting intentions, charitable giving, and volunteering (Uscinski & Parent, 2014). They are also linked to lower participation in signing petitions, attending lawful demonstrations, and contacting social representatives (Jolley & Douglas, 2014b; Jolley et al., 2022; Herold et al., 2024). In public health, these beliefs are linked to lower vaccination rates (Jolley & Douglas, 2014a; Biddlestone et al., 2020) and a distrust of healthcare institutions (Whetten et al., 2006). Additionally, these beliefs predict weaker compliance with recommended protective behaviors during public health crises like the COVID-19 pandemic (Bierwiaczonek et al., 2020; Freeman et al., 2020; Imhoff & Lamberty, 2020) and less engagement in preventing and following HIV and AIDS treatment programs (Bogart et al., 2010). Likewise, they are associated with health-risk behaviors, such as rejecting medical treatment (Kalichman et al., 2009). Given their importance for mental health, beliefs in conspiracies are connected to poorer mental well-being, including higher anxiety and greater susceptibility to paranoia (Grzesiak-Feldman, 2013; Freeman & Bentall, 2017).

[1] According to *Laboratorium Badań Medioznawczych UW* [Media Studies Lab, University of Warsaw].

Socially, these beliefs weaken trust in institutions and confidence in science (Jolley & Douglas, 2014b; Lewandowsky et al., 2015; Nera et al., 2022; Pummerer et al., 2022). This reduction in trust leads to lower compliance with government regulations (Pummerer et al., 2022). Concerning social relations, previous research shows that beliefs in conspiracies are linked to greater support for fringe political groups and violent political actions (Sunstein & Vermeule, 2009; Vegetti & Littvay, 2022). They also promote prejudice against outgroups (Jolley et al., 2020) and spread misinformation, which weakens societal consensus and increases polarization in public discourse (van Mulukom et al., 2022). In the personal realm, these beliefs are associated with poorer social relationships (van Prooijen et al., 2022b), social exclusion, stigmatization, and ostracism (Lantian et al., 2018; Poon et al., 2020).

Taken together, beliefs in conspiracies carry significant costs on individuals and society as a whole (Uscinski & Parent, 2014), both online and offline (Ahmed et al., 2020). For example, spreading conspiracy theories about the harmful effects of the 5G cellular network led to people setting fire to cell phone towers (Meese et al., 2020; Wassens, 2020) and over 200 attacks on telecommunications workers in the United Kingdom (Vincent, 2020). Beyond this, beliefs in conspiracies are especially dangerous when leaders support them. When people are unsure of facts or cannot interpret scientific evidence, they naturally turn to their leaders for guidance (Douglas & Sutton, 2015, 2023). Overall, these patterns make beliefs in conspiracies not only a theoretical concern but a pressing public issue. Although some cognitive and behavioral traits may have been useful in ancestral environments (van Prooijen & van Vugt, 2018), today they cause problems for democratic participation, public health, trust in institutions, and social solidarity.

CHAPTER 3. Four Theoretical Approaches on Beliefs in Conspiracies: Toward an Integrative Model

Evolutionary-Developmental Perspective of Beliefs in Conspiracies

Evolutionary psychology explains social behavior as the result of evolved design features, tuned by natural and sexual selection to solve recurring problems and, indirectly, to affect fitness. These mechanisms have been shaped by natural and sexual selection to serve specific functions ultimately connected to reproductive success (Maner & Menzel, 2013). Beliefs in conspiracies can be seen as byproducts of evolved systems for coalition detection and threat anticipation.

Historically, episodes of real conspiracies, coordinated and secret actions by groups that resulted in significant human costs, such as deaths and resource loss, are believed to have shaped social cognition by creating selection pressures. These pressures likely promoted the development of mechanisms for detecting coalitionary intent and monitoring alliances (van Prooijen & van Vugt, 2018). In line with this account, the alliance-detection literature posits a specialized cognitive system that rapidly infers who is cooperating with whom and encodes coalitional structure in ways that guide social judgment and behavior (Kurzban & Leary, 2001; Pietraszewski, 2016; Kurzban et al., 2021). Interestingly, some experiments show that when coalition cues are made prominent and independent of race, racial categorization decreases significantly. In contrast, sex categorization remains strong, indicating that race is encoded opportunistically as a coalition cue, whereas sex is tracked by a separate mechanism (Pietraszewski et al., 2014).

Some evidence suggests that men, compared to women, respond more strongly to intergroup threats (van Vugt et al., 2007), however, these differences depend on social context (see Balliet et al., 2011). Consistent with the male warrior hypothesis, it is proposed that men's psychology evolved through intergroup competition (van Vugt, 2012). Perhaps these past

experiences helped men develop specific psychological traits, such as forming coalitions that can plan, initiate, and carry out aggressive actions against outsiders to protect or secure reproductive opportunities and resources (McDonald et al., 2012). In some contexts, women might gain security through alliances, while for men, these coalitions often serve both safety and reproductive benefits.

On the other hand, Error Management Theory may provide a complementary explanation for beliefs in conspiracies. When signs of coordinated malicious intent are unclear, judgments can either incorrectly identify nonexistent conspiracies or overlook real ones (Haselton & Buss, 2009; Haselton & Nettle, 2006). Since the costs of missing a real conspiracy historically exceeded those of false alarms, this theory predicts a tendency to over-detect. Therefore, in situations of ambiguity or threat, people might be more prone to beliefs in conspiracies to avoid the more costly mistake of missing a real threat (van Prooijen & van Vugt, 2018). Additionally, beliefs in conspiracies are associated with agency detection and illusory pattern perception (van Prooijen & Douglas, 2018).

Beyond the developed biases for detection and error management, a key question is why the inclination towards those beliefs differs among individuals and across various contexts. Here we turn to life history theory. This evolutionary theory addresses this by connecting ecological conditions, such as harshness and unpredictability, and developmental adjustments to stable differences in threat awareness and trust. In this perspective, life history theory explains how time and energy are distributed through trade-offs.

Life history theory provides a framework for understanding how organisms should allocate their time and energy to specific tasks and traits to maximize efficiency amid trade-offs (Giske et al., 2003; Del Giudice et al., 2015). These optimal investments change throughout an individual's life. The theory explores the evolutionary forces influencing the timing of key life events such as development, growth, reproduction, and aging (Kaplan & Gangestad, 2005).

Furthermore, life history theory suggests that experiencing instability, harshness, and danger early in life influences the development of long-term behavioral strategies and the types of information individuals focus on (Ellis et al., 2009; Belsky, 2012; Del Giudice et al., 2015).

In turn, a life history strategy is a consistent set of biological, psychological, and social traits that show how individuals respond to recurring adaptation challenges by distributing effort among growth, reproduction, and maintenance. These strategies remain adaptable and locally tailored within ecological limits (Brumbach et al., 2009; Csathó & Birkás, 2018; Lu et al., 2022). Differences among these traits are represented on a fast-slow spectrum, where individuals with fast strategies focus on immediate gains and devalue delayed rewards. On the contrary, individuals with slow life strategies tend to be more future-focused and investment-driven (Del Giudice et al., 2015). Along the lines of life history theory, individuals develop reproductive strategies influenced by early ecological conditions to optimize adaptation, defined as survival and offspring, through the allocation of limited material and bioenergetic resources (Kaplan & Gangestad, 2005; Ellis et al., 2009). Selective pressures like extrinsic mortality and organismal trade-offs direct this allocation into somatic efforts, such as maintenance, growth, and human skill development, as well as reproductive efforts, including mating, reproduction, and parental care (Gadgil & Bossert, 1970; Del Giudice & Belsky, 2011; Fabian & Flatt, 2012; Łukasik et al., 2021). These strategies affect the ability to solve adaptive problems in specific ecological settings (Figueredo et al., 2005). They are influenced by some phenotypic plasticity and flexibility in response to ecological conditions and individual living situations (Nettle, 2010; Fischer et al., 2011; Frankenhuis & Del Giudice, 2012).

Notably, in harsh and unpredictable contexts, scarcity forces individuals to choose between investing in current versus future reproduction and between caring for existing offspring versus producing more. As a result, individuals need to focus on development, survival, and reproduction, instead of attempting to optimize all three simultaneously. The

combination of these traits forms a person's life history strategy (Kaplan & Gangestad, 2005; Ellis et al., 2009). Because life history strategies evolve through calibration over time (Del Giudice et al., 2012), the next step is to examine developmental inputs, particularly childhood harshness and unpredictability, and how they affect adult stress responses and trust.

Kaplan and Gangestad (2005) contend that environments marked by high harshness, such as limited resources, elevated homicide rates, inadequate maternal care, or unpredictability, which is perceived as volatile and unstable, tend to encourage faster life history strategies. Faster strategies are associated with risky behaviors, earlier sexual activity, and more sexual partners (Chua et al., 2017; Sýkorová & Flegr, 2021). People with faster strategies often exhibit lower self-control, disregard for social norms and rules (Kwiek et al., 2017), higher impulsivity, a focus on the present, and difficulty valuing the future (Griskevicius et al., 2011; Del Giudice, 2014; Kwiek et al., 2017). They also tend to take more risks more often (Wang et al., 2009; Mishra et al., 2017), exhibit a craving for sensation seeking (Copping et al., 2013), and have a reduced ability to anticipate the outcomes of their actions (Griskevicius et al., 2011).

Conversely, slower life history strategies are associated with lower mortality, higher offspring survival, and longer lifespans, as well as greater involvement in parental support and care, resulting in overall improved survival prospects (Lawson & Mace, 2011; Kwiek et al., 2017). Humans with slower strategies tend to be monogamous, more selective about sexual partners (Schmitt, 2005; Figueredo et al., 2006; Del Giudice, 2009), more deliberate and future-oriented in their actions (Mishra et al., 2017), motivated by future benefits and rewards (Chen & Chang, 2016), capable of delaying gratification (Griskevicius et al., 2011), and generally more conscientious (Figueredo et al., 2015). In addition, these strategies are viewed as evolved responses to ecological safety signals, which involve adapting social behavior (Chang & Lu, 2018). Importantly, Griskevicius and colleagues (2011) emphasize that fast life history

tendencies may remain latent in benign environments but become activated under adverse conditions (H1a; H3a).[2]

This is why early childhood experiences are considered crucial to a person's life history. Early adversity alters expectations about resource availability, the trustworthiness of others, and relationship stability, thereby increasing vigilance in challenging situations (Belsky et al., 1991; Ellis et al., 2009). There is evidence that childhood adversity is associated with decreased psychosocial flexibility, increased stress reactivity, and heightened vigilance in response to potential threats and dangers (Anisman et al., 2008; Beutel et al., 2017). Moreover, the experience of uncertainty may result in a decreased sense of control among individuals from lower socioeconomic backgrounds compared to those from wealthier environments (Mittal & Griskevicius, 2014). Additionally, a persistent and unprecedented sense of uncertainty and insecurity naturally tends to increase anxiety and stress (Barzilay et al., 2020). In light of this, it is important that adults' responses to current ecological stressors differ based on their childhood experiences (Chang & Lu, 2018).

Living in environments of scarcity and volatility influences how people make social decisions. Consistent with calibration models, lower socioeconomic status is associated with more impulsive actions, greater risk-taking, and less patience for delayed rewards (Griskevicius et al., 2013). What is more, this can contribute to the development of hostile interpersonal styles and relatively poorer social skills in adulthood (Brumbach et al., 2009). Similarly, individuals with fast life strategies tend to experience higher levels of paranoia, anxiety, depression, mania, suicidal thoughts, and aggression (Chua et al., 2017; Hurst & Kavanagh, 2017). They also tend to trust others less (Chua et al., 2017; Stamos et al., 2019). While this heightened reactivity can

[2] In this literature review, we preview the hypotheses. For readability, some multifactor hypotheses are presented in components. The full formal wording and the testing plan appear in Chapter 4.

be advantageous in unpredictable settings, it may also result in a low threshold for perceiving threats in ambiguous situations, leading to increased vigilance and distrust (Kwiek et al., 2017). This vigilance and distrust might foster beliefs in conspiracies because such beliefs can provide a sense of safety and predictability (Whitson & Galinsky, 2008). Evidence also suggests that individuals who faced greater unpredictability during childhood tend to develop faster life history strategies and become more sensitive to stress in adulthood (Qi et al., 2024). During periods of ecological hardship or unpredictability, people may further shift toward these faster strategies (Chang & Lu, 2018; Csathó & Birkás, 2018). In light of the above, it is plausible that exposure to threatening or difficult conditions is linked to higher endorsement of beliefs in conspiracies and to faster life history orientations (H1b, H3b).

In turn, Lazarus and Folkman (1984) suggest that the tendency toward vigilance can be explained by the stress-appraisal perspective, which states that ambiguity is more often seen as a threat. This perception lowers perceived control and raises the desire for cognitive closure (Kruglanski, 2004; Kruglanski & Fishman, 2009; Roets & Van Hiel, 2011). As a result, coping strategies focus on reducing uncertainty, mainly through avoidant mechanisms like information avoidance (Sweeny et al., 2010; Golman et al., 2022), denial, disengagement (Compas et al., 2017), and quick meaning-making via broad explanations (Roets & Van Hiel, 2011), which can evolve into beliefs in conspiracies (Douglas et al., 2017). Taken together, beliefs in conspiracies may serve as a way to manage stress. They allow people to assign intentionality and impose order on complex events, helping them temporarily regain a sense of predictability (Whitson & Galinsky, 2008). Adverse life events and perceived stress are antecedents of beliefs in conspiracies (Swami et al., 2016a; Pfeffer et al., 2022). Moreover, lower trust in both others and institutions is one of the most consistent factors associated with such beliefs (Abalakina-Paap et al., 1999; van Prooijen et al., 2022b). For individuals who need cognitive closure, threatening experiences and events further enhance beliefs in conspiracies (Swami et al., 2016a;

Douglas et al., 2017; Hart & Graether, 2018; Marchlewska et al., 2018; Freeman et al., 2020; Constantinou et al., 2021; Pummerer et al., 2022). Adopting beliefs in conspiracies may be a problematic way of coping (Marchlewska et al., 2022), especially when people try to deal with the world's complexity and stress by avoiding information (Swami et al., 2016a). Although meaning-making mechanisms aim to reduce feelings of anxiety or depression, they often make individuals more susceptible to beliefs in conspiracies (van Prooijen & Douglas, 2017; Šrol et al., 2021). Evidence also suggests that beliefs in conspiracies are more common among those who employ problematic coping strategies (Constantinou et al., 2021; Hendy & Black, 2022; Molenda et al., 2024). Accordingly, during times of adversity, experiences of childhood adversity may covary with beliefs in conspiracies, and, in stressful situations, these beliefs might serve as a short-term stress management strategy (H3c).

While early ecology may tune vigilance and trust (Ellis et al., 2009; Szepsenwol & Simpson, 2019), individuals also vary in relatively stable traits that can affect how they interpret ambiguous information. In the next subsection, we explore correlational evidence connecting personality traits to beliefs in conspiracies, including the Big Five characteristics and antagonistic traits like Machiavellianism, narcissism, and psychopathy.

Personality Factors of Beliefs in Conspiracies

When we consider individuals who hold conspiracy theories, we often attempt to describe them based on their personality traits. Personality includes stable patterns of thinking, feeling, acting, and motivating behavior over time, as well as the mechanisms that create them (Allport, 1961; McCrae & Costa, 2008; DeYoung, 2015). Those stable characteristics shape how individuals respond to opportunities, challenges, and threats in various situations and are commonly described by the five-factor model of personality (Uher, 2017). This model, called

the Big Five, outlines five key personality dimensions: extraversion, agreeableness, conscientiousness, openness to experience, and neuroticism (Costa & McCrae, 1992).

Individuals with high levels of extraversion often stand out because of their sociability, assertiveness, energy, and positive emotions. In turn, openness to experience includes imagination, curiosity about ideas, sensitivity to beauty, and a desire for intellectual exploration. Individuals high in agreeableness are perceived as cooperative, trusting, and empathetic toward others. Another dimension, conscientiousness, manifests in the tendency to be disciplined, organized, and persistent in tasks. Finally, neuroticism is characterized by a tendency to feel negative emotions and react intensely to stressful situations **(**DeYoung et al., 2007; McCrae & Costa, 2008; Soto & John, 2017).

Whereas the Big Five outlines fundamental traits of normative personality, another perspective highlights antagonistic traits that are especially relevant when distrust and threat processing are central. These antagonistic traits are outlined in the Dark Triad model, which encompasses narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002; Furnham et al., 2013; Jones & Paulhus, 2014). The first is marked by exaggerated self-esteem, expectations of special treatment, and a status-seeking interpersonal style (Cichocka et al., 2016). Individuals high in this trait tend to see themselves as the center of attention (van Prooijen & Douglas, 2018). In its collective form, it increases ingroup worth and entitlement (Golec de Zavala et al., 2019). Interestingly, recent theories view narcissism as a blend of narcissistic neuroticism, genetically influenced extraversion, and antagonism (Miller et al., 2021; Cichocka et al., 2022), indicating that these trait areas are not entirely separate and may overlap somewhat. Machiavellianism is characterized by a tendency toward distrust, skepticism, and strategically manipulative tendencies (Furnham et al., 2013). Last of the antagonistic traits, psychopathy, is a characteristic linked to boldness, meanness, low inhibitions, and superficial emotions (Hare & Neumann, 2008; Patrick et al., 2009; Furnham et

al., 2013). Importantly, the three main personality traits in the Dark Triad model are interconnected, overlapping both conceptually and empirically. Specifically, they reflect related patterns of antagonistic and exploitative behavior. Namely, they are linked to manipulation (Hare & Neumann, 2008; Furnham et al., 2013) and a tendency to exploit others, as well as reduced empathy and a self-centered attitude (Moshagen et al., 2018; March & Springer, 2019). Furthermore, the Dark Triad traits are associated with relational aggression and a tendency to perceive others as hostile and malicious (Jiang et al., 2024).

Extensive literature on personality traits suggests that these characteristics may be associated with beliefs in conspiracies (Stasielowicz, 2022; Bowes et al., 2023). Considering broader traits, such as the Big Five, the current results are somewhat mixed rather than uniform. Across studies, the most replicable finding is the negative link between beliefs in conspiracies and agreeableness (Swami et al., 2010, 2013; Bruder et al., 2013). Notably, low agreeableness indicates antagonism and suspicion, which are essential parts of beliefs in conspiracies (Galliford & Furnham, 2017). Similarly, evidence shows that stronger beliefs in conspiracies are linked to low conscientiousness, particularly the less deliberative part of this trait (Bowes et al., 2021). Results for openness are mixed and inconsistent. Some of them exhibit both positive (Swami et al., 2011) and negative relationships with beliefs in conspiracies (Swami et al., 2016b). We observe that this could be because openness encompasses two equally important aspects of the broader trait, with the Big Five measures capturing each to different degrees (DeYoung, 2015). Namely, we can distinguish the intellectual aspect of openness, which involves engaging with cognitive and abstract ideas, and a form of openness based on aesthetic experiences, including perceptual and artistic interests, as well as a tendency to fantasize (DeYoung et al., 2007). Therefore, it is worth noting that the relationship between beliefs in conspiracies and openness appears to be bidirectional. On one hand, openness to experience reflects a tendency to seek novel and unusual ideas, which may increase susceptibility to beliefs

in conspiracies (Swami et al., 2013). On the other hand, this trait is also positively related to intelligence and more analytical thinking (Zajenkowski & Matthews, 2019), which is associated with a decreased tendency to hold beliefs in conspiracies (Swami et al., 2014; Cosgrove & Murphy, 2023).

In addition to basic personality traits, there is evidence that beliefs in conspiracies are linked to the Dark Triad traits (Kay, 2021). We argue that an antagonistic disposition may provide additional explanatory power. Studying literature and research in this field reveals that the most reliable associations are primarily with Machiavellianism and psychopathy (March & Springer, 2019; Hughes & Machan, 2021; Došenović & Dinić, 2024). Moreover, Machiavellianism and psychopathy are positively associated with general and COVID-19 specific beliefs in conspiracies (Hughes & Machan, 2021; Došenović & Dinić, 2024). Narcissism also predicts this endorsement, but this pattern is more differentiated. Individual narcissism is typically associated with a higher general endorsement of beliefs in conspiracies (Cichocka et al., 2016; Cichocka et al., 2022; Golec de Zavala et al., 2022), whereas the collective form of this trait tends to relate primarily to outgroup-focused content. At times, collective narcissism is linked to COVID-19 specific beliefs but not to general conspiracy theories (Hughes & Machan, 2021; Cichocka et al., 2016).

Beyond broad trait models, endorsement of beliefs in conspiracies is linked to a set of person-level characteristics. On the clinical side, some studies show that higher schizotypy (Darwin et al., 2011; Dyrendal et al., 2021), paranoia proneness (Darwin et al., 2011; Freeman et al., 2020; Stasielowicz, 2022), and reduced empathic concern, such as callousness (Swami et al., 2016c; Moshagen et al., 2018), are associated with beliefs in conspiracies. On the motivational and cognitive front, endorsement frequently occurs alongside a desire for uniqueness (Imhoff & Lamberty, 2017), greater need for cognitive closure (Marchlewska et al., 2018), intolerance of uncertainty (van Prooijen & Jostmann, 2013), and a tendency towards less

analytical or reflective thinking styles (Ståhl & van Prooijen, 2018; Stasielowicz, 2022; Yelbuz et al., 2022). Considering the worldviews and attitudes of people who endorse beliefs in conspiracies, their outlook often includes stronger endorsement of paranormal or supernatural claims (Darwin et al., 2011; Barron et al., 2014) and is connected to right-wing authoritarianism (Golec de Zavala & Cichocka, 2012). Lastly, boredom proneness has also been identified as a modest but consistent correlate of beliefs in conspiracies (Brotherton & Eser, 2015).

Here, we explain the importance of examining both basic and antagonistic personality traits. Findings related to the Big Five help us understand beliefs in conspiracies, but results are mixed across various studies and reviews (Goreis & Voracek, 2019; Bowes et al., 2023; Hornsey et al., 2023). The Big Five encompasses broad personality dimensions but may overlook some key features. Nevertheless, research on basic and antagonistic traits consistently shows common patterns: lower interpersonal and institutional trust, increased vigilance for threats, and a hostile attribution style in social situations (Goertzel, 1994; Abalakina-Paap et al., 1999; Imhoff & Bruder, 2014; Nera et al., 2022). Some socially undesirable tendencies, such as manipulativeness, callousness, and antagonism, are only partially captured within the Big Five framework (Paulhus & Williams, 2002; Furnham et al., 2013). The Dark Triad traits provide an additional useful perspective because they relate to interpersonal distrust, strategic social behavior, and a weaker respect for normative rules (Hare & Neumann, 2008; Moshagen et al., 2018). These connections may be especially relevant for understanding the phenomenon of beliefs in conspiracies.

Overall, this review suggests that certain personality traits may be linked to the development of beliefs in conspiracies. Thus, we hypothesize that these beliefs are associated with personality traits, including both the core dimensions of the Big Five model (H2a) and the antagonistic qualities described in the Dark Triad (H3d).

Motivational Systems and Beliefs in Conspiracies

Humans are continuously affected by various factors that shape their behaviors, thoughts, and choices. These influences encompass psychological, social, and cultural norms, as well as biological factors, ecological cues, and environmental features. Every day, individuals face numerous stressors and influences that mold their thoughts, emotions, and behaviors (Bandhu et al., 2024). To go beyond description and specify the mechanism, we base our understanding on the Reinforcement Sensitivity Theory (RST) of personality (Gray, 1970; Gray & McNaughton, 2000). This theory and its derivatives offer a neural systems model for understanding motivation in terms of approach and withdrawal dynamics (Corr, 2004). On this basis, motivation is explained through two systems: the Behavioral Inhibition System (BIS) and the Behavioral Activation System (BAS).

The Behavioral Activation System operates as a reward-oriented mechanism that motivates individuals to pursue socially valued outcomes and rewards, resulting in feelings of excitement and motivation. It includes three subscales: Drive, which indicates persistent goal pursuit, Fun Seeking, which shows a desire for new rewards and a tendency to seek pleasurable experiences, and Reward Responsiveness, which reflects positive reactions when rewards are received (Carver & White, 1994). By comparison, the Behavioral Inhibition System responds to potential punishment and negative consequences, acting as an avoidance mechanism (Carver & White, 1994; Corr, 2004; Berkman et al., 2009). This motivational system often appears as increased watchfulness and anxiety (Reuter et al., 2015; Corr & Cooper, 2016).

Individuals who score higher on the Behavioral Activation System tend to show more positive affect (Campbell-Sills et al., 2004) and are associated with extraversion, novelty seeking, and sensation seeking (Mardaga & Hansenne, 2007; Segarra et al., 2014; Smillie et al., 2015; Espinoza Oyarce et al., 2021). The Behavioral Activation System is also linked to approach-related anger (Carver & Harmon-Jones, 2009; Gable & Poole, 2014) and to risk-

taking behaviors and substance use (Voigt et al., 2009; Zisserson et al., 2007). It can predict higher levels of proactive aggression and anger-out behaviors (Smits & Kuppens, 2005). At the same time, evidence suggests that one aspect of this system, namely Reward Responsiveness, serves as a protective factor against engaging in risky health behaviors (Voigt et al., 2009).

In turn, people with higher sensitivity in the Behavioral Inhibition System tend to report trait anxiety, worry, and negative affect more frequently (Carver & White, 1994; Campbell-Sills et al., 2004; Espinoza Oyarce et al., 2021). Furthermore, sensitivity in this system is associated with neuroticism, emotional problems, and depression (Campbell-Sills et al., 2004; Smits & Kuppens, 2005; Corr & Cooper, 2016). The Behavioral Inhibition System is connected to vigilance and threat monitoring. Empirical research also links this motivational system to disengagement and avoidant coping (Litman, 2006; Jonas et al., 2014). What is important is that these two motivational systems form the core basis of the Big Five traits (Segarra et al., 2014), with the Behavioral Inhibition System underpinning affective instability and the Behavioral Activation System promoting sociability and reward seeking (Smillie et al., 2015).

Studies so far suggest that endorsement of beliefs in conspiracies may, in some cases, be linked to higher engagement of the Behavioral Activation System (BAS), especially when approach motivation is driven by anger. Conversely, those with higher scores on the Behavioral Inhibition System tend to be more suspicious, seeking a strong sense of control over their lives (Windsor et al., 2008), and looking for predictability (McEvoy & Mahoney, 2011; Hong & Lee, 2015), all of which are important factors for beliefs in conspiracies (Douglas et al., 2017). Given the above, some individuals may adopt beliefs in conspiracies as a way to compensate for their perceived lack of control (Stojanov et al., 2022), to restore predictability, and to protect their social identity (Douglas et al., 2017; Marchlewska et al., 2019). Moreover, conspiracy narratives can evoke both avoidance behaviors, like fear and withdrawal, and approach behaviors, such as anger and confrontation, aligning with an adaptive functions perspective

(van Prooijen & van Vugt, 2018). This finding is consistent with evidence that individuals who have more difficulty regulating their emotions are more likely to hold beliefs in conspiracies (Molenda et al., 2023). Beliefs in conspiracies are more linked to dispositional anxiety and are associated with vigilance, with little or no connection to cognitive or behavioral avoidance. This pattern fits a Behavioral Inhibition System profile of anxiety and threat monitoring rather than simple withdrawal (Corr, 2004; Berkman et al., 2009; Krüppel et al., 2023).

When people face a threat, immediate responses include behavioral inhibition, increased anxious arousal, and vigilance (see also Berkman et al., 2009 for Behavioral Inhibition System activation by response conflict). In contrast, distal responses focus on reducing inhibition and anxiety through distant defenses (Jutzi et al., 2020). Within this context, approach-oriented motivation can reduce beliefs in conspiracies when personal control is intact. Still, under salient loss of power, even among approach-oriented individuals, endorsement increases, consistent with compensatory-control accounts (Whitson et al., 2019).

In comparison, approach motivation (BAS), primarily driven by anger, increases the attractiveness and resilience of beliefs in conspiracies. Trait anger predicts endorsement independently of overall approach motivation, while state anger strengthens this effect. These connections are partly explained by increased attributions of malicious intent to suspected conspirators (Szymaniak et al., 2023; Harmon-Jones & Szymaniak, 2023; Harmon-Jones et al., 2024). On the other hand, beliefs in conspiracies are considered to have entertaining value, such as mystery and thrill (van Prooijen et al., 2022a), and, therefore, they might be rewarding for some people.

In sum, beyond personality traits, we suggest that beliefs in conspiracies appeal to both individuals oriented toward engaging narratives (BAS) and those whose heightened vigilance (BIS) makes them more receptive to intentionality attributions and threat-focused explanations (H2b).

Situational Factors: Characteristics and Cues Underlying Beliefs in Conspiracies

Besides how humans think, feel, and what motivates them, an essential factor appears to be how they read and interpret their situation. How people perceive their situation might give additional insight into why they adopt beliefs in conspiracies. Prior work suggests that the way people perceive a specific situation is correlated with their beliefs in conspiracies.

For instance, a sense of low power (Abalakina-Paap et al., 1999; Bruder et al., 2013; Jolley & Douglas, 2013; Pantazi et al., 2022), decreased control (Whitson & Galinsky, 2008; Bruder et al., 2013; Prooijen & Acker, 2015; Kofta et al., 2020), heightened uncertainty (van Prooijen & Jostmann, 2013; Rutjens & Većkalov, 2022; Leclercq et al., 2024), and threat (Jolley et al., 2018) co-occur with beliefs in conspiracies. These appraisals shape how we view both distant historical events (van Prooijen & Acker, 2015) and recent happenings, such as a pandemic or global conflicts (Oleksy et al., 2021).

A broad literature of beliefs in conspiracies connects them with perceptions of existential threat (Federico et al., 2018; Heiss et al., 2021; Liekefett et al., 2023). For example, increased threat perceptions during the COVID-19 pandemic were associated with stronger beliefs in conspiracies (Heiss et al., 2021). Similarly, viewing society as under threat relates to beliefs in conspiracies through increased anxiety, a reduced sense of control, and feelings of uncertainty (van Prooijen & Douglas, 2017; van Prooijen et al., 2018). Elevated uncertainty can lead to reasoning strategies that promote beliefs in conspiracies (Krekó, 2023; Leclercq et al., 2024). Importantly, besides uncertainty, the general perception of threat may also lead to the formation of beliefs in conspiracies (Heiss et al., 2021). In addition, stronger endorsers tend to see the world as more dangerous, see it more strongly as socially threatening, non-random, and lacking fixed morality (Moulding et al., 2016), with a widespread moral breakdown in society (Brotherton et al., 2013; Bruder et al., 2013; Bowes et al., 2023). Moreover, people who

strongly believe in a dangerous and threatening world perceive life as an ongoing battle for survival, with threats all around (Grigoryev & Gallyamova, 2023).

Under conditions of power asymmetry, where the other party is perceived as dominant or controlling, individuals prone to beliefs in conspiracies lower their epistemic trust in that source (Imhoff et al., 2018). Experimental studies show that exposure to beliefs in conspiracies can itself increase feelings of powerlessness and anomie (Jolley et al., 2019). Thus, besides dispositional traits, perceptions of danger, deception, instability, and existential threats in specific situations provide proximate channels that evoke beliefs in conspiracies.

The perception of the world can also be examined in more detail by focusing on how individuals interpret specific, momentary situations in their daily lives. To do this, Rauthmann and Sherman (2016) introduced the DIAMONDS taxonomy, which offers a more thorough assessment of the situation characteristics (Zajenkowski et al., 2020). This measure includes dimensions of situational characteristics such as Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Deception, and Sociality (DIAMONDS). In line with this framework, individual differences in beliefs about the world, such as seeing it as threatening or unpredictable, may systematically shape how people appraise concrete encounters in terms of duty, adversity, or deception. In particular, perceptions of deception could heighten suspicious thinking (Rauthmann & Sherman, 2016). Using the DIAMONDS perspective can help merge broad worldview beliefs with the micro-level perception of situations, offering a deeper understanding of the psychological roots of beliefs in conspiracies.

Overall, we emphasize that signs of adversity and social threat generally increase vigilance, decrease perceived control, and raise suspicion of others (Whitson & Galinsky, 2008; Heiss et al., 2021). Under uncertainty and adversity, reduced perceived control, heightened vigilance, and increased focus on deceptive intent are immediate ways that harshness and unpredictability make conspiratorial narratives seem logical and action-guiding in the moment

(Whitson & Galinsky, 2008; Leclercq et al., 2024). Consistent with existential accounts, research, both experimental and correlational, indicates that self-uncertainty leads to increased conspiratorial explanations (van Prooijen, 2016). Additionally, increased awareness of mortality is connected to defending one's worldview and being sensitive to threats, which are direct paths leading to greater acceptance of conspiratorial explanations during crises (Pyszczynski et al., 2021).

Similarly, experimentally inducing loss of control or uncertainty increases beliefs in conspiracies (Whitson & Galinsky, 2008; Whitson et al., 2019). Likewise, perceiving one's nation as under significant threat fosters suspicion of outgroups (Cichocka et al., 2016). When people view a group as outstanding, superior, and deserving of more recognition, they tend to see outgroups as threatening (Golec de Zavala & Lantos, 2020). Notably, the effects of existential threat on outgroup-focused beliefs in conspiracies are mediated by illusory pattern recognition and heightened agency detection (Müller & Hartmann, 2023; Mao et al., 2025).

These cognitive mechanisms may be sensitive to cues of adversity, unpredictability, mortality, and threat, leading humans to become more vigilant (Nesse, 2005; Haselton & Nettle, 2006; Del Giudice et al., 2011), distrustful (Sperber et al., 2010; Raihani & Bell, 2019), and suspicious in social exchange (Cosmides & Tooby, 1992; Neuberg et al., 2010; van Prooijen & van Vugt, 2018). In line with the above, we suggest that, beyond dispositional factors, situational characteristics and ecological cues of threats, as represented by the DIAMONDS taxonomy, are associated with beliefs in conspiracies. Accordingly, we hypothesize a positive correlation between perceived DIAMONDS-relevant situational characteristics and beliefs in conspiracies (H2c). We further hypothesize that experimentally inducing ecological harshness and unpredictability will increase beliefs in conspiracies (H4; H5).

Key Constructs and Definitions

In this dissertation, we employ clear definitions of the constructs being examined to ensure clarity and consistency across various studies. Here, we present the basic concepts in our work outlined above, specifically:

- **Beliefs in conspiracies**

We view beliefs in conspiracies as a baseline disposition to interpret social or political events as being caused by the coordinated and harmful acts of powerful and covert groups (Brotherton et al., 2013; Douglas et al., 2019). In our research, we distinguish between *general beliefs in conspiracies*, which are widespread and trait-like endorsements of conspiratorial explanations, and *local beliefs* rooted in narratives specific to the Polish sociocultural context (Imhoff et al., 2022).

- **Life history strategy**

We use a definition that describes life history strategies as patterns of developmental trade-off profiles shaped by ecological factors (harshness, competitiveness, danger, instability, and unpredictability), which affect how humans distribute energy among survival, reproduction, and social ties (Ellis et al., 2009; Del Giudice et al., 2015). In life history theory, *faster strategies* aim for quick gains and immediate rewards, while *slower strategies* prioritize long-term planning, patience, and stability in relationships (Mell et al., 2018; Chang et al., 2019).

- **Adversity**

We conceptualize adversity as a higher-order state of ecological disadvantage inferred from two primary conditions marked by *harshness*, which is characterized by lack of safety, and elevated costs and risks to health and survival, as well as *unpredictability*, which is viewed as

changing and challenging to predict shifts (Ellis et al., 2009; Shonkoff et al., 2012; Chang et al., 2019). Based on this concept, we distinguish two measurement levels of adversity:

(1) *developmental adversity* (childhood), which refers to exposure to stressful, complex, threatening, and unstable environments from early childhood through adolescence (Ellis et al., 2009; Shonkoff et al., 2012).

(2) *ecological adversity* (present), which is linked with the current extent of disadvantage, mainly measured by perceived resource scarcity and irregularity. In some analyses, we also conceptualize competitiveness, danger, and instability as supplementary indicators of adversity (Ellis et al., 2009; Belsky et al., 2012).

- **Ecological cues**

These constructs function as observed pieces of information that shape adaptive responses (Ellis et al., 2009). Ecological cues in our framework belong to a situational paradigm. In particular, they are proximal, experimentally induced signals designed to convey information about harshness and unpredictability (Griskevicius et al., 2011), without assuming that a brief manipulation alters the underlying state of adversity. We want to emphasize that we view adversity as a measured, longer-term condition. At the same time, we treat ecological cues as short-term signals generated during the experiment. Because they function at different levels, we do not assume they are the same or directly interchangeable.

- **Situational characteristics**

We mapped out situational characteristics using the DIAMONDS framework (Rauthmann et al., 2014), treating its subscales as eight distinct ways people may perceive a situation. These include: duty (obligations), intellect (cognitive engagement), adversity (risk), mating (romantic

and sexual cues), positivity (pleasant signals), negativity (stressful signals), deception (hidden motives), and sociality (social interactions).

- **Coping strategies**

They reflect cognitive and behavioral efforts to manage emotions and solve problems under stress (Lazarus & Folkman, 1984; Compas et al., 2017). In this dissertation, we define coping as a proximal response pattern that might reflect evolutionary-developmental calibration to stress (Ellis & Del Giudice, 2019). Primarily, we will focus on problematic coping strategies, such as substance use, disengagement, and risky behaviors (Carver et al., 1989; Marchlewska et al., 2022; Molenda et al., 2024).

- **Personality traits**

We conceptualize personality on a fundamental and antagonistic spectrum. In our approach, we include both broad basic traits, such as neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience (McCrae & Costa, 2008), as well as antagonistic traits represented by Machiavellianism, psychopathy, and narcissism (Paulhus & Williams, 2002). In our data, neuroticism is measured using its reverse-scored pole, emotional stability, in line with the terminology used in the IPIP-BFM-20 (Topolewska et al., 2014).

- **Motivation**

We conceptualize motivation as consisting of the approach system and the threat-monitoring system, represented by the Behavioral Activation System (BAS) and the Behavioral Inhibition System (BIS), respectively (Gray & McNaughton, 2000). We also focus on dimensions of BAS, such as BAS Drive, which reflects goal pursuit, BAS Fun Seeking, defined as searching for

novelty, and BAS Reward Responsiveness, viewed as responses to gains (Carver & White, 1994).

Theoretical Integration of the Model

In this dissertation, we examine how ecological and individual factors shape beliefs in conspiracies through four lenses: evolutionary-developmental, personality, motivational, and situational. We link stable individual differences to strategic responses elicited by threat and ecological cues, and synthesize a scattered body of findings into a coherent framework.

First, the evolutionary-developmental approach (life history theory) links beliefs in conspiracies to adaptive calibration under developmental and ecological adversity. Within this approach, coping is treated as a proximal behavioral expression of such calibration under stress. Second, personality approaches explain the endorsement of beliefs in conspiracies in terms of stable dispositions, such as the Big Five and antagonistic traits captured by the Dark Triad. Third, the motivational approach focuses on sensitivity to threat and reward as proximal controls of attention and interpretation. Fourth, the situational approach shows how situational characteristics and ecological cues, like unpredictability and harshness, can elicit beliefs in conspiracies. Next, we will explore each approach, including its theoretical basis and implications for the study of beliefs in conspiracies. Guided by this structure, we ask whether beliefs in conspiracies are better understood as:

1. evolutionary-developmental pathways,
2. outcomes of personality traits,
3. reflection of motivational sensitivities,
4. situationally evoked responses.

Therefore, this dissertation presents a systematic integration of these four perspectives, specifically:

1. **Evolutionary-developmental pathways**: This perspective may offer insight into how beliefs in conspiracies develop as "*adaptively calibrated responses to developmental and ecological adversity"*. According to life history theory, early childhood conditions are crucial in shaping long-term strategies (Ellis et al., 2009; Belsky, 2012). We suggest that individuals with faster life history strategies, shaped by challenging living environments, may be more susceptible to beliefs in conspiracies. Exposure to adversity signals during the formative years can shape long-term psychological growth, leading to hypervigilance, mistrust, and sensitivity to potential threats (McLaughlin et al., 2014; Frankenhuis et al., 2016). Within this approach, coping strategies are understood as a proximal behavioral expression of life history calibration under stress. Individuals facing stress and uncertainty may adopt beliefs in conspiracies to manage anxiety, restore a sense of control, or make sense of adverse experiences (Compas et al., 2001; Zarazińska & Jonason, 2024).

2. **Personality traits:** This approach focuses on fundamental personality characteristics, such as the Big Five traits (McCrae & Costa, 2008), as well as socially aversive characteristics described in the Dark Triad (Paulhus & Williams, 2002). According to this approach, stable personality traits shape a broad spectrum of attitudes and beliefs (McCrae & Costa, 2008). Beliefs in conspiracies may be linked to basic personality characteristics, especially openness and low agreeableness (Swami et al., 2010; Brotherton et al., 2013; Halama & Teličák, 2024). Additionally, they may be associated with the Dark Triad traits (March & Springer, 2019; Kay, 2021). This approach highlights antagonistic characteristics such as narcissism, Machiavellianism, and

psychopathy, which are associated with increased social distrust, exploitation, manipulation, and hostility (Hare & Neumann, 2008; Furnham et al., 2013; Jiang et al., 2024). Thus, beliefs in conspiracies can be viewed as "*antagonistic or basic trait-based dispositions*". These traits, in various combinations, might serve as potential factors explaining beliefs in conspiracies.

3. **Motivational systems:** From this perspective, motivational profiles such as the Behavioral Inhibition System (BIS) and the Behavioral Activation System (BAS) may offer an alternative explanation for why some individuals are more susceptible to beliefs in conspiracies (Carver & White, 1994; Gray & McNaughton, 2000). The Behavioral Inhibition System sensitivity can foster hypervigilance and intolerance of uncertainty (Reuter et al., 2015), aligning with the cognitive style typically associated with beliefs in conspiracies. On the other hand, the Behavioral Activation System, in particular Drive and Fun Seeking, is related to approach-oriented risk-taking and sensation-seeking, which may encourage engagement with agentic, emotionally charged narratives, leading to a stronger endorsement of beliefs in conspiracies (Carver & Harmon-Jones, 2009; Corr & Cooper, 2016). Within this approach, beliefs in conspiracies may reflect "*the sensitivities of motivational systems"*.

4. **Situationally evoked responses:** This approach highlights the role of "*situationally evoked responses to ecological cues and situational characteristics"* that can activate underlying cognitive schemas. The DIAMONDS taxonomy (Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Deception, Sociality) demonstrates that people differ systematically in how they perceive situations. Although ecological harshness and unpredictability serve as developmental dimensions in life history theory (Ellis et al.,

2009; Del Giudice et al., 2015), we treat them as short-term situational threats that can evoke responses. This distinction allows us to compare long-term calibration (described in the evolutionary-developmental approach) with short-term situational activation (measured by situational factors and simple experiments that briefly introduce harsh or unpredictable contexts).

We propose an integrative model where beliefs in conspiracies develop at the intersection of evolutionary adaptations and developmental environments, with coping serving as a proximal behavioral expression of life history calibration under stress. This process involves stable personality traits, motivational profiles, and situational cues (see Table 1 for details). This structure offers a clear analytical framework and supports a complementary research approach across multiple studies. We highlight that no single theoretical perspective can entirely explain beliefs in conspiracies, and we evaluate their combined and distinctive explanatory strengths. While the current model primarily focuses on psychological antecedents, its broader significance lies in the societal consequences discussed in Chapter 1, which underscore the importance of understanding when and for whom these beliefs tend to be activated. The General Discussion expands on the full theoretical integration by analyzing findings from all empirical studies together.

Table 1

Overview of theoretical approaches to beliefs in conspiracies across five studies

Approach	Core focus	Time scale	Study
Evolutionary-developmental	developmental adversity ecological adversity life history strategy coping	long-term activation (childhood, chronic environments)	**Study 1:** ecological adversity life history strategy **Study 3:** childhood adversity life history strategy coping
Personality traits	Big Five traits Dark Triad traits	lifelong stability	**Study 2:** Big Five **Study 3:** Dark Triad
Motivational systems	BIS and BAS sensitivities	trait-like but dynamic	**Study 2:** Behavioral Activation System Behavioral Inhibition System
Situationally evoked responses	situational characteristics (DIAMONDS) ecological cues of harshness and unpredictability	short-term activation (minutes to days)	**Study 2:** situational characteristics **Study 4:** ecological cues of harshness **Study 5:** ecological cues of unpredictability

Note. The table is a roadmap only. Specific aims and predictions are reported under each study.

CHAPTER 4. Research Program: General Hypotheses, Methodology, and Analysis Plan

General Goals of the Research Program and Hypotheses

The primary goal of this research project is to develop a comprehensive understanding of the psychological and evolutionary foundations of beliefs in conspiracies. We intend to explore this phenomenon using four explanatory approaches. Our goal is to expand current knowledge by employing an integrative, multimethod perspective to identify evolutionary, dispositional, motivational, and situational factors that may be associated with and influence beliefs in conspiracies.

In our research program, we comparatively assess and integrate four explanatory approaches to individual differences in beliefs in conspiracies, specifically:
(1) **evolutionary-developmental pathways** centered on life history strategy and calibration to adversity, with coping conceptualized as a proximal behavioral expression of life history calibration under stress,
(2) **personality traits**, including the Big Five and antagonistic features of the Dark Triad,
(3) **motivational system sensitivities** indexed by Behavioral Inhibition and Behavioral Activation,
(4) **situationally evoked responses** captured by perceived situational characteristics and ecological cues.

This dissertation replicates and extends previous studies on beliefs in conspiracies, providing a more nuanced understanding of the factors that may contribute to the formation of such beliefs. The primary objectives of the research program are as follows:

1. To assess the relevance of life-history strategy, coping, and developmental and ecological adversity for individual differences in endorsement of beliefs in conspiracies.
2. To examine the role of personality traits, particularly antagonistic tendencies from the Dark Triad and core traits from the Big Five, in beliefs in conspiracies.

3. To test whether individual differences in Behavioral Inhibition (BIS) and Behavioral Activation (BAS) are associated with beliefs in conspiracies.
4. To analyze links between perceived situational characteristics, especially perceptions of adversity, deception, and negativity, and endorsement of beliefs in conspiracies.
5. To investigate whether brief exposure to ecological cues, such as harshness and unpredictability, causally increases beliefs in conspiracies in experimental inductions.
6. To compare the relative explanatory reach of the four perspectives across general vs. content-specific (local) measures of beliefs in conspiracies.

Additionally, we will examine theoretically motivated moderators of both the observed associations and the experimental effects (e.g., sex, general vs. local scales). We emphasize that each study tests hypotheses grounded in one or more of the four approaches, enabling a comparative assessment of their explanatory reach and an exploration of their integration into a coherent explanatory framework.

Here, we restate the general hypotheses that were outlined in the theoretical review. Guided by the research questions and by the overarching framework that integrates four theoretical explanations of beliefs in conspiracies, we formulate the following general hypotheses:

H1: *If beliefs in conspiracies are adaptively calibrated responses, as proposed by life history theory, then they will be positively associated with the life history strategy and with subjective perception of ecological adversity.*

H2: *If beliefs in conspiracies are linked to dispositional, motivational, and situational factors, then these beliefs will be associated with personality traits, motivational systems, and perceived situational characteristics*.

H3: *If beliefs in conspiracies serve as calibrated responses to early adversity, then they will be positively associated with developmental factors (childhood adversity, life history strategy, coping strategies) and antagonistic personality traits (Dark Triad).*

H4: *If individuals are exposed to ecological cues of harshness, then their beliefs in conspiracies will increase.*

H5: *If individuals are exposed to ecological cues of unpredictability, then their beliefs in conspiracies will increase.*

We note that each general hypothesis refers to a single study in the research program. Together, these five hypotheses provide a comprehensive overview of the research direction. We highlight that the general hypotheses are presented above, and the following chapters of the dissertation will present the exact predictions, methods, analyses of results, and discussions for each study.

Description of the Research Program and Objectives of Individual Studies

The research program comprises five studies that employ a combination of correlational and experimental methods within an integrative framework. This design enables a programmatic test of evolutionary-developmental, dispositional, motivational, and situational hypotheses regarding both general and local beliefs in conspiracies. To achieve these aims, we will proceed in five steps, each corresponding to a separate study.

- **Study 1: Evolutionary-developmental correlational test**

  The first step in this research program involves a cross-sectional correlational study, which aims to investigate the relationship between beliefs in conspiracies, life history strategy, and perceived ecological cues across three temporal frames: childhood, the present, and the anticipated future. We will examine whether these associations differ by sex and instrument (the Generic Conspiracist Beliefs Scale and the Conspiracy

Mentality Questionnaire). This step serves as a basic test of the idea that beliefs in conspiracies align with adaptively calibrated responses to ecological adversity, as measured by the harshness, instability, danger, and competitiveness of environments.

- **Study 2: Dispositional, motivational, and situational factors**

  The second step of our research program introduces dispositional, motivational, and situational factors. We will expand the model to include personality traits (the Big Five), motivational sensitivities indexed by the Behavioral Activation System and the Behavioral Inhibition System, as well as perceived situational characteristics based on the DIAMONDS taxonomy. This design enables us to assess whether personality, motivation, and situational factors are associated with beliefs in conspiracies. Specifically, the study also helps clarify which motivational sensitivities are involved and which types of situational characteristics are linked to beliefs in conspiracies.

- **Study 3: Expanded evolutionary-developmental and dispositional model**

  The third step extends the initial correlational framework. Here, we will incorporate antagonistic traits from the Dark Triad, life history strategy, coping strategies, and perceived childhood adversity. This cross-sectional model is designed to examine whether beliefs in conspiracies reflect adaptively calibrated responses to developmental adversity. Additionally, we will assess whether general and local beliefs in conspiracies have different psychological profiles and whether these relationships vary by sex.

- **Study 4: Experimental induction of ecological harshness**

  In this experiment, we will investigate whether inductions of ecological harshness increase beliefs in conspiracies compared to neutral conditions. We will also analyze

whether the induction effect differs by sex and type of belief (general versus local). This study offers causal insight into short-term contextual activation, complementing the long-term calibration pathway.

- **Study 5: Experimental induction of ecological unpredictability**

  In this study, we will explore whether inducing ecological unpredictability increases beliefs in conspiracies compared to neutral conditions. We will also examine whether the induction effect varies by sex and type of belief (general versus local). Again, this study provides causal insights into short-term contextual activation, complementing the long-term calibration pathway.

General Methodology Across All Studies

Within this section, we outline the general methodology applied across all studies, including the measurement and research tools used, data collection strategies, and statistical procedures. All studies adhere to the ethical standards approved by The Maria Grzegorzewska University (Approval No. 100/2022). Across the research program, we will use a consistent set of psychological tools, some in their original English versions and others in validated Polish adaptations. Table 2 provides a complete list of all psychometric tools that will be used across the studies. We will include measures that were previously validated and have satisfactory psychometric properties in both original and adapted studies (Cronbach's α from .58 to .93), indicating acceptable to excellent reliability. A detailed set of internal-consistency values reported in the literature is summarized in Appendix G (Table G3). Cronbach's α coefficients obtained in our samples will be noted in the Methods section of each study.

Table 2

A summary of all the tools that will be used across studies within the research program

Construct	Measurement	Language	Author/Adaptation	Study
Beliefs in conspiracies	Generic Conspiracist Beliefs Scale (GCBS)	English Polish	Brotherton et al., 2013 Siwiak et al., 2019	1-5
	Conspiracy Mentality Questionnaire (CMQ)	English	Bruder et al., 2013	1
	Local Beliefs in Conspiracies Scale (LBCS)	Polish	Original, author-developed	3-5
Life history strategy	42 item *K*-SF-42	English	Figueredo et al., 2017	1
	Mini-*K* Scale	English Polish	Figueredo et al., 2006 Czarna et al., 2016	3
Personality traits	20-item International Personality Item Pool (IPIP-BFM-20)	Polish	Donnellan et al., 2006 Topolewska et al., 2014	2
	Short Dark Triad (SD3)	Polish	Jones & Paulhus, 2014 Rogoza & Cieciuch, 2019	3
Motivational systems	BIS-BAS Scale	Polish	Carver & White, 1994 Müller & Wytykowska, 2005	2
Coping strategies	Mini-COPE	Polish	Carver et al., 1989 Juczyński & Ogińska-Bulik, 2012	3
Situational characteristics	*S8** Scale	Polish	Rauthmann & Sherman, 2016 Zajenkowski et al., 2020	2
Developmental and ecological adversity	General Childhood Perception	Polish	Original, author-developed	3
	Living Condition Questionnaire	English	Original, author-developed	1

Note. All author-developed measures are included in Appendix A.

We note that in the area of beliefs in conspiracies, available instruments are mostly limited to the Generic Conspiracist Beliefs Scale and the Conspiracy Mentality Questionnaire. To address the lack of culturally relevant measures, especially those suited to the Polish socio-political context, we will develop an original Local Beliefs in Conspiracies Scale. We will also

prepare additional author-developed materials, including tools assessing adversity and stimuli for experimental manipulations. Importantly, we will use all original instruments with the authors' permission. The psychometric properties of all measures will be reported and discussed in the chapters for each study. The appendices for each study will include the full versions of our author-developed questionnaires (see Appendix A).

Data Collection and Analysis

We will collect data through both professional online panel platforms and volunteer-based recruitment, depending on financial considerations and data quality requirements. We will use self-managed data collection selectively to strike a balance between cost efficiency and sample control. Given the growing concerns about the reliability of online data, we will implement several integrity checks to ensure the accuracy and integrity of our data. Specifically, we will embed attention checks within the questionnaires, verify response times to identify participants who complete the surveys too quickly, and exclude incomplete responses to enhance data reliability and minimize potential biases.

Our analytic strategy will be aligned across studies while remaining appropriate to each design. We will report descriptive statistics, internal consistency indices for all scales in our samples, and zero-order correlation matrices for the main variables. For group comparisons and experimental effects, we will use analysis of variance (ANOVA) and report the corresponding effect sizes along with their confidence intervals. Any mediation tests will be treated as exploratory, post hoc analyses. We note that following APA 7 guidelines (American Psychological Association, 2020), we will report exact *p*-values (e.g., $p = .008$) in the two experimental studies (with ANOVA analyses). For correlational analyses, we will use a simplified threshold notation (e.g., $p < .001$) in line with conventional reporting practices. In addition, we will describe *p*-values between .05 and .10 as trend-level and interpret them

cautiously. All datasets from published studies will be publicly available on the Open Science Framework (OSF). We will include the link to the data in the chapters that describe the relevant studies. Data from additional studies will be made available upon publication.

CHAPTER 5. Study 1: Correlational Study of Beliefs in Conspiracies as a Response to Ecological Conditions Across Three Time Points

Note. This chapter is based on a published article titled:

Zarazińska-Chromińska, A., & Jonason, P. (2025). Insights into beliefs in conspiracies from a life history theory perspective. *Evolutionary Behavioral Sciences.* DOI: 10.1037/ebs0000375.

Objective of the Study and Theoretical Rationale

In this study, we will evaluate the explanatory value of the evolutionary-developmental approach for individual differences in beliefs in conspiracies. More precisely, we will investigate whether beliefs in conspiracies can be conceptualized as adaptively calibrated responses to perceived ecological adversity (Del Giudice et al., 2011), assessed across three temporal perspectives: past (childhood), present, and anticipated future. We will analyze whether individuals interpret early life environments as cues to future conditions and, under adverse ecological contexts, adopt faster life history strategies, which may occur with a greater endorsement of beliefs in conspiracies. In this view, beliefs in conspiracies function as calibrated responses to perceived threat, unpredictability, competition, and harsh conditions. To capture this process, we will include subjective assessments of adversity across the lifespan, including anticipated future experiences.

Since people with challenging past experiences are more likely to adopt beliefs in conspiracies (Freeman & Bentall, 2017; Goreis et al., 2023), we predict those beliefs will be positively linked to perceived ecological adversity in childhood, the present, and the anticipated future (P1.1). On this basis, we expect that in tough times, people may develop psychological strategies like increased awareness of threats. This could include a tendency to beliefs in conspiracies. The focus on past, present, and future matches findings that show both past experiences and future expectations influence actual behavior (Nuttin, 1985).

There is evidence that children raised in harsh environments by insensitive parents are more likely to develop traits suited to a fast life history strategy. Those strategies are associated with early reproduction and short-term benefits (Belsky, 2012; Mell et al., 2018). Therefore, we predict that individuals with faster life history strategies will be more likely to adopt beliefs in conspiracies (P1.2). These beliefs might help in predicting hidden threats and dealing with uncertain situations (van Prooijen & van Vugt, 2018). Additionally, we will examine whether these relationships are influenced by measurement type (GCBS or CMQ) and sex (P1.3). Although both the Generic Conspiracist Beliefs Scale (GCBS) and the Conspiracy Mentality Questionnaire (CMQ) measure the same construct, they differ in how they are operationalized (e.g., item content and scope). Some researchers (Brotherton et al., 2013; Bruder et al., 2013; Imhoff & Bruder, 2014) underline that both measures are related but distinct constructs. Given this, we will check for sex differences and whether any such differences vary across the two measures.

From an evolutionary perspective, men and women may react differently to ecological threats because of distinct reproductive strategies and different levels of parental investment (Kaplan & Gangestad, 2005). Some studies suggest that men are more likely to endorse beliefs in conspiracies (Freeman & Bentall, 2017), while others report no significant differences between men and women (Uscinski & Parent, 2014). Men usually show faster life history strategies than women, possibly because of lower parental investment engagement (Figueredo et al., 2006). Consistent with this, we will also examine whether men have faster life history strategies (P1.4), demonstrate greater endorsement of beliefs in conspiracies (P1.5), and report worse living conditions compared to women (P1.6). More broadly, evidence indicates that certain hardships are more closely connected to men's emotional well-being or distress (e.g., lower perceived neighborhood safety, cumulative inflation-related hardships), supporting our exploratory prediction that men might view their living conditions as more negative (Louie et

al., 2023; Robinette et al., 2025). Furthermore, men report lower life satisfaction than women (Joshanloo & Jovanović, 2020), which could further lead to more negative assessments of their living conditions. Importantly, we consider these predictions exploratory because previous research has shown mixed results (e.g., Uscinski & Parent, 2014; Freeman & Bentall, 2017; Graves et al., 2021).

In this study, we will analyze an evolutionary-developmental explanation for individual differences in beliefs in conspiracies. We will investigate whether perceived ecological adversity across three time frames and faster life history strategies are linked to stronger beliefs in conspiracies, treating such beliefs as adaptively calibrated responses to danger, unpredictability, competitiveness, and harsh conditions.

Research Questions, Hypotheses, and Predictions

This study was designed to empirically test the first general hypothesis (H1) introduced in the theoretical framework.

General Hypothesis H1**:** *If beliefs in conspiracies are adaptively calibrated responses as proposed by life history theory, then they will be positively associated with the life history strategy and with subjective perception of ecological adversity.*

This general hypothesis drives the research questions below, namely:

Q1. Do beliefs in conspiracies relate to perceived ecological adversity (living conditions) across different developmental stages, specifically childhood, present, and future expectations?

Q2. Are individuals with faster life history strategies more likely to endorse beliefs in conspiracies?

Q3. Do the type of measurement (GCBS vs. CMQ) and sex moderate these associations?

Q4. Are there sex differences in life history strategies, perceived adversity, and beliefs in conspiracies?

Based on these research questions and the theoretical foundations introduced at the start of this study, we made the following specific predictions, namely:

P1.1. Beliefs in conspiracies will be positively associated with perceived ecological adversity in childhood, in the present, and in the anticipated future.

P1.2. Individuals with faster life history strategies will report stronger endorsement of beliefs in conspiracies.

P1.3. The association in P1.1. and P1.2. will differ on the type of measurement (GCBS vs. CMQ) and sex.

Besides the main predictions, we will also examine whether sex differences might appear in life history strategies and beliefs in conspiracies. In particular, we will explore whether:

P1.4. Men will exhibit faster life history strategies than women.

P1.5. Men will endorse stronger beliefs in conspiracies than women.

P1.6. Men will rate their living conditions as more adverse than women.

Analytic Plan

To test our predictions, we will use the *SPSS* program (version 28). To determine whether beliefs in conspiracies are related to ecological adversity and life history strategy, we will calculate the Pearson correlation coefficient. To test for mean sex differences, we will perform *t*-tests. To evaluate moderation by sex (group differences in correlations), we will compare coefficients using Fisher's *z*. To examine moderation by measurement type (GCBS vs. CMQ) within the same sample, we will apply Steiger's *z*.

Method

Participants and Procedure

This sample size was planned based on the average effect size ($r \approx .20$) in personality psychology (Gignac & Szodorai, 2016) and on guidelines ($N \approx 250$) set for reducing estimation

error in personality psychology (Schönbrodt & Perugini, 2013). To verify these statistics, we used G*Power (Faul et al., 2007) to conduct a power analysis. We planned our sample size to detect a bivariate correlation of $r = .20$ with a two-tailed $\alpha = .05$ and desired power of .85, which yields a required sample of 226 participants.

The study included 285 online, snowball, or social media-based volunteers (34.4% men, 64.9% women, 0.7% other) aged between 18 and 70 years ($M = 32.41$, $SD = 12.08$). In total, 225 (78.9%) participants were of White/European descent, 31 (10.9%) of them were of Asian descent, 11 (3.9%) were of Black/African descent, nine (3.2%) were of Hispanic/Latino descent, and nine (3.2%) identified as belonging to another racial group. We informed participants about the nature of the study, provided a tick-box consent form, and then completed a brief self-report survey. We thanked and debriefed them afterwards. The study procedures followed the guidelines of the ethics committee at The Maria Grzegorzewska University. Although the hypotheses were not pre-registered, the data are available on the Open Science Framework[3].

Measures

We measured beliefs in conspiracies in two ways. First, we used the 15-item Generic Conspiracist Beliefs Scale (Brotherton et al., 2013), which covers a range of topics, such as secret groups controlling the world. Participants reported how accurate (1 = *definitely not true*; 5 = *definitely true*) each statement (e.g., "Technology with mind-control capacities is used on people without their knowledge.", $\alpha = .93$) was. Second, we used the 5-item Conspiracy Mentality Questionnaire (Bruder et al., 2013). Participants reported how certain (0% = *Certainly not;* 100% = *Certain*) they were that each statement (e.g., "Government agencies

[3] OSF: https://osf.io/6yu8a/

closely monitor all citizens.", $\alpha = .87$) was true. Items were averaged to create an index of each measure. These measures are correlated ($r = .76$, $p < .01$), so to identify whether they have a single standard dimension, we conducted an Exploratory Factor Analysis using the Principal Axis Factoring method with a varimax rotation. The initial eigenvalues showed that three factors had values greater than 1.00. Together, these factors explained 58.4% of the total variance. Specifically, Factor 1 accounted for 23.8% of the variance, Factor 2 for 20.1%, and Factor 3 for 14.4%. The factor loadings ranged from .44 to .79, indicating that the items were well represented and consistently loaded on the factors (see Table B1 in Appendix B for details). These results suggest that the two sets of items reflect distinct operationalizations of beliefs in conspiracies. Therefore, we analyzed them separately.

To measure individual differences in life history strategies, we used the 42-item *K*-SF-42 (Figueredo et al., 2017). Participants were asked about their agreement (-3 = *strongly* disagree; 3 = *strongly agree*) with 18 items for the subscales of *Insight, Planning, and Control* (e.g., "When I encounter problems, I don't give up until I solve them."), *General Altruism* (e.g., "I contribute a great deal to the welfare and well-being of my friends these days."), and *Religiosity* (e.g., "I'm a very religious person."). Next, participants assessed their agreement (0 = *not at all*; 3 = *a lot*) with 24 items for the subscales of *Romantic Partner Relationship* (e.g., "I want to get close to my partner, but I keep pulling back."), *Parental Relationship Quality* (e.g., "How much effort did your biological mother put into watching over you and making sure you had a good upbringing?"), *Family Social Contact and Support* (e.g., "How much have your relatives told you that you had done something well?"), and *Friends Social Contact and Support* (e.g., "How much have your friends offered to take you somewhere?"). We averaged items to develop indexes for each main domain and then combined them to create a single global index of life history strategy along a fast-slow continuum (higher scores indicate a slower life history strategy).

Then, we aimed to explore the relationship between perceived living conditions across different time periods: past, present, and future. Given the lack of appropriate measures that capture the dynamic nature of ecological conditions: how harsh, competitive, stable, and dangerous life was (in the past), is (presently), and will be (in the future), we created a new measure. Importantly, by using this approach, we built upon our previous research (Zarazińska & Jonason, 2024), which examined childhood adversity as part of past ecological factors. Accordingly, we asked participants to reflect on their living conditions and then rate how harsh, competitive, unstable, and dangerous they perceived them to be (1 = *very low*; 5 = *very high*). Within this approach, we combined evolutionary (Jonason et al., 2016) and social (Duckitt & Fisher, 2003) perspectives on self-reported life conditions, leading to a holistic view of an individual's life. Next, we averaged items to form separate indices for each condition at each time point, as well as an overall index (see Table 2). Items related to stability were reverse-coded, and higher scores signify greater instability (see Appendix A3 for the measure). In summary, we considered living conditions as indicators of ecological adversity.

In Table 3, we present correlations between variables and two measures of beliefs in conspiracies, the Generic Conspiracist Beliefs Scale and the Conspiracy Mentality Questionnaire. We report Cronbach's α values for the variables and subscales used in this study in Table 2 (α for the beliefs in conspiracies measures are noted above). Additionally, we provide descriptive statistics and correlations between subscales of life history strategy and indicators of living conditions in Appendix B (Table B2 and Table B3). We acknowledge that these additional analyses provide context but do not test our hypotheses. Therefore, we consider them exploratory.

Results

In Table 3, we present correlations between the Generic Conspiracist Beliefs Scale (GCBS) and the Conspiracy Mentality Questionnaire (CMQ), as well as four ecological conditions: instability, harshness, competitiveness, and dangerousness, each examined for the past, the present, and the future. These analyses are descriptive and exploratory.

Table 3

Correlations between beliefs in conspiracies measured by the Generic Conspiracist Beliefs Scale and the Conspiracy Mentality Questionnaire, along with living conditions

	Beliefs in conspiracies		
Variable	GCBS	CMQ	Steiger's *z*
Instability	.14*	.08	1.00
Past	.12*	.08	0.66
Present	.16**	.09	1.17
Future	.05	.02	0.49
Harshness	.32**	.22**	1.73†
Past	.27**	.18**	1.53†
Present	.29**	.20**	1.54†
Future	.22**	.15*	1.18
Competitiveness	.29**	.21**	1.37†
Past	.30**	.21**	1.55†
Present	.24**	.18**	1.02
Future	.23**	.17**	1.02
Dangerousness	.25**	.17**	1.36†
Past	.23**	.16**	1.18
Present	.19**	.16**	0.50
Future	.21**	.13*	1.34†

Note. GCBS = beliefs in conspiracies measured by the Generic Conspiracist Beliefs Scale; CMQ = beliefs in conspiracies measured by the Conspiracy Mentality Questionnaire. *zs* are Steiger's *z* to compare dependent correlations between the GCBS and the CMQ.
† $p < .10$, * $p < .05$, ** $p < .01$

We observed uniformly positive and small to moderate associations (r = .12-.32). The strongest and most consistent relations were found for harshness and competitiveness. In contrast, instability was weaker (and the future was not significant). Furthermore, coefficients

of the Generic Conspiracist Beliefs Scale tend to be higher than those of the Conspiracy Mentality Questionnaire. These patterns motivated the next step.

We examined the associations between two measures of beliefs in conspiracies, the Generic Conspiracist Beliefs Scale and the Conspiracy Mentality Questionnaire, with life history strategies and living conditions. We present the leading associations in Table 4.

Table 4

Descriptive statistics and correlations between individual differences in beliefs in conspiracies, life history strategies, and living conditions

Variable	α	*M* (SD)	GCBS	CMQ	Steiger's *z*
Life history strategy	.89	3.87 (0.61)	-.10	-.09	0.01
Insight, planning, and control	.86	4.39 (0.94)	-.08	-.05	-0.33
General altruism	.71	3.21 (0.82)	.01	-.01	0.33
Religiosity	.93	2.57 (1.19)	.16**	.04	1.99*
Romantic partner	.79	4.44 (0.93)	-.26**	-.20**	-1.02
Parental relationship quality	.87	4.51 (1.13)	-.11†	-.03	-1.32
Family social contact support	.93	3.88 (1.29)	-.10†	-.11†	0.17
Friends social contact support	.93	4.08 (1.22)	.01	-.01	0.33
Living conditions					
Instability	.69	2.36 (0.87)	.14*	.08	1.00
Harshness	.77	2.03 (0.90)	.32**	.22**	1.73†
Competitiveness	.85	2.52 (1.15)	.29**	.21**	1.37†
Dangerousness	.80	1.66 (0.84)	.25**	.17**	1.36†

Note. GCBS = Generic Conspiracist Beliefs Scale; CMQ = Conspiracy Mentality Questionnaire. There were correlations (r = .76, p < .01) between beliefs in conspiracies measured by the GCBS (M = 2.59, SD = 0.92, α = .93) and CMQ (M = 51.56, SD = 24.90, α = .87). *zs* are Steiger's *z* to compare dependent correlations between the GCBS and the CMQ.
† p < .10, * p < .05, ** p < .01

We observed several patterns. First, we found that beliefs in conspiracies were positively linked to harsher, more competitive, and more dangerous living conditions. The connection with instability was the weakest and did not show up when beliefs were measured using the Conspiracy Mentality Questionnaire (P1.1). In addition, we found that the link

between beliefs in conspiracies, as measured by the Conspiracy Mentality Questionnaire, and dangerousness was weaker than that observed with the Generic Conspiracist Beliefs Scale, which was approximately one-third smaller (see Table 4). Overall, across all four living conditions: instability, harshness, competitiveness, and dangerousness, the correlations with the Conspiracy Mentality Questionnaire were consistently weaker than those with the Generic Conspiracist Beliefs Scale. Significantly, the differences ranged from .06 to .10, with the Generic Conspiracist Beliefs Scale showing the stronger associations with each living condition.

Second, we found that among the components of life history strategies, religiosity was linked to beliefs in conspiracies (P1.2), but this was only measured by the Generic Conspiracist Beliefs Scale (Steiger's $z = 1.99$, $p < .05$). By contrast, romantic partner relationship went in the opposite direction. People who reported closer, more intimate relationships endorsed fewer beliefs in conspiracies on both measures. At the trend level ($p < .10$), we observed small negative associations for parental relationship quality (specific for the Generic Conspiracist Beliefs Scale only) and for family social contact support (across both measures). Because these effects are small and several are only trends, we recommend interpreting them with caution.

Third, we noted that the associations varied by instrument. They were generally stronger when beliefs in conspiracies were measured with the Generic Conspiracist Beliefs Scale than with the Conspiracy Mentality Questionnaire. Taken together, our results partly support the idea that beliefs in conspiracies are linked to adverse living conditions but provide only limited evidence for a broader connection to overall life history strategy.

We examined whether the pattern looked similar for women and men (see Table 5). These correlations varied little across sex, except for one marginal difference ($z = 1.68$, $p < .05$), suggesting that competitiveness was more strongly associated with beliefs in conspiracies among men.

Table 5

Correlations and sex differences for two measures of beliefs in conspiracies and life conditions across each time point

	Beliefs in conspiracies					
	GCBS			CMQ		
Variable	Men	Women	*z*	Men	Women	*z*
1. Life history strategy	-.19	-.02	-1.36	-.16	-.04	-0.96
2. Instability in the Past	.14	.09	-0.40	.03	.09	0.48
3. Harshness in the Past	.35**	.22**	1.12	.15	.20**	-0.41
4. Competitiveness in the Past	.40**	.25**	1.33	.23*	.19*	0.33
5. Dangerousness in the Past	.34**	.15*	1.60	.21*	.12	0.73
6. Instability Now	.22**	.11	-0.89	.20*	.02	-1.44
7. Harshness Now	.40**	.21**	1.66*	.30**	.15*	1.25
8. Competitiveness Now	.29**	.20**	0.76	.14	.20**	-0.49
9. Dangerousness Now	.23*	.15*	0.66	.22*	.11	0.89
10. Instability in the Future	.04	.05	0.08	-.04	.03	0.55
11. Harshness in the Future	.29**	.16*	1.08	.20	.12	0.65
12. Competitiveness in the Future	.38**	.14	2.05*	.14	.18*	-0.32
13. Dangerousness in the Future	.16	.22**	-0.49	.06	.15*	-0.72
14. Instability (overall)	.17	.11	-0.48	.08	.06	-0.16
15. Harshness (overall)	.41**	.25**	1.42	.25*	.20**	0.42
16. Competitiveness (overall)	.41**	.22**	1.68*	.19	.22**	-0.25
17. Dangerousness (overall)	.29**	.21**	0.68	.20	.15*	0.41
18. Past	.40**	.25**	-1.33	.20	.21**	0.08
19. Present	.40**	.24**	-1.41	.30**	.17*	-1.09
20. Future	.31**	.20**	-0.93	.13	.17*	0.32

Note. GCBS = Generic Conspiracist Beliefs Scale; CMQ = Conspiracy Mentality Questionnaire. *z* is Fisher's *z* testing the difference between independent correlations among men and women.

* $p < .05$, ** $p < .01$

Consequently, our prediction that the relationships between these factors are influenced by measurement type and sex received partial support (P1.3). Because of the relatively small sample size of men (n = 98) and the large number of moderation tests, we interpret these findings with caution. Some differences may reflect chance findings (Type I error).

Looking across all tests, we found that the average Fisher's z did not indicate generalized moderation by sex, suggesting that any differences are more likely to be trait-specific rather than systematic. We also saw similar patterns across the two instruments. However, associations were generally slightly stronger when beliefs in conspiracies were measured with the Generic Conspiracist Beliefs Scale compared to the Conspiracy Mentality Questionnaire.

Fourth, we acknowledge that our predictions regarding sex differences (P1.4-P1.6) received limited support. Although women generally reported slower life history strategies than men, the effects were small or inconsistent. We also present additional analyses in Appendix B (see Table B2). Individuals who reported more unstable, harsh, or dangerous (but not competitive) living conditions indicated faster life history strategies. Additionally, the four descriptions of ecological adversity were moderately to strongly correlated with each other. The Generic Conspiracist Beliefs Scale and the Conspiracy Mentality Questionnaire were also closely connected.

Discussion

In Study 1, we explored whether beliefs in conspiracies can be viewed as "adaptively calibrated responses to ecological adversity". Specifically, we looked at whether life history strategies and subjective perceptions of ecological adversity across the past, present, and expected future are associated with beliefs in conspiracies. Furthermore, we examined whether these relationships differ depending on the measurement tool (the Generic Conspiracist Beliefs Scale versus the Conspiracy Mentality Questionnaire) and whether men and women differ in life history strategies and beliefs in conspiracies. Overall, our results provide partial support for the evolutionary-developmental approach but show limited consistent evidence for sex differences. Below, we explore potential explanations and situate these results within the broader literature.

Beliefs in conspiracies were consistently linked to perceptions of competitiveness, dangerousness, and harshness across temporal frames. We observed heterogeneity in effect sizes across adversities and measures: associations were consistently positive, yet strongest for harshness, competitiveness, and dangerousness, weakest for instability, and systematically larger for the Generic Conspiracist Beliefs Scale than the Conspiracy Mentality Questionnaire (see Table 3). We suggest that not all indicators of adversity serve the same function. Perceptions of resource competition, danger, and harshness may be more critical than instability for beliefs in conspiracies. These ecological indicators may act as signals indicating potential threats. We found limited evidence suggesting that beliefs in conspiracies were directly associated with faster life history strategies. Therefore, we propose that these beliefs may be better viewed as adaptive responses to ecological challenges, rather than as fixed markers of a fast life history strategy (see Ellis et al., 2009; Belsky, 2012; Del Giudice, 2015). Our ancient ancestors lived with constant risks, including harsh environments, conflicts with others, disease, and injury (Slavich et al., 2023). We propose that beliefs in conspiracies may function as an

adaptive response for ancient hunter-gatherers, aiding them in managing threats from competition over limited resources and potential dangers (van Prooijen & van Vugt, 2018). Conversely, beliefs in conspiracies may be a response to past traumas, which can ultimately hinder a person's ability to function effectively over time (Bilewicz, 2022). In light of the above, our interpretation aligns with previous research suggesting that beliefs in conspiracies are flexible and change in response to perceived threats (van Prooijen & Douglas, 2017), rather than being fixed and dispositional factors. When people face existential danger and a coalitional threat (van Prooijen & van Vugt, 2018; van Prooijen, 2020), they are more likely to hold beliefs in conspiracies. Existential threat heightens agency detection and illusory pattern perception, and these processes promote outgroup beliefs in conspiracies (Mao et al., 2025). Additionally, these responses to threats were not optimized for current social and ecological settings, they were calibrated by ancestral environments (Slavich et al., 2023).

Early life adversity can calibrate life history strategies, and resource inequality may heighten susceptibility to beliefs in conspiracies by increasing perceived danger and loss of control (Chang et al., 2019; Casara et al., 2022; Zeng et al., 2024). However, in our data, the global life history index showed no reliable association with beliefs in conspiracies. This suggests that broad life history composites may be less informative than specific ecological perceptions in this context. In contrast, selected facets of life history strategy (e.g., religiosity and romantic partner) showed small but consistent associations.

Individuals who hold beliefs in conspiracies report lower satisfaction in close relationships and in expected interactions, such as online dating. Prior work ties partner disagreement about beliefs in conspiracies to reduced satisfaction (Toribio-Flórez et al., 2024). In our data, beliefs were negatively correlated with partner quality, consistent with but not definitive of that pathway. Reduced intimacy may lead individuals to seek validation in conspiracist communities (Poon et al., 2020; Biddlestone et al., 2021). We also observed a

trend-level pattern suggesting that people with less family contact and support are more likely to hold beliefs in conspiracies (see Table 4). Beliefs in conspiracies were linked with weaker relationships with parents, as measured by the Generic Conspiracist Beliefs Scale. Ecological adversity and limited parental support can undermine feelings of safety and self-esteem. These experiences also shape adult social cognition (Chen & Miller, 2012; Landry et al., 2022) and predict lower interpersonal trust and greater distance in social relations (Mastroni & Mooney, 2024). When the need to form and maintain close relationships goes unmet, beliefs in conspiracies may develop (van Prooijen & van Lange, 2014). This helps explain why social disconnection is linked to these beliefs (Brewer & Gardner, 1996; Toribio-Flórez et al., 2023).

We argue that this association is two ways: people who endorse beliefs in conspiracies often experience tense relationships with family members or romantic partners, likely because close others do not share these beliefs with them. Individuals with weak family or romantic connections may seek understanding and a sense of belonging in other areas. Beliefs in conspiracies may help them fulfill needs for connection and community (Graeupner & Coman, 2017; Brugnoli et al., 2019; Poon et al., 2020). Beliefs in conspiracies carry real social costs. Many individuals, particularly those from marginalized communities, endorse beliefs in conspiracies to regain a sense of belonging and control (Robertson et al., 2022; Okdie et al., 2023). This pull is understandable: when everyday interactions signal exclusion or low social acceptance, beliefs in conspiracies may explain “why” and “who” can feel stabilizing, which intensifies their appeal (Davis et al., 2018). The same dynamic can draw in people who typically avoid such beliefs. When people experience hostile treatment and lack of acceptance, they may adopt beliefs in conspiracies as a way to understand this social pain (Graeupner & Coman, 2017; Lantian et al., 2018; Poon et al., 2020). Paradoxically, those in conspiracy circles often feel more isolated and lonely. In addition, these emotions further reinforce these beliefs (Toribio-Flórez et al., 2023). Looking at the bigger picture, societal costs become apparent.

Such beliefs can incite hostility and prejudice between groups (Liekefett et al., 2023) and reduce cooperation, thereby weakening social solidarity (van Prooijen et al., 2022b). However, they also reveal the opposite direction: beliefs in conspiracies can lead to social exclusion, creating a vicious cycle of mistrust. They can also lower trust in institutions (Phadke et al., 2021; van der Linden et al., 2021; Bruder & Kunert, 2022).

Moreover, we observed that religiosity was associated with beliefs in conspiracies when assessed with the Generic Conspiracist Beliefs, but not with the Conspiracy Mentality Questionnaire (see Table 4). Thus, any link appears measure-specific rather than general. Even so, we partially replicated past findings on the connection between religiosity and beliefs in conspiracies (Leibovitz et al., 2021). We highlight that both constructs share characteristics like heightened threat sensitivity, reliance on intentional explanations, and distinct ingroup and outgroup boundaries. This may be because they often interpret events as being influenced by intentional actions (Franks et al., 2013). Additionally, there is evidence that religious fundamentalism is linked to lower analytical thinking and critical reasoning, reduced intelligence, and a greater endorsement of beliefs in conspiracies (Bronstein et al., 2019; Zuckerman et al., 2020; Łowicki et al., 2022). We emphasize that religiosity and beliefs in conspiracies are not identical. Although beliefs in conspiracies are often tied to lower cognitive ability and an identity-protective stance (Imhoff et al., 2022), religiosity does not always follow this pattern. People who relate to religion symbolically or culturally can differ from those with a fundamentalist outlook (Freidin & Martini, 2022). By contrast, broad, holistic spirituality tends to show a steady positive link with beliefs in conspiracies (Jedinger & Siegers, 2024). People who are spiritually unaffiliated may hold these beliefs more often than those in established churches, but this gap narrows when superstition is taken into account (Zawistowska et al., 2025). Our findings highlight both similarities and differences between religiosity and beliefs in conspiracies, indicating shared vigilance mechanisms but different

downstream effects. Here, we have an essential methodological note. We operationalized religiosity and spirituality as a single composite (e.g., the item "Spirituality is important in my life"), which may have inflated the correlations between religiosity and beliefs in conspiracies when measured with the Generic Conspiracist Beliefs Scale. In future work, we suggest modeling religiosity and spirituality as distinct constructs and testing their discriminant validity to minimize conceptual and measurement confounds.

Next, we identified some inconsistent differences between men and women in beliefs in conspiracies. Specifically, we found little evidence that competitiveness was more strongly associated with beliefs in conspiracies among men, consistent with previous claims that men are generally more competitive (Buss, 1998) and more sensitive to ecological resource competition (Baldauf et al., 2014). This pattern aligns with evolutionary explanations such as the male warrior hypothesis (McDonald et al., 2012), which suggests increased male reactivity to intergroup conflict, as well as traditional sex roles emphasizing male responsibility for defense (Eagly et al., 2000). However, our data indicate that these pathways play only a limited role in beliefs in conspiracies.

Moreover, we found some exploratory results consistent with life history perspectives. Men reported faster life history strategies, while women reported stronger social support than men (Petrides & Furnham, 2000; Figueredo et al., 2005). This aligns with previous evidence that women tend to have larger and more supportive social ties (Milner et al., 2016). During stressful times, women are generally more inclined to seek help from close friends (Taylor et al., 2000) and derive greater benefits from these relationships (Bedrov & Gable, 2023). However, they appear to be hit harder when their support systems are disrupted (Bhatia et al., 2024). This pattern suggests that social strategies differ by sex and warns against making broad generalizations across different contexts (Bedrov & Gable, 2023). Thus, our results align with some prior findings that report no sex differences across beliefs in conspiracies (Uscinski &

Parent, 2014). One possibility is that sex differences depend on context and vary across different ecological conditions or measurement methods (Kaplan & Gangestad, 2005). Factors specific to the context, such as the use of social media, may influence these effects (Cassese et al., 2020; Sorci, 2024).

Taken together, we found only partial support for life history theory. Conceptually, we interpret beliefs in conspiracies as threat-vigilance responses that are flexible and context-dependent rather than stable markers of a fast life history strategy. Our results also refine life history predictions by indicating that not all adversity cues are equally crucial in predicting beliefs in conspiracies. Empirically, we observed that the strength of our correlations varied based on the measurement tool. Methodologically, we found stronger and more consistent correlations in the Generic Conspiracist Beliefs Scale, compared to the Conspiracy Mentality Questionnaire. We acknowledge that our exploratory factor analysis of the pooled items revealed three distinct, yet correlated, factors that capture beliefs in conspiracies (see Table B1 in Appendix B). In contrast, associations were generally stronger and more consistent for the Generic Conspiracist Beliefs Scale, which we attribute to item content and reliability. Aligned with previous studies that used the Generic Conspiracist Beliefs Scale and the Conspiracy Mentality Questionnaire on the same samples, these measures demonstrate strong agreement but also reveal differences related to methods and content (see Bruder et al., 2013; Brotherton et al., 2013; Swami et al., 2017; Atari et al., 2019; Uygur & Çinpolat, 2025). We propose conducting confirmatory tests of this structure for future work.

At the same time, we note several limitations. We relied on self-reports, including retrospective ratings of childhood conditions, which are vulnerable to recall and desirability biases (see Appendix A). Our cross-sectional design prevents causal inference. We also observed different effect sizes for the Generic Conspiracist Beliefs Scale and the Conspiracy Mentality Questionnaire, suggesting measurement differences that readers should be aware of.

The sample was not drawn from Poland, and we recorded only race. Because we lacked information such as country of residence, language, education, socioeconomic status, or religious affiliation, we cannot judge how broadly the findings generalize. Moreover, we did not include biological indicators (e.g., stress biomarkers, hormones), which limits the strength of life history interpretations, and debates around life history measures (e.g., Mini-*K*, *K*-SF-42) remain unresolved (please refer to the discussion about the limitations of these measures; Copping et al., 2014, 2016; Richardson et al., 2017; Gruijters, 2018; Gruijters & Fleuren, 2018; Nettle & Frankenhuis, 2020; Manson & Kruger, 2022). We also combined religiosity and spirituality into one index, which may have inflated their associations with beliefs in conspiracies (Franks et al., 2013). Therefore, our results should be interpreted with caution.

We recommend that future research employ longitudinal and experimental designs to investigate whether early adversity prospectively predicts later beliefs in conspiracies. Researchers should broaden their sampling and report more diverse demographics (country, ethnicity, language, education, socioeconomic status, and religious affiliation) so that readers can assess generalizability and context (Adam-Troian et al., 2021; van Prooijen & Song, 2021). We also advise pairing broad, general measures with domain-specific items and related constructs, such as "conspiracy thinking", to separate a general tendency from topic-level endorsement (see Imhoff & Bruder, 2014). Future studies should include multi-method assessments, for example, behavioral tasks, informant reports, and experience sampling, to reduce common method bias. We recommend treating religiosity and spirituality as separate constructs. Future studies should check that the scales work the same across key groups (e.g., by sex and cultural background). It would also help to add biological markers to strengthen life history analyses.

Overall, we used an evolutionary-developmental approach to provide an initial empirical test of life history theory as a developmental account of beliefs in conspiracies. We

acknowledge that we found only partial support for life history theory. Rather than marking a clear fast life history profile, beliefs in conspiracies appeared to function as flexible threat vigilance responses calibrated to how adverse and competitive the world is perceived to be. The global life history index did not reliably relate to beliefs in conspiracies. However, we observed that religiosity and romantic partner attachment had consistent links with beliefs in conspiracies. Our findings suggest that close relationships and value frameworks may be more informative than a broad strategic profile (see Table 4). The strongest correlates were perceptions of harshness, danger, and competition, indicating that a situational perspective explains the data better than a broad strategic one. We argue that adversity cues vary in their diagnosticity, especially in the case of competition, danger, and harshness, which are more closely linked to tracked beliefs than instability.

In conclusion, we suggest that beliefs in conspiracies should be viewed as flexible and responsive to context, emphasizing threat vigilance rather than as a stable indication of a fast life history strategy. Perceived harshness, danger, and competition are identified as the most significant ecological perceptions.

CHAPTER 6. Study 2: Exploring Associations Between Personality Traits, Motivation, Situational Characteristics, and Beliefs in Conspiracies

Objective of The Study and Theoretical Rationale

In this study, we will focus on three angles: (1) personality traits, (2) motivational sensitivities, and (3) perceived situational characteristics. We will examine whether each relates to beliefs in conspiracies. Prior work shows that people who score lower on agreeableness and conscientiousness tend to endorse beliefs in conspiracies more frequently, which fits with greater antagonism, impulsivity, and suspicion (Swami et al., 2010; Galliford & Furnham, 2017; Bowes et al., 2021). Findings for openness are mixed. The side of openness tied to curiosity about unusual ideas sometimes comes with higher endorsement of beliefs in conspiracies (Swami et al., 2013; Goreis & Voracek, 2019). By contrast, the intellect aspect, which reflects more reflective and analytical engagement, tends to relate to lower endorsement (Swami et al., 2014; Zajenkowski & Matthews, 2019). In light of this, we predict that agreeableness, conscientiousness, and the intellect aspect will be negatively related to beliefs in conspiracies (P2.1).

Regarding motivational systems, and guided by Reinforcement Sensitivity Theory (Gray & McNaughton, 2000; Corr, 2004, 2016), we first note that the Behavioral Inhibition System (BIS) indexes vigilance, detection of goal conflict, uncertainty, and threat monitoring (Carver & White, 1994; Reuter et al., 2015; Corr & Cooper, 2016), whereas the Behavioral Activation System (BAS) reflects approach and reward sensitivity. Accordingly, we anticipate a positive association between BIS sensitivity and beliefs in conspiracies (P2.2), consistent with evidence that higher BIS relates to a desire for predictability (Hong & Lee, 2015), which can make such beliefs more attractive (Douglas et al., 2017). On the other hand, higher BAS could relate to greater engagement with agentic and emotionally charged narratives, while BIS may index heightened sensitivity to uncertainty and threat (Carver & White, 1994; Corr, 2004; Rauthmann

& Sherman, 2016). Therefore, relations involving BAS will be examined exploratorily without a directional hypothesis.

Beliefs in conspiracies are complex and ambiguous. We assume that situational perceptions also play a crucial role in shaping them. There is evidence that perceived threat and uncertainty consistently strengthen beliefs in conspiracies (van Prooijen & Jostmann, 2013; Jolley et al., 2018; Kofta et al., 2020). Additionally, perceptions of deception increase suspicious thinking style (Rauthmann & Sherman, 2016). Beliefs in conspiracies form in contexts of perceived malevolence and threat (Imhoff & Bruder, 2014). In those moments, they can make the world feel more predictable, tighten bonds within one's group, and give people a way to cope with stress (Douglas et al., 2017; Jolley et al., 2018).

Since beliefs in conspiracies are often characterized by hostility and threat (Douglas et al., 2017), we expect that supporting them will be linked to viewing the situation as adversarial, deceptive, and negative (P2.3). On the other hand, viewing situations as intellectually stimulating may promote analytic reasoning and reflective thinking, which are negatively linked to beliefs in conspiracies (Swami et al., 2014; DeYoung, 2015). Hence, we predict that perceiving the situation as intellectually stimulating will reduce beliefs in conspiracies (P2.4).

Here, we want to stress that "intellect" as a personality aspect of openness is not the same as "intellectual" situations. The trait reflects a stable habit of analytical and reflective thinking, whereas the situational rating indicates that the moment feels mentally demanding or stimulating (DeYoung et al., 2007; Rauthmann et al., 2014).

Overall, we will explore the relationships between personality traits, motivational systems, and perceived situational characteristics in relation to individual differences in beliefs in conspiracies.

Research Questions, Hypotheses, and Predictions

This study examines the second general hypothesis (H2), which investigates the role of dispositional, motivational, and situational factors in beliefs in conspiracies.

General Hypothesis H2: *If beliefs in conspiracies are linked to dispositional, motivational, and situational factors, then these beliefs will be associated with personality traits, motivational systems, and perceived situational characteristics*.

The following research questions support this general hypothesis:

Q5. Are Big Five personality traits, motivational systems, and perceived situational characteristics linked to beliefs in conspiracies?

Q6. Are situational perceptions of deception, adversity, negativity, and lower intellect associated with higher beliefs in conspiracies?

Q7. (*Exploratory)* Do these associations differ by sex?

Based on these research questions, we formulated the following specific predictions:

P2.1. Agreeableness, conscientiousness, and intellect (within the domain of openness/intellect) will be negatively associated with beliefs in conspiracies.

P2.2. Higher sensitivity of the Behavioral Inhibition System will be positively linked to beliefs in conspiracies.

P2.3. Perceiving situations as higher in deception, adversity, and negativity will be positively associated with beliefs in conspiracies.

P2.4. Perceiving situations as higher in intellect will be negatively linked to beliefs in conspiracies.

Analytic Plan

To test our predictions, we will use the SPSS program (version 28). To determine whether beliefs in conspiracies are related to personality traits, motivational systems, and

perceived situational characteristics, we will calculate the Pearson correlation coefficient. To explore sex differences in means, we will perform *t*-tests. To assess moderation by sex (group differences in correlations) in exploratory analyses, we will compare coefficients using Fisher's *z*.

Method

Participants and Procedure

To determine whether our study was adequately powered, we performed an a priori power analysis in G*Power (Faul et al., 2007) for the *F*-test in linear multiple regression (fixed model, R^2 deviation from zero). To be conservative with respect to potential multiple-predictor models, we assumed a medium effect ($f^2 = .15$), $\alpha = .05$, and a power of .85 with 17 predictors. We detected that a sample of 160 participants is required. Thus, we confirmed the appropriate size of the study sample.

The final sample was composed of 429 (53.8% women, 46.2% men) participants from Poland, aged between 18 and 78 years of age ($M = 42.68$, $SD = 15.66$), 21 of them (4.9%) had primary education, 42 (9.8%) had vocational education, 187 (43.6%) had a high school degree, 12 (2.8%) were current undergraduates, and 167 (38.9%) had a Bachelor's or Master's degree.

We conducted this study in a laboratory as part of a larger project. We recruited all participants from a research panel. Initially, we informed participants about the general purpose of the study and their right to withdraw at any time without needing to justify their decision. After completing the survey, participants received a reward. The study procedures adhered to the guidelines and protocols established by the ethics committee at The Maria Grzegorzewska University.

Measures

To measure general beliefs in conspiracies, we used the Polish version (Siwiak et al., 2019) of the 15-item Generic Conspiracist Beliefs Scale (Brotherton et al., 2013). The scale covers a range of topics such as secret groups controlling global life for their own interests (e.g., "Evidence of alien contact is being concealed from the public."; α = .94). Participants reported how true each statement was (1 = *definitely not true*; 7 = *definitely true*). Items were averaged to create an index of general beliefs in conspiracies. This scale demonstrated similar internal consistency to the original version (Brotherton et al., 2013) and our previous study.

We measured individual differences in the Big Five traits with the Polish version (Topolewska et al., 2014) of the 20-item International Personality Item Pool (Donnellan et al., 2006). This scale contains four items per trait: openness/intellect (e.g., "I have a rich vocabulary."), emotional stability (e.g., "I am usually relaxed."), extraversion (e.g., "I am the life of the party."), agreeableness (e.g., "I take time out for others."), and conscientiousness (e.g., "I follow a schedule."). Participants were asked how much they agreed (1 = *strongly disagree*; 4 = *strongly agree*), and the items were averaged to form indexes for each trait.

To assess how people perceive the COVID-19 situation, we used the Polish translation (Zajenkowski et al., 2020) of the 40-item *S*8* Scale (Rauthmann & Sherman, 2016), in which participants indicated their perception of the current situation (1 = *not at all*; 7 = *totally*). The scale has five items for each of the eight dimensions: duty (e.g., "A job needs to be done."), intellect (e.g., "The situation evokes values regarding life styles or politics."), adversity (e.g., "I am being blamed for something."), mating (e.g., "Members of the other sex are present."), pOsitivity (e.g., "The situation is playful."), negativity (e.g., "The situation could entail frustration."), deception (e.g., "It is possible to deceive someone."), and sociality (e.g., "Others show many communicative signals."). Items were averaged to create indexes of each aspect of the situation.

To assess temperamental traits, we used the Polish translation (Müller & Wytykowska, 2005) of the 24-item BIS-BAS scale (Carver & White, 1994), which measures individual differences in the Behavioral Activation System (BAS) and Behavioral Inhibition System (BIS). The scale consists of items capturing BIS (7 items, e.g., "I worry about making mistakes."), BAS Drive (4 items, e.g., "When I want something, I usually go all-out to get it."), BAS Fun Seeking (4 items, e.g., "I will often do things for no other reason than that they might be fun."), and BAS Reward Responsiveness (5 items, e.g., "It would excite me to win a contest."). Participants rated how true they believed each statement was (1 = *very true for me*; 4 = *very false for me*). Some items are reverse-coded and serve as fillers (items 1, 6, 11, and 17). Next, we computed separate mean scores for BIS, BAS Drive, BAS Fun Seeking, and BAS Reward Responsiveness. In Table 6, we present Cronbach's α for all the scales used in this study. The only exception is the Generic Conspiracist Beliefs Scale, whose reliability is reported in the measures section.

Results

In Table 6, we report the correlations between the Behavioral Activation System, the Behavioral Inhibition System, the Big Five traits, situational characteristics, and beliefs in conspiracies.

Table 6

Correlations between the Big Five traits, perceived situational characteristics, motivational systems, and beliefs in conspiracies

Variable	α	*M* (*SD*)	Beliefs in conspiracies
1. Openness/Intellect	.67	3.53 (0.72)	-.16**
2. Conscientiousness	.68	3.56 (0.77)	-.02
3. Extraversion	.80	3.05 (0.90)	.05
4. Agreeableness	.74	3.62 (0.73)	-.03
5. Emotional Stability	.72	2.86 (0.79)	-.10*
6. Duty	.86	5.07 (1.17)	-.07
7. Intellect	.87	5.12 (1.14)	.03
8. Adversity	.86	3.23 (1.42)	.18**
9. Mating	.61	4.05 (1.25)	.19**
10. pOsitivity	.91	3.68 (1.50)	.10*
11. Negativity	.94	4.51 (1.44)	.14**
12. Deception	.88	4.17 (1.35)	.21**
13. Sociality	.85	4.59 (1.27)	.10*
14. Behavioral Inhibition System	.71	19.64 (3.14)	.05
15. BAS Fun Seeking	.66	10.28 (2.11)	.14**
16. BAS Reward Responsiveness	.71	14.97 (2.23)	.09
17. BAS Drive	.76	10.38 (2.26)	.15**

Note. BAS = Behavioral Activation System.
* $p < .05$, ** $p < .01$

We found some patterns. First, we predicted that agreeableness, conscientiousness, and intellect (a facet of openness) would be negatively associated with beliefs in conspiracies (P2.1). This prediction received only partial support. Within personality, we found that the intellect, as measured by openness/intellect, was negatively correlated with beliefs in conspiracies. However, we observed that agreeableness and conscientiousness were unrelated

to beliefs in conspiracies. Unexpectedly, we found that emotional stability was associated with a slight negative correlation with beliefs in conspiracies. However, the sex-specific correlations were negative for both men and women (see Table 7), albeit with a small magnitude.

Second, we did not observe a correlation with the Behavioral Inhibition System (P2.2). Surprisingly, we found that sensitivity to the Behavioral Activation System was positively linked to beliefs in conspiracies. Specifically, Fun Seeking and Drive were positively associated with beliefs in conspiracies, whereas Reward Responsiveness was not. Third, as we expected, perceptions of deception, adversity, and negativity were positively linked to beliefs in conspiracies (P2.3). On the contrary, we found that perception of intellectual engagement was not related to beliefs in conspiracies (2.4). We observed that several situational characteristics not specified in the predictions, such as negativity, mating, positivity, and sociality, were also positively associated with beliefs in conspiracies (see Table 6).

In exploratory analyses, we also examined whether the relationships between personality traits, motivational systems, situational characteristics, and beliefs in conspiracies differed for men and women (see Table 7). We interpret these exploratory analyses with caution.

Table 7

Correlations with beliefs in conspiracies for men and women, and tests of sex differences

Variable	Beliefs in conspiracies		
	Men	Women	*z*
1. Openness/Intellect	-.06	-.24**	1.89*
2. Conscientiousness	.01	-.04	0.51
3. Extraversion	.07	.04	0.31
4. Agreeableness	.03	-.07	1.03
5. Emotional Stability	-.09	-.12†	0.31
6. Duty	-.07	-.06	-0.10
7. Intellect	-.08	.13†	-2.16*
8. Adversity	.12	.24**	-1.27
9. Mating	.10	.26**	-1.70*
10. pOsitivity	.06	.13†	-0.72
11. Negativity	.14†	.15*	-0.11
12. Deception	.16	.26**	-1.07
13. Sociality	.06	.13†	-0.72
14. Behavioral Inhibition System	.10	.02	0.82
15. BAS Fun Seeking	.02	.24**	-2.30*
16. BAS Reward Responsiveness	.10	.07	0.31
17. BAS Drive	.12	.17*	0.31

Note. BAS = Behavioral Activation System; *z* is Fisher's *z* testing the difference between independent correlations among men and women.
† $p < .10$, * $p < .05$, ** $p < .01$

We found little evidence that these correlations differed in men and women for beliefs in conspiracies. The negative association between openness/intellect and beliefs in conspiracies was stronger in women than in men. For situational intellect, the pattern differed by sex, with a positive relation in women and a negative one in men. In addition, we found that mating and Fun Seeking were also more strongly related to beliefs in conspiracies in women than in men. Given the number of comparisons and the relatively small male subsample, we interpret these patterns with caution. Additionally, in post hoc analyses, we found four sex differences (see Table 8).

Table 8

Sex differences in personality traits, motivational systems, and situational characteristics

Variable	Mean (*SD*)			
	Men	Women	*t*	Hedges' *g*
1. Openness/Intellect	3.56 (0.73)	3.50 (0.71)	-0.81	0.08
2. Conscientiousness	3.59 (0.78)	3.54 (0.76)	-0.67	0.07
3. Extraversion	3.01 (0.93)	3.09 (0.87)	0.85	0.09
4. Agreeableness	3.57 (0.75)	3.66 (0.72)	1.24	0.12
5. Emotional Stability	2.98 (0.78)	2.76 (0.78)	-3.03**	0.28
6. Duty	5.03 (1.16)	5.12 (1.18)	0.80	0.08
7. Intellect	5.13 (1.14)	5.10 (1.15)	-0.22	0.03
8. Adversity	3.19 (1.38)	3.26 (1.46)	0.48	0.05
9. Mating	4.18 (1.22)	3.95 (1.27)	-1.86	0.18
10. pOsitivity	3.70 (1.45)	3.67 (1.55)	-0.26	0.02
11. Negativity	4.34 (1.46)	4.65 (1.41)	2.26*	0.22
12. Deception	4.09 (1.37)	4.24 (1.34)	1.11	0.11
13. Sociality	4.49 (1.25)	4.68 (1.28)	1.54	0.15
14. Behavioral Inhibition System	18.99 (3.14)	20.19 (3.03)	4.02**	0.39
15. BAS Fun Seeking	10.35 (1.95)	10.23 (2.23)	-0.63	0.06
16. BAS Reward Responsiveness	14.93 (2.25)	15.00 (2.22)	0.33	0.03
17. BAS Drive	10.70 (2.14)	10.10 (2.33)	-2.73**	0.27

Note. BAS = Behavioral Activation System. *t*-values are computed for the women-men contrast.
† $p < .10$, * $p < .05$, ** $p < .01$

We found that men scored higher on emotional stability than women. We also detected that women reported more negative situational characteristics than men. Furthermore, we found that women displayed stronger sensitivity to the Behavioral Inhibition System, while men scored higher on the Behavioral Activation System Drive. We also present the full correlation matrix among all variables included in the study. These correlations offer further descriptive insights, enabling readers to explore the relationships between constructs beyond the main analyses. In light of the supplementary nature of these results, the table is reported in Appendix C (see Table C1).

Discussion

In Study 2, we hypothesized that dispositional, motivational, and situational factors might be linked to beliefs in conspiracies. Here, we integrated three approaches: (1) personality traits, (2) motivational systems, and (3) situational perceptions. We found partial support for our predictions.

Given the Big Five traits, we observed that intellect (as an aspect of openness) had the most consistent negative relationship with beliefs in conspiracies. Our results mirror Poier and Nikodemska-Wołowik (2024), who found that agreeableness and conscientiousness were unrelated to beliefs in conspiracies, and emotional stability was only weakly (marginally) negatively correlated. Regarding motivational systems, we found that higher BAS Drive and BAS Fun Seeking were positively associated with beliefs in conspiracies, consistent with the idea that approach-oriented tendencies and sensation seeking may increase engagement with agentic narratives (Carver & White, 1994; Voigt et al., 2009). By contrast, the effects of BIS and BAS Reward Responsiveness did not show clear associations. Finally, we observed that perceptions of negativity, adversity, deception, positivity, sociality, and mating were linked to beliefs in conspiracies.

Our findings indicate that personality traits, motivational systems, and perceived situational characteristics are linked to beliefs in conspiracies. However, the underlying mechanisms are complex and cannot be attributed to just one factor. We argue that these results support a multidimensional perspective rather than a single-factor explanation. Across analyses, the intellect aspect of openness had the most consistent negative correlation with beliefs in conspiracies. Notably, we employed a measure that captures intellect rather than openness (DeYoung et al., 2007). This pattern should be read cautiously. Even so, it is consistent with prior work suggesting that stronger beliefs in conspiracies tend to co-occur with less analytic, more intuitive thinking and with lower scores on cognitive-ability measures (Gligorić et al.,

2021; Stasielowicz, 2022; Hornsey et al., 2023). Some work suggests that the openness to experience is tied to schizotypal tendencies, such as seeing illusory patterns or causal links (DeYoung, 2015). Openness reveals a divide in its relationship with beliefs in conspiracies. Being open to unconventional ideas generally correlates positively, while a more information-focused openness tends to correlate negatively with beliefs in conspiracies (Gligorić et al., 2021). We highlight the necessity for future research to differentiate between openness and intellect as distinct predictors of beliefs in conspiracies.

In our data, agreeableness and conscientiousness did not show clear links with beliefs in conspiracies, which differs from some earlier studies. However, this is in line with broader reviews showing that links between personality and these beliefs are usually small and can vary by sample and measure (Goreis & Voracek, 2019; Bowes et al., 2023). Emotional stability showed only a weak relation. By contrast, openness/intellect continued to relate more consistently to lower endorsement. Taken together, the pattern is mixed and echoes the wider literature (e.g., Goreis & Voracek, 2019; Bowes et al., 2023; Hornsey et al., 2023), underscoring that dispositional predictors of beliefs in conspiracies are modest and context-sensitive rather than uniform. This pattern aligns with the criticism that very broad traits can be blunt tools. Antagonistic tendencies, such as those captured by the Dark Triad, may offer sharper and more useful insights (Jones & Paulhus, 2014; March & Springer, 2019). Therefore, in Study 3, we will incorporate measures of the Dark Triad to examine whether these traits explain additional variance beyond what the Big Five can account for.

We also discovered that beliefs in conspiracies are linked to motivational systems, particularly Drive and Fun Seeking, both of which have a positive correlation with these beliefs. The activation of these systems may lead to feelings of hopeful excitement, persistence in achieving goals, and happiness following success (Merchán-Clavellino et al., 2019). At the same time, searching for conspiracies and evidence for them can have a rewarding value for

some individuals (van Prooijen, 2022b; van Prooijen et al., 2022a). This can be explained by the fact that conspiracy theories and beliefs in conspiracies may also be viewed as humorous or playful stories (Daniel & Harper, 2020) and give entertainment and engagement for some people (van Prooijen et al., 2022a). Jokes and memes about essential social events, such as anti-vaccination contexts, can help spread conspiracy theories (Fiadotava et al., 2023). People with beliefs in conspiracies may find unverified content exciting (Tian et al., 2025). For them conspiracy explanations can be engaging in a similar, almost playful way (Levy, 2022). Moreover, beliefs in conspiracies can ignite motivation by bringing a sense of meaning and inspiring novelty (van Prooijen, 2022b; van Prooijen et al., 2022a). This helps explain why they spread so quickly online.

Considering psychological perceptions of situations, we observed that beliefs in conspiracies were positively linked to perceptions of adversity, negativity, and deception. We argue that perceiving situations as adversarial and deceptive is consistent with the very definition of beliefs in conspiracies, which refer to the existence of malevolent groups that deceive or manipulate others (Douglas et al., 2017). Surprisingly, perceptions of mating, sociality, and positivity were also linked to beliefs in conspiracies. Beyond the defensive role of beliefs in conspiracies, they can also be engaging and entertaining stories that provide a positive emotional lift in the present (Daniel & Harper, 2020; Levy, 2022; van Prooijen et al., 2022b). Conversely, a positive perception can serve as a coping mechanism, assisting individuals in managing challenging situations like the pandemic and global conflicts. From an evolutionary perspective, this mechanism may be essential for mating because mating motives can decrease perceived risk and loss aversion, making it easier to approach new or existing partners (Baker & Maner, 2008; Li et al., 2012). This rationale aligns with our findings that mating-related situational perceptions were positively linked to beliefs in conspiracies.

Although the connections between beliefs in conspiracies and mating remain untested, it is an area worth exploring. Some individuals may spread rumors or conspiratorial stories to challenge hierarchies and unsettle the political order in hopes of gaining status (see Petersen et al., 2023). Status is often tied to dominance, which makes it easier to gain and keep a strong social position (Cheng et al., 2013). Dominance is also linked to reproductive opportunities, particularly in small-scale societies where status competitions are more evident (von Rueden & Jaeggi, 2016). From this point of view, perceiving a situation as mating-relevant may help explain the link between beliefs in conspiracies and sensitivity to social competition. Such beliefs could work as a psychological tactic to undercut rivals, cast doubt on dominant groups, and raise one's relative standing. This account is still speculative and needs direct tests, but it offers a plausible evolutionary angle on why mating-related motives might connect with beliefs in conspiracies.

Conversely, a positive link between beliefs in conspiracies and perception of sociality might indicate a coalitional interpretation of the situation and an approach-focused engagement with socially shared beliefs in conspiracies (Rauthmann & Sherman, 2016; Poon et al., 2020). Although negative perceptions of the situation were negatively correlated with positive perceptions (see Table C1 in Appendix C), we observed that individuals with beliefs in conspiracies evaluated them in both ways. Those with beliefs in conspiracies might see current situation both positively and negatively, possibly because of cognitive biases and a tendency to interpret information that confirms their beliefs (Georgiou et al., 2021). People may focus selectively on positive aspects, such as "proven" plots or increased awareness among similar-minded individuals. Likewise, they may also highlight negative elements, such as distrust in authorities (Hartmann & Müller, 2022). There is some evidence that positive and negative emotions increase beliefs in conspiracies (Harmon-Jones et al., 2024; Munro, in press). However, Whitson et al. (2015) propose that emotional uncertainty, rather than affective

valence per se, is the closer predictor of beliefs in conspiracies. Emotional uncertainty is closely tied to feelings of unpredictability and reduced control (Whitson & Galinsky, 2008; Kay et al., 2009; Sullivan et al., 2010), which are known antecedents of beliefs in conspiracies. Beliefs in conspiracies can offer a framework that helps people make sense of and reconcile conflicting views about events. On balance, these findings suggest that beliefs in conspiracies reflect not only who people are but also how they perceive their environments and interpret significant events, with likely downstream implications for behavior and motivations.

We acknowledge several limitations. We drew on a single-country, WEIRD sample (Western, Educated, Industrialized, Rich, and Democratic), which may confine our results to the Polish[4] context only (Henrich et al., 2010). We relied on brief self-reports and a cross-sectional design, so we cannot make causal inferences, and shared-method variance might inflate the connections. Situational characteristics were measured using the *S8** in a broad context, and some scales showed only moderate reliability, likely weakening the effects (mating $\alpha = .61$, BAS Fun Seeking $\alpha = .66$, openness/intellect $\alpha = .67$, conscientiousness $\alpha = .68$). Lastly, beliefs in conspiracies were assessed with a single general instrument (the Generic Conspiracist Beliefs Scale), which limited conclusions about local beliefs in conspiracies.

Given these limitations, we recommend testing causality with longitudinal and experimental studies. Because our sample was drawn from a Western and industrialized population, we also suggest broadening recruitment beyond WEIRD contexts and including more diverse cultural groups. One important focus in future work should be refining measurement by separating openness from intellect (for example, using the BFI-2; Soto & John, 2017), expanding the coverage of the BIS and BAS, and pairing a general measure of beliefs in conspiracies with domain specific scales. In future analyses, to estimate the unique and shared

[4] Although Poland's Cold War history placed it outside the traditional "Western bloc", contemporary Poland is a high-income, industrialized EU democracy.

effects of traits, motivational systems, and situational characteristics, we recommend applying combined models such as structural equation modeling (SEM) and multilevel analyses.

In this sample, simple correlations indicate that how individuals interpret situations and their motivational tendencies are more closely linked to beliefs in conspiracies than to broader personality traits. Even though the effects were minor and correlational, the pattern suggests that these beliefs may serve purposes beyond coping with perceived threats. At times, they can be engaging or emotionally rewarding, which aligns with perspectives that emphasize the importance of situational cues.

CHAPTER 7. Study 3: Exploring Associations Between Childhood Adversity, Life History Strategies, Coping Strategies, Dark Triad Traits, and Beliefs in Conspiracies

Note. This chapter is based on a published article titled[5]:

Zarazińska, A., & Jonason, P. (2024). Developing conspiracy theories: Conspiracy beliefs are correlated with perceived childhood adversity. *Evolutionary Behavioral Sciences.*

DOI: 10.1037/ebs0000360.

Objective of the Study and Theoretical Rationale

In Study 3, we will investigate the links between antagonistic personality traits, coping strategies, life history strategy, and early adversity, as well as their associations with beliefs in conspiracies. Within the broader context of the dissertation, we will focus on two explanatory approaches: (1) personality traits and (2) evolutionary-developmental pathways.

Early experiences and our childhood can leave a long shadow for our whole life. Early life adversity can recalibrate how people see and respond to the world. Growing up in harsh and unpredictable settings tends to reduce psychosocial adaptability, heighten stress responses, and increase watchfulness for danger (Anisman et al., 2008; Beutel et al., 2017). For children from these environments, these threatening experiences shape their expectations about the reliability of resources, others' trustworthiness, and the stability of relationships in adulthood (Belsky et al., 1991; Ellis et al., 2009). In demanding situations, humans may adopt faster life history strategies that prioritize quick, short-term adaptation over long-term planning (Ellis et al., 2009; Belsky, 2012). In light of the above, beliefs in conspiracies may be understood as adaptively calibrated responses to ecological threats (van Prooijen & Douglas, 2017). Thus, we

[5] Correction in preparation. Our conclusions remain unchanged (Machiavellianism mediates for GBC only, the narcissism and GBC link is stronger among women). As of September 2025.

predict that beliefs in conspiracies will be positively associated with early adversity (P3.1). Faster life history strategies encourage short-term, threat-sensitive thinking, which is linked to mistrust and suspicion (Figueredo et al., 2006; Griskevicius et al., 2011). Additionally, we anticipate that these beliefs will be related to faster life history strategies (P3.2). Furthermore, there is some evidence indicating that childhood adversity is linked to Dark Triad traits (as noted in Jonason et al., 2010, 2014; Láng & Birkás, 2014) and to interpersonal distrust (Raihani & Bell, 2019). We therefore predict that there will be positive associations between beliefs in conspiracies and Dark Triad traits (P3.3). In addition, problematic coping strategies, for example, denial, disengagement, and substance use, are more prevalent following experiences of early adversity (Carver et al., 1989; Hurst & Kavanagh, 2017) and are associated with feelings of distress and mistrust (Compas et al., 2017). Consequently, we expect that beliefs in conspiracies will be more strongly linked to problematic coping strategies rather than to adaptive coping strategies (P3.4).

Sex differences in parental investment and threat sensitivity may influence life history strategy adoption and susceptibility to beliefs in conspiracies (Kaplan & Gangestad, 2005). On this basis, we will consider whether sex and type of beliefs in conspiracies (general versus local) may moderate the associations among developmental (early) adversity, life history strategy, coping, Dark Triad traits, and beliefs in conspiracies (P3.5). Importantly, general beliefs in conspiracies may look more like stable traits, whereas local beliefs in conspiracies tend to be situationally reactive (Marchlewska et al., 2022). Accordingly, we treat sex and the distinction between beliefs as contextual frames that may shape how developmental inputs translate into profiles of beliefs in conspiracies.

The literature indicates that men are more likely to exhibit faster life history strategies (Kaplan & Gangestad, 2005; Figueredo et al., 2006), score higher on Dark Triad traits (Jonason et al., 2020), and report lower life satisfaction (Joshanloo & Jovanović, 2020). Thus, we predict

that men will report faster strategies (P3.6), endorse stronger beliefs in conspiracies (P3.7), and perceive their childhood as more adverse than women (P3.8).

Overall, we will examine two explanatory approaches. As in Study 1, we adopt an evolutionary-developmental perspective, conceptualizing beliefs in conspiracies as adaptively calibrated responses to adversity. Similar to Study 2, we will include a personality approach to examine the relationship between the Dark Triad traits and beliefs in conspiracies.

Research Questions, Hypotheses, and Predictions

This study examines the third general hypothesis (H3), which integrates evolutionary-developmental factors and antagonistic personality traits.

General Hypothesis H3: *If beliefs in conspiracies serve as calibrated responses to early adversity, then they will be positively associated with developmental factors (childhood adversity, life history strategy, coping strategies) and antagonistic personality traits (Dark Triad).*

This general hypothesis guides the following research questions:

Research Questions:

Q8. Are beliefs in conspiracies linked to developmental and personality factors such as childhood adversity, life history strategy, coping strategies, and the Dark Triad traits?

Q9. Do general and local beliefs in conspiracies differ in whether they are more strongly associated with developmental factors (life history strategy, childhood conditions, coping strategies) or personality traits?

Q10. Do these associations differ by sex?

Based on these research questions and the general hypothesis, we formulated the following specific predictions:

P3.1. Perceived childhood adversity will be positively associated with beliefs in conspiracies.

P3.2. Faster life history strategies will be linked with stronger endorsement of beliefs in conspiracies.

P3.3. Dark Triad traits will be positively associated with beliefs in conspiracies.

P3.4. Beliefs in conspiracies will be positively linked to problematic coping strategies.

P3.5. The associations between childhood adversity, life history strategy, problematic coping strategies, the Dark Triad traits, and beliefs in conspiracies will be moderated by sex and by belief type (general vs. local).

Similarly to Study 1, we will consider the possibility that sex differences may emerge in life history strategies and beliefs in conspiracies. Specifically, we will explore whether:

P3.6. Men will exhibit faster life history strategies than women.

P3.7. Men will endorse stronger beliefs in conspiracies than women.

P3.8. Men will perceive their childhood conditions as more adverse than women.

Analytic Plan

To test our predictions, we will use the program *SPSS* (version 28). To determine whether beliefs in conspiracies are related to childhood adversity, life history strategy, coping strategies, and the Dark Triad traits, we will conduct Pearson's *r* analyses. To test mean sex differences, we will conduct *t*-tests. To assess moderation by sex, we will compare coefficients using Fisher's *z*. To evaluate moderation by type of beliefs in conspiracies (general vs. local) and within the same sample, we will apply Steiger's *z*. For mediation analyses, we will utilize Hayes's PROCESS (2017), with bias-corrected bootstrap confidence intervals, reporting unstandardized total, direct, and indirect effects (*B*, *SE,* 95% CI).

Method

Participants and Procedure

We conducted an a priori power analysis in G*Power (Faul et al., 2007) for the *F*-test in linear multiple regression (fixed model, R^2 deviation from zero). To detect a medium effect ($f^2 = 0.15$), $\alpha = .05$, and a desired power of .85 with 22 predictors, the required sample size was 178. We used this conservative benchmark because some tests involve multiple parameters, and to ensure adequate power for the planned correlational analyses, *t*-tests, and correlation comparisons. The achieved sample exceeded this target and was therefore sufficient. Our final sample consisted of 360 individuals (51.4% men, 48.6% women) from Poland (aged 18-79; *M* = 32.39, *SD* = 10.62) who participated in an online study.

In our sample, three participants (0.8%) had primary education, eight (2.2%) had vocational education, 75 (20.8%) had a high school diploma, 55 (15.3%) were current undergraduates, 207 (57.5%) held a Bachelor's or Master's degree, and 12 of them (3.3%) had a doctoral degree. Most participants (66.4%) were employed. Participants were informed about the nature of the study, provided consent, completed a self-report brief survey, and were thanked and debriefed. The study procedure followed the guidelines established by the ethics committee at The Maria Grzegorzewska University. The hypotheses were not pre-registered, but the data are available on the Open Science Framework.[6]

Measures

As in previous studies, we measured individual differences in general beliefs in conspiracies with the Polish version (Siwiak et al., 2019) of the 15-item Generic Conspiracist Beliefs Scale (Brotherton et al., 2013). Participants indicated how true each statement was (1 =

[6] OSF: https://osf.io/qtrxa/

definitely not true; 5 = *definitely true*), and these responses were averaged to form an index of general beliefs in conspiracies. This measure demonstrated comparable internal consistency to the original version (Brotherton et al., 2013) and our earlier studies.

To measure local beliefs in conspiracies, we used ten ad hoc conspiracy theories that we considered currently relevant to Polish society (e.g., "The cause of the Polish TU-154 plane crash near Smoleńsk was either an attack or some deliberate action.") and based on previous research (Molenda et al., 2022). In this measure, called the Local Beliefs in Conspiracies Scale, participants reported their level of agreement (1 = *definitely disagree*; 5 = *definitely agree*) with each item, which were then averaged to create an index of local beliefs in conspiracies (for the complete list of items, see Appendix A1). We conducted an Exploratory Factor Analysis using the Principal Axis Factoring method to identify the underlying factor structure of the data. We detected that, in an Exploratory Factor Analysis with a varimax rotation, these items loaded on a single dimension (Factor loadings = .60 to .83) with an eigenvalue of 5.42, accounting for 54.2% of the variance in the items.

To assess childhood adversity, we created eight specific, face-valid items about childhood conditions (e.g., "My childhood was difficult."), where participants indicated their level of agreement (1 = *definitely disagree*; 5 = *definitely agree*) that their childhood was (1) stable, (2) predictable, (3) safe. Items 1, 2, 4, 5, and 6 were reverse-coded (see Appendix A2 for the complete list). We averaged all items to create an index of childhood adversity. In an Exploratory Factor Analysis with a varimax rotation[7], these items loaded onto a single factor (Factor loadings = .52 to .89) with an eigenvalue of 4.78, explaining 59.7% of the variance in the items.

[7] We employed the varimax rotation method to simplify interpretation within a proposed unidimensional solution.

We assessed individual differences in life history strategies with the Polish version (Jonason et al., 2013) of the Mini-*K* Scale (Figueredo et al., 2006). This is a 20-item instrument that covers domains such as (1) Family Social Contacts and Support, (2) Social Contacts and Support from Friends, (3) Harm Avoidance, (4) Quality of The Mother/Father Relationship, (5) Insight, Planning and Control, and (6) Community Involvement (e.g., "I often make plans in advance and stick to them."). Participants reported their level of agreement (-3 = *definitely disagree*; 3 = *definitely agree*) with the items. Next, we created an index of life history strategy, where larger values indicate a slower life history strategy.

To measure coping strategies, we used the Polish version (Juczyński & Ogińska-Bulik, 2009) of the Mini-COPE (Carver et al., 1989). This is a 28-item questionnaire (e.g., "I say to myself: this isn't real.") in which participants report how they react to stressful events (1 = *I hardly ever do this;* 5 = *I almost always do this*). Items describe 14 stress management strategies, including active coping, planning, positive reframing, acceptance, humor, religion, use of emotional support, use of instrumental support, self-distraction, denial, substance use, giving vent to one's feelings, behavioral disengagement, and self-blame. These 14 strategies were averaged to create indexes of three categories of coping strategies (Jonason et al., 2020b): constructive, problematic, and social coping strategies.

Finally, we measured individual differences in the Dark Triad traits using the Polish version (Rogoza & Cieciuch, 2019) of the Short Dark Triad (Jones & Paulhus, 2014), which includes 27 items measuring Machiavellianism (e.g., "I like to use clever manipulation to get my way."), narcissism (e.g., "People see me as a natural leader."), and psychopathy (e.g., "People who mess with me always regret it."). Participants indicated how much they agreed with each statement (1 = *disagree strongly*; 5 = *agree strongly*), and the items were averaged to create trait scores. We present all Cronbach's α values for the variables and scales used in this study in Appendix D (see Table D1).

Results

We provide all descriptive statistics and intercorrelations for our measures in Appendix D (Table D1). We summarize the focal results for the present hypotheses. Below in Table 9, we report part of our results.

Table 9

Differences in correlations between general and local beliefs in conspiracies and the Dark Triad traits, life history strategy, and coping strategies

Variable	GBC	LBC	Steiger's *z*
1. Machiavellianism	.30**	.14**	3.08**
2. Narcissism	.15**	.15**	<0.01
3. Psychopathy	.21**	.19**	0.38
4. Life history strategy	.01	.06	-0.93
5. Childhood adversity	.19**	.15**	0.76
6. Constructive coping strategies	.05	.01	0.74
7. Problematic coping strategies	.19**	.09†	1.88†
8. Social coping strategies	-.05	.03	-1.48

Note. GBC = General beliefs in conspiracies. LBC = Local beliefs in conspiracies, *z* is Steiger's *z* to control for the correlation between beliefs in conspiracies.
† $p < .10$, * $p < .05$, ** $p < .01$

First, in line with our predictions, both general and local beliefs in conspiracies were positively associated with childhood adversity (P3.1). This finding supports the idea that early adversity acts as a cue of ecological threat and encourages people to adopt distrustful explanatory strategies. Second, our prediction that faster life history strategies would be linked with stronger endorsement of beliefs in conspiracies was not supported. We observed that the overall life history indicator was not related to beliefs in conspiracies (P3.2). Third, we found that the Dark Triad traits were associated with beliefs in conspiracies (P3.3). In particular,

Machiavellianism was more strongly related to general beliefs in conspiracies than with local ones ($z = 3.08$, $p < .01$).

Furthermore, we examined associations between beliefs in conspiracies and coping strategies. We observed that problematic coping was positively related to general beliefs in conspiracies (P3.4). Still, for local beliefs in conspiracies, it was only a trend ($p < .10$). Because several scales showed modest reliability (constructive: $\alpha = .50$, social: $\alpha = .58$, problematic: $\alpha = .62$), these effects should be treated as descriptive. Hence, our prediction is only partially supported (see Table D1 in Appendix D). We note that some non-problematic coping subscales were also related to general and local beliefs. For transparency, we report subscale results and sex-moderation tests as exploratory in Appendix D (Table D2). We acknowledge that these effects were small and inconsistent, therefore, we treat them as descriptive.

Moreover, we expected that sex and the type of beliefs in conspiracies would predict associations between childhood adversity, life history strategy, the Dark Triad traits, and beliefs in conspiracies. In Table 10, we present our statistical results.

Table 10

Sex differences in the correlations between the Dark Triad traits, life history strategy, childhood adversity, coping strategies, and beliefs in conspiracies

Variable	GBC			LBC		
	Men	Women	*z*	Men	Women	*z*
1. Machiavellianism	.24**	.38**	-1.46	.13†	.18*	-0.48
2. Narcissism	.04	.27**	-2.23*	.19**	.12	0.68
3. Psychopathy	.20**	.25**	-0.50	.19**	.22**	-0.30
4. Life history strategy	-.08	.08	-1.51	.07	.02	0.47
5. Childhood adversity	.26**	.13†	1.27	.14†	.16*	-0.19
6. Constructive coping strategies	.01	.10	-0.85	.01	-.01	0.19
7. Problematic coping strategies	.26**	.11	1.46	.12	.05	0.66
8. Social coping strategies	-.09	-.02	-0.66	.12	-.08	1.89*

Note. GBC = General beliefs in conspiracies; LBC = Local beliefs in conspiracies. There were correlations between general and local beliefs in conspiracies among men ($r = .75$, $p < .01$) and women ($r = .71$, $p < .01$), z is Fisher's z testing the difference between independent correlations among men and women.
† $p < .10$, * $p < .05$, ** $p < .01$

Generally, we observed broadly similar correlation patterns for men and women. Narcissism was more strongly correlated with general beliefs in conspiracies among women than in men (Fisher's $z = -2.23$, $p < .05$). In addition, the correlation between local beliefs in conspiracies and social coping strategies differed (Fisher's $z = 1.89$, $p < .05$) in men and women, but neither correlation was significant on its own. Other sex differences were small (some at the trend level) and should be read with caution. Consequently, our prediction that sex and belief type would moderate these associations (P3.5) was partially supported: differences by belief type were evident, whereas evidence for sex moderation was weak and inconsistent.

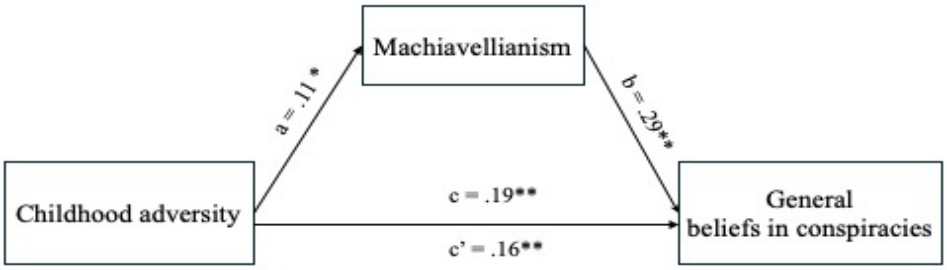
Additionally, we expected men to report faster strategies than women (P3.6). Our findings support this prediction (see Appendix D, Table D1). However, we found no evidence that men held stronger beliefs in conspiracies than women. Importantly, levels of beliefs in

conspiracies did not differ significantly between the sexes, failing to support this prediction (P3.7). Similarly, our prediction that men would perceive their childhood as more adverse than women was also not supported (P3.8).

We conducted the mediation analysis on an exploratory basis because the correlational pattern suggested a potential indirect pathway. Childhood adversity was positively linked to beliefs in conspiracies, Dark Triad traits were also positively associated with these beliefs, and childhood adversity correlated with Machiavellianism in the full correlation matrix. Based on this pattern and theoretical framework, we tested whether Machiavellianism might partly explain the relationship between childhood adversity and beliefs in conspiracies. We chose Machiavellianism because it satisfied the usual criteria for testing mediation (Baron and Kenny, 1986). Using PROCESS 4.1, we estimated two models with childhood adversity as the predictor, Machiavellianism as the mediator, and either general or local beliefs in conspiracies as the outcome (see Figures 1A and 1B).

Figure 1A

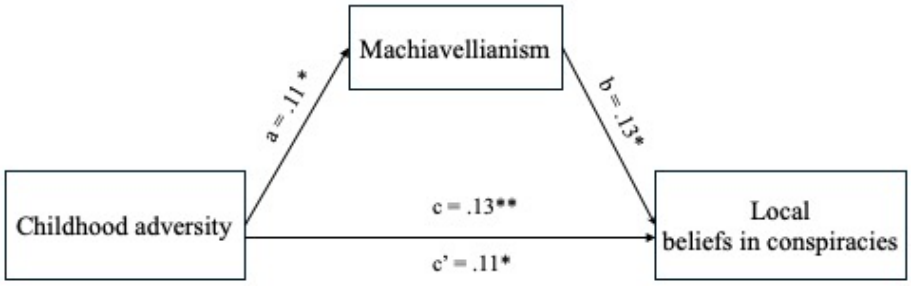
Mediating effects of Machiavellianism in the relationship between childhood adversity and general beliefs in conspiracies



Note. All presented effects are unstandardized; a is the effect of childhood adversity on Machiavellianism; *b* is the effect of Machiavellianism on general beliefs in conspiracies; *c'* is the direct effect of childhood adversity on general beliefs in conspiracies; *c* is the total effect of childhood adversity on general beliefs in conspiracies.
* $p < .05$, ** $p < .01$

Figure 1B

Mediating effects of Machiavellianism in the relationship between childhood adversity and local beliefs in conspiracies



Note. All effects presented are unstandardized; a is the effect of childhood adversity on Machiavellianism; *b* indicates the effect of Machiavellianism on local beliefs in conspiracies; *c'* is the direct effect of childhood adversity on local beliefs in conspiracies; *c* is the total effect of childhood adversity on local beliefs in conspiracies.
* $p < .05$, ** $p < .01$

First, as can be seen in Figure 1A, we detected that the total effect of childhood adversity on general beliefs in conspiracies was significant and positive ($B = .19$, $SE = 0.05$, $t = 3.68$, $p < .001$, 95% CI [.09; .29]). In the analysis of the indirect effect, we found that the relationship between childhood adversity and general beliefs in conspiracies was partially mediated by Machiavellianism ($B = .03$, $SE = 0.02$, 95% CI [.003; .066]). Furthermore, we found that the direct effect of childhood adversity on general beliefs in conspiracies remained significant after accounting for Machiavellianism ($B = .16$, $SE = 0.05$, $p < .01$, 95% CI [.06; .25]). We obtained similar results for local beliefs in conspiracies (see Figure 1B). We found that the total effect of childhood adversity on local beliefs in conspiracies was significant and positive ($B = .13$, $SE = 0.05$, $t = 2.81$, $p < .01$, 95% CI [.04; .21]). In the analysis of the indirect effect, we detected that the relationship between childhood adversity and local beliefs in conspiracies was small and its 95% CI included zero ($B = .01$, $SE = 0.01$, 95% CI [- .001; .030]). We therefore found no evidence of mediation for local beliefs. Moreover, the direct effect of childhood adversity on local beliefs in conspiracies remained significant after accounting for Machiavellianism ($B = .11$, $SE = 0.05$, $t = 2.56$, $p < .05$, 95% CI [.03; .20]).

Discussion

Childhood experiences leave lasting marks on development, and they shape how adults handle stress later in life (Chang & Lu, 2018). Although many studies focus on current circumstances, early experiences also shape adult functioning (Danese & McEwen, 2012; Jonason et al., 2014; Young et al., 2019). In harsh environments, with limited money, unreliable caregivers, and unstable relationships, people often come to see the world as uncertain. As adults, people with this outlook often stay on high alert and act cautiously (Belsky et al., 1991; Ellis et al., 2009). Growing up in hardship is associated with lower trust and a tendency to be easily swayed. These often go hand in hand with mental health difficulties and partly explain the link from early adversity to later symptoms (Campbell et al., 2021). Because vigilance and distrust are key predictors of beliefs in conspiracies (Douglas et al., 2017; Krüppel et al., 2023), we therefore expected that childhood adversity would play a meaningful role.

In this study, we employed an evolutionary-developmental and trait-based approach to gain a deeper understanding of the factors that contribute to general and local beliefs in conspiracies. Our goal was to investigate the connections between childhood adversity, fast life history strategies, Dark Triad traits, and problematic coping strategies, and how these factors relate to both general and local beliefs in conspiracies. We partially support our predictions. We found that childhood adversity was positively linked with beliefs in conspiracies. This pattern is consistent with the view that early contexts tune vigilance and distrust in adulthood (Ellis et al., 2009), contributing to a suspicious explanatory style.

Contrary to expectations, we observed that a global life history strategy index had weak or inconsistent relationships, supporting an indirect life history theory pathway that operates through antagonism rather than as a direct main effect (Jonason et al., 2017; Gruijters & Fleuren, 2018). While childhood adversity was connected to a faster life history strategy (Ellis et al., 2009), the overall measure of life history strategy was not associated with beliefs in

conspiracies. This could be because of the psychometric characteristics of the Mini-*K* Scale, which uses latent indicators that influence each other within a network (see Gruijters & Fleuren, 2018; Bolund, 2020; Sear, 2020). Given the heterogeneous content of standard life history strategy measures, such scores may summarize life circumstances more than they index a single, functionally coherent strategy. Thus we treat the life history strategy factor as limited in this dataset.

Then, in line with previous evidence (Langenhof & Komdeur, 2018), we demonstrated that childhood adversity is positively related to beliefs in conspiracies in our data, supporting the idea that early environments shape later threat-focused responses. However, this support is only partial. Because living conditions are linked to cognitive functioning in adulthood (Aartsen et al., 2019) and difficult childhoods can be associated with overall cognitive challenges, including lower intellectual performance, language skills, and aspects of executive functioning (Pechtel & Pizzagalli, 2011), we recognize that these challenges may also manifest as beliefs in conspiracies. Childhood adversity may lead to the development of hostile interpersonal styles (Brumbach et al., 2009), suggesting that such interpersonal patterns can evolve into beliefs in conspiracies.

Next, we confirmed previous findings that beliefs in conspiracies (general and local) are linked to the Dark Triad traits (Kay, 2021; Pilch et al., 2023; Došenović & Dinić, 2024). We also found that Machiavellianism correlated more strongly with general beliefs in conspiracies than with local ones. We interpret this difference by treating general beliefs in conspiracies as a broad mindset or predisposition to endorse conspiracy theories (Frenken & Imhoff, 2021). Moreover, we found that Machiavellianism mediated the association between childhood adversity and general beliefs in conspiracies (Figure 1A). However, mediation was not statistically reliable for local beliefs in conspiracies (Figure 1B). We interpret these paths

cautiously and as tentative. At the same time, we situate these links in mechanisms related to distrust, control, and threat (Hepp et al., 2021).

The relationship between Machiavellianism and beliefs in conspiracies may stem from a perceived lack of control and a desire to regain it, coupled with a general tendency to distrust others (Kay, 2021). We can explain these associations on evolutionary grounds. Specifically, we are naturally alert to potential threats because humans prioritize their safety. Some individuals may seek out hidden patterns, including conspiracy theories, in uncertain and unpredictable situations. We suggest that those with difficult childhood experiences may be overly sensitive to potential threats. This sensitivity may lead them to increased distrust and focus on danger. Essentially, it may be an overactive version of a system that evolved to protect us (Hepp et al., 2021; Kay, 2021).

Our findings align with past evidence regarding the role of adversity, but they differ in their interpretation of the life history mechanism (Fan & Meng, 2022). Whereas previous explanations describe the path from adversity to problem behaviors mediated by life history strategy under Dark Triad moderation, our global life history index showed weak and inconsistent links to beliefs in conspiracies. In our data, Machiavellianism partially mediated the association between adversity and general beliefs. We interpret this difference in several ways.

Broad life history scales may capture how people manage their behavior (e.g., planning, impulse control) more than what they believe, so that they may show weak links with beliefs in conspiracies. Antagonistic traits are more closely related to beliefs in conspiracies and may be the primary driver of such beliefs. Some discrepancies across studies likely reflect differences in what is measured (behaviors vs. beliefs), who is studied (youth vs. adults), and how life history is assessed (a global Mini-*K* score vs. specific effort and risk indicators). Additionally, a global life history index encompasses various aspects of people's lives and may reflect current

conditions as much as a unified strategy (see discussions and critiques regarding life history strategies by Copping et al., 2014; Gruijters & Fleuren, 2018; Bolund, 2020; Manson & Kruger, 2022). In contrast, antagonistic traits like Machiavellianism, narcissism, and psychopathy might be seen as proximate psychobehavioral strategies that influence goal-oriented social decision-making (Paulhus & Williams, 2002; Jonason et al., 2009; Bereczkei, 2015).

We found a small link between problematic coping and general beliefs in conspiracies (see Table 9). Across coping styles, however, effects were weak and uneven, echoing reviews that report mixed findings and measurement limits (Krüppel et al., 2023). Because several subscales show only modest reliability, these estimates should be interpreted with caution (constructive coping: .50; social coping: 58; and problematic coping: 62). Earlier studies suggest that living in complex and unpredictable environments can lead to stress responses and potentially block constructive coping behaviors (Ports et al., 2020), and provide evidence that problematic coping is linked to beliefs in conspiracies (see Marchlewska et al., 2022; Molenda et al., 2024). However, our analysis did not find strong evidence supporting this relationship. Our coping measures revealed only small and inconsistent correlations with beliefs (Muris et al., 2017).

We replicated prior evidence that men exhibit faster life history strategies (Kaplan & Gangestad, 2005; Figueredo et al., 2006) and scored higher on Machiavellianism and psychopathy (Muris et al., 2017). We also found that narcissism is related more strongly to general beliefs in conspiracies among women than men. These findings align with evidence that narcissism predicts beliefs in conspiracies (Cichocka et al., 2016; Cosgrove & Murphy, 2023). Women tend, on average, to score a little higher on vulnerable narcissism. Individuals with this subtype typically report higher levels of fear of missing out (FOMO; Carone et al., 2023) and lower levels of trust (Cichocka et al., 2022). They also focus less on social ties (Green et al., 2020) and are more sensitive to threats and danger (Miller et al., 2015).

Considering the developmental background, we note that it is also crucial that higher childhood emotional abuse and neglect are associated with elevated vulnerable narcissism (Carone et al., 2024). A likely mechanism is that adversity promotes vulnerable narcissism, which increases generalized distrust and threat-focused interpretations, thereby raising general, more than local beliefs in conspiracies. To examine this pathway alongside Machiavellianism, future research should measure grandiose and vulnerable narcissism separately, break down adversity into facets such as emotional abuse and neglect, and compare their individual effects in moderated mediation. In addition, sex differences in narcissism and in the Dark Triad traits overall are often minor and unstable (Grijalva et al., 2015; Muris et al., 2017; Weidmann et al., 2023), so we consider the stronger association among women as tentative and possibly influenced by the sample.

We also observed that general and local beliefs in conspiracies were positively correlated. This pattern is consistent with a hierarchical view in which a broad conspiratorial mindset underlies local beliefs, but we did not directly test a predictive or causal relation between the two. When viewed developmentally, distant adversity may heighten threat vigilance and distrust, which strengthens a general tendency that supports the acceptance of specific, local narratives (Belsky et al., 1991; Ellis et al., 2009; van Prooijen & van Vugt, 2018). We argue that local beliefs vary depending on identity motives and perceived intergroup threats, which helps explain why certain topics gain popularity in specific communities and cultures (Tajfel, 1978; Franks et al., 2017; Sternisko et al., 2020). We assume that psychometrics probably contributes to these differences. Specifically, broad instruments like the Generic Conspiracist Beliefs Scale show comparatively strong structure. At the same time, ad hoc, topical batteries such as the Local Beliefs in Conspiracies Scale may mix global and local content and be sensitive to salience, which can weaken discrimination between general and local factors (Brotherton et al., 2013; Imhoff et al., 2022).

Overall, the pattern supports an integrative view: childhood adversity serves as a distal factor that feeds into more immediate antagonistic dispositions. This helps explain why general beliefs show broader psychosocial links than local beliefs in conspiracies. The difference between general and local beliefs also suggests that cultural context, for example, religious framing, may shape how these beliefs are expressed.

Our conclusions come with limits. We studied a WEIRD sample from Poland and used locally chosen conspiracy items, so generalizability is narrow and cross-national tests of evolutionary claims are still needed (Henrich et al., 2010; Pollet & Saxton, 2019). Some coping subscales showed only modest reliability, possibly because of translation issues or the difficulty in assessing general versus situation-specific coping. Furthermore, debates about higher-order factor structure also remain unresolved (see Nielsen & Knardahl, 2014; Jonason et al., 2020b). We also used ad hoc measures of local beliefs in conspiracies and childhood adversity. These measures were internally consistent, but broader validity is uncertain (Bifulco et al., 2006; Warren et al., 2022). Finally, we relied on the Mini-*K* global score, which is sensitive to wording and culture, may reflect current circumstances more than a stable strategy, and does not directly measure behavior (Copping et al., 2014; Gruijters & Fleuren, 2018; Nettle & Frankenhuis, 2020). We recommend using tools with clear subscales, such as the COPE Inventory (Carver et al., 1989; Marchlewska et al., 2022; Rodrigues et al., 2022) and pair facet-level life history measures with behavioral tasks. We also suggest tracking the timing, duration, and chronicity of adversity in emotional, physical, and economic spheres.

Childhood adversity was linked to beliefs in conspiracies, but a global life history score was not. We view life history as a background developmental context rather than a direct explanation of current global life history strategies. Antagonistic traits, especially Machiavellianism, showed the strongest and most specific links with beliefs in conspiracies. Machiavellianism partly explained the link between adversity and general beliefs in

conspiracies. Coping was related mainly to general beliefs in conspiracies, but the effects were mixed, and some subscales had low reliability, so these results should be interpreted with caution. In sum, beliefs in conspiracies appear to be threat-focused responses shaped largely by antagonistic dispositions (van Prooijen & van Vugt, 2018). In summary, distal adversity may channel into proximal antagonistic traits, which then relate to beliefs in conspiracies.

CHAPTER 8. Study 4: Effect of Ecological Harshness on Beliefs in Conspiracies: An Experimental Study

Objective of the Study and Theoretical Rationale

The primary aim of Study 4 is to investigate the causal effect of an ecological harshness prime on beliefs in conspiracies. Within this study, we will also explore whether sex moderates the impact of the harshness prime on beliefs in conspiracies. Although harshness is originally conceptualized within life history theory (Ellis et al., 2009; Del Giudice et al., 2015) as a developmental factor, we adopt the situationally evoked responses approach, treating harshness as an ecological cue that may evoke adaptive cognitive responses, such as beliefs in conspiracies. We emphasize that in this experiment, we consider harshness as a proximal ecological cue, rather than a developmental calibration.

We assume that individuals may have evolved cognitive mechanisms that are particularly sensitive to signs of ecological threats, leading to increased vigilance (Nesse, 2005; Haselton & Nettle, 2006; Del Giudice et al., 2011), distrust (Sperber et al., 2010; Raihani & Bell, 2019), and suspicion in social exchange (Cosmides & Tooby, 1992; Neuberg et al., 2010; van Prooijen & van Vugt, 2018). Ecological harshness refers to the average level of extrinsic morbidity and mortality, or the extent to which uncontrollable factors threaten survival and reproduction (Ellis et al., 2009; Del Giudice et al., 2015; Pepper & Nettle, 2017). There is evidence that inducing an existential health-related threat may increase outgroup beliefs in conspiracies by activating agency detection and illusory pattern mechanisms (Mao et al., 2025). Similarly, viewing the social world as dangerous predicts beliefs in conspiracies and tends to come with greater anxiety, more uncertainty, and a loss of control (van Prooijen & Douglas, 2017).

In line with findings that threat-related cues can increase reliance on beliefs in conspiracies as a form of defensive cognition, particularly through processes such as illusory

pattern perception and agency detection (Whitson & Galinsky, 2008), we predict that individuals exposed to harshness primes will report stronger beliefs in conspiracies than those in the neutral condition (P4.1). We use the safety condition as an active control that signals the absence of threat, allowing us to distinguish the effects of harshness from those of its ecological opposite. We also observed that in a previous correlational study (Study 3), participants endorsed general beliefs in conspiracies more strongly than local ones. Therefore, we predict that harshness cues will amplify endorsement of general beliefs in conspiracies more than local beliefs (P4.2). This prediction is consistent with evidence that general beliefs in conspiracies represent a more stable and universal dimension than context-specific ones (Imhoff et al., 2022).

Research Questions, Hypotheses, and Predictions

This experimental study tests the fourth general hypothesis (H4), which builds on the experimental activation of ecological cues related to harshness.

General Hypothesis H4: *If individuals are exposed to ecological cues of harshness, then their beliefs in conspiracies will increase.*

This general hypothesis corresponds with the following research questions:

Q11. Does priming ecological harshness increase beliefs in conspiracies compared to the neutral condition?

Q12. Does the effect of an ecological harshness prime differ between general and local beliefs in conspiracies?

Q13. (*Exploratory)* Does the effect of the harshness prime differ by sex?

Based on these research questions and the general hypothesis, we formulated the following predictions, specifically:

P4.1. Participants exposed to the ecological harshness prime will report higher beliefs in conspiracies than participants in the neutral condition.

P4.2. Participants exposed to the ecological harshness prime will exhibit a larger increase in general than in local beliefs in conspiracies.

Analytic Plan

To evaluate our hypotheses, we will conduct a mixed-design ANOVA with sex and condition as between-subjects factors and belief domain (general vs. local) as a within-subjects factor. This confirmatory model provides a comprehensive test of the main effects and the interaction between sex, condition, and belief domain. Additionally, we will perform exploratory *t*-tests to examine sex differences in beliefs in conspiracies. We will report both between-sex comparisons (men vs. women) and within-sex comparisons (general vs. local beliefs), including effect sizes: Cohen's *d* and Hedges' *g*.

Method

Participants and Procedure

We conducted an a priori power analysis in G*Power (Faul et al., 2007) to estimate the sample size needed to detect a medium effect in a fixed-effects ANOVA (special, main effects, and interactions). With $\alpha = .05$, a desired power of .95, an effect size of $f = .25$, and numerator degrees of freedom set to 5, the analysis indicated a required total sample size of 323. Therefore, the sample size for the current study was planned accordingly.

The final sample consisted of 816 participants (51.3% women, 48.5% men, 0.2% other) from Poland, aged between 18 and 82 years ($M = 48.37$, $SD = 16.30$). Among participants, 14 (1.7%) had primary education, 71 (8.7%) had vocational education, 335 (41.1%) had a high school degree, 10 (1.2%) were current undergraduates, and 381 (46.7%) held a Bachelor's or

Master's degree. Five (0.6%) had a doctoral degree. Slightly more than half of the respondents, 473 (58.0%), were employed. All participants were informed about the general aim of the study and their rights to withdraw without needing to justify their decision. The study was conducted online, with participants completing the survey on a designated platform.

Participants were randomly assigned to two experimental groups and one control group, with each participant having an equal chance of being placed in any condition. This process helped control for potential confounding variables. In Experimental Group 1 (n = 275), participants were exposed to the harshness manipulation, while in Experimental Group 2 (n = 269), they were exposed to the safety manipulation. The Control Group (n = 272) received no manipulation and served as a baseline for comparison with the experimental groups. To check if age differed across groups, we performed a univariate ANOVA. We found no main effect of group (p = .864), no main effect of sex (p = .367), and no interaction between group and sex (p = .913). The model explained only 0.2% of the variance in age (R^2 = .002, adjusted R^2 = -.005). These results indicate that the groups were similar in terms of age.

Measures

Consistent with previous studies, we measured individual differences in general beliefs in conspiracies with the Polish version (Siwiak et al., 2019) of the 15-item Generic Conspiracist Beliefs Scale (Brotherton et al., 2013). Participants reported the degree to which each statement was true (1 = *definitely not true*; 5 = *definitely true*), and all these ratings were averaged to create an index of general beliefs in conspiracies. Like previous studies, this scale also demonstrated good internal consistency (α = .94).

Similar to Study 3, we used the Local Beliefs in Conspiracies Scale (Zarazińska & Jonason, 2024) to measure local beliefs in conspiracies in Poland. Participants indicated their level of agreement (1 = *definitely disagree*; 5 = *definitely agree*) with each item, and these

ratings were averaged to form an index of local beliefs in conspiracies. We performed an Exploratory Factor Analysis using the Principal Axis Factoring method to determine the underlying factor structure of the data. In an Exploratory Factor Analysis with a varimax rotation, these items loaded onto a single factor (Factor loadings = .53 to .81) with an eigenvalue of 4.92, accounting for 49.2% of the variance in the items. We demonstrated that the scale had good internal consistency (α = .90). In this study, we treated the EFA as an exploratory validation in a new context. The factor structure was subsequently confirmed via CFA in Study 5. We present detailed item loadings in Appendix E (Table E1).

Experimental Manipulation

The study was conducted online, with participants completing the survey on a designated platform. Participants were randomly assigned to two experimental groups and one control group. In the harshness condition, participants viewed a short presentation titled "Unsafe Home: Increase in Serious Household Accidents". The presentation included photographs and brief descriptions of serious household accidents, adapted from a priming procedure used in previous research (Sennebogen, 2009; Griskevicius et al., 2011). It was intended to convey cues of ecological harshness in the home context (see Appendix A4). After viewing the presentation, participants completed the following measures: the Generic Conspiracist Beliefs Scale, which assesses general tendencies to beliefs in conspiracies, and the Local Beliefs in Conspiracies Scale, which evaluates beliefs in local conspiracy theories through a list of well-known examples in Poland.

In the safety condition, participants viewed a brief presentation titled "Safe Home*:* Minor Household Incidents". This presentation included photographs and descriptions designed to convey a sense of safety and low threat in the home context (see Appendix A5). After the

presentation, participants completed the same set of measures: the Generic Conspiracist Beliefs Scale and the Local Beliefs in Conspiracies Scale.

At the same time, participants in the neutral condition viewed a neutral presentation titled “Exotic plants in the world”, which featured photographs and descriptions of rare and exotic plants. After viewing the presentation, participants completed the same measures. We outlined all procedures for each group in Table 11 below.

Table 11

Summary of experimental procedures and order of measures by condition (harshness, safety, neutral)

Condition	Harshness	Safety	Neutral
Aim	Manipulation of harshness	Manipulation of safety	No manipulation
Manipulation task	Watching a short presentation: *Unsafe Home: Increase in Serious Household Accidents*	Watching a short presentation: *Safe Home: Minor Household Incidents*	No manipulation. Watching a short presentation: *Exotic Plants in the World*
Set of questionnaires	Complete the Generic Conspiracist Belief Scale (GCBS) Complete the Local Beliefs in Conspiracies (LBCS)		

Note. The table summarizes the main study procedures for each of the three groups in the study.

Debriefing

At the end of the study, all participants received a thorough debriefing. They were informed about the true purpose of the research and the manipulations involved. They also received contact details in case they experienced distress, needed psychological support, or had further questions for the lead researcher. The study was conducted in accordance with the guidelines of the ethics committee at The Maria Grzegorzewska University.

Results

Given that a small number of participants identified their sex as "other" (n = 1), we decided to exclude them from analyses involving sex as a between-subjects factor. The final sample included only participants who identified as men (n = 396) or women (n = 419). We adopted this approach to ensure sufficient power and clearer group comparisons.

We ran a mixed-design ANOVA with sex (men vs. women) and condition (harshness, safety, neutral) as between-subjects factors, and belief domain (general vs. local) as a within-subject factor. This model tested the main effects and their interactions, including whether the condition effect differed by belief domain. We present the results in Table 12.

Table 12

Mixed-design ANOVA for beliefs in conspiracies by belief domain, sex, and condition

Effect	F	df	p	partial η^2
Within-subjects				
Domain (GBC vs. LBC)	1182.33	1, 809	< .001	.594
Domain × Sex	11.95	1, 809	< .001	.015
Domain × Condition	1.38	2, 809	.252	.003
Domain × Sex × Condition	0.34	2, 809	.709	.001
Between-subjects				
Sex	15.06	1, 809	< .001	.018
Condition	0.30	2, 809	.738	.001
Sex × Condition	1.12	2, 809	.326	.003

Note. Domain = type of beliefs in conspiracies. GBC = General beliefs in conspiracies. LBC = Local beliefs in conspiracies.

We preregistered two predictions: that harshness would elevate overall beliefs relative to neutral (P4.1) and would amplify general more than local beliefs (P4.2). In contrast to our predictions, we found no main effect of condition or an interaction between domain and

condition. We also found no evidence of a three-way interaction among belief domain, sex, and condition. These results suggest that the experimental manipulation did not change the overall pattern of findings.

We found that there was a strong main effect of belief domain ($F(1, 809) = 1182.33$, $p < .001$, partial $\eta^2 = .594$), with participants reporting higher levels of general beliefs in conspiracies ($M = 3.08$, $SD = 0.83$) than local ones ($M = 2.25$, $SD = 0.84$). Moreover, we found a small main effect of sex ($F(1, 809) = 15.06$, $p < .001$, partial $\eta^2 = .018$). We observed that women generally reported higher overall levels of beliefs in conspiracies than men (see Table 13). Additionally, we observed an interaction between belief domain and sex ($F(1, 809) = 11.95$, $p < .001$, partial $\eta^2 = .015$), indicating that the difference between general and local beliefs was slightly larger for women than for men. In summary, the most substantial effect was the distinction between general and local beliefs in conspiracies, followed by a small impact of sex and a small interaction between domain and sex. The experimental condition did not affect endorsement of beliefs in conspiracies. We next inspected group means and pairwise contrasts (Table 13).

Table 13

Summary of between- and within- sex differences in local and general beliefs in conspiracies

	Mean (*SD*)				
	Overall	Men	Women	*t*-test	Hedges' *g*
Total sample					
Local beliefs in conspiracies	2.25 (0.84)	2.11 (0.84)	2.39 (0.82)	4.97***	0.34
General beliefs in conspiracies	3.08 (0.83)	3.02 (0.88)	3.14 (0.77)	2.08*	0.15
t-test	-34.09***	-25.07***	-23.44***		
Cohen's *d*	0.99	1.06	0.94		
Harshness					
Local beliefs in conspiracies	2.26 (0.85)	2.11 (0.82)	2.40 (0.86)	2.84**	0.34
General beliefs in conspiracies	3.08 (0.84)	3.05 (0.88)	3.11 (0.81)	0.64	0.07
t-test	-20.06***	-15.37***	-13.28***		
Cohen's *d*	0.97	1.11	0.85		
Safety					
Local beliefs in conspiracies	2.25 (0.85)	2.15 (0.85)	2.34 (0.84)	1.89*	0.22
General beliefs in conspiracies	3.03 (0.81)	3.01 (0.88)	3.06 (0.75)	0.55	0.06
t-test	-18.40***	-13.33***	-12.77***		
Cohen's *d*	0.94	0.99	0.90		
Neutral					
Local beliefs in conspiracies	2.25 (0.83)	2.06 (0.84)	2.44 (0.77)	3.91***	0.47
General beliefs in conspiracies	3.13 (0.83)	3.01 (0.89)	3.25 (0.75)	2.44**	0.29
t-test	-20.62***	-14.71***	-14.55***		
Cohen's *d*	1.06	1.10	1.07		

Note. *t*-tests are provided for descriptive purposes, with main conclusions based on the mixed ANOVA. Cohen's *d* is reported as an absolute value (magnitude only).
* $p < .05$, ** $p < .01$, *** $p < .001$

As presented in Table 13, we found that women reported higher local beliefs in conspiracies than men across all conditions (Hedges' g = 0.22 to 0.47). By contrast, sex differences in general beliefs in conspiracies were minor and reached significance in the total sample (g = 0.15) and neutral condition (g = 0.29). Across the total sample and within each condition, participants consistently endorsed general beliefs in conspiracies more strongly than local (all p-values < .001, Cohen's d = 0.94-1.06).

Overall, sex differences were larger for local than for general beliefs in conspiracies, and this pattern held across all conditions. The within-subject effect sizes indicated a robust and highly stable preference for general over local beliefs. The priming manipulation did not meaningfully alter these patterns. Average levels and sex differences were consistent across conditions.

Discussion

The primary aim of this study was to investigate the causal effect of experimentally induced ecological harshness on beliefs in conspiracies, both general and local. We also performed exploratory analyses to determine whether sex influences these beliefs. Three main patterns emerged. First, we did not observe any effect of the experimental manipulation. Second, endorsement of general beliefs exceeded local beliefs across conditions. Third, women tended to score slightly higher overall, particularly in the local domain, although these differences were modest.

We found that across all three conditions (harshness, safety, and neutral), levels of both general and local beliefs in conspiracies remained stable and did not differ between groups. Our findings suggest that a brief, one-time priming of harshness was too weak to produce noticeable changes. One possible explanation is that beliefs in conspiracies function as stable dispositions shaped by life experiences, which predispose individuals to interpret the world through patterns of hidden intentions. Such dispositions may reflect long-term ecological influences rather than short-term ecological cues (Ellis et al., 2009; Belsky, 2012; Del Giudice et al., 2015). In line with life history theory, harshness typically represents chronic developmental environments rather than momentary stimuli (Ellis et al., 2009; Del Giudice et al., 2011), which explains the lack of influence of the manipulation on beliefs in conspiracies.

Across both sexes and all conditions, we observed the most substantial effect was a within-subject domain difference, where participants consistently endorsed general beliefs in conspiracies more strongly than local ones. General conspiracies are broad, abstract narratives about secret groups and power structures, which makes them more easily transmissible across contexts. General beliefs in conspiracies are broad, abstract stories about hidden groups and power. Because they do not rely on first-hand experience or detailed cultural knowledge, they travel easily across contexts and often receive stronger endorsement (Bruder et al., 2013;

Brotherton et al., 2013; Imhoff et al., 2022). Local beliefs in conspiracies are more tied to place and situation, and people tend to accept them when they feel culturally or situationally relevant (Schlipphak et al., 2021). This pattern fits prior evidence that the "conspiracy mentality" as captured by general scales is reasonably stable and not easily moved by political messages or other ideological cues (Pilch et al., 2023). It also aligns with early work that viewed general beliefs in conspiracies as a broad mental schema (Goertzel, 1994).

Then, for sex differences, women scored slightly higher overall, especially on local beliefs in conspiracies, regardless of condition. We can explain these findings by the Error Management Theory perspective (Haselton & Buss, 2000). For example, many women are taught to be careful, to read others' intentions, and to protect close relationships. These lessons can make them watch people and situations more closely (Eagly & Wood, 2012). In line with this, they may be more sensitive to social threats and may worry about risks to family or about being taken advantage of (Haselton & Buss, 2000). We acknowledge that effect sizes were small, and the large sample likely aided significance, so these findings should be read as suggestive rather than definitive.

Significantly, the absence of an effect of harshness priming challenges earlier claims that reduced control or perceived threat increases beliefs in conspiracies (Whitson & Galinsky, 2008; van Prooijen & Jostmann, 2013). In our data, results align with reports of mixed effects and replication problems for simple control manipulations (van Elk & Lodder, 2018). Brief text primes likely lack the ecological validity needed to shift deeply held worldviews. We agree with a life history perspective that vigilance related to harshness probably reflects developmental adjustment rather than temporary activation in adulthood (Ellis et al., 2009; Del Guidice et al., 2011).

We recognize several limitations of our work. We did not include manipulation checks, for example ratings of perceived harshness, so we cannot make strong causal claims about the

manipulation itself. There were no pre-manipulation baseline measures, which makes it hard to detect within-person change and to rule out pre-existing differences between groups. We also did not test whether the manipulation shifted emotions such as anxiety, perceived control, or distrust, even though those states might have carried the effect. The manipulation was brief and text-based, which further limits ecological validity. A single, one-off exposure in a lab-like setting may not capture how people respond to harsh environments in daily life.

Future research should incorporate clear manipulation checks and gather baseline and follow-up measures. Stronger and more immersive procedures can help, such as virtual reality scenes, longer or repeated exposures, or guided autobiographical recall. It will be helpful to monitor short-term changes during the session and add a delayed follow-up to check if any effects last. Designs that follow people over time and compare different countries can test how chronic ecological harshness, for example, economic instability or conflict, shapes beliefs in conspiracies. Moderation tests can examine whether effects are larger among people with lower socioeconomic status, higher stress, or faster life history strategies. Finally, adding cognitive and personality measures, such as paranoia, need for closure, and mental reflection, may clarify why general beliefs in conspiracies and local beliefs in conspiracies diverge and which processes link ecological cues to each domain.

Overall, we observed that beliefs in conspiracies are multidimensional, relatively stable, and resistant to brief situational manipulations. The consistent preference for general over local beliefs suggests that beliefs in conspiracies may reflect broad adaptive functions in line with both Error Management Theory and life history theory perspectives. The slight but systematic sex differences between women and men may reflect a combination of evolutionary vigilance and sociocultural impacts. The lack of results suggests that developmental calibration matters more than situational activation, and that beliefs in conspiracies function as stable worldviews rather than responses to fleeting cues.

CHAPTER 9. Study 5: Effect of Ecological Unpredictability on Beliefs in Conspiracies: An Experimental Study

Objective of the Study and Theoretical Rationale

In our last study within the research program, we aim to explore how experimentally induced ecological unpredictability influences beliefs in conspiracies. As in Study 4, we will conduct exploratory analyses to examine whether sex moderates the impact of unpredictability on such beliefs. We build on the design of the previous experiment by introducing a different ecological manipulation. We note that unpredictability, like harshness, is originally conceptualized within life history theory (Ellis et al., 2009; Del Giudice et al., 2015) as a developmental factor. However, we treat unpredictability as a proximal ecological cue within the evoked responses approach. We recall the definition of unpredictability, which is viewed as variability over time and space in the occurrence of threats or deprivations (Ellis et al., 2022).

Beliefs in conspiracies may function as adaptive cognitive responses in shifting ecological conditions (Whitson & Galinsky, 2008; van Prooijen & Jostmann, 2013) that undermine the predictability of social systems (Fritsche et al., 2011; Kay et al., 2009; Landau et al., 2015) and the practicality of planning for the long term (Ellis et al., 2009; Mittal & Griskevicius, 2014). When threats feel salient, people are more likely to lean on beliefs in conspiracies, partly because they see patterns and intentions that are not really there (Whitson & Galinsky, 2008). Therefore, we predict that individuals exposed to unpredictability primes will report stronger beliefs in conspiracies than those in the neutral condition (P5.1). We additionally include a predictability condition as an active control that reduces uncertainty, allowing us to distinguish the effects of unpredictability from those of its ecological opposite. We recognize that direct evidence on the link between unpredictability and beliefs in conspiracies is limited. However, the available literature suggests that similar mechanisms are at play. One line concerns the joint role of epistemic and existential motives (Douglas et al.,

2017), which are tied to the need for control and understanding in unpredictable environments (see the overview by Dow et al., 2022). When life feels unpredictable and uncertain, people look for explanations more closely. People in uncertain situations are more likely to see patterns and intention where none exist. Consequently, they may find beliefs in conspiracies more attractive (Krekó, 2023; Leclercq et al., 2024). A perceived threat has a similar effect and predicts stronger support for such beliefs (Heiss et al., 2021). In these situations, beliefs in conspiracies can help people feel more in control and predict what will happen next (van Prooijen, 2022a; Alfasi, 2025). Overall, this evidence suggests that cues of ecological unpredictability may encourage beliefs in conspiracies. This evidence gap highlights the theoretical significance and innovation of experimentally manipulating unpredictability in this dissertation.

We also observed that in Study 4, participants endorsed general beliefs in conspiracies more strongly than local ones. Given this pattern, we expect cues of unpredictability to boost endorsement of general beliefs in conspiracies more than local ones (P5.2). This fits evidence that general beliefs in conspiracies are more stable and transfer across contexts than specific beliefs (Imhoff et al., 2022).

Research Questions, Hypotheses, and Predictions

This final study tests the fifth general hypothesis (H5) and extends the logic of Study 4 from harshness to unpredictability.

General Hypothesis H5: *If individuals are exposed to ecological cues of unpredictability, then their beliefs in conspiracies will increase.*

This general hypothesis corresponds with the following research questions:

Q14. Does priming ecological unpredictability increase beliefs in conspiracies compared to the neutral condition?

Q15. Does the effect of an ecological unpredictability prime differ between general and local beliefs in conspiracies?

Q16. (*Exploratory)* Does the effect of the unpredictability prime differ by sex?

Based on these research questions, we formulated these specific predictions:

P5.1. Participants exposed to the ecological unpredictability prime will report higher beliefs in conspiracies than participants in the neutral condition.

P5.2. Participants exposed to the ecological unpredictability prime will exhibit a larger increase in general than in local beliefs in conspiracies.

Analytic Plan

To test our hypotheses, we will use a mixed-design ANOVA with sex and condition as between-subjects factors and belief domain (general vs. local) as a within-subjects factor. This confirmatory model offers a unified test of the main effects and the interaction among sex, condition, and belief domain. In addition to the confirmatory ANOVA models, we will perform exploratory *t*-tests to examine sex differences in beliefs in conspiracies. We will report both between-sex comparisons (men vs. women) and within-sex comparisons (general vs. local beliefs), including effect sizes: Cohen's *d* and Hedges' *g*.

Method

Participants and Procedure

Since this study follows the same design and analytical approach as our previous work, we used earlier power calculations conducted in G*Power to determine the necessary sample size (Faul et al., 2007). In that analysis, we assumed a medium effect size (f = .25), a significance level of .05, and a desired power of .95, and used a fixed-effects ANOVA model with main effects and interactions. We found that a total of 323 participants would be sufficient.

Therefore, the sample size for the current study was planned accordingly. The final sample included 687 participants (57.8% women, 39.3% men, and 2.9% other), all from Poland, aged between 18 and 95 years (M = 30.07, SD = 13.08). Among the 687 participants, two (0.3%) had primary education, seven (1.0%) had vocational education, 84 (12.2%) had a high school degree, 274 (39.9%) were current undergraduates, 183 (26.6%) held a Bachelor's or Master's degree, and 137 (19.9%) had a doctoral degree. In our sample, 473 participants (68.8%) were employed.

As in Study 4, this study was conducted online, with participants completing the survey on a designated platform. Participants were randomly assigned to two experimental groups and one control group. In Experimental Group 1 (n = 217), participants were exposed to the unpredictability manipulation, while in Experimental Group 2 (n = 232), they were exposed to the predictability manipulation. In the Control Group (n = 238), participants received no manipulation and served as a baseline for comparison with the experimental groups. To determine if age differed across groups, we conducted a univariate analysis of variance (ANOVA). We found no main effect of group (p = .920), no main effect of sex (p = .208), and no interaction between sex and group (p = .767). The model explained only 0.8% of the variance in age (R^2 = .008, adjusted R^2 = -.003). These results indicate that the groups were comparable in terms of age.

Measures

As in previous studies, we evaluate individual differences in general beliefs in conspiracies using the Polish version (Siwiak et al., 2019) of the 15-item Generic Conspiracist Beliefs Scale (Brotherton et al., 2013). Participants indicated how true each statement was (1 = *definitely not true*; 5 = *definitely true*), and all responses were averaged to form an overall index of general beliefs in conspiracies (α = .91).

Likewise, to assess local beliefs in conspiracies in Poland, we used the Local Beliefs in Conspiracies Scale (Zarazińska & Jonason, 2024). Participants indicated their level of agreement (1 = *definitely disagree*; 5 = *definitely agree*) with each item, which were then averaged to form an index of local beliefs in conspiracies (α = .89). To examine the structure of the scale, we performed a Confirmatory Factor Analysis (CFA). The model showed marginal fit ($\chi^2(35) = 346.00$, $p < 0.001$; RMSEA = 0.11, 90% CI [.10, .13]; CFI = .89; TLI = .86). All items significantly loaded onto a single latent factor, with standardized loadings from .43 to .93 (all p-values < .001). These results support a unidimensional structure while highlighting the need for further refinement. We provided detailed loadings and additional fit indices in Appendix F (Table F1).

Experimental Manipulation

As in Study 4, this study was conducted online, and participants completed the survey on a designated platform. Participants were assigned to two experimental and one control group through random assignment. In the unpredictability condition, participants read an online article titled "We can't predict anything. Are we facing the worst?". The article (adapted from Durante et al., 2015; Leiby & Madsen, 2017) was presented as a realistic news piece, discussing the economic crisis and rising financial problems in Poland, and emphasizing themes of unpredictability (see Appendix A6). After reading the article, participants completed the following measures: the Generic Conspiracist Beliefs Scale, which assesses general beliefs in conspiracies, and then the Local Beliefs in Conspiracies Scale, which evaluates beliefs in specific conspiracies through a list of well-known theories in Poland.

In the predictability condition, participants read an online article titled "Stable at last! Unemployment is decreasing and Poles saving *more* and more". This article, also framed as a realistic news piece, discussed economic stability in Poland and highlighted themes of

predictability and positive financial trends (see Appendix A7). After reading the article, participants completed the Generic Conspiracist Beliefs Scale and the Local Beliefs in Conspiracies Scale.

At the same time, participants in the neutral condition read an online neutral article titled "Homemade apple pie recipe". After reading the article, participants completed the same measures: the Generic Conspiracist Beliefs Scale and the Local Beliefs in Conspiracies Scale. We presented all procedures for the three groups in Table 14 below.

Table 14

Summary of experimental procedures and order of measures by condition (unpredictability, predictability, neutral)

Condition	Unpredictability	Predictability	Neutral
Aim	Manipulation of unpredictability	Manipulation of predictability	No manipulation
Manipulation task	Reading an online article titled: *We can't predict anything. Are we facing the worst?*	Reading an online article titled: *Stable at last! Unemployment i*s *decreasing and Poles saving more and more.*	No manipulation. Reading an article: *Homemade apple pie recipe.*
Set of questionnaires	Complete the Generic Conspiracist Beliefs Scale (GCBS) Complete the Local Beliefs in Conspiracies Scale (LBCS)		

Note. The table summarizes the main study procedures for each of the three groups in the study.

Debriefing

After completing the survey, participants were informed of the true purpose of the study. They also received details on how to access mental health support if they felt distress related to their participation, along with contact information for the lead researcher for further questions.

The study procedure adhered to the guidelines established by the ethics committee at The Maria Grzegorzewska University.

Results

As in Study 4, we excluded a small number of participants who identified their sex as "other" (n = 20). They were omitted from analyses that involved sex as a between-subjects factor. The final sample included only participants who identified as men (n = 270) or women (n = 397). We did this to ensure sufficient statistical power and to facilitate more explicit comparisons between groups. Additionally, in exploratory analyses, we examined whether participants' sex might influence their beliefs in conspiracies or interact with experimental manipulations.

Thus, we conducted a mixed-design ANOVA with sex (men vs. women) and experimental condition (unpredictability, predictability, neutral) as between-subjects factors, and belief domain (general vs. local) as a within-subject factor. This design allowed us to test univariate effects and to compare the relative influence of general and local beliefs in conspiracies. We presented the results of these analyses in Table 15 below.

Table 15

Mixed-design ANOVA for beliefs in conspiracies by belief domain, sex, and condition

Effect	*F*	df	*p*	partial η^2
Within-subjects				
Domain (GBC vs. LBC)	1039.71	1, 661	< .001	.611
Domain × Sex	0.93	1, 661	.335	.001
Domain × Condition	1.05	2, 661	.352	.003
Domain × Sex × Condition	0.23	2, 661	.795	.001
Between-subjects				
Sex	4.41	1, 661	.036	.007
Condition	0.28	2, 661	.756	.001
Sex × Condition	0.03	2, 661	.972	< .001

Note. Domain = type of beliefs in conspiracies. GBC = General beliefs in conspiracies. LBC = Local beliefs in conspiracies.

We found that participants in the unpredictability condition did not report a higher overall endorsement of beliefs in conspiracies than those in the neutral condition, so the planned main effect of condition (P5.1) was not supported. Likewise, participants in the unpredictability condition did not show a larger increase in general beliefs in conspiracies compared to local beliefs (P5.2). The overall pattern did not differ by sex across conditions.

We found a strong main effect of belief domain ($F(1, 661) = 1039.71$, $p < .001$, partial $\eta^2 = .611$), revealing that participants differed in their endorsement of general and local beliefs in conspiracies. Generally, we found that participants endorsed general beliefs in conspiracies ($M = 2.51$, $SD = 0.81$) more strongly than local ones ($M = 1.74$, $SD = 0.67$). We did not detect any interactions between the belief domain and sex, or between the belief domain and condition. We also found no evidence of a three-way interaction among belief domain, sex, and condition. At the between-subjects level, we found a small main effect of sex (see Table 16). Men and women differed in their overall endorsement of beliefs in conspiracies.

Since we observed sex differences, we decided to explore these differences further and compare the strength of local versus general beliefs in conspiracies across different conditions. While the ANOVA results provide an overall view of main effects and interactions, they do not specify the exact differences in means between conditions. To better understand the patterns indicated by our design, we conducted a series of *t*-tests. These tests helped us analyze pairwise comparisons more closely and clarify where specific differences in beliefs in conspiracies appeared among conditions and sexes. In Table 16, we display the results of these analyses.

Table 16

Summary of between- and within-sex differences in local and general beliefs in conspiracies

	Mean (*SD*)				
	Overall	Men	Women	*t*-test	Hedges' *g*
Total sample					
Local beliefs in conspiracies	1.74 (0.67)	1.68 (0.64)	1.78 (0.69)	1.74	0.15
General beliefs in conspiracies	2.51 (0.81)	2.43 (0.79)	2.57 (0.81)	2.18*	0.17
t-test	-33.21***	-20.09***	-26.52***		
Cohen's *d*	1.04	1.04	1.05		
Unpredictability					
Local beliefs in conspiracies	1.79 (0.66)	1.75 (0.63)	1.82 (0.67)	0.77	0.11
General beliefs in conspiracies	2.52 (0.80)	2.45 (0.78)	2.57 (0.82)	1.05	0.15
t-test	-16.74***	-9.04***	-14.36***		
Cohen's *d*	1.00	0.99	1.00		
Predictability					
Local beliefs in conspiracies	1.72 (0.69)	1.68 (0.68)	1.75 (0.70)	0.80	0.10
General beliefs in conspiracies	2.49 (0.77)	2.40 (0.77)	2.56 (0.77)	1.54	0.21
t-test	-19.46***	-12.22***	-15.18***		
Cohen's *d*	1.05	0.99	1.10		
Neutral					
Local beliefs in conspiracies	1.71 (0.67)	1.64 (0.61)	1.76 (0.71)	1.36	0.18
General beliefs in conspiracies	2.52 (0.84)	2.44 (0.82)	2.57 (0.86)	1.14	0.15
t-test	-21.49***	-14.06***	-16.30***		
Cohen's *d*	1.07	1.11	1.03		

Note. *t*-tests are provided for descriptive purposes, with main conclusions based on the mixed ANOVA. Cohen's *d* is reported as an absolute value (magnitude only).
* $p < .05$, ** $p < .01$, *** $p < .001$

We observed that women reported slightly higher scores than men on both local and general beliefs in conspiracies (g = 0.10-0.21). For general beliefs in conspiracies, the differences between men and women were minor effects and were evident only in the total sample (g = 0.17). We also found that, across the whole sample and in each condition, participants reported stronger general than local beliefs in conspiracies, with large within-person effects (Cohen's d = 0.99-1.11, all p-values < .001).

In summary, both men and women endorsed beliefs in conspiracies, with minor differences. The gap was small and comparable across belief domains. This pattern was the same across unpredictability, predictability, and neutral conditions. We emphasize that the experimental manipulation did not change the results, as average levels of beliefs and the size of sex differences remained consistent across conditions.

Discussion

The primary aim of this study was to investigate the causal effect of experimentally induced unpredictability on beliefs in conspiracies. In contrast to our prediction, the unpredictability manipulation did not increase endorsement of either general or local beliefs in conspiracies relative to the predictability or neutral conditions (van Elk & Lodder, 2018). Beyond our general predictions, we identified three consistent findings. First, people tended to rate general beliefs in conspiracies higher than local ones. Second, women and men scored almost the same, and any differences were very small. Third, the general over local pattern showed up each time we checked (Brotherton et al., 2013; Bruder et al., 2013; Imhoff et al., 2022).

The most significant finding was the domain effect. Specifically, support for general beliefs in conspiracies was greater than for local beliefs. This pattern was observed across all conditions. We interpret this as evidence of a lasting distinction between different belief domains. General beliefs in conspiracies work like broad templates that people can apply across situations. They seem to be consistent and stable across different contexts independently of daily political messaging (Pilch et al., 2023). Culturally, these general beliefs are widely shared because they are not tied to a single event, making them easier to accept, remember, and communicate. At the same time, local beliefs in conspiracies usually need background knowledge about specific people, places, or events before they take hold (Franks et al., 2017; Sternisko et al., 2020). In turn, some research suggests that endorsement may not solely rely on specific knowledge and can reflect wider dispositions and cultural context (Bost et al., 2010).

From a life history view, general beliefs in conspiracies can function like standing vigilance and a steady lens for making sense of uncertainty (Ellis et al., 2009). By comparison, local beliefs in conspiracies tend to rely more on immediate, situational cues. The repetition of this pattern across studies indicates a fundamental structural difference rather than a mere

statistical fluke. Keeping this in mind, we provide several explanations. One option is that beliefs in conspiracies behave like trait-like dispositions that resist short-term cues, which fits the idea of a relatively stable "conspiracy mentality" (Brotherton et al., 2013; Bruder et al., 2013). Secondly, our manipulation likely lacked ecological validity. Brief text primes and a mild unpredictability cue may be too weak to shift beliefs in conspiracies.

A third angle is based on the judgment under risk. People may adopt a "better safe than sorry" stance, which aligns with Error Management Theory. In this view, false alarms are less costly than overlooking a hidden threat or a real conspiracy (de Jong & Vroling, 2014; Van den Bergh et al., 2020; Haselton & Buss, 2000; Haselton & Nettle, 2006). An arousal account is also plausible. Affective salience can heighten vigilance and pattern detection, making conspiracy explanations feel more compelling (van Prooijen & van Dijk, 2014; Zsidó, 2024). However, we did not manipulate or measure arousal or affect in this study, so this last interpretation remains tentative.

We found that women scored slightly higher than men in beliefs in conspiracies. However, the differences were small and practically negligible. Unlike Study 4, we did not observe a domain and sex interaction. Accordingly, women's stronger endorsement of local beliefs in conspiracies does not appear to be a stable or replicable effect. These inconsistencies imply that sex differences in beliefs in conspiracies are weak and context-dependent.

Several limitations qualify our conclusions. Although the large sample provided ample statistical power, it can render minimal effects statistically significant. Hence, effect sizes should guide interpretation. We note that the absence of a manipulation check makes it unclear whether participants perceived or processed the unpredictability primes as intended. The ecological cues may have been too abstract or insufficiently engaging to elicit strong responses. Moreover, we admit that the absence of mediator measures (e.g., perceived unpredictability) prevents stronger causal inferences about the proposed mechanisms. Finally, relying on binary

sex classification improved analytical clarity but reduced inclusivity, and the ecological validity of our primes remains uncertain, as they cannot replicate the chronic unpredictability faced in daily life.

To address these limitations, we recommend using more immersive and emotionally salient manipulations, such as guided autobiographical recall, virtual reality, or repeated exposures, and adding manipulation checks of perceived unpredictability with baseline and follow-up measures of beliefs in conspiracies, affect, and arousal. We suggest longitudinal studies to test how chronic unpredictability shapes beliefs in conspiracies over time, and cross-cultural work to verify the general versus local distinction and to check that the measures function similarly across contexts. We propose modeling moderators such as socioeconomic status, stress history, perceived safety, political identity, distrust, vigilance, and cognitive reflection. This will demonstrate who is most affected by unpredictability. Finally, we recommend examining when local beliefs in conspiracies become salient in real settings, for example, during crises, disease outbreaks, local scandals, or targeted political communication.

In summary, this study revealed a significant domain effect that favors general beliefs in conspiracies over local ones. We found negligible differences between sexes and no impact from unpredictability priming. These results suggest that both general and local beliefs in conspiracies remained largely unaffected by brief ecological cues. We propose that long-term ecological exposures may have a greater influence than short-term primes.

CHAPTER 10. Additional Comparative Analysis of Study 4 and Study 5

Introduction and Rationale

We note that this cross-study analysis is post hoc and exploratory in nature. Considering the results from Studies 4 and 5, which independently examined the effects of ecological cues of harshness and unpredictability on beliefs in conspiracies, we conducted an additional cross-study analysis to compare the relative strength and mechanisms of these two ecological cues. We based this decision on prior research suggesting that unpredictability and harshness may reflect distinct psychological pathways (Ellis et al., 2009; Del Giudice et al., 2015). Unpredictability means unstable, difficult to predict changes, like unexpected job loss or inconsistent support. It tends to reduce people's sense of control and pushes them to seek clear explanations (Whitson & Galinsky, 2008). Harshness refers to steady, complex conditions, such as chronic low income, high crime rates, or limited access to healthcare (Ellis et al., 2009; Del Giudice et al., 2015; Ellis et al., 2022).

Building on this framework, we combined the datasets from Studies 4 and 5 to test whether cues of unpredictability or harshness have a more substantial impact on beliefs in conspiracies. Our aim was not only to integrate findings across studies but also to provide a more rigorous test of the relative psychological influence of distinct ecological cues. Because this comparative analysis was not part of our original research plan, we treat it as post hoc and exploratory. Its purpose is to clarify our earlier findings and to point out directions for future research on ecological cues and beliefs in conspiracies.

Analytic Plan

We will conduct a mixed-design ANOVA with sex (men vs. women) and condition (harshness, safety, unpredictability, predictability, neutral) as between-subjects factors, and belief domain (general vs. local) as a within-subjects factor. We will focus on the main effect

of the condition and the interaction between the domain and the condition. When the omnibus *F*-test for condition is significant and the domain and condition interaction is not, we will run Bonferroni-adjusted pairwise comparisons on overall beliefs in conspiracies scores (collapsed across belief domain). We will report effect sizes as partial η^2 for ANOVA effects and Cohen's *d* for pairwise contrasts.

Results

We present descriptive statistics for local and general beliefs in conspiracies by condition and sex in Table 17. These values offer a broad overview of the data distribution and enable an initial check of group differences before conducting the statistical analyses.

Table 17

Means and standard deviations of local and general beliefs in conspiracies by condition and sex

		LBC		GBC	
Condition	Sex	*M*	*SD*	*M*	*SD*
Safety	Men	2.15	0.85	3.00	0.88
	Women	2.34	0.83	3.06	0.75
Harshness	Men	2.11	0.82	3.05	0.88
	Women	2.40	0.86	3.11	0.81
Predictability	Men	1.68	0.68	2.40	0.77
	Women	1.75	0.70	2.56	0.77
Unpredictability	Men	1.75	0.63	2.45	0.78
	Women	1.82	0.67	2.57	0.82
Neutral	Men	1.89	0.79	2.78	0.91
	Women	2.10	0.81	2.91	0.87

Note. GBC = General beliefs in conspiracies. LBC = Local beliefs in conspiracies. *M* = Means; *SD* = Standard deviation. Reported values are observed means and standard deviations.

We note that the reported means and standard deviations are raw scores. Then, we conducted a mixed-design ANOVA with sex (men, women) and five conditions (harshness, safety, unpredictability, predictability, neutral) as between-subject factors, and belief domain

(general, local) as a within-subject factor. We present the results of the analyses below in Table 18.

Table 18

Mixed-design ANOVA for beliefs in conspiracies by belief domain, sex, and condition

Effect	*F*	df	*p*	partial η^2
Within-subjects				
Domain (GBC vs. LBC)	1951.96	1, 1472	< .001	.570
Domain × Sex	3.05	1, 1472	.081	.002
Domain × Condition	1.80	4, 1472	.127	.005
Domain × Sex × Condition	2.34	4, 1472	.053	.006
Between-subjects				
Sex	11.19	1, 1472	< .001	.008
Condition	31.06	4, 1472	< .001	.078
Sex × Condition	0.15	4, 1472	.962	< .001

Note. Domain = type of beliefs in conspiracies. GBC = General beliefs in conspiracies. LBC = Local beliefs in conspiracies.

We found that the main effect of belief domain demonstrated that participants endorsed general beliefs in conspiracies (M = 2.79, 95% CI [2.75, 2.84]) more strongly than local ones (M = 2.00, 95% CI [1.96, 2.04]). We found no interaction between the belief domain and sex, nor between the belief domain and condition. There was also no three-way interaction among domain, sex, and condition. For the between-subjects analysis, we found a main effect of sex, with women reporting slightly higher overall[8] beliefs in conspiracies (M = 2.46, 95% CI [2.41, 2.52]) than men (M = 2.33, 95% CI [2.27, 2.39]). Additionally, we observed a main effect of condition on overall endorsement, with no interaction between sex and condition.

[8] Overall endorsement of beliefs in conspiracies was estimated as the estimated marginal mean from the mixed ANOVA, averaged (collapsed) across the within-subject factor belief domain (general, local).

Because the condition effect was significant, we conducted Bonferroni-adjusted post hoc comparisons on the overall endorsement scores (collapsed across general and local). We present complete pairwise comparisons in Table 19.

Table 19

Post hoc comparisons for overall beliefs in conspiracies

Comparison (I-J)	Mean Difference (I-J)	*SE*	*p*	95% CI [LL, UL]
Safety-Harshness	-0.03	0.06	1.000	[-0.21, 0.15]
Safety-Predictability	**0.54**	0.07	<.001	[0.35, 0.72]
Safety-Unpredictability	**0.49**	0.07	<.001	[0.29, 0.68]
Safety-Neutral	**0.21**	0.06	.002	[0.05, 0.37]
Harshness-Predictability	**0.57**	0.07	<.001	[0.38, 0.75]
Harshness-Unpredictability	**0.52**	0.07	<.001	[0.32, 0.71]
Harshness-Neutral	**0.24**	0.06	<.001	[0.08, 0.40]
Predictability-Unpredictability	-0.05	0.07	1.000	[-0.25, 0.15]
Predictability-Neutral	**-0.33**	0.06	<.001	[-0.49, -0.16]
Unpredictability-Neutral	**-0.27**	0.06	<.001	[-0.45, -0.10]

Note. Based on estimated marginal means collapsed across the belief domain (general and local). The error term is the mean square (MSE) = .549. $p < .05$. CI = Confidence Interval; *SE* = Standard Error. Bold values indicate significant comparisons.

Bonferroni-adjusted pairwise comparisons revealed that safety and harshness yielded higher overall beliefs in conspiracies than neutral, predictability, and unpredictability (all $p <$ .001), with no difference between safety and harshness (p = 1.00). The neutral condition produced higher scores than predictability and unpredictability (both $p <$ .001), whereas predictability and unpredictability did not differ.

Additionally, to further examine the consistency of differences between general and local beliefs in conspiracies across studies, we conducted paired-samples *t*-tests. Table 20 presents the results for Studies 3, 4, and 5, as well as the combined analysis of Studies 4 and 5.

Table 20

Paired-samples t-tests comparing local and general beliefs in conspiracies across studies

	Mean (*SD*)			
	Study 3	Study 4	Study 5	Study 4 & 5
Local beliefs in conspiracies	1.91 (0.77)	2.25 (0.84)	1.74 (0.67)	2.02 (0.82)
General beliefs in conspiracies	2.70 (0.88)	3.08 (0.83)	2.51 (0.81)	2.82 (0.87)
t-test	-24.32***	-34.09***	-33.21***	-47.43***
Cohen's *d*	0.96	0.99	1.04	0.95

Note. All results refer to paired-samples *t*-tests comparing local and general beliefs in conspiracies (LBC-GBC). Cohen's *d* is reported as an absolute value (magnitude only). These paired-samples contrasts are descriptive and align with the mixed-ANOVA domain effect.
*** $p < .001$.

We found that across all analyses, participants consistently reported a higher level of general beliefs in conspiracies than local ones (all *p*-values < .001). The effect sizes were large across studies (Cohen's $d = 0.95$-1.04). These findings demonstrate a consistent pattern that general beliefs in conspiracies are more widely endorsed than local ones.

Discussion

In this combined analysis, we pooled data from Studies 4 and 5 to provide a clearer test of whether ecological cues shape beliefs in conspiracies. Our analysis revealed a clear difference between domains, with endorsement of general beliefs in conspiracies exceeding that of local beliefs. This effect was large (partial $\eta^2 = .570$) and did not vary by sex or condition. Although we measured only general and local beliefs in conspiracies (and did not assess a separate domain-general "conspiracy mentality"), the pattern is consistent with prior work showing that a broad conspiracist disposition predicts both general and locally specific beliefs (Milošević Đorđević et al., 2021). The stronger endorsement of general beliefs also appears to be a stable feature of conspiracy cognition, in line with findings that broad conspiracy narratives are easier to accept and spread than local ones (Bruder et al., 2013; Astapova et al., 2021; Imhoff et al., 2022).

Then, we observed a main effect of condition. Beliefs in conspiracies were elevated in the safety and harshness conditions relative to predictability, unpredictability, and neutral conditions. In contrast, predictability and unpredictability did not differ from one another (see Table 19). Given the above, we suggest that the emotional tone of ecological cues, whether people feel safe or harsh, may be more important for susceptibility to beliefs in conspiracies than whether events are predictable. Emotionally charged settings, whether positive or negative, can increase suspicious thinking and pattern seeking (van Prooijen & van Dijk, 2014; Douglas et al., 2017). Arousal signals the intensity and readiness for action of a state (Storbeck & Clore, 2008), and high-intensity, task-relevant cues tend to capture and hold attention across multiple senses (Zsidó, 2024). That said, we did not manipulate or check arousal or affect in this study, so this explanation should be treated as a hypothesis.

Additionally, we found a small but reliable sex difference. Women scored slightly higher than men on overall beliefs in conspiracies. The effect was small and did not change by

belief domain or by condition, and there were no significant two- or three-way interactions. In short, the main pattern we report was stable across all conditions. According to Error Management Theory, the slight advantage women have in overall beliefs in conspiracies may indicate a lower threshold for detecting social threats, where false alarms are less costly than misses (Haselton & Buss, 2000). We note this as a tentative interpretation and refer readers to the discussion in Study 4 for a fuller explanation (see Chapter 8).

Taken together, these results emphasize some key theoretical implications. First, we found no evidence that short-term priming of ecological cues increases beliefs in conspiracies. It appears that brief cues have little effect. It is sustained exposure to ecological challenges, ongoing unpredictability, or long-term socioeconomic pressure that is more likely to change beliefs in conspiracies (Ellis et al., 2009; Szepsenwol & Simpson, 2019). Second, the clear distinction between general and local beliefs in conspiracies highlights the multidimensional nature of those beliefs. We assume that general and local beliefs may reflect different adaptive trade-offs (Ellis et al., 2009; Nettle & Frankenhuis, 2020).

We acknowledge several limitations. Without manipulation checks, we cannot confirm that participants processed the primes as intended. We note that combining data from two studies increased statistical power but may have also introduced uncontrolled variance because of methodological differences. Additionally, relying on self-report measures such as the Generic Conspiracist Beliefs Scale and the Local Beliefs in Conspiracies Scale raises concerns about response biases. We propose that future studies should combine stronger, field-relevant manipulations with longitudinal and cross-cultural designs. Critically, future studies should include both structural features of the ecological cues (harshness, unpredictability) and emotional features, ideally using crossed/orthogonal factorial designs with thorough manipulation checks (perceived harshness and unpredictability, perceived control, affect, and source credibility). In our data, sex differences were small and did not interact with condition,

suggesting broadly similar patterns for women and men. Future work should test whether these effects persist over time, generalize across cultures, and interact with stable traits and worldviews.

Three results stand out. First, endorsement of general beliefs in conspiracies consistently exceeded local beliefs. Second, affective context, especially cues of safety or harshness, increased overall endorsement of beliefs in conspiracies. Third, sex differences were minor and non-interactive. These inferences remain provisional because arousal and affect were not directly measured. Taken together, these patterns indicate that general beliefs in conspiracies are relatively stable, less influenced by predictability cues, and probably more shaped by emotional context and long-term ecological exposures.

CHAPTER 11. Integrative Discussion: Synthesis, Limitations, and Future Directions

General Discussion

In this chapter, we consolidate findings from five studies to explore a multidimensional view of beliefs in conspiracies. Throughout the dissertation, we compare four approaches to understand what each one offers. We developed an integrated research program that combines an evolutionary-developmental perspective based on life history theory, a personality trait approach, a motivational systems approach, and a framework for situationally evoked responses.

Generally, in the evolutionary-developmental approach, we defined beliefs in conspiracies as *adaptively calibrated responses to developmental and ecological adversity.* In the personality trait approach, we viewed them as *antagonistic or basic trait-based dispositions*. In the motivational system framework, we conceptualized them as a *reflection of the sensitivities of motivational systems*. In the situational view, we defined beliefs in conspiracies as *situationally evoked responses to ecological cues and situational characteristics*. For clarity, we compiled the key results from all studies into a single summary table in Appendix G (see Table G4). This table offers a concise overview and enables readers to cross-check specific details.

Across our research program, we discovered three clear patterns. Firstly, we found that individuals endorsed general beliefs in conspiracies more strongly than local beliefs in conspiracies. This gap between general and local beliefs in conspiracies was substantial (see Table 20) and consistently observed whenever we measured it in Studies 3-5. Second, in the experiments, brief text primes about harshness or unpredictability, tested separately, did not influence the endorsement of beliefs in conspiracies. Third, we observe that only when we pooled Studies 4 and 5 did safe and harsh conditions display higher overall endorsement than predictability, unpredictability, and neutral conditions. In addition, neutral exceeded both

predictability and unpredictability, whereas predictability and unpredictability did not differ. This pattern suggests that the role of emotional tone and momentary engagement is more important than the structure of predictability versus unpredictability.

In light of our research results, we will evaluate them in relation to the general hypotheses we formulated (see Table G2 for all predictions). We found that our hypothesis, which posits that beliefs in conspiracies serve as adaptive responses to ecological adversity, was only partially supported (H1). Specifically, we found that beliefs in conspiracies reflected how harsh, competitive, and dangerous people perceived their environments to be, in the past, present, and future. By contrast, the global life history speed index showed no clear direct association with beliefs in conspiracies.

Then, we found that beliefs in conspiracies were associated with personality traits, motivational systems, and perceived situational characteristics (H2). People scored higher on beliefs in conspiracies when they exhibited lower intellect within the openness aspect and a higher BAS Drive and BAS Fun Seeking. Furthermore, emotional stability showed a small negative association with these beliefs. On the situational side, perceiving situations as more adverse, deceptive, negative, or positive, as well as social and mating-relevant, was associated with a stronger endorsement of beliefs in conspiracies. We therefore treat this hypothesis as partially supported, robust for motivational systems and situational characteristics, but weak for the broader Big Five personality traits.

Similarly, we hypothesized that beliefs in conspiracies are calibrated responses to early adversity and should be associated with developmental adversity, coping strategies, life history strategy, and the Dark Triad traits (H3). Reports of childhood adversity were positively linked to both general and local beliefs in conspiracies. At the same time, the global life history strategy index showed no clear association. We also considered whether beliefs in conspiracies might operate as a problematic coping strategy. However, our data do not support this account,

and these null findings should be interpreted in light of the modest reliabilities for several coping scales. Within the Dark Triad, we observed that Machiavellianism partially mediated the link between childhood adversity and general beliefs in conspiracies. Overall, adverse childhood conditions and antagonistic disposition, especially Machiavellianism, were associated with beliefs in conspiracies.

We found that our hypothesis, that experimentally induced harshness would increase beliefs in conspiracies (H4), was not supported. In Study 4, the harshness prime did not increase endorsement compared to neutral or safety conditions. Similarly, our hypothesis that experimentally induced unpredictability would raise beliefs in conspiracies (H5) was also not supported. In Study 5, unpredictability did not increase endorsement relative to neutral, and predictability did not differ from unpredictability. In the pooled analyses across Studies 4 and 5, safety and harshness yielded higher overall endorsement than neutral, and neutral exceeded both predictability and unpredictability, with no difference between the latter two. We suggest that this pattern points to emotional tone and short-term engagement, rather than harshness alone, driving the minor differences across conditions. Additionally, we propose that ecological cues of harshness and unpredictability may matter chiefly when they are chronic or occur early in development, rather than when they are briefly signaled in the lab.

Moreover, we posit that situational effects have their limits. We emphasize that priming effects are most effective when they are credible, engaging, and repeated (Green & Brock, 2000; Pornpitakpan, 2004; Pennycook et al., 2018). We acknowledge that a single brief exposure to text is unlikely to be sufficient, particularly for broad measures of beliefs in conspiracies (Cesario, 2014). We recommend using exposures that more closely resemble real life and incorporating proper manipulation checks (see Shadish et al., 2002; Maertens et al., 2021), which prevents us from distinguishing actual null effects from weak or unreliable inductions. We argue this should be a priority for future research.

As mentioned above, beyond these hypotheses, we found that the most significant, replicable, and reliable effect was the gap between general and local beliefs in conspiracies (see Studies 3-5). Our findings remained consistent across conditions and sexes. The domain architecture matters for interpretation. We suggest that general beliefs in conspiracies serve as a broad, portable mindset and abstract framework of suspicion that does not depend on specific local symbols or current events. In contrast, local beliefs in conspiracies are more context-tuned, tied to local narratives and shared community experiences. Understanding local beliefs in conspiracies requires considering the level of identity and rootedness (see Sternisko et al., 2020). Content that is "ours" connected to local symbols and history is more likely to evoke defenses of group values (Tajfel, 1978; van Prooijen & van Vugt, 2018). Therefore, it is not just the general suspicion that matters, but also how deeply someone is embedded in their community and what threats they see as significant (Sternisko et al., 2020).

General beliefs in conspiracies were more strongly associated with Machiavellianism, whereas local beliefs in conspiracies showed small, context-dependent associations in this Polish sample and should be interpreted cautiously. Conceptually, local beliefs in conspiracies are likely to hinge more on identity-related processes, such as ingroup identification, identity centrality, rootedness in local communities, and perceived intergroup threat, than on antagonistic dispositions per se (see Tajfel, 1978; van Prooijen & van Vugt, 2018; Sternisko et al., 2020). Accordingly, future work should measure identity and embeddedness directly, for example, social, national, or religious identification, place attachment, collective self-views, and perceived group-based threat, and test whether these variables mediate or moderate links between ecological cues and local beliefs in conspiracies.

Additionally, we emphasize that general beliefs in conspiracies and local beliefs in conspiracies are related, but they are not the same (Brotherton et al., 2013; Bruder et al., 2013). General beliefs in conspiracies are understood as a general suspicious tendency and may "fuel"

specific local beliefs in conspiracies when the right situation arises (Đorđević et al., 2021). Beyond this, scales that measure general beliefs in conspiracies (GCBS and CMQ) capture a broad conspiracy mentality and usually have cleaner psychometrics (stable factors, higher reliability). By contrast, local items capture event-specific, culturally embedded content. Both are useful, but not interchangeable. We treated the belief domain as a within-person factor and avoided collapsing general and local beliefs in conspiracies into a single score. We also took first steps toward validating a locally developed scale. We found that internal consistency and initial EFA and CFA were acceptable (see Table E1 and Table F1 in Appendices). However, we recommend a more comprehensive validation of this scale, including test-retest reliability, convergent and discriminant validity, and invariance across groups and over time.

Beyond that, we conducted exploratory analyses across our studies. These analyses confirmed previous research showing that sex differences in beliefs in conspiracies are minor and unstable. In the broader literature, there is evidence of higher endorsement among men in some samples (Freeman & Bentall, 2017; Cassese et al., 2020), evidence of greater tendencies among women in others (Hammad et al., 2021; Popoli & Longus, 2021), and reports of minimal or null overall differences (Uscinski & Parent, 2014; Dyrendal et al., 2021; Enders et al., 2024). We suggest that differences in content, measurement, and national context likely contribute to these discrepancies. We acknowledge that our findings are consistent with this mixed pattern and do not change the core domain result, which is that general beliefs in conspiracies exceed local beliefs in conspiracies across both sexes.

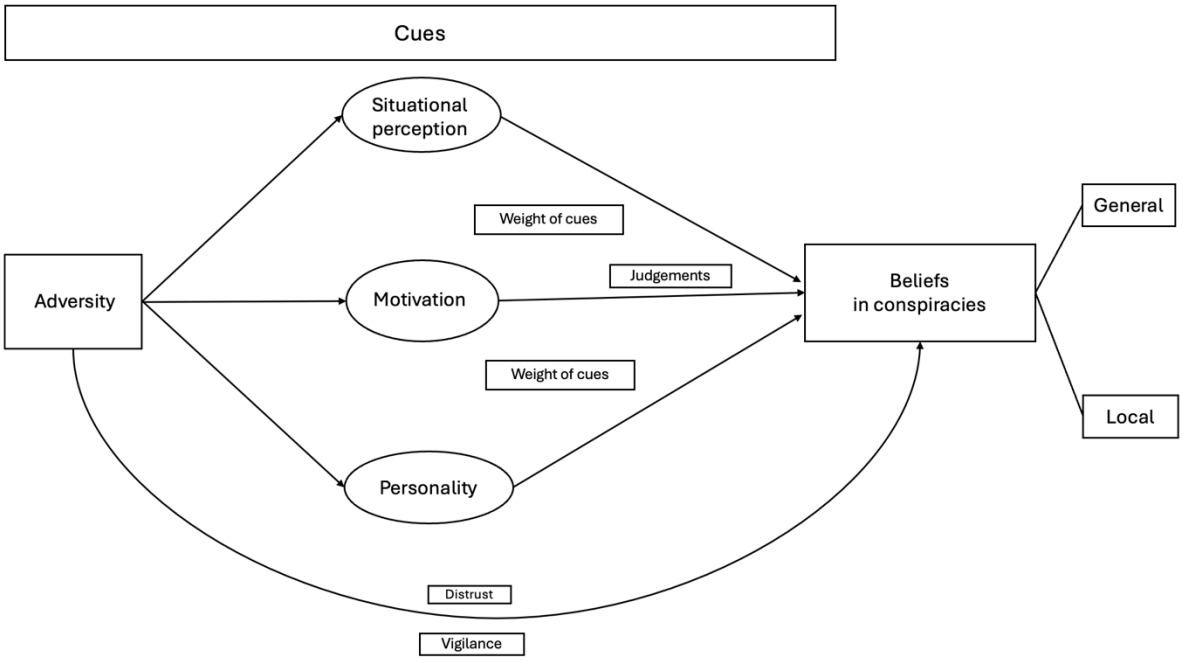
In addition, the broader literature suggests a trend consistent with Error Management Theory (Haselton & Buss, 2000; Haselton & Nettle, 2006) and with responses to threats (Mikulincer et al., 2003). Women often report higher risk perceptions and stronger pathogen avoidance and disgust (Finucane et al., 2000; Tybur et al., 2009; Al-Shawaf et al., 2018), while some studies find that men increase risk taking after mortality salience (Jessop et al., 2008;

Taubman-Ben-Ari & Skvirsky, 2019). These patterns align with the concept of "tend-and-befriend" responses to threat and the Error Management Theory's logic of minimizing costly missed threats (Taylor, 2000). We note that our studies were not designed to test Error Management Theory, and we did not observe reliable sex by condition interactions. We therefore treat this literature as a plausible backdrop rather than a direct explanation of our data. In our results, sex differences were small and unstable, and they did not alter the core domain pattern in which general beliefs in conspiracies exceeded local beliefs in conspiracies. We encourage targeted tests with domain-specific content, preregistered hypotheses, and samples powered to detect minor effects. We plan to model these moderators explicitly in future work.

Here, we aim to synthesize and clarify these findings using our four-approach framework and a Brunswik-inspired lens diagram (1956; Hammond & Hursch, 1964) that applies its core logic to our constructs (see Figure 2).

Figure 2

Integrative model from the present program of research



*Note. The i*ntegrative model was based on five studies in the dissertation.

In line with this view, the broader environment offers multiple imperfect signals with some real-world relevance (Brunswik, 1955; Dhami et al., 2004). How people weigh different cues, shaped by their upbringing, traits, perception, and motives, guides their judgments and can influence their beliefs in conspiracies (Hursch et al., 1964; Cooksey, 1996; Hammond & Stewart, 2001; Karelaia & Hogarth, 2008). From an evolutionary-developmental perspective, our evidence is better seen as a developmental context rather than a single-label explanation. Importantly, exposure to adversity can lead to greater mistrust and vigilance (Belsky et al., 1991; Ellis et al., 2009; Compas et al., 2017; Szepsenwol & Simpson, 2019). Individuals who had more challenging childhoods also reported stronger beliefs in conspiracies, suggesting that early adversity may be a common vulnerability factor. Thus, difficult living conditions and adversity could increase beliefs in conspiracies (as seen in Studies 1 and 3). Within our framework, adversity tunes cue weights toward threat and control, thereby amplifying the effect of later hostile or uncertain information on judgment.

When trust declines and suspicion of fraud increases, it becomes easier to accept explanations that suggest hidden motives (Goertzel, 1994; Abalakina-Paap et al., 1999), particularly in uncertain and dangerous situations (Whitson & Galinsky, 2008; Grzesiak-Feldman, 2013; van Prooijen & Douglas, 2017). This links the belief that "the world is dangerous" with the belief that "others are working behind the scenes" (see Bruder et al., 2013). In addition, such reactions are also consistent with developmental approaches, which hold that early adversity shapes vigilance and distrust (Belsky et al., 1991; Ellis et al., 2009). Furthermore, broader signals of harshness, competition, danger, and unpredictability have some real-world relevance. People who notice such signals are more likely to judge social events as threatening, competitive, and outside their control. Notably, early adversity and difficult

experiences increase the weight given to those appraisals, which raises the likelihood of endorsing beliefs in conspiracies.

This pattern also points to an indirect pathway. Early adversity, such as harsh and unpredictable environments, may appear to foster antagonism (Del Giudice et al., 2011) and weaken trust (Hepp et al., 2021), and these tendencies are associated with beliefs in conspiracies (Imhoff & Bruder, 2014; Douglas et al., 2017; Kay, 2021). However, it is also possible that strong beliefs in conspiracies over time filter how people see the world and reinforce feelings of threat and risk. We recommend that future research examine this using longitudinal and diary designs. At the same time, the trait view clarifies the at-risk profile, marked by higher Machiavellianism and lower analytical thinking, with stronger links to general beliefs in conspiracies (see Swami et al., 2010; Galliford & Furnham, 2017; March & Springer, 2019). In this framework, personality traits act as stable settings that influence how much weight people give to different cues. We suggest that antagonism increases the weight assigned to signs of harmful intent, while reduced analytical thinking lowers the threshold for accepting pattern-based explanations.

Motivational sensitivities help explain why some individuals are more susceptible to beliefs in conspiracies. A tendency to seek rewards and meaning can make conspiracy-related content feel engaging or significant. This helps explain why some people are drawn to such content, not only as an escape from uncertainty (Carver & White, 1994; Imhoff & Lamberty, 2017). The way people perceive the situation reveals when these predispositions are likely to be expressed (see Rauthmann et al., 2014, 2015).

In other words, we employ the evolutionary-developmental perspective to explain ***why*** these beliefs can seem reasonable under adversity, the trait perspective to identify ***who*** is most at risk, and motivational systems to demonstrate ***how*** people move toward or away from such

narratives in their daily lives. Situational views and ecological cues indicate ***when*** these predispositions are expressed.

We argue that a consistent domain effect also fits our framework. General beliefs in conspiracies were stronger than local beliefs in conspiracies. We interpret this as a difference in what is being judged. General beliefs in conspiracies rely more on abstract threat and agency cues, which have broad real-world relevance. Local beliefs in conspiracies rely more on identity-linked cues and shared stories. Group identity and social ties likely add extra weight to group-relevant cues, which would explain why local endorsement is more context-dependent.

Finally, the absence of experimental effects provides insight within this framework. Short, one-time prompts probably altered which distant cues were noticed at the moment, but did not modify the long-term weighting settings for cue use. Without strong credibility, engagement, and manipulation checks, immediate evaluations may not have shifted enough to change judgment. This matches our pooled finding that emotional tone and engagement mattered more than how predictable the situation was.

Limitations of the Research Program, Directions for Future Research, and Practical Implications

Limitations

While our studies yield essential findings, they are not without limitations. We used attention checks and screening procedures that differed across datasets. We also did not always use error estimates that are robust when model assumptions are imperfect. Because we ran many tests and pooled some results across studies, a few significant findings may have appeared by chance. Most analyses relied on data from a single time point, so we cannot tell which factor comes first in the links among adversity, personality traits, motivation, coping, and beliefs in conspiracies. We primarily used ANOVA and correlations, which do not model measurement

error and can overstate effects when large within-person domain differences are present. We did not preregister equivalence tests or Bayesian criteria for interpreting nulls, so our null findings are descriptive rather than confirmatory.

We always presented general beliefs in conspiracies before local beliefs in conspiracies. This fixed order can enhance the stable domain effect we observed. General and local beliefs in conspiracies capture related but not identical constructs. We did not assess baseline levels of suspiciousness, paranoia, or initial beliefs in conspiracies. Participants may already have held elevated beliefs at baseline, which limits our interpretation of experimental effects and cross-sectional links. Additionally, there is a plausible overlap in constructs: self-report scales of beliefs in conspiracies partly reflect a broader suspicious attitude and general distrust. Previous findings indicate that such beliefs are linked to a tendency to see others as untrustworthy and to perceive malevolent intent (Imhoff & Bruder, 2014; van Prooijen & Acker, 2015), yet factor-analytic work and different correlates suggest that beliefs in conspiracies and paranoia or suspiciousness are related but separate constructs (Brotherton et al., 2013; Baron et al., 2014; Imhoff & Lamberty, 2017; Hanfstingl et al., 2024). Therefore, we consider suspiciousness as a possible higher-order vulnerability while viewing beliefs in conspiracies as specific domain assessments.

Our experiments did not include manipulation checks for perceived harshness, unpredictability, affect, control, engagement, or source credibility. Null effects can reflect stable beliefs, weak inductions, low credibility, or low engagement. Text-only primes have limited real-world realism, and short exposures rarely change systems that develop over years. We relied on self-reports collected in single sessions, which are vulnerable to responding in a manner that agrees with items regardless of content, skewed distributions, scores near the top of the scale, and same-method bias. Several coping subscales showed low internal consistency in our sample, so we treated coping as a non-informative predictor. Our global life history

strategy measure did not show robust direct links to beliefs in conspiracies across two studies. This pattern may reflect both theoretical and measurement aspects, including ongoing debates about the Mini-*K* and related indices (see critique by Copping et al., 2014; Gruijters & Fleuren, 2018; Nettle & Frankenhuis, 2020; Manson & Kruger, 2022). In one study, we combined religiosity and spirituality into a single index, which can inflate associations when items overlap in content.

In addition, samples were mainly recruited online in Poland, with Study 1 as the exception, so generalizability is limited (Henrich et al., 2010; Pollet & Saxton, 2019). In the pooled analysis, safety and harsh conditions sometimes exceeded predictability, unpredictability, and neutral conditions. This difference may reflect engagement, reading time, or ideological fit rather than arousal alone. We acknowledge that we did not measure credibility, exposure time, or ideological congruence, so these explanations remain open.

Finally, our measures assessed endorsement of particular claims rather than a content-free reasoning style. Because some conspiracy narratives have been verified in history (such as Watergate, MKUltra, and "Operation Berkshire"), higher local beliefs in conspiracies can sometimes reflect cautious evidence seeking under uncertainty. This creates a risk that we underrepresent reasoning style and that the truth value and cultural salience of specific items influence scores. We recognize that our Local Beliefs in Conspiracies Scale included some items that were really more general and overlapped with the Generic Conspiracist Beliefs Scale (Brotherton et al., 2013). That probably blurred the line between domains and may have boosted the local scores.

It is important to note the limitations we identified. They define the boundaries of our inferences and indicate concrete priorities for improving design and measurement. In particular, they point to the need for stronger manipulation checks, more reliable coping, and life history instruments. Notably, we suggest baseline assessments of suspiciousness and beliefs in

conspiracies, counterbalanced order of measures, broader and more diverse samples, and analytic approaches that model measurement error. We will use these constraints to guide methodological refinements in future work.

Future Directions

Aware of the limits of our program, we recommend stronger, process-sensitive experiments. We propose immersive materials, such as short audio-video stories or virtual reality, as well as multi-session designs and pre- and post-within-person assessments (Green & Brock, 2000; Shadish et al., 2002). Every study should include manipulation checks of perceived harshness, unpredictability, affect, control, engagement, and source credibility. Where feasible, we suggest adding simple process markers such as heart rate variability, skin conductance, brief salivary cortisol measurements in lab sub-studies, eye tracking, and short attention or decision-making tasks (Appelhans & Luecken, 2006; Dawson et al., 2007; Hellhammer et al., 2009; Holmqvist et al., 2011).

We recommend conducting longitudinal and cross-cultural studies to test whether the general over-local pattern replicates outside Poland and remains stable over time. These designs should include formal checks of measurement invariance across groups and waves so that comparisons are defensible. We propose replacing weak coping tools with the COPE Inventory or its validated adaptations (Carver et al, 1989; Marchlewska et al., 2022; Rodrigues et al., 2022). We suggest reporting omega for reliability and keeping general and local beliefs in conspiracies separate.

For life history, we will move away from a single global score and use facet-level questionnaires together with brief behavioral tasks and simple behavioral records. For instance, for risk preference, we recommend the incentivized Holt-Laury multiple price list as a compact behavioral measure (see Holt & Laury, 2002), and where possible, add modeling of decision processes, signal detection approaches (Macmillan & Creelman, 2005). We recommend using

analytic tools that match the questions, mixed effects, and structural models that can handle measurement errors.

We plan to model traits, perceived situations, and coping strategies together, and to test plausible moderators such as ideology, institutional trust, attachment, chronic stress, socioeconomic status, media diet, cognitive reflection, pathogen sensitivity, paranoia, and need for closure (Pennycook & Rand, 2019; van Prooijen & van Vugt, 2018). We suggest directly comparing interventions such as prebunking (pre-exposure warnings), accuracy prompts, consider-the-opposite, and brief reasoning training, and we will track durability over time (Pennycook et al., 2020). Where possible, we recommend including stress physiology and objective indicators of early life conditions.

We suggest incorporating within-person field methods around real events to distinguish brief spikes from baseline levels and link momentary appraisals to short-term changes in beliefs in conspiracies. To improve internal validity, we propose measuring baseline suspiciousness and baseline beliefs in conspiracies, counterbalancing the order of general and local scales, and adding content-free tasks of pattern perception and agency detection so that we assess reasoning style, not only endorsement (Whitson & Galinsky, 2008; van Prooijen et al., 2018).

Finally, given concerns about the fragility and boundary conditions of priming effects, we suggest using stronger materials and including manipulation checks for perceived harshness and unpredictability (Cesario, 2014). We also advise assessing source credibility and engagement, as credibility significantly impacts persuasive power.

Practical Implications

In this section, we highlight potential applications of our results. We focus on public communication, health, education, media, digital platforms, institutional practices, clinical support, work, and field monitoring.

- **Public communication and public health**

We recommend providing clear and consistent updates that specify what is known, what remains uncertain, what will happen then, and when the next update is expected. We recommend using inoculation messaging to alert audiences to common manipulation tactics before exposure and pairing this with brief accuracy prompts at the point of sharing. We suggest not relying solely on emotional cues. In our data, brief text prompts did not shift beliefs in conspiracies. Credibility and engagement are probably important, so we recommend testing messages first to build trust and attention before the rollout.

- **Education and media literacy**

We encourage practices that slow quick judgments. We recommend routines that teach source verification, delaying conclusions, and recognizing false patterns. This suggestion follows our finding that lower levels of analytic reflection are associated with stronger beliefs in conspiracies. We suggest embedding short, repeated exercises rather than one-time slogans.

- **Digital platforms**

We suggest adding light accuracy nudges at the moment of sharing, short notices about common manipulation tactics, and small frictions that slow impulsive forwarding while keeping sources easy to verify.

- **Institutions and trust**

We recommend greater transparency in the decision-making process and the timing of communication. Publish criteria, timelines, and points of contact in plain language. When content is local, we suggest working with community leaders to frame messages in culturally appropriate terms. This greater transparency practice may reduce attributions of hidden intent.

- **Program design and evaluation**

We recommend treating the belief domain as a within-person factor. Do not collapse general and local beliefs in conspiracies into a single score. Measure baseline suspiciousness and baseline beliefs in conspiracies and counterbalance the order of general and local scales. Include brief manipulation checks and track behaviors, such as sharing and engagement, rather than attitudes alone.

- **Clinical practice**

When early adversity and low trust are present, we recommend work on tolerance of uncertainty, cognitive reappraisal, and building relational trust. We recommend an evidence-based approach that assesses claims individually, instead of dismissing them outright, while assisting clients in exercising scrutiny without increasing threat perceptions.

- **Workplaces**

We recommend predictable communication rhythms and clear rationales for decisions. We propose to clearly state who made decisions, the basis for those decisions, and how questions can be raised. This may reduce rumors and second-guessing, preventing the growth of beliefs in conspiracies within teams.

- **Field monitoring**

We recommend brief within-person measures around real events to differentiate between temporary spikes and stable baselines. We suggest logging the news context during data collection so that shifts in beliefs in conspiracies can be linked to situational appraisals, rather than just individual differences.

Taken together, in practice, we operate on two levels. The broader level focuses on reflection and trust, whereas the local level is rooted in community identity and context. Short emotional messages can raise overall endorsement, but they do not alter the domain structure in which general beliefs in conspiracies exceed local beliefs in conspiracies.

Conclusions

In conclusion, our findings indicate that beliefs in conspiracies cannot be explained by a single approach. They are not simply a reflection of life history strategies, not a manifestation of problematic coping in general, not an outcome of basic personality traits. We suggest that beliefs in conspiracies may reflect a complex understanding of the threats and sense of agency individuals experience in different contexts. These beliefs are calibrated responses to adverse experiences (especially early adversity), expressed through antagonistic dispositions (notably Machiavellianism), heightened by approach motivation (BAS Drive and Fun Seeking), and cued by situational factors (adverse, deceptive, negative, yet also social, positive, and related to mating). Overall, we stress that viewing any single approach as the sole explanation for beliefs in conspiracies appears overly reductive. Beliefs in conspiracies are a multifaceted phenomenon, with adversity, antagonism, motivation, and perception each linked to such beliefs.

Author's Note

At the beginning of this dissertation, I open with the words of Maria Skłodowska-Curie:

"Nothing in life is to be feared. It is only to be understood.

Now is the time to understand more, so that we may fear less."

That guiding thread was never just an ornament. It was my method and compass. My central question was not who believes, but why, and under what conditions such beliefs become psychologically compelling. The studies presented here answer some questions and, more importantly, open many others. For these reasons, this dissertation is a starting point rather than a final word. I plan to continue the scientific work outlined in the conclusion and further explore the topic of beliefs in conspiracies. I want to emphasize that understanding, so that we fear less, is not a destination but a direction to follow. I offer these findings as a foundation, an invitation to refine, replicate, and ask better questions about when, why, and for whom these beliefs make sense.

Additional Scientific Achievements and Academic Development

Publications

- **Zarazińska-Chromińska, A.**, & Jonason, P.K. (2025). Insights into beliefs in conspiracies from a life history perspective. *Evolutionary Behavioral Sciences*.
- **Zarazińska-Chromińska, A**. (2025). *Religious conspiracy theories*. In: Shackelford, T.K. (eds) Encyclopedia of Religious Psychology and Behavior. Springer, Cham.
- **Zarazińska-Chromińska, A**. (2025). *Razem czy jednak osobno? Zapewnienie uczniom wsparcia i współpraca między psychologiem szkolnym a nauczycielami w szkole podstawowej*. In: *Pomoc psychologiczna dzieciom i młodzieży,* eds. L. Zabłocka-Żytka, I. Jelonkiewicz. Wydawnictwo APS.
- **Zarazińska-Chromińska, A**. (2025). Ja realne i ja idealne kobiet i mężczyzn a satysfakcja ze związku: badanie korelacyjne par młodych dorosłych. *Humanitas Pedagogika i Psychologia*.
- Zajenkowska, A., Bodecka, M., Duda, E., Kaźmierczak, I., Jakubowska, A., **Zarazińska-Chromińska, A.**, Lawrence, C., & Okruszek, Ł. (2024). Judgment and attention toward male and female harm-doers: An eye-tracking investigation in community adults and inmates. *Violence and Gender, 11*(4).
- **Zarazińska, A.** (2024). *Life History Strategy*. In: Shackelford, T.K. (eds) *Encyclopedia of Sexual Psychology and Behavior*. Springer, Cham.
- **Zarazińska, A.**, & Jonason, P.K. (2024). Developing conspiracy theories: Conspiracy beliefs are correlated with perceived childhood adversity. *Evolutionary Behavioral Sciences.*
- Fanslau, A., Olech, M., Kałowski, P., Branowska, K., **Zarazińska, A.**, Glenwright, M., McGuinness, L., & Banasik-Jemielniak, N. (2024). Let's entertain others: The relationship between comic styles and the histrionic self-presentation style in Polish, British, and Canadian samples. *HUMOR*.
- Nowakowska, I., & **Zarazińska, A**. (2023). What is important for you makes you think about the pandemic differently: Moral foundations, pandemic-related fears, and convictions. A latent profile approach. *Estudios de Psicologia.*
- Nowakowska, I., & **Zarazińska, A.** (2023). Conspiracy beliefs about groups benefitting from the COVID-19 pandemic moderate the relationship between fear of COVID-19 and subjective assessment of the efficacy of preventive measures. *Studia Psychologica*.

- Fanslau, A., …, **Zarazińska, A.**, Siemieniuk, A., & Banasik-Jemielniak, N. (2023). Dark triad predictors of irony and sarcasm use: An investigation in a Polish sample. *Personality and Individual Differences.*
- Jakubowska, A., Zajenkowska, A., Kaźmierczak, I., **Zarazińska, A.**, et al. (2023). Anger sensitivity and relatedness frustration as predictors of depression. *Personality and Individual Differences.*

International Conferences

- Looking into the past to understand conspiratorial beliefs. *19th General Meeting of the European Association of Social Psychology (EASP)*, Kraków, 29 Jun - 4 Jul 2023 - Poster.
- Razem czy jednak osobno? Zapewnienie uczniom wsparcia i współpraca między psychologiem szkolnym a nauczycielami w szkole podstawowej (Together or separate? Student support and collaboration between the school psychologist and teachers in primary school). *III International Scientific and Training Conference on Psychological Assistance Methods*, APS, Warsaw, 9 - 10 Nov 2023 - Talk.
- Early life experiences and conspiracy beliefs. *National Scientific Conference SSUR IN POSTERUM*, Rzeszów, 9 Feb 2023 - Talk.

National Conferences

- Kiedy życie wywraca się do góry nogami… związki między zaburzeniem depresyjnym a niepełnosprawnością (When life turns upside down: Links between depressive disorder and disability). *Interdisciplinary Approach to Disability*, Szczecin, 24 - 25 Feb 2022 - Talk.
- Jak ogień i woda: Przekonania konspiracyjne w perspektywie różnic indywidualnych (Like fire and water: Conspiracy beliefs from the individual-differences perspective). *Psychology in Various Perspectives - Junior Scholars' Research*, Institute of Psychology PAS, Warsaw, 3 Jun 2022 - Poster.
- Jak poradzić sobie z traumą? Zorientowana na traumę terapia poznawczo-behawioralna (How to cope with trauma? Trauma-focused cognitive-behavioral therapy). *Multifaceted Perspective on Trauma - 3rd Edition. In the Face of War*, APS, Warsaw, 10 Jun 2022 - Poster.

- Mroczna strona natury człowieka: związki między mrocznymi cechami osobowości a przekonaniami konspiracyjnymi (The dark side of human nature: Dark traits and conspiracy beliefs). *Multidisciplinary Doctoral Conference of the University of Szczecin 2.0*, Szczecin, 23 Jun 2022 - Talk.
- Strach przed koronawirusem i przekonania spiskowe dotyczące COVID-19 a subiektywna ocena skuteczności środków zapobiegawczych (Fear of COVID-19 and conspiratorial beliefs vs. subjective assessment of preventive measures). *XVII Congress of the Polish Social Psychological Society*, Gdańsk, 15 - 18 Sep 2022 - Talk.
- Analiza związków między cechami osobowości i psychologiczną percepcją sytuacji a przekonaniami konspiracyjnymi (Links between personality traits, situational perceptions, and conspiracy beliefs). *Psych-On: National Conference of Students and Young Scientists*, University of Łódź, 10 - 11 Dec 2022 - Talk (Best Presentation Award).
- Wiara w teorie spiskowe a strategie regulacji emocji (Conspiracy beliefs and emotion regulation strategies). *PSYCHOZJUM: National Conference of Psychological Science Clubs*, Poznań, 10 - 11 Jun 2023 - Talk.
- Wiara w spiski jako adaptacyjna reakcja na warunki środowiskowe w perspektywie teorii historii życia (Conspiracy beliefs as adaptive reactions to ecological conditions from a life history perspective). *1st National Conference of Young Researchers: "The Research Process in Social Sciences. Contemporary Challenges and Perspectives"*, APS, Warsaw, 6 - 7 Oct 2023 - Poster.
- Zgubione szczęście na doktoracie. Analiza jakości życia wśród doktorantów (Lost happiness during the PhD: Quality of life among doctoral students). *11th National Scientific Conference "Quality of Life at Work and Beyond"*, Opole, 10 - 11 Jun 2024 - Talk.

Research Projects and Grants

- **Principal Investigator** - Psychological and evolutionary correlates of conspiracy beliefs (BST internal university grant), The Maria Grzegorzewska University (APS). Awarded 10 Jul 2022.
- **Expert, Junior Researcher, Methodological Support** - Leadership and Digital Innovation for Sustainable Deinstitutionalisation and Social Care Transformation,

ERASMUS-EDU-2025-PI-ALL-INNO-EDU-ENTERP (Partnerships for Innovation - Alliances).

- **Expert, Junior Researcher, Methodological Support** - Empowering Young Peacemakers - A Peer Mediation & Media Literacy Approach to Online Bullying, CERV-2025-CHILD (EU call on rights of the child and children's participation).

Collaborations

- Znaczenie procesów regulacji emocji i radzenia sobie ze stresem w kształtowaniu się wiary w teorie spiskowe (The role of emotion regulation and coping with stress in the formation of belief in conspiracy theories) - OPUS 18: 2019/35/B/HS6/00123.
- Użycie ironii werbalnej w różnych kulturach: rola czynników indywidualnych i społeczno-kulturowych (Use of verbal irony across cultures: the role of individual and socio-cultural factors) - NCN: 2019/35/D/HS2/01005.
- Wpływ procesów uwagowych nakierowanych na identyfikację podobieństw vs. różnic z innymi na wskaźniki nastroju w grupach z diagnozą depresji i bez tego zaburzenia (Attention to similarity vs. difference and mood in depression).
- Rozwój osobowości w wyniku krytycznych zdarzeń życiowych. Droga od kryzysu do pozytywnej dezintegracji u pacjentów z diagnozą depresji (Personality development after critical life events: From crisis to positive disintegration in depression).
- Związek pomiędzy wrogimi atrybucjami a symptomami zaburzeń osobowości: kontekstowe i poznawcze podstawy wrogich atrybucji jako wskaźnik skuteczności terapii zaburzeń osobowości (Hostile attributions and personality disorder symptoms) - Sonata BIS 11: 2021/42/E/HS6/00018.

Research and Grant-Writing Experience

- End-to-end research workflow. Aims and hypotheses, design, ethics, data collection (online and lab), statistical analysis (individual-differences designs), and interpretation.
- Multiple submissions to the National Science Centre (NCN) - ongoing grant writing and project development.

Training and Teaching

- Participant - School of the Young Scientist-Councilor training program.
- Two information sessions for doctoral students: Rights and Obligations of Doctoral Students (25 Oct 2023 and 8 Nov 2023).

Organizational Activities

- Organizing Committee Member - 1st National Conference of Young Researchers: The Research Process in Social Sciences. Contemporary Challenges and Perspectives, APS, Warsaw, 6 - 7 Oct 2023 (moderated paper session).
- Organizing Committee Member and Secretary - III International Scientific and Training Conference on Psychological Assistance Methods for Children and Adolescents, APS, Warsaw, 9 - 10 Nov 2023.
- Scientific and Organizing Committee Member - IV International Research and Training Conference on Psychological Help Methods: On Crisis Intervention, APS, Warsaw, 13 - 14 Nov 2025.
- Organizing Committee Member - ENTER Conference 2024: Building Trauma-Informed Societies: Current Challenges for Mental Health, APS, Warsaw, 27 Jun 2024.
- Co-creator - promotional video for the specialization Psychology of Development and Education Support, APS.

Memberships

- Healab
- Language & Humour Lab

Reviewing Activity

- Manuscript reviewer: *International Journal of Psychology*, *PLOS One*.
- Grant reviewer: Grantová Agentura České Republiky (GAČR) - Czech Science Foundation.

REFERENCES

Aaronovitch, D. (2010). *Voodoo histories: The role of the conspiracy theory in shaping modern history.* New York: Riverhead Books.

Abalakina-Paap, M., Stephan, W. G., Craig, T., & Gregory, W. L. (1999). Beliefs in conspiracies. *Political Psychology, 20*(3), 637–647.

Adam-Troian, J., Wagner-Egger, P., Motyl, M., Arciszewski, T., Imhoff, R., Zimmer, F., Klein, O., Babinska, M., Bangerter, A., Bilewicz, M., Blanuša, N., Bovan, K., Bužarovska, R., Cichocka, A., Çelebi, E., Delouvée, S., Douglas, K. M., Dyrendal, A., Gjoneska, B., … van Prooijen, J.-W. (2021). Investigating the links between cultural values and belief in conspiracy theories: The key roles of collectivism and masculinity. *Political Psychology, 42*(4), 597–618.

Ahmed, W., Vidal-Alaball, J., Downing, J., & López Seguí, F. (2020). COVID-19 and the 5G Conspiracy Theory: Social Network Analysis of Twitter Data. *Journal of Medical Internet Research, 22*(5), e19458.

Al-Shawaf, T., Lewis, D. M. G., & Buss, D. M. (2018). Sex differences in disgust: Why are women more easily disgusted than men? *Emotion Review, 10*(2), 149–160.

Alfasi, Y. (2025). Conspiracy beliefs explain why intolerance of uncertainty, personal control, and political uncontrollability predict willingness to get vaccinated against COVID-19. *The Journal of Social Psychology, 165*(1), 37–50.

Allport, G. W. (1961). *Pattern and growth in personality*. Holt, Rinehart & Winston.

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.).

Anisman, H., Merali, Z., & Stead, J. D. (2008). Experiential and genetic contributions to depressive- and anxiety-like disorders: Clinical and experimental studies. *Neuroscience & Biobehavioral Reviews, 32*(6), 1185–1206.

Appelhans, B. M., & Luecken, L. J. (2006). Heart rate variability as an index of regulated emotional responding. *Review of General Psychology, 10*(3), 229–240.

Arnulf, J. K., Robinson, C., & Furnham, A. (2022). Dispositional and ideological factor correlate of conspiracy thinking and beliefs. *PloS One, 17*(10), e0273763. https://doi.org/10.1371/journal.pone.0273763

Astapova, A., Colăcel, O., Pintilescu, C., & Scheibner, T. (Eds.). (2021). *Conspiracy theories in Eastern Europe: Tropes and trends*. Routledge.

Atari, M., Afhami, R., & Swami, V. (2019). Psychometric assessments of Persian translations of three measures of conspiracist beliefs. *PLOS ONE, 14*(4), e0215202.

Baker, M., & Maner, J. K. (2008). Risk-taking as a situationally sensitive male mating strategy. *Evolution and Human Behavior, 29*, 391–395.

Bakshy, E., Messing, S., & Adamic, L. A. (2015). Exposure to ideologically diverse news and opinion on Facebook. *Science, 348*(6239), 1130–1132.

Balliet, D., Li, N. P., Macfarlan, S. J., & van Vugt, M. (2011). Sex differences in cooperation: A meta-analytic review of social dilemmas. *Psychological Bulletin, 137*(6), 881–909.

Bandhu, D., Mohan, M. M., Nittala, N. A. P., Jadhav, P., Bhadauria, A., & Saxena, K. K. (2024). Theories of motivation: A comprehensive analysis of human behavior drivers. *Acta Psychologica, 244*, 104177.

Barron, D., Morgan, K., Towell, T., Altemeyer, B., & Swami, V. (2014). Associations between schizotypy and belief in conspiracist ideation. *Personality and Individual Differences, 70,* 156–159.

Barzilay, R., Moore, T. M., Greenberg, D. M., DiDomenico, G. E., Brown, L.A., White, L. K., Gur, R. C., & Gur, R. E. (2020). Resilience, COVID-19-related stress, anxiety, and

depression during the pandemic in a large population enriched for healthcare providers. *Translational Psychiatry*, *10*, 291.
Basham, L. (2003). Malevolent global conspiracy. *Journal of Social Philosophy,* 34 (1), 91–103.
Bedrov, A., & Gable, S. L. (2023). Thriving together: The benefits of women's social ties for physical, psychological and relationship health. *Philosophical Transactions of the Royal Society B: Biological Sciences, 378*(1868), 20210441.
Belsky, J. (2012). The development of human reproductive strategies: Progress and prospects. *Current Directions in Psychological Science, 21*, 310–316.
Belsky, J., Steinberg, L., & Draper, P. (1991). Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development, 62*(4), 647–670.
Bereczkei, T. (2015). The manipulative skill: Cognitive devices and their neural correlates underlying Machiavellian's decision making. *Brain and Cognition, 99*, 24–31.
Berkman, E. T., Lieberman, M. D., & Gable, S. L. (2009). BIS, BAS, and response conflict: Testing predictions of the revised Reinforcement Sensitivity Theory. *Personality and Individual Differences, 46*(5-6), 586–591.
Bessi, A., Coletto, M., Davidescu, G. A., Scala, A., Caldarelli, G., & Quattrociocchi, W. (2015). Science vs conspiracy: Collective narratives in the age of misinformation. *PLOS ONE, 10*(2), e0118093.
Beutel, M. E., Klein, E. M., Brähler, E., Reiner, I., Jünger, C., Michal, M., Wiltink, J., Wild, P. S., Münzel, T., Lackner, K. J., & Tibubos, A. N. (2017). Loneliness in the general population: Prevalence, determinants and relations to mental health. *BMC Psychiatry, 17*(1), 97.
Bhatia, N., Wang, L., Slaughter, F., Nguyen, A. T., Smith, S., Simoni, J. M., Crane, H. M., & Graham, S. M. (2024). Gender differences in the relationship between social support and quality of life among people living with HIV during the COVID-19 pandemic. *Women's Health Reports, 5*(1), 916–924.
Biddlestone, M., Cichocka, A., Główczewski, M., & Cislak, A. (2022). Their own worst enemy? Collective narcissists are willing to conspire against their in-group. *British Journal of Psychology, 113*(4), 894–916.
Biddlestone, M., Green, R., & Douglas, K. M. (2020). Cultural orientation, power, belief in conspiracy theories, and intentions to reduce the spread of COVID-19. *The British Journal of Social Psychology*, *59*, 663–673.
Bierwiaczonek, K., Kunst, J. R., & Pich, O. (2020). Belief in COVID-19 conspiracy theories reduces social distancing over time. *Applied Psychology: Health and Well-Being, 12*(4), 1270–1285.
Bilewicz, M. (2022). Conspiracy beliefs as an adaptation to historical trauma. *Current Opinion in Psychology, 47*, Article 101359.
Bilewicz, M., Winiewski, M., Kofta, M., & Wójcik, A. (2013). Harmful ideas, the structure and consequences of anti-Semitic beliefs in Poland. *Political Psychology, 34*(6), 821–839.
Binnendyk, J., & Pennycook, G. (2022). Intuition, reason, and conspiracy beliefs. *Current Opinion in Psychology, 47*, 101387.
Birkás, B., Gács, B., & Csathó, Á. (2016). Keep calm and don't worry: Different Dark Triad traits predict distinct coping preferences. *Personality and Individual Differences, 88,* 134–138.
Birkás, B., Pátkai, G., & Csathó, Á. (2020). The mediating role of the Dark Triad between life history strategy and perceived stress factors. *Psychological Reports, 123*, 252–265.

Bogart, L. M., & Bird, S. T. (2003). Exploring the relationship of conspiracy beliefs about HIV/AIDS to sexual behaviors and attitudes among African-American adults. *Journal of the National Medical Association, 95*(11), 1057–1065.

Bogart, L. M., Wagner, G., Galvan, F. H., & Banks, D. (2010). Conspiracy beliefs about HIV are related to antiretroviral treatment nonadherence among African American men with HIV. *Journal of Acquired Immune Deficiency Syndromes, 53*, 648–655.

Bolund, E. (2020). The challenge of measuring trade-offs in human life history research. *Evolution and Human Behavior, 41*(6), 502–512.

Bonneville-Roussy, A., Evans, P., Verner-Filion, J., Vallerand, R.J., & Bouffard, T. (2017). Motivation and coping with the stress of assessment: Gender differences in outcomes for university students. *Contemporary Educational Psychology, 48,* 28–42.

Bost, P. R., Prunier, S. G., & Piper, A. J. (2010). Relations of familiarity with reasoning strategies in conspiracy beliefs. *Psychological Reports, 107*(2), 593–602.

Bowes, S. M., Costello, T. H., & Tasimi, A. (2023). The conspiratorial mind: A meta-analytic review of motivational and personological correlates. *Psychological Bulletin, 149*(5–6), 259–293.

Bowes, S. M., Costello, T. H., Ma, W., & Lilienfeld, S. O. (2021). Looking under the tinfoil hat: Clarifying the personological and psychopathological correlates of conspiracy beliefs. *Journal of Personality, 89*, 422–436.

Brotherton, R., & Eser, S. (2015). Bored to fears: Boredom proneness, paranoia, and conspiracy theories. *Personality and Individual Differences, 80*, 1–5.

Brotherton, R., French, C.C., & Pickering, A.D. (2013). Measuring belief in conspiracy theories: the Generic Conspiracist Beliefs Scale. *Frontiers in Psychology, 4*, Article 279.

Bruder, M., Haffke, P., Neave, N., Nouripanah, N., & Imhoff, R. (2013). Measuring individual differences in generic beliefs in conspiracy theories across cultures: conspiracy mentality questionnaire. *Frontiers in Psychology, 4*, Article 225.

Brumbach, B. H., Figueredo, A. J., & Ellis, B. J. (2009). Effects of Harsh and Unpredictable Environments in Adolescence on Development of Life History Strategies. *Human Nature, 20*, 25-51.

Brunswik, E. (1955). Representative design and probabilistic theory in a functional psychology. *Psychological Review, 62*(3), 193–217.

Brunswik, E. (1956). *Perception and the representative design of psychological experiments*. University of California Press.

Campbell-Sills, L., Liverant, G. I., & Brown, T. A. (2004). Psychometric evaluation of the Behavioral Inhibition/Behavioral Activation Scales in a large sample of outpatients with anxiety and mood disorders. *Psychological Assessment, 16*(3), 244–254.

Campbell, C., Tanzer, M., Saunders, R., Booker, T., Allison, E., Li, E., O'Dowda, C., Luyten, P., & Fonagy, P. (2021). Development and validation of a self-report measure of epistemic trust. *PLOS ONE, 16*(4), e0250264.

Carone, N., Benzi, I. M. A., Parolin, L. A. L., & Fontana, A. (2023). "I can't miss a thing": The contribution of defense mechanisms, grandiose narcissism, and vulnerable narcissism to fear of missing out in emerging adulthood. *Personality and Individual Differences, 214*, 112333.

Carone, N., Muzi, L., Benzi, I. M. A., Cacioppo, M., Parolin, L. A. L., Santona, A. M. R., & Fontana, A. (2024). The influence of childhood emotional abuse and neglect on love addiction: The indirect effect of vulnerable narcissism among female and male emerging adults. *Journal of Interpersonal Violence, 40*(17–18), 3957–3985.

Carver, C. S., & Harmon-Jones, E. (2009). Anger is an approach-related affect: Evidence and implications. *Psychological Bulletin, 135*(2), 183–204.

Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology*, *67,* 319-333.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology, 56*, 267–283.

Casara, B. G. S., Suitner, C., & Jetten, J. (2022). The impact of economic inequality on conspiracy beliefs. *Journal of Experimental Social Psychology, 98*, 104245.

Castanho Silva, B., Vegetti, F., & Littvay, L. (2017). The elite is up to something: Exploring the relation between populism and belief in conspiracy theories. *Swiss Political Science Review, 23*(4), 423–443.

Cesario, J. (2014). Priming, replication, and the hardest science. *Perspectives on Psychological Science, 9*(1), 40–48.

Chang, L., & Lu, H. J. (2018). Resource and extrinsic risk in defining fast life histories of rural Chinese left-behind children. *Evolution and Human Behavior, 39*, 59–66.

Chang, L., Lu, H. J., Lansford, J. E., Skinner, A. T., Bornstein, M. H., Steinberg, L., Dodge, K. A., Chen, B. B., Tian, Q., Bacchini, D., Deater-Deckard, K., Pastorelli, C., Alampay, L. P., Sorbring, E., Al-Hassan, S. M., Oburu, P., Malone, P. S., Di Giunta, L., Tirado, L. M. U., & Tapanya, S. (2019). Environmental harshness and unpredictability, life history, and social and academic behavior of adolescents in nine countries. *Developmental Psychology, 55*(4), 890–903.

Chen, B.-B., & Chang, L. (2016). Procrastination as a fast life history strategy. *Evolutionary Psychology, 14*, 1–5.

Cheng, J. T., Tracy, J. L., Foulsham, T., Kingstone, A., & Henrich, J. (2013). Two ways to the top: Evidence that dominance and prestige are distinct yet viable avenues to social rank and influence. *Journal of Personality and Social Psychology, 104*(1), 103–125.

Chua, K. J., Lukaszewski, A.W., Grant, D. M., & Sng, O. (2017). Human life history strategies: calibrated to external or internal cues? *Evolutionary Psychology, 15*, 1–16.

Cichocka, A., Marchlewska, M., & Biddlestone, M. (2022). Why do narcissists find conspiracy theories so appealing? *Current Opinion in Psychology, 47*, 101386.

Cichocka, A., Marchlewska, M., & Golec de Zavala, A. (2016a). Does self-love or self-hate predict conspiracy beliefs? Narcissism, self-esteem, and the endorsement of conspiracy theories. *Social Psychological and Personality Science, 7*, 157–166.

Cichocka, A., Marchlewska, M., Golec de Zavala, A., & Olechowski, M. (2016b). 'They will not control us': Ingroup positivity and belief in intergroup conspiracies. *British Journal of Psychology, 107*(3), 556–576.

Cinelli, M., De Francisci Morales, G., Galeazzi, A., Quattrociocchi, W., & Starnini, M. (2021). The echo chamber effect on social media. *Proceedings of the National Academy of Sciences of the United States of America, 118*(9), e2023301118.

Compas, B. E., Jaser, S. S., Bettis, A. H., Watson, K. H., Gruhn, M. A., Dunbar, J. P., Williams, E., & Thigpen, J. C. (2017). Coping, emotion regulation, and psychopathology in childhood and adolescence: A meta-analysis and narrative review. *Psychological Bulletin, 143*(9), 939–991.

Constantinou, M., Gloster, A. T., & Karekla, M. (2021). I won't comply because it is a hoax: Conspiracy beliefs, lockdown compliance, and the importance of psychological flexibility. *Journal of Contextual Behavioral Science, 20*, 46–51.

Cooksey, R.W. (1996). *Judgment analysis: Theory, methods, and applications*. Academic Press.

Copping, L. T., Campbell, A., & Muncer, S. (2013). Impulsivity, sensation seeking and reproductive behaviour: A life history perspective. *Personality and Individual Differences, 54*(8), 908–912.
Copping, L. T., Campbell, A., & Muncer, S. (2014). Psychometrics and life history strategy: The structure and validity of the High-K Strategy Scale. *Evolutionary Psychology, 12*(2), 200–222.
Corr, P. J. (2004). Reinforcement sensitivity theory and personality. *Neuroscience & Biobehavioral Reviews, 28*(3), 317–332.
Corr, P. J. (Ed.). (2016). *Reinforcement sensitivity theory of personality: Research, applications, and future directions*. Cambridge University Press.
Corr, P. J., & Cooper, A. J. (2016). The Reinforcement Sensitivity Theory of Personality Questionnaire (RST-PQ): Development and validation. *Psychological Assessment, 28*(11), 1427–1440.
Cosgrove, T. J., & Murphy, C. P. (2023). Narcissistic susceptibility to conspiracy beliefs exaggerated by education, reduced by cognitive reflection. *Frontiers in Psychology, 14*, 1164725.
Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163–228). Oxford University Press.
Curie, M. (1923). *Pierre Curie*. New York, NY: The Macmillan Company. (Original work published in French).
Czarna, A. Z., Jonason, P. K., Dufner, M., & Kossowska, M. (2016). The Dirty Dozen scale: Validation of a Polish version and extension of the nomological net. *Frontiers in Psychology, 7,* Article 445.
Czech, F., & Ścigaj, P. (2020). Popularność narracji spiskowych w Polsce czasu pandemii COVID-19 [The popularity of conspiracy narratives in Poland during the COVID-19 pandemic].
Dagnall, N., Denovan, A., Drinkwater, K. G., & Escolà-Gascón, A. (2023). The Generic Conspiracist Beliefs Scale-5: Further psychometric evaluation using a United Kingdom-based sample. *Frontiers in Psychology, 14*, 1303838.
Danese, A., & McEwen, B. S. (2012). Adverse childhood experiences, allostasis, allostatic load, and age-related disease. *Physiology & Behavior, 106*(1), 29–39.
Daniel, L., & Harper, D. J. (2020). The social construction of conspiracy beliefs: A Q-methodology study of how ordinary people define them and judge their plausibility. *Journal of Constructivist Psychology, 33*(6), 564–585.
Darwin, H., Neave, N., & Holmes, J. (2011). Belief in conspiracy theories: The role of paranormal belief, paranoid ideation and schizotypy. *Personality and Individual Differences, 50*(8), 1289–1293.
Dawson, M. E., Schell, A. M., & Filion, D. L. (2007). The electrodermal system. In J. T. Cacioppo, L. G. Tassinary, & G. G. Berntson (Eds.), *Handbook of psychophysiology* (3rd ed., pp. 159–181). Cambridge University Press.
de Jong, P. J., & Vroling, M. (2014). Better safe than sorry: Threat-confirming reasoning bias in anxiety disorders. In I. Blanchette (Ed.), *Emotion and reasoning* (pp. 22–43). Psychology Press.
Del Giudice M. (2014). An evolutionary life history framework for psychopathology. *Psychological Inquiry*, *25,* 261–300.
Del Giudice, M. (2009). Sex, attachment, and the development of reproductive strategies. *Behavioral and Brain Sciences, 32*(1), 1–67.

Del Giudice, M., & Belsky, J. (2011). Parent-child relationships. In C. Salmon & T.K. Shackleford (Eds.), *The Oxford handbook of evolutionary family psychology* (pp. 65–82). Oxford University Press.

Del Giudice, M., Ellis, B. J., & Shirtcliff, E. A. (2011). The adaptive calibration model of stress responsivity. *Neuroscience & Biobehavioral Reviews, 35*(7), 1562–1592.

Del Giudice, M., Gangestad, S. W., & Kaplan, H. S. (2015). Life history theory and evolutionary psychology. In D. M. Buss (Ed.), *The handbook of evolutionary psychology: Foundations* (2nd ed., pp. 88–114). Wiley.

Del Giudice, M., Hinnant, J. B., Ellis, B. J., & El-Sheikh, M. (2012). Adaptive patterns of stress responsivity: A preliminary investigation. *Developmental Psychology, 48*(3), 775–790.

Del Vicario, M., Vivaldo, G., Bessi, A., Zollo, F., Scala, A., Caldarelli, G., & Quattrociocchi, W. (2016). Echo chambers: Emotional contagion and group polarization on Facebook. *Scientific Reports, 6*, 37825.

DeYoung, C. G. (2015). Cybernetic Big Five theory. *Journal of Research in Personality, 56*, 33–58.

DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the Big Five. *Journal of Personality and Social Psychology, 93*(5), 880–896.

Dhami, M. K., Hertwig, R., & Hoffrage, U. (2004). The role of representative design in an ecological approach to cognition. *Psychological Bulletin, 130*(6), 959–988.

Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The Mini-IPIP Scales: Tiny-yet-effective measures of the Big Five Factors of Personality. *Psychological Assessment, 18*(2), 192–203. https://doi.org/10.1037/1040-3590.18.2.192

Došenović, A., & Dinić, B. M. (2024). Relationships between Dark Tetrad traits and beliefs in conspiracy theories: Mediation effects of cognitive styles. *Personality and Individual Differences, 218*, 1–4.

Douglas, K. M., & Sutton, R. M. (2008). The hidden impact of conspiracy theories: Perceived and actual influence of theories surrounding the death of Princess Diana. *The Journal of Social Psychology, 148*(2), 210–221.

Douglas, K. M., & Sutton, R. M. (2015). Climate change: Why the conspiracy theories are dangerous. *Bulletin of the Atomic Scientists, 71*(2), 98–106.

Douglas, K. M., & Sutton, R. M. (2023). What are conspiracy theories? A definitional approach to their correlates, consequences, and communication. *Annual Review of Psychology, 74*, 271–298.

Douglas, K. M., Sutton, R. M., & Cichocka, A. (2017). The psychology of conspiracy theories. *Current Directions in Psychological Science, 26*(6), 538–542.

Douglas, K. M., Sutton, R. M., Callan, M. J., Dawtry, R. J., & Harvey, A. J. (2016). Someone is pulling the strings: Hypersensitive agency detection and belief in conspiracy theories. *Thinking & Reasoning, 22*, 57–77.

Douglas, K. M., Uscinski, J. E., Sutton, R. M., Cichocka, A., Nefes, T., Ang, C. S., & Deravi, F. (2019). Understanding conspiracy theories. *Political Psychology, 40*(Suppl 1), 3–35.

Dow, B. J., Menon, T., Wang, C. S., & Whitson, J. A. (2022). Sense of control and conspiracy perceptions: Generative directions on a well-worn path. *Current Opinion in Psychology, 47*, Article 101389.

Drinkwater, K. G., Dagnall, N., Denovan, A., & Neave, N. (2020). Psychometric assessment of the Generic Conspiracist Beliefs Scale. *PLOS ONE, 15*(3), e0230365.

Duckitt, J., & Fisher, K. (2003). The impact of social threat on world view and ideological attitudes. *Political Psychology, 24*, 199–222.

Durante, K. M., Griskevicius, V., Redden, J. P., & White, A. E. (2015). Spending on daughters versus sons in economic recessions. *Journal of Consumer Research, 42*(3), 435–457.

Dyrendal, A., Kennair, L. E. O., & Bendixen, M. (2021). Predictors of belief in conspiracy theory: The role of individual differences in schizotypal traits, paranormal beliefs, social dominance orientation, right-wing authoritarianism and conspiracy mentality. *Personality and Individual Differences, 173*, 110645.

Eagly, A. H., & Wood, W. (2012). Social role theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 458–476). Sage Publications Ltd.

Ecker, U. K. H., Lewandowsky, S., Cook, J., Schmid, P., Fazio, L. K., Brashier, N., Kendeou, P., Vraga, E. K., & Amazeen, M. A. (2022). The psychological drivers of misinformation belief and its resistance to correction. *Nature Reviews Psychology, 1*(1), 13–29.

Ellis, B. J., & Del Giudice, M. (2019). Developmental Adaptation to Stress: An Evolutionary Perspective. *Annual Review of Psychology, 70*, 111–139.

Ellis, B. J., Figueredo, A. J., Brumbach, B. H., & Schlomer, G. L. (2009). Fundamental Dimensions of Environmental Risk: The Impact of Harsh versus Unpredictable Environments on the Evolution and Development of Life History Strategies. *Human Nature, 20*(2), 204–268.

Ellis, B. J., Sheridan, M. A., Belsky, J., & McLaughlin, K. A. (2022). Why and how does early adversity influence development? Toward an integrated model of dimensions of environmental experience. *Development and Psychopathology, 34*(2), 447–471.

Endtricht, R., & Kanol, E. (2024). Conspiracy beliefs and negative attitudes towards outgroups in times of crises: Experimental evidence from Germany. *PLOS ONE, 19*(11), e0312418.

Erokhin, D., & Komendantova, N. (2023). GMO discussion on Twitter. *GM Crops & Food, 14*(1), 1–13.

Espinoza Oyarce, D. A., Burns, R., Butterworth, P., & Cherbuin, N. (2021). Bridging classical and revised reinforcement sensitivity theory research: A longitudinal analysis of a large population study. *Frontiers in Psychology, 12*, 737117.

Fabian, D. & Flatt, T. (2012). Life History Evolution. *Nature Education Knowledge*, *3*(10), 24.

Fan, L., & Meng, W. (2022). The relationship between childhood adversity and problem behavior of new street corner youth on campus: A moderate mediation model. *Frontiers in Psychology, 13*, Article 1036773.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149-1160.

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.

Fiadotava, A., Astapova, A., Hendershott, R., McKinnon, M., & Jürgens, A. S. (2023). Injecting fun? Humour, conspiracy theory and (anti)vaccination discourse in popular media. *Public Understanding of Science, 32*(5), 622–640.

Figueredo A. J., Woodley of Menie M. A., Jacobs W. J. (2015). The general factor of personality: a hierarchical life history model. In Buss D. M. (Ed.), *The handbook of evolutionary psychology* (2nd ed., Vol. 2: Integrations, pp. 943–967). New York, NY: Wiley.

Figueredo, A. J., Garcia, R. A., Menke, J. M., Jacobs, W. J., Gladden, P. R., Bianchi, J., Patch, E. A., Beck, C. J. A., Kavanagh, P. S., Sotomayor-Peterson, M., Jiang, Y., & Li, N. P. (2017). The K-SF-42: a new short form of the Arizona Life History Battery. *Evolutionary Psychology, 15(*1), Article 1474704916676276.

Figueredo, A. J., Vásquez, G., Brumbach, B. H., Sefcek, J. A., Kirsner, B. R., & Jacobs, W. J. (2005). The K-factor: Individual differences in life history strategy. *Personality and Individual Differences, 39*(8), 1349–1360.

Finucane, M. L., Slovic, P., Mertz, C. K., Flynn, J., & Satterfield, T. A. (2000). Gender, race, and perceived risk: The "white male" effect. *Risk Analysis, 20*(1), 1–11.

Fischer, P., Krueger, J. I., Greitemeyer, T., Vogrincic, C., Kastenmüller, A., Frey, D., Heene, M., Wicher, M., & Kainbacher, M. (2011). The bystander-effect: a meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychological Bulletin*, *137*, 517–537.

Flaherty, E., Sturm, T., & Farries, E. (2022). The conspiracy of Covid-19 and 5G: Spatial analysis fallacies in the age of data democratization. *Social Science & Medicine, 293*, 114546.

Fountoulakis, K., Apostolidou, M., Atsiova, M., Filippidou, A., Florou, A., Gousiou, D., Mossialos, E. (2022). Mental health and conspirasism in health care professionals during the spring 2020 COVID-19 lockdown in Greece. *Acta Neuropsychiatrica, 34*, 132-147.

Frankenhuis, W. E., & Del Giudice, M. (2012). When do adaptive developmental mechanisms yield maladaptive outcomes? *Developmental Psychology, 48*, 628–642.

Frankenhuis, W. E., Panchanathan, K., & Nettle, D. (2016). Cognition in harsh and unpredictable environments. *Current Opinion in Psychology, 7*, 76–80.

Freeman, D., & Bentall, R. P. (2017). The concomitants of conspiracy concerns. *Social Psychiatry and Psychiatric Epidemiology, 52*(5), 595–604.

Freeman, D., Waite, F., Rosebrock, L., Petit, A., Causier, C., East, A., Jenner, L., Teale, A. L., Carr, L., Mulhall, S., Bold, E., & Lambe, S. (2022). Coronavirus conspiracy beliefs, mistrust, and compliance with government guidelines in England. *Psychological Medicine, 52*(2), 251–263.

Freidin, E., & Martini, L. A. (2022). An analytic cognitive style negatively predicts a more literal but not a more symbolic religiosity type. *International Journal for the Psychology of Religion, 32*(1), 31–52.

French, A. M., Storey, V. C., & Wallace, L. (2023). The impact of cognitive biases on the believability of fake news. *European Journal of Information Systems, 34*(1), 72–93.

Fritsche, I., Jonas, E., & Kessler, T. (2011). Collective reactions to threat: Implications for intergroup conflict and for solving societal crises. *Social Issues and Policy Review, 5*(1), 101–136.

Furnham, A., & Horne, G. (2022). Cover Ups and Conspiracy Theories: Demographics, Work Disenchantment, Equity Sensitivity, and Beliefs in Cover-ups. *Journal of Work and Organizational Psychology, 38*(1), 19-25.

Furnham, A., Richards, S. C., & Paulhus, D. L. (2013). The Dark Triad of personality: A 10-year review. *Social and Personality Psychology Compass, 7*(3), 199–216.

Gable, P. A., & Poole, B. D. (2014). Influence of trait behavioral inhibition and behavioral approach motivation systems on the LPP and frontal asymmetry to anger pictures. *Social Cognitive and Affective Neuroscience, 9*(2), 182–190.

Gadgil, M. & Bossert, W. H. (1970). Life historical consequences of natural selection. *Amer. Naturalist, 104*, 1-24.

Gagliardi, L. (2023). The role of cognitive biases in conspiracy beliefs: a literature review. *Journal of Economic Surveys.* Advance online publication. https://irinsubria.uninsubria.it/retrieve/2fc58e1d-6bc9-4dde-aea2-623988a0e2ef/Gagliardi%2023_Journal_of_Economic_Surveys_The_role_of_cognitive.pdf

Gagliardi, L. (2025). The role of cognitive biases in conspiracy beliefs: A literature review. *Journal of Economic Surveys, 39*(1), 32–65.
Galliford, N., & Furnham, A. (2017). Individual difference factors and beliefs in medical and political conspiracy theories. *Scandinavian Journal of Psychology*, *58*, 422–428.
Gignac, G. E., & Szodorai, E. T. (2016). Effect size guidelines for individual differences researchers. *Personality and Individual Differences*, *102*, 74-78.
Giske, J., Mangel, M., Jakobsen, P. J., Huse, G., Wilcox, C., & Strand, E. (2003). Explicit trade-off rules in proximate adaptive agents. *Evolutionary Ecology Research, 5*, 835–865.
Goertzel, T. (1994). Belief in conspiracy theories. *Political Psychology, 15*(4), 731–742.
Golec de Zavala, A., & Cichocka, A. (2012). Collective narcissism and anti-Semitism in Poland. *Group Processes and Intergroup Relations, 15*, 213-229.
Golec de Zavala, A., Bierwiaczonek, K., & Ciesielski, P. (2022). An interpretation of meta-analytical evidence for the link between collective narcissism and conspiracy theories. *Current Opinion in Psychology, 47*, 101360.
Golec de Zavala, A., Dyduch-Hazar, K., & Lantos, D. (2019). Collective narcissism: Political consequences of investing self-worth in the ingroup's image. *Political Psychology, 40*(S1), 37–74.
Golman, R., Loewenstein, G., Molnar, A., & Saccardo, S. (2022). The demand for, and avoidance of, information. *Management Science, 68*(9), 6454–6476.
Goreis, A., & 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*, Article 205.
Goreis, A., Pfeffer, B., Zesch, H. E., Klinger, D., Reiner, T., Bock, M. M., Ohmann, S., Sackl-Pammer, P., Werneck-Rohrer, S., Eder, H., Skala, K., Czernin, K., Mairhofer, D., Rohringer, B., Bedus, C., Lipp, R., Vesely, C., Plener, P. L., & Kothgassner, O. D. (2023). Conspiracy beliefs and COVID-19 guideline adherence in adolescent psychiatric outpatients: The predictive role of adverse childhood experiences. *Child and Adolescent Psychiatry and Mental Health, 17*(1), 13.
Graeupner, D., & Coman, A. (2017). The dark side of meaning-making: How social exclusion leads to superstitious thinking. *Journal of Experimental Social Psychology, 69*, 218–222.
Graves, B. S., Hall, M. E., Dias-Karch, C., Haischer, M. H., & Apter, C. (2021). Gender differences in perceived stress and coping among college students. *PLOS ONE, 16*(8), e0255634.
Gray, J. A. (1970). The psychophysiological basis of introversion–extraversion. *Behaviour Research and Therapy, 8*(3), 249–266.
Gray, J. A., & McNaughton, N. (2000). *The neuropsychology of anxiety: An enquiry into the functions of the septo–hippocampal system* (2nd ed.). Oxford University Press.
Green, A., MacLean, R., & Charles, K. (2020). Unmasking gender differences in narcissism within intimate partner violence. *Personality and Individual Differences, 167*, Article 110247.
Green, M. C., & Brock, T. C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology, 79*(5), 701–721.
Grigoryev, D., & Gallyamova, A. (2023). Social worldviews predict the general factor of paranormal and generic conspiracist beliefs. *The Spanish Journal of Psychology, 26*, e19.
Grijalva, E., Newman, D. A., Tay, L., Donnellan, M. B., Harms, P. D., Robins, R. W., & Yan, T. (2015). Gender differences in narcissism: A meta-analytic review. *Psychological Bulletin, 141*(2), 261–310.

Griskevicius, V., Ackerman, J. M., Cantú, S. M., Delton, A. W., Robertson, T. E., Simpson, J. A., Thompson, M. E., & Tybur, J. M. (2013). When the economy falters, do people spend or save? Responses to resource scarcity depend on childhood environments. *Psychological Science, 24*(2), 197–205.

Griskevicius, V., Delton, A. W., Robertson, T. E., & Tybur, J. M. (2011). Environmental contingency in life history strategies: Influence of mortality and socioeconomic status on reproductive timing. *Journal of Personality and Social Psychology, 100*(2), 241–254.

Griskevicius, V., Tybur, J. M., Delton, A. W., & Robertson, T. E. (2011). The influence of mortality and socioeconomic status on risk and delayed rewards: a life history theory approach. *Journal of Personality and Social Psychology*, *100*, 1015–1026.

Gruijters, S. L. K., & Fleuren, B. P. I. (2018). Measuring the unmeasurable: The psychometrics of life history strategy. *Human Nature, 29*(1), 33–44.

Grzesiak-Feldman, M. (2013). The effect of high-anxiety situations on conspiracy thinking. *Current Psychology, 32*(1), 100–118.

Halama, P., & Teličák, P. (2024). General and maladaptive traits as predictors of specific conspiracy beliefs related to COVID-19 and Russian-Ukrainian war: Three-wave longitudinal study. *Current Psychology, 43*, 35651–35659.

Hammond, K. R., & Stewart, T. R. (2001). *The essential Brunswik: Beginnings, explications, applications*. Oxford University Press.

Hammond, K. R., Hursch, C. J., & Todd, F. J. (1964). Analyzing the components of clinical inference. *Psychological Review, 71*(6), 438–456.

Hanfstingl, B., Oberleiter, S., Pietschnig, J., Tran, U. S., & Voracek, M. (2024). Detecting jingle and jangle fallacies by identifying consistencies and variabilities in study specifications: A call for research. *Frontiers in Psychology, 15*, 1404060.

Hare, R. D., & Neumann, C. S. (2008). Psychopathy as a clinical and empirical construct. *Annual Review of Clinical Psychology*, *4*, 217–246.

Harmon-Jones, E., & Szymaniak, K. (2023). Evil perceptions mediate the association between trait anger and generic conspiracy beliefs. *Personality and Individual Differences, 213*, 112303.

Harmon-Jones, E., Szymaniak, K., Sebban, G., & Harmon-Jones, C. (2024). Belief in conspiracy theories that differ in evil intentions: Correlations with anger and other traits. *Personality and Individual Differences, 224*, 112639.

Hart, J., & Graether, M. (2018). Something's going on here: Psychological predictors of belief in conspiracy theories. *Journal of Individual Differences, 39*(4), 229–237.

Haselton, M. G., & Buss, D. M. (2000). Error management theory: A new perspective on biases in cross-sex mind reading. *Journal of Personality and Social Psychology, 78*(1), 81–91.

Haselton, M. G., & Buss, D. M. (2009). Error management theory and the evolution of misbeliefs. *Behavioral and Brain Sciences, 32*(6), 522–523.

Haselton, M. G., & Nettle, D. (2006). The paranoid optimist: An integrative evolutionary model of cognitive biases. *Personality and Social Psychology Review, 10*(1), 47–66.

Heider, F., & Simmel, M. (1944). An experimental study of apparent behavior. *The American Journal of Psychology, 57*, 243–259.

Heiss, R., Gell, S., Röthlingshöfer, E., & Zoller, C. (2021). How threat perceptions relate to learning and conspiracy beliefs about COVID-19: Evidence from a panel study. *Personality and Individual Differences, 175*, 110672.

Hellhammer, D. H., Wüst, S., & Kudielka, B. M. (2009). Salivary cortisol as a biomarker in stress research. *Psychoneuroendocrinology, 34*(2), 163–171.

Hendy, H., & Black, P. (2022). *Conspiracy beliefs as coping behavior: Life stressors, powerlessness, and extreme beliefs*. Rowman & Littlefield.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33*(2–3), 61–83.

Hepp, J., Schmitz, S. E., Urbild, J., Zauner, K., & Niedtfeld, I. (2021). Childhood maltreatment is associated with distrust and negatively biased emotion processing. *Borderline Personality Disorder and Emotion Dysregulation, 8*(1), 5.

Herold, M. (2024). The impact of conspiracy belief on democratic culture: Evidence from Europe. *HKS Misinformation Review*. https://misinforeview.hks.harvard.edu/article/the-impact-of-conspiracy-belief-on-democratic-culture-evidence-from-europe/

Holmqvist, K., Nyström, M., Andersson, R., Dewhurst, R., Jarodzka, H., & van de Weijer, J. (2011). *Eye tracking: A comprehensive guide to methods and measures*. Oxford University Press.

Holt, C. A., & Laury, S. K. (2002). Risk aversion and incentive effects. *American Economic Review, 92*(5), 1644–1655.

Hong, J., & Lee, A. Y. (2015). Preference for extra informational details in the absence of utility: The need for cognitive closure as desire for predictability. *Journal of Consumer Research, 41*(6), 1467–1488.

Hornsey, M. J., & Pearson, S. (2022). Cross-national differences in willingness to believe conspiracy theories. *Current Opinion in Psychology, 47*, 101391.

Hornsey, M. J., Bierwiaczonek, K., Sassenberg, K., & Douglas, K. M. (2023). Individual, intergroup and nation-level influences on belief in conspiracy theories. *Nature Reviews Psychology, 2*(2), 85–97.

Huang, L., & Whitson, J. (2020). Organizational costs of compensating for mind-body dissonance through conspiracies and superstitions. *Organizational Behavior and Human Decision Processes, 156*, 1–12.

Hughes, S., & Machan, L. (2021). It's a conspiracy: COVID-19 conspiracies link to psychopathy, Machiavellianism and collective narcissism. *Personality and Individual Differences, 171*, 110559.

Hursch, C. J., Hammond, K. R., & Hursch, J. L. (1964). Some methodological considerations in multiple-cue probability studies. *Psychological Review, 71*(1), 42–60.

Hurst, J. E., & Kavanagh, P. S. (2017). Life history strategies and psychopathology: The faster the life strategies, the more symptoms of psychopathology. *Evolution and Human Behavior, 38*(1), 1–8.

Imhoff, R. (2024). On the usefulness of the conspiracy mentality concept. *Zeitschrift für Psychologie, 232*(1), 59–63.

Imhoff, R., & Bruder, M. (2014). Speaking (un-)truth to power: Conspiracy mentality as a generalised political attitude. *European Journal of Personality, 28*(1), 25–43.

Imhoff, R., & Lamberty, P. (2020). A bioweapon or a hoax? The link between distinct conspiracy beliefs about the coronavirus disease (COVID-19) outbreak and pandemic behavior. *Social Psychological and Personality Science, 11*(8), 1110–1118.

Imhoff, R., & Lamberty, P. K. (2017). Too special to be duped: Need for uniqueness motivates conspiracy beliefs. *European Journal of Social Psychology, 47*(6), 724–734.

Imhoff, R., Bertlich, T., & Frenken, M. (2022). Tearing apart the "evil" twins: A general conspiracy mentality is not the same as specific conspiracy beliefs. *Current Opinion in Psychology, 46*, 101349.

Imhoff, R., Lamberty, P., & Klein, O. (2018). Using power as a negative cue: How conspiracy mentality affects epistemic trust in sources of historical knowledge. *Personality and Social Psychology Bulletin, 44*(9), 1364–1379.

Jabkowski, P., Domaradzki, J., & Baranowski, M. (2025). Religiosity and beliefs in medical conspiracy theories in 37 European countries during the COVID-19 pandemic. *Humanities and Social Sciences Communications, 12*, 434.

Jedinger, A., & Siegers, P. (2024). Religion, spirituality, and susceptibility to conspiracy theories: Examining the role of analytic thinking and post-critical beliefs. *Politics and Religion, 17*(3), 389–409.

Jessop, D. C., Albery, I. P., Rutter, D. R., & Garrod, H. (2008). Understanding the impact of mortality salience on the processing of health-risk information: A terror management theory perspective. *Personality and Social Psychology Bulletin, 34*(8), 1088–1099.

Jiang, Y., Tong, L., Cao, W., & Wang, H. (2024). Dark Triad and relational aggression: The mediating role of relative deprivation and hostile attribution bias. *Frontiers in Psychology, 15*, 1487970.

Jolley, D., & Douglas, K. M. (2014a). The effects of anti-vaccine conspiracy theories on vaccination intentions. *PLOS ONE, 9*(2), e89177.

Jolley, D., & 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*(1), 35–56.

Jolley, D., & Douglas, K. M. (2017). Prevention is better than cure: Addressing anti-vaccine conspiracy theories. *Journal of Applied Social Psychology, 47*(8), 459–469.

Jolley, D., Douglas, K. M., & Sutton, R. M. (2018). Blaming a few bad apples to save a threatened barrel: The system-justifying function of conspiracy theories. *Political Psychology, 39*(2), 465–478.

Jolley, D., Marques, M. D., & Cookson, D. (2022). Shining a spotlight on the dangerous consequences of conspiracy theories. *Current Opinion in Psychology, 47*, 101363.

Jolley, D., Meleady, R., & Douglas, K. M. (2020). Exposure to intergroup conspiracy theories promotes prejudice which spreads across groups. *British Journal of Psychology, 111*(1), 17–35.

Jonas, E., McGregor, I., Klackl, J., Agroskin, D., Fritsche, I., Holbrook, C., Nash, K., Proulx, T., & Quirin, M. (2014). Threat and defense: From anxiety to approach. In J. M. Olson & M. P. Zanna (Eds.), *Advances in experimental social psychology* (Vol. 49, pp. 219–286). Academic Press.

Jonason, P. K., & Tost, J. (2010). I just cannot control myself: The dark triad and self control. *Personality and Individual Differences, 49*, 611–615.

Jonason, P. K., Foster, J. D., Egorova, M. S., Parshikova, O., Csathó, Á., Oshio, A., & Gouveia, V. V. (2017). The Dark Triad traits from a life history perspective in six countries. *Frontiers in Psychology, 8*, 1476.

Jonason, P. K., Icho, A., & Ireland, K. (2016). Resources, harshness, and unpredictability: The socioeconomic conditions associated with the Dark Triad traits. *Evolutionary Psychology, 14*, 1–11.

Jonason, P. K., Li, N. P., & Czarna, A. Z. (2013). Quick and dirty: Some psychosocial costs associated with the Dark Triad in three countries. *Evolutionary Psychology*, *11*, 172–185.

Jonason, P. K., Li, N. P., Webster, G. D., & Schmitt, D. P. (2009). The Dark Triad: Facilitating a short-term mating strategy in men. *European Journal of Personality, 23*(1), 5–18.

Jonason, P. K., Talbot, D., Cunningham, M. L., & Chonody, J. (2020). Higher-order coping strategies: Who uses them and what outcomes are linked to them. *Personality and Individual Differences, 155*, 109755.

Jones, D. N., & Olderbak, S. G. (2014). The associations among dark personalities and sexual tactics across different scenarios. *Journal of Interpersonal Violence, 29*, 1050–1070.

Jones, D. N., & Paulhus, D. L. (2011). The role of impulsivity in the Dark Triad of personality. *Personality and Individual Differences, 51*, 679–682.
Jones, D. N., & Paulhus, D. L. (2014). Introducing the Short Dark Triad (SD3): a brief measure of dark personality traits. *Assessment, 21*, 28–41.
Joshanloo, M., & Jovanović, V. (2020). The relationship between gender and life satisfaction: Analysis across demographic groups and global regions. *Archives of Women's Mental Health, 23*(3), 331–338.
Juczyński, Z., & Ogińska-Bulik, N. (2009). *Narzędzia pomiaru stresu i radzenia sobie ze stresem* [Tools for measuring stress and for coping with stress]. Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego.
Jutzi, C. A., Willardt, R., Schmid, P. C., & Jonas, E. (2020). Between conspiracy beliefs, ingroup bias, and system justification: How people use defense strategies to cope with the threat of COVID-19. *Frontiers in Psychology, 11*, 578586.
Kalichman, S. C., Simbayi, L. C., Cloete, A., Clayford, M., Arnolds, W., Mxoli, M., Smith, G., Cherry, C., Shefer, T., Crawford, M., & Kalichman, M. O. (2009). Integrated gender-based violence and HIV risk reduction intervention for South African men: Results of a quasi-experimental field trial. *Prevention Science, 10*, 260–269.
Kaplan, H.S., & Gangestad, S. W. (2005). Life History Theory and Evolutionary Psychology. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 68–95). John Wiley & Sons, Inc..
Karelaia, N., & Hogarth, R. M. (2008). Determinants of linear judgment: A meta-analysis of lens model studies. *Psychological Bulletin, 134*(3), 404–426.
Kay, A. C., Whitson, J. A., Gaucher, D., & Galinsky, A. D. (2009). Compensatory control: Achieving order through the mind, our institutions, and the heavens. *Current Directions in Psychological Science, 18*, 264–268.
Kay, C. S. (2021). The targets of all treachery: Delusional ideation, paranoia, and the need for uniqueness as mediators between two forms of narcissism and conspiracy beliefs. *Journal of Research in Personality, 93,* Article 104128.
Kay, C. S., & Slovic, P. (2023). The Generic Conspiracist Beliefs Scale–5: A short-form measure of conspiracist ideation. *Journal of Research in Personality, 102*, 104315.
Kofta, M., & Sedek, G. (2005). Conspiracy Stereotypes of Jews during Systemic Transformation in Poland. *International Journal of Sociology, 35*(1), 40–64.
Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M.B., Karam, B., Adib, E., Zarka, J., Traboulsi, C., Akl, E.W., & Baddour, K. (2020). Coronavirus goes viral: Quantifying the COVID-19 misinformation epidemic on Twitter. *Cureus, 12*, e7255.
Kovic, M., & Füchslin, T. (2018). Probability and conspiratorial thinking. *Applied Cognitive Psychology, 32*(3), 390–400.
Krekó, P. (2023). Escape from uncertainty: To conspiracy theories and pseudoscience. In J. P. Forgas, W. D. Crano, & K. Fiedler (Eds.), *The psychology of insecurity: Seeking certainty where none can be found* (pp. 349–367). Routledge.
Kruger, D. J., Reischl, T., & Zimmerman, M. A. (2008). Time perspective as a mechanism for functional developmental adaptation. *Journal of Social, Evolutionary, and Cultural Psychology, 2*(1), 1–22.
Kruglanski, A. W. (2004). *The psychology of closed mindedness*. Psychology Press.
Kruglanski, A. W., & Fishman, S. (2009). The need for cognitive closure. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 343–353). The Guilford Press.
Krüppel, J., Yoon, D., & Mokros, A. (2023). Clarifying the link between anxiety and conspiracy beliefs: A cross-sectional study on the role of coping with stressors. *Personality and Individual Differences, 202*, 111966.

Kurzban, R., & Leary, M. R. (2001). Evolutionary origins of stigmatization: The functions of social exclusion. *Psychological Bulletin, 127*, 187–208.

Kurzban, R., Tooby, J., & Cosmides, L. (2001). Can race be erased? Coalitional computation and social categorization. *Proceedings of the National Academy of Sciences of the United States of America, 98*(26), 15387–15392.

Kwiek, M., Florek, S., & Piotrowski, P. (2017). The Theory of Life History and Criminal Behavior. *Resocjalizacja Polska*, *12*, 9-26.

Laboratorium Badań Medioznawczych UW. (2024). *Dezinformacja oczami Polaków. Edycja 2024* [Report; Disinformation through the eyes of Poles: 2024 edition]. https://www.lbm.uw.edu.pl/images/Dezinformacja_oczami_Polakw_edycja_2024.pdf

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.

Langenhof, M. R., & Komdeur, J. (2018). Why and how the early-life environment affects development of coping behaviours. *Behavioral Ecology and Sociobiology, 72*, Article 34.

Lantian, A., Muller, D., Nurra, C., & Douglas, K. M. (2017). "I know things they don't know!": The role of need for uniqueness in belief in conspiracy theories. *Social Psychology, 48*(3), 160–173.

Lantian, A., Muller, D., Nurra, C., Klein, O., Berjot, S., & Pantazi, M. (2018). Stigmatized beliefs: Conspiracy theories, anticipated negative evaluation of the self, and fear of social exclusion. *European Journal of Social Psychology, 48*, 939–954.

Lawson, D. W., & Mace, R. (2011). Parental investment and the optimization of human family size. *Philosophical Transactions of the Royal Society B: Biological Sciences, 366*(1563), 333–343.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company.

Leclercq, S., Szaffarczyk, S., Leptourgos, P., Yger, P., Fakhri, A., Wathelet, M., Bouttier, V., Denève, S., & Jardri, R. (2024). Conspiracy beliefs and perceptual inference in times of political uncertainty. *Scientific Reports, 14*(1), 9001.

Leiby, J., & Madsen, P. E. (2017). Margin of safety: Life history strategies and the effects of socioeconomic status on self-selection into accounting. *Accounting, Organizations and Society, 60*, 21–36.

Leman, P. J., & Cinnirella, M. (2007). A major event has a major cause: Evidence for the role of heuristics in reasoning about conspiracy theories. *Social Psychological Review, 9*(2), 18–28.

Leveaux, S. (2022). Comparing the lay representations of conspiracy believers. *Journal for the Theory of Social Behaviour, 52*(3), 393–415.

Levy, N. (2022). Conspiracy theories as serious play. *Philosophical Topics, 50*(2), 1–19.

Lewandowsky, S., Ecker, U. K. H., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest, 13*(3), 106–131.

Lewandowsky, S., Gignac, G. E., & Oberauer, K. (2013). The role of conspiracist ideation and worldviews in predicting rejection of science. *PLOS ONE, 8*(10), e75637.

Lewandowsky, S., Gignac, G. E., & Oberauer, K. (2015). The Role of Conspiracist Ideation and Worldviews in Predicting Rejection of Science. *PLOS ONE, 10*, e0134773.

Li, Y. J., Kenrick, D. T., Griskevicius, V., & Neuberg, S. L. (2012). Economic decision biases and fundamental motivations: How mating and self-protection alter loss aversion. *Journal of Personality and Social Psychology, 102*(3), 550–561.

Liekefett, L., Christ, O., & Becker, J. C. (2023). Can conspiracy beliefs be beneficial? Longitudinal linkages between conspiracy beliefs, anxiety, uncertainty aversion, and existential threat. *Personality and Social Psychology Bulletin, 49*(2), 167–179.

Litman, J. A. (2006). The COPE inventory: Dimensionality and relationships with approach- and avoidance-motives and positive and negative traits. *Personality and Individual Differences, 41*(2), 273–284.

Liu, J., Schwarz, A., Risius, M., Hirschheim, R., & Van Scotter, J. (2025). Conceptualizing echo chambers and information cocoons: A literature review and synthesis of current knowledge and future directions. *The Journal of Strategic Information Systems*. Advance online publication.

Louie, P., Wu, C., Shahidi, F. V., & Siddiqi, A. (2023). Inflation hardship, gender, and mental health. *SSM – Population Health, 23*, 101452.

Łowicki, P., Marchlewska, M., Molenda, Z., Karakula, A., & Szczepańska, D. (2022). Does religion predict coronavirus conspiracy beliefs? Centrality of religiosity, religious fundamentalism, and COVID-19 conspiracy beliefs. *Personality and Individual Differences, 187*, 111413.

Łukasik, A., Wołpiuk-Ochocińska, A., & Borawski, D. (2021). Testing the indirect effects of somatic and parental effort on stress: The roles of worldviews and coping strategies. *Current Psychology: a Journal for Diverse Perspectives on Diverse Psychological Issues, 40*, 1476–1489.

Macmillan, N. A., & Creelman, C. D. (2005). *Detection theory: A user's guide* (2nd ed.). Lawrence Erlbaum Associates Publishers.

Maner, J. K., & Menzel, A. J. (2013). Evolutionary social psychology. In H. Tennen, J. Suls, & I. B. Weiner (Eds.), *Handbook of psychology: Personality and social psychology* (2nd ed., pp. 487–506). John Wiley & Sons, Inc..

Manson, J. H., & Kruger, D. J. (2022). Network analysis of psychometric life history indicators. *Evolution and Human Behavior, 43*, 197–211.

Mao, J. Y., Zeng, Z. X., Yang, S. L., Guo, Y. Y., Wang, B., & van Prooijen, J. W. (2025). Why existential threats increase conspiracy beliefs: Evidence for the mediating roles of agency detection and pattern perception. *British Journal of Psychology*. Advance online publication.

March, E., & Springer, J. (2019). Belief in conspiracy theories: The predictive role of schizotypy, Machiavellianism, and primary psychopathy. *PLOS ONE, 14*(12), e0225964.

Marchlewska, M., Cichocka, A., & Kossowska, M. (2018). Addicted to answers: Need for cognitive closure and the endorsement of conspiracy beliefs. *European Journal of Social Psychology, 48*(2), 109–117.

Marchlewska, M., Cichocka, A., Łozowski, F., Górska, P., & Winiewski, M. (2019). In search of an imaginary enemy: Catholic collective narcissism and the endorsement of gender conspiracy beliefs. *The Journal of Social Psychology, 159*(6), 766–779.

Marchlewska, M., Green, R., Cichocka, A., Molenda, Z., & Douglas, K. M. (2022). From bad to worse: Avoidance coping with stress increases conspiracy beliefs. *The British Journal of Social Psychology*, *61*, 532–549.

Mardaga, S., & Hansenne, M. (2007). Relationships between Cloninger's biosocial model of personality and the behavioral inhibition/approach systems (BIS/BAS). *Personality and Individual Differences, 42*, 715–722.

McCarthy, M. (2014). Nearly half of Americans believe in at least one medical conspiracy theory, survey finds. *BMJ, 348*, g2277.

McCrae, R. R., & Costa, P. T., Jr. (2008). The five-factor theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 159–181). The Guilford Press.

McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality, 60*(2), 175–215.

McDonald, M. M., Navarrete, C. D., & Van Vugt, M. (2012). Evolution and the psychology of intergroup conflict: The male warrior hypothesis. *Philosophical Transactions of the Royal Society B: Biological Sciences, 367*(1589), 670–679.

McEvoy, P. M., & Mahoney, A. E. J. (2011). Achieving certainty about the structure of intolerance of uncertainty in a treatment-seeking sample with anxiety and depression. *Journal of Anxiety Disorders, 25*(1), 112–122.

McLaughlin, K. A. (2016). Future directions in childhood adversity and youth psychopathology. *Journal of Clinical Child & Adolescent Psychology, 45*(3), 361–382.

McLaughlin, K. A., Sheridan, M. A., & Lambert, H. K. (2014). Childhood adversity and neural development: Deprivation and threat as distinct dimensions of early experience. *Neuroscience & Biobehavioral Reviews, 47*, 578–591.

Meese, J., Frith, J., & Wilken, R. (2020). COVID-19, 5G conspiracies and infrastructural futures. *Media International Australia, 177*(1), 30–46.

Mell, H., Safra, L., Algan, Y., Baumard, N., & Chevallier, C. (2018). Childhood environmental harshness predicts coordinated health and reproductive strategies: A cross-sectional study of a nationally representative sample from France. *Evolution and Human Behavior, 39*(1), 1–8.

Meuer, M., Oeberst, A., Imhoff, R. (2021). Believe it or not – no support for an effect of providing explanatory or threat-related information on conspiracy theories. *International Review of Social Psychology, 34*(1), Article 26.

Mikulincer, M., Florian, V., & Hirschberger, G. (2003). The existential function of close relationships: Introducing death into the attachment–terror management analysis. *Personality and Social Psychology Review, 7*(1), 20–40.

Miller, J. D., Back, M. D., Lynam, D. R., & Wright, A. G. C. (2021). Narcissism today: What we know and what we need to learn. *Current Directions in Psychological Science, 30*(6), 519–525.

Miller, J. D., Price, J., Gentile, B., Lynam, D. R., & Campbell, W. K. (2012). Grandiose and vulnerable narcissism from the perspective of the interpersonal circumplex. *Personality and Individual Differences, 53*(4), 507–512.

Miller, J. M. (2020). Do COVID-19 Conspiracy Theory Beliefs Form a Monological Belief System?. *Canadian Journal of Political Science*, 1–8.

Milner, A., Krnjacki, L., & LaMontagne, A. D. (2016). Age and gender differences in the influence of social support on mental health: A longitudinal fixed-effects analysis using 13 annual waves of the HILDA cohort. *Public Health, 140*, 172–178.

Milošević Đorđević, J., Žeželj, I., & Đurić, Ž. (2021). Beyond general political attitudes: Conspiracy mentality as a global belief system predicts endorsement of international and local conspiracy theories. *Journal of Social and Political Psychology, 9*(1), 144–158.

Mishra, S., Templeton, A. J., & Meadows, T. J. S. (2017). Living, fast and slow: Is life history orientation associated with risk-related personality traits, risk attitudes, criminal outcomes, and gambling? *Personality and Individual Differences, 117*, 242–248.

Mittal, C., & Griskevicius, V. (2014). Sense of control under uncertainty depends on people's childhood environment: A life history theory approach. *Journal of Personality and Social Psychology, 107*(4), 621–637.

Molenda, Z., Green, R., Marchlewska, M., Cichocka, A., & Douglas, K. (2022). Emotion dysregulation and belief in conspiracy theories. *Personality and Individual Differences, 204*, 112042.

Molenda, Z., Green, R., Marchlewska, M., Cichocka, A., & Douglas, K. M. (2023). Emotion dysregulation and belief in conspiracy theories. *Personality and Individual Differences, 204*, 1–10.

Molenda, Z., Marchlewska, M., Karakula, A., Szczepańska, D., Rogoza, M., Green, R., Cislak, A., & Douglas, K. M. (2024). Coping strategies and belief in COVID-19 conspiracy theories. *British Journal of Social Psychology, 63*(1), 319–339.

Moshagen, M., Hilbig, B. E., & Zettler, I. (2018). The dark core of personality. *Psychological Review, 125*(5), 656–688.

Moulding, R., Nix-Carnell, S., Schnabel, A., Nedeljkovic, M., Burnside, E. E., Lentini, A. F., & Mehzabin, N. (2016). Better the devil you know than a world you don't? Intolerance of uncertainty and worldview explanations for belief in conspiracy theories. *Personality and Individual Differences, 98*, 345–354.

Müller, J. M., & Wytykowska, A. M. (2005). Psychometric properties and validation of a Polish adaptation of Carver and White's BIS/BAS scales. *Personality and Individual Differences, 39(4)*, 795–805. https://doi.org/10.1016/j.paid.2005.03.006

Müller, P., & Hartmann, M. (2023). Linking paranormal and conspiracy beliefs to illusory pattern perception through signal detection theory. *Scientific Reports, 13*(1), 9739.

Munro, D. (in press). Conspiracy theories: How much do people believe them? In N. van Leeuwen & T. Lombrozo (Eds.), *The Oxford handbook of the cognitive science of belief*. Oxford University Press.

Muris, P., Merckelbach, H., Otgaar, H., & Meijer, E. (2017). The malevolent side of human nature. *Perspectives on Psychological Science, 12*(2), 183–204.

Nera, K., Mora, Y. L., Klein, P., Roblain, A., Van Oost, P., Terache, J., & Klein, O. (2022). Looking for ties with secret agendas during the pandemic: Conspiracy mentality is associated with reduced trust in political, medical, and scientific institutions—but not in medical personnel. *Psychologica Belgica, 62*(1), 193–207.

Nesse, R. M. (2005). Natural selection and the regulation of defenses: A signal detection analysis of the smoke detector principle. *Evolution and Human Behavior, 26*(1), 88–105.

Nettle, D. (2010). Dying young and living fast: Variation in life history across English neighborhoods. *Behavioral Ecology, 21*(2), 387–395.

Nettle, D., & Frankenhuis, W. E. (2020). Life-history theory in psychology and evolutionary biology: One research programme or two? *Philosophical Transactions of the Royal Society B, 375*(1803), 20190490.

Neuberg, S. L., Kenrick, D. T., & Schaller, M. (2010). Evolutionary social psychology. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th ed., pp. 761–796). Wiley.

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology, 2*(2), 175–220.

Nuttin, J. (1985). *Future time perspective and motivation* (Louvain Psychology Series: Studia Psychologica). Leuven University.

Oleksy, T., Wnuk, A., Gambin, M., & Łyś, A. (2021). Dynamic relationships between different types of conspiracy theories about COVID-19 and protective behaviour: A four-wave panel study in Poland. *Social Science & Medicine, 280*, 114028.

Ośrodek Myśli Politycznej. https://wsmip.uj.edu.pl/documents/41658/145634371/CZECH%2C%2B%C5%9ACIGAJ%2B-%2BRAPORT%2B-

%2BPopularno%C5%9B%C4%87%2Bnarracji%2Bspiskowych%2Bw%2BPolsce%2Bczasu%2Bpandemii%2BCOVID-19.pdf/22b0085f-1c67-423f-992f-6d06dc84e281
Pantazi, M., Papaioannou, K., & Prooijen, J.-W. (2022). Power to the people: The hidden link between support for direct democracy and belief in conspiracy theories. *Political Psychology, 43*(3), 529–548.
Patrick, C. J., Fowles, D. C., & Krueger, R. F. (2009). Triarchic conceptualization of psychopathy: Developmental origins of disinhibition, boldness, and meanness. *Development and Psychopathology, 21*(3), 913–938.
Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism and psychopathy. *Journal of Research in Personality, 36*(6), 556–563.
Pavela Banai, I., Banai, B., & Mikloušić, I. (2022). Beliefs in COVID-19 conspiracy theories, compliance with the preventive measures, and trust in government medical officials. *Current Psychology, 41*(10), 7448–7458.
Pennycook, G., & Rand, D. G. (2019). Lazy, not biased: Susceptibility to partisan fake news is better explained by lack of reasoning than by motivated reasoning. *Cognition, 188*, 39–50.
Pepper, G. V., & Nettle, D. (2017). The behavioural constellation of deprivation: Causes and consequences. *Behavioral and Brain Sciences, 40*, e314.
Pfeffer, B., Goreis, A., Reichmann, A., Bauda, I., Klinger, D., Bock, M. M., Plener, P. L., & Kothgassner, O. D. (2022). Coping styles mediating the relationship between perceived chronic stress and conspiracy beliefs about COVID-19. *Current Psychology*. Advance online publication.
Pietraszewski, D. (2016). How the mind sees coalitional and group conflict: The evolutionary invariances of n-person conflict dynamics. *Evolution and Human Behavior, 37*(6), 470–480.
Pietraszewski, D., Cosmides, L., & Tooby, J. (2014). The content of our cooperation, not the color of our skin: An alliance detection system regulates categorization by coalition and race, but not sex. *PLOS ONE, 9*(2), e88534.
Pilch, I., Turska-Kawa, A., Wardawy, P., Olszanecka-Marmola, A., & Smołkowska-Jędo, W. (2023). Contemporary trends in psychological research on conspiracy beliefs. a systematic review. *Frontiers in Psychology, 14*, 1075779.
Poier, S., & Nikodemska-Wołowik, A. M. (2024). Germany under the tinfoil hat? The associations of the Big Five personality traits and coronavirus conspiracy beliefs with the intention to get vaccinated. *Journal of Infection and Public Health, 17*(9), 102519.
Pollet, T. V., & Saxton, T. K. (2019). How diverse are the samples used in the journals *Evolution & Human Behavior* and *Evolutionary Psychology*? *Evolutionary Psychological Science, 5*, 357–368.
Popoli, G., & Longus, A. (2021). Gender differences and the five facets of conspiracy theory. *International Journal of Psychological Studies, 13*(3), 64–69.
Pornpitakpan, C. (2004). The persuasiveness of source credibility: A critical review of five decades' evidence. *Journal of Applied Social Psychology, 34*(2), 243–281.
Prooijen, J.-W., & Acker, M. (2015). The influence of control on belief in conspiracy theories: Conceptual and applied extensions. *Applied Cognitive Psychology, 29*(5), 753–761.
Pummerer, L., Böhm, R., Lilleholt, L., Winter, K., Zettler, I., & Sassenberg, K. (2022). Conspiracy theories and their societal effects during the COVID-19 pandemic. *Social Psychological and Personality Science, 13*(1), 49–59.
Pyszczynski, T., Lockett, M., Greenberg, J., & Solomon, S. (2021). Terror Management Theory and the COVID-19 pandemic. *Journal of Humanistic Psychology, 61*(2), 173–189.

Qi, W., He, X., & Wang, Z. (2024). Childhood unpredictability and sleep quality in adulthood: The mediating roles of life history strategy and perceived stress. *Frontiers in Psychology, 15*, 1347365.

Raihani, N. J., & Bell, V. (2019). An evolutionary perspective on paranoia. *Nature Human Behaviour, 3*(2), 114–121.

Rauthmann, J. F., & Sherman, R. A. (2016). Measuring the Situational Eight DIAMONDS characteristics of situations: An optimization of the RSQ-8 to the S8*. *European Journal of Psychological Assessment, 32*, 155–164.

Rauthmann, J. F., Gallardo-Pujol, D., Guillaume, E. M., Todd, E., Nave, C. S., Sherman, R. A., Ziegler, M., Jones, A. B., & Funder, D. C. (2014). The situational eight DIAMONDS: A taxonomy of major dimensions of situation characteristics. *Journal of Personality and Social Psychology, 107*(4), 677–718.

Reuter, M., Cooper, A. J., Smillie, L. D., Markett, S., & Montag, C. (2015). A new measure for the revised reinforcement sensitivity theory: Psychometric criteria and genetic validation. *Frontiers in Systems Neuroscience, 9*, 38.

Robinette, J. W., Piazza, J. R., & Stawski, R. S. (2025). Community crime and safety: An investigation of gender differences in the daily stress process. *Journal of Community Psychology, 53*(2), e23158.

Rodrigues, F., Figueiredo, N., Rodrigues, J., Ferreira, R., Hernández-Mendo, A., & Monteiro, D. (2022). A comprehensive review and bifactor modeling analysis of the Brief COPE. *Inquiry: The Journal of Health Care Organization, Provision, and Financing, 59*, 469580221108127.

Roets, A., & Van Hiel, A. (2011). Allport's prejudiced personality today: Need for closure as the motivated cognitive basis of prejudice. *Current Directions in Psychological Science, 20*(6), 349–354.

Rogoza, R., & Cieciuch, J. (2019). Structural investigation of the Short Dark Triad Questionnaire in Polish population. *Current Psychology: a Journal for Diverse Perspectives on Diverse Psychological Issues, 38*(3), 756–763. https://doi.org/10.1007/s12144-017-9653-1

Romer, D., & Jamieson, K. H. (2020). Conspiracy theories as barriers to controlling the spread of COVID-19 in the U.S. *Social Science & Medicine, 263*, 113356.

Rutjens, B. T., & Većkalov, B. (2022). Conspiracy beliefs and science rejection. *Current Opinion in Psychology, 46*, 101392.

Schlipphak, B., Bollwerk, M., & Back, M. (2021). Beliefs in conspiracy theories (CT): The role of country context. *Political Research Exchange, 3*(1), 1949358.

Schmitt, D. P. (2005). Sociosexuality from Argentina to Zimbabwe: A 48-nation study of sex, culture, and strategies of human mating. *Behavioral and Brain Sciences, 28*(2), 247–311.

Schmitt, D. P., & Shackelford, T. K. (2008). Big Five traits related to short-term mating: From personality to promiscuity across 46 nations. *Evolutionary Psychology, 6*, 246–282.

Schönbrodt, F.D., & Perugini, M. (2013). At what sample size do correlations stabilize? *Journal of Research in Personality, 47*, 609-612.

Schöpfer, C., Abatista, A. G. F., Fuhrer, J., & Cova, F. (2023). 'Where there are villains, there will be heroes': Belief in conspiracy theories as an existential tool to fulfill need for meaning. *Personality and Individual Differences, 200*, 111900.

Sear, R. (2020). Do human 'life history strategies' exist? *Evolution and Human Behavior, 41*(6), 513–526.

Segarra, P., Poy, R., López, R., & Moltó, J. (2014). Characterizing Carver and White's BIS/BAS subscales using the Five Factor Model of personality. *Personality and Individual Differences, 61–62*, 18–23.

Sennebogen, E. (2009, May 11). What's the most dangerous room in the house? *HowStuffWorks*. Retrieved July 26, 2025, from https://home.howstuffworks.com/home-improvement/household-safety/most-dangerous-room.htm

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Houghton Mifflin.

Shapiro, G. K., Holding, A., Perez, S., Amsel, R., & Rosberger, Z. (2016). Validation of the Vaccine Conspiracy Beliefs Scale. *Papillomavirus Research, 2*, 167–172.

Shearer, C., West, J. J., Caldeira, K., & Davis, S. J. (2016). Quantifying expert consensus against the "chemtrails" conspiracy theory. *Environmental Research Letters, 11*(8), 084011.

Shonkoff, J. P., Garner, A. S., Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, & Section on Developmental and Behavioral Pediatrics. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), e232–e246.

Siwiak, A., Szpitalak, M., & Polczyk, R. (2019). Generic Conspiracist Beliefs Scale – Polish adaptation of the method. *Polish Psychological Bulletin*, *50*, 259–269.

Slavich, G. M., Roos, L. G., Mengelkoch, S., Webb, C. A., Shattuck, E. C., Moriarity, D. P., & Alley, J. C. (2023). Social safety theory: Conceptual foundation, underlying mechanisms, and future directions. *Health Psychology Review, 17*(1), 5–59.

Smillie, L. D., DeYoung, C. G., & Hall, P. J. (2015). Clarifying the relation between extraversion and positive affect. *Journal of Personality, 83*(5), 564–574.

Smits, D. J. M., & Kuppens, P. (2005). The relations between anger, coping with anger, and aggression, and the BIS/BAS system. *Personality and Individual Differences, 39*(4), 783–793.

Soral, W., Cichocka, A., Bilewicz, M., & Marchlewska, M. (2018). The collective conspiracy mentality in Poland. In J. E. Uscinski (Ed.), *Conspiracy theories and the people who believe them* (pp. 372–384). Oxford University Press.

Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology, 113*(1), 117–143.

Sperber, D., Clément, F., Heintz, C., Mascaro, O., Mercier, H., Origgi, G., & Wilson, D. (2010). Epistemic vigilance. *Mind & Language, 25*(4), 359–393.

Šrol, J., Cavojova, V., & Mikušková, E. B. (2021). Finding someone to blame: The link between COVID-19 conspiracy beliefs, prejudice, support for violence, and other negative social outcomes. *Frontiers in Psychology, 12*, 726076.

Ståhl, T., & van Prooijen, J.-W. (2018). Epistemic rationality: Skepticism toward unfounded beliefs requires sufficient cognitive ability and motivation to be rational. *Personality and Individual Differences, 122*, 155–163.

Stamos, A., Altsitsiadis, E., & Dewitte, S. (2019). Investigating the effect of childhood socioeconomic background on interpersonal trust: Lower childhood socioeconomic status predicts lower levels of trust. *Personality and Individual Differences, 145*, 19–25.

Stein, R. A., Ometa, O., Pachtman Shetty, S., Katz, A., Popitiu, M. I., & Brotherton, R. (2021). Conspiracy theories in the era of COVID-19: A tale of two pandemics. *International Journal of Clinical Practice, 75*(2), e13778.

Stockemer, D., & Bordeleau, S. (2024). Conspiracy theories and their believers in an era of misinformation. *Harvard Kennedy School Misinformation Review, 5*(1).

Stojanov, A., Bering, J. M., & Halberstadt, J. (2022). Perceived lack of control and conspiracy theory beliefs in the wake of political strife and natural disaster. *Psihologija, 55*(2), 149–168.

Storbeck, J., & Clore, G. L. (2008). Affective arousal as information: How affective arousal influences judgments, learning, and memory. *Social and Personality Psychology Compass, 2*(5), 1824–1843.

Stubbersfield, J. (2021). Conspiracy Theories: A Cultural Evolution Theory Approach. Preprint: 10.31219/osf.io/hqkju.

Sullivan, D., Landau, M. J., & Rothschild, Z. K. (2010). An existential function of enemyship: Evidence that people attribute influence to personal and political enemies to compensate for threats to control. *Journal of Personality and Social Psychology, 98*(3), 434–449.

Sunstein, C. R., & Vermeule, A. (2009). Conspiracy theories: Causes and cures. *Journal of Political Philosophy, 17*, 202-227.

Sutton, R. M., & Douglas, K. M. (2020). Conspiracy theories and the conspiracy mindset: Implications for political ideology. *Current Opinion in Behavioral Sciences, 34*, 118–122.

Sutton, R. M., Douglas, K. M., & Trella, C. (2024). Conspiracy mentality versus belief in conspiracy theories: Response to Nera and some recommendations for researchers. *Zeitschrift für Psychologie, 232*(1), 50–54.

Swami, V., & Coles, R. (2010). The truth is out there. *The Psychologist, 23*(7), 560–563.

Swami, V., & Furnham, A. (2012). Examining conspiracist beliefs about the disappearance of Amelia Earhart. *Journal of General Psychology, 139*(4), 244–259.

Swami, V., Barron, D., Weis, L., Voracek, M., Stieger, S., & Furnham, A. (2017). An examination of the factorial and convergent validity of four measures of conspiracist ideation, with recommendations for researchers. *PLOS ONE, 12*(2), e0172617.

Swami, V., Barron, D., Weis, L., Voracek, M., Stieger, S., & Furnham, A. (2017). An examination of the factorial and convergent validity of four measures of conspiracist ideation, with recommendations for researchers. PLOS ONE, 12(2), e0172617.

Swami, V., Chamorro-Premuzic, T., & Furnham, A. (2010). Unanswered questions: A preliminary investigation of personality and individual difference predictors of 9/11 conspiracist beliefs. *Applied Cognitive Psychology, 24*, 749–761.

Swami, V., Coles, R., Stieger, S., Pietschnig, J., Furnham, A., Rehim, S., & Voracek, M. (2011). Conspiracist ideation in Britain and Austria: Evidence of a monological belief system and associations between individual psychological differences and real-world and fictitious conspiracy theories. British Journal of Psychology, 102(3), 443–463.

Swami, V., Furnham, A., Smyth, N., Weis, L., Ley, A., & Clow, A. (2016a). Putting the stress on conspiracy theories: Examining associations between psychosocial stress, anxiety, and belief in conspiracy theories. *Personality and Individual Differences,* 99, 72-76.

Swami, V., Pietschnig, J., Tran, U. S., Nader, I. W., Stieger, S., & 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(1), 71–80.

Swami, V., Tran, U. S., Stieger, S., Pietschnig, J., Nader, I. W., & Voracek, M. (2016b). Who believes in the giant skeleton myth? An examination of individual difference correlates. *SAGE Open, 6*, 1–7.

Swami, V., Voracek, M., Stieger, S., Tran, U. S., & Furnham, A. (2014). Analytic thinking reduces belief in conspiracy theories. *Cognition, 133*(3), 572–585.

Swami, V., Weis, L., Lay, A., Barron, D., & Furnham, A. (2016c). Associations between belief in conspiracy theories and the maladaptive personality traits of the personality inventory for DSM-5. *Psychiatry Research*, *236*, 86–90.

Sweeny, K., Melnyk, D., Miller, W., & Shepperd, J. A. (2010). Information avoidance: Who, what, when, and why. *Review of General Psychology, 14*(4), 340–353.

Sýkorová, K., & Flegr, J. (2021). Faster life history strategy manifests itself by lower age at menarche, higher sexual desire, and earlier reproduction in people with worse health. *Scientific Reports, 11*(1), 11254.

Szymaniak, K., Zajenkowski, M., Fronczyk, K., Leung, S., & Harmon-Jones, E. (2023). Trait anger and approach motivation are related to higher endorsement of specific and generic conspiracy beliefs. *Journal of Research in Personality, 104*, 104374.

Taber, C. S., & Lodge, M. (2006). Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science, 50*(3), 755–769.

Tasielowicz, Ł. (2022). Who believes in conspiracy theories? A meta-analysis on personality correlates. *Journal of Research in Personality, 98*, 104229.

Taubert, F., Schmid, P., Holford, D., Verger, P., Fasce, A., Karlsson, L. C., Soveri, A., Lewandowsky, S., & Betsch, C. (2024). Association of the belief in conspiracy narratives with vaccination status and recommendation behaviours of German physicians. *Vaccine: X, 20*, 100560.

Taubman-Ben-Ari, O., & Skvirsky, V. (2019). The terror management underpinnings of risky behavior. In C. Routledge & M. Vess (Eds.), *Handbook of terror management theory* (pp. 559–576). Elsevier.

Taylor, S. E., Klein, L. C., Lewis, B. P., Gruenewald, T. L., Gurung, R. A. R., & Updegraff, J. A. (2000). Biobehavioral responses to stress in females: Tend-and-befriend, not fight-or-flight. *Psychological Review, 107*(3), 411–429.

Tian, C., Jensen, M. L., & Armeen, I. (2025). Why do I share when I know it probably isn't true? An investigation of motivations underlying cyber rumor sharing. *AIS Transactions on Human-Computer Interaction, 17*(2), 233–260.

Tingley, D., Wagner, G. (2017). Solar geoengineering and the chemtrails conspiracy on social media. *Palgrave Commun*, *3*, 12.

Topolewska, E., Skimina, E., Strus, W., Cieciuch, J., & Rowiński, T. (2014). The short IPIP-BFM-20 questionnaire for measuring the Big Five. *Annals of Psychology, 17*(2), 385-402.

Toribio-Flórez, D., Azevedo, F., Crawford, J., & van Bavel, J. J. (2023). Consequences of conspiracy theories for romantic relationships. *Nature Human Behaviour, 7*, 274–283.

Toribio-Flórez, D., Green, R., & Douglas, K. M. (2024). Belief in conspiracy theories and satisfaction in interpersonal relationships. *Journal of Applied Social Psychology*. Advance online publication.

Trella, C., Sutton, R. M., & Douglas, K. M. (2024). Semantic and causal relations between the conspiracy mentality and belief in conspiracy theories. *Zeitschrift für Psychologie, 232*(1), 7–17.

Tybur, J. M., Lieberman, D., & Griskevicius, V. (2009). Microbes, mating, and morality: Individual differences in three functional domains of disgust. *Journal of Personality and Social Psychology, 97*(1), 103–122.

Uher, J. (2017). Basic definitions in personality psychology: Challenges for conceptual integrations. *European Journal of Personality, 31*(5), 572–573.

Uscinski, J. E., & Parent, J. (2014). *American Conspiracy Theories*. Oxford University Press.

Uscinski, J. E., Klofstad, C., & Atkinson, M. D. (2016). What drives conspiratorial beliefs? The role of informational cues and predispositions. *Political Research Quarterly, 69*(1), 57–71.

Uygur, M. E., & Çinpolat, E. (2025). Adapting the Generic Conspiracist Beliefs Scale into Turkish and its relationship between critical thinking, information literacy, and media literacy in prospective teachers: A mixed study. *Current Psychology*. Advance online publication.

van Berkel, K. H. (2009). The Relationship Between Personality, Coping Styles and Stress, Anxiety and Depression. *Science: Theses and Dissertations.* University of Canterbury.
Van den Bergh, O., Brosschot, J., Critchley, H., Thayer, J. F., & Ottaviani, C. (2021). Better safe than sorry: A common signature of general vulnerability for psychopathology. *Perspectives on Psychological Science, 16*(2), 225–246.
van der Tempel, J., & Alcock, J. E. (2015). Relationships between conspiracy mentality, hyperactive agency detection, and schizotypy: Supernatural forces at work? *Personality and Individual Differences, 82*, 136–141.
van Elk, M., & Lodder, P. (2018). Experimental manipulations of personal control do not increase illusory pattern perception. *Collabra: Psychology, 4*(1), 1–22.
van Mulukom, V., Pummerer, L. J., Alper, S., Bai, H., Čavojová, V., Farias, J., Kay, C. S., Lazarevic, L. B., Lobato, E. J. C., Marinthe, G., Pavela Banai, I., Šrol, J., & Žeželj, I. (2022). Antecedents and consequences of COVID-19 conspiracy beliefs: A systematic review. *Social Science & Medicine, 301*, 114912.
van Prooijen J.-W. (2022a). Injustice Without Evidence: The Unique Role of Conspiracy Theories in Social Justice Research. *Social Justice Research*, *35*(1), 88–106.
van Prooijen, J.-W. (2016). Sometimes inclusion breeds suspicion: Self-uncertainty and belongingness predict belief in conspiracy theories. *European Journal of Social Psychology, 46*(3), 267–279.
van Prooijen, J.-W. (2018). Belief in conspiracy theories: Basic principles of an emerging research domain. European Journal of Social Psychology, 48(7), 897–908.
van Prooijen, J.-W. (2020). An existential threat model of conspiracy theories. *European Psychologist, 25*(1), 16–25.
van Prooijen, J.-W. (2022b). Psychological benefits of believing conspiracy theories. *Current Opinion in Psychology, 47,* Article 101352.
van Prooijen, J.-W., & Acker, M. (2015). The influence of control on belief in conspiracy theories: Conceptual and applied extensions. *Applied Cognitive Psychology, 29*(5), 753–761.
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.
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*(7), 897–908.
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*(1), 109–115.
van Prooijen, J.-W., & Song, M. (2021). The cultural dimension of intergroup conspiracy theories. *British Journal of Psychology, 112*(2), 455–473.
van Prooijen, J.-W., & van Dijk, E. (2014). When consequence size predicts belief in conspiracy theories: The moderating role of perspective taking. *Journal of Experimental Social Psychology, 55*, 63–73.
van Prooijen, J.-W., & van Lange, P. A. M. (2014). The social dimension of belief in conspiracy theories. In J.-W. van Prooijen & P. A. M. van Lange (Eds.), Power, politics, and paranoia (pp. 237–253). Cambridge University Press.
van Prooijen, J.-W., & van Vugt, M. (2018). Conspiracy theories: Evolved functions and psychological mechanisms. *Perspectives on Psychological Science, 13*(6), 770–788.
van Prooijen, J.-W., Douglas, K. M., & De Inocencio, C. (2018). Connecting the dots: Illusory pattern perception predicts belief in conspiracies and the supernatural. *European*

van Prooijen, J.-W., Krouwel, A. P. M., & Pollet, T. V. (2015). Political extremism predicts belief in conspiracy theories. *Social Psychological and Personality Science, 6*(5), 570–578.

van Prooijen, J.-W., Ligthart, J., Rosema, S., & Xu, Y. (2022a). The entertainment value of conspiracy theories. *British Journal of Psychology, 113*(1), 25–48.

van Prooijen, J.-W., Spadaro, G., & Wang, H. (2022b). Suspicion of institutions: How distrust and conspiracy theories deteriorate social relationships. *Current Opinion in Psychology*, *43*, 65–69.

van Vugt, M., De Cremer, D., & Janssen, D. P. (2007). Gender differences in cooperation and competition: The male-warrior hypothesis. *Psychological Science, 18*(1), 19–23.

Vegetti, F., & Littvay, L. (2022). Belief in conspiracy theories and attitudes toward political violence. *Italian Political Science Review/Rivista Italiana Di Scienza Politica, 52*(1), 18–32.

Vincent, J. (2020). *Something in the air: Conspiracy theorists say 5G causes novel coronavirus, so now they're harassing and attacking UK telecoms engineers*. New York, NY: The Verge.

Voigt, D. C., Dillard, J. P., Braddock, K. H., Anderson, J. W., Sopory, P., & Stephenson, M. T. (2009). Carver and White's (1994) BIS/BAS scales and their relationship to risky health behaviours. *Personality and Individual Differences, 47*(2), 89–93.

von Rueden, C. R., & Jaeggi, A. V. (2016). Men's status and reproductive success in 33 nonindustrial societies: Effects of subsistence, marriage system, and reproductive strategy. *Proceedings of the National Academy of Sciences of the United States of America, 113*(39), 10824–10829.

Wagner-Egger, P., & Bangerter, A. (2007). The truth lies elsewhere: Correlates of belief in conspiracy theories. *Revue Internationale de Psychologie Sociale, 20*, 31-61.

Wagner-Egger, P., Bangerter, A., Delouvée, S., & Dieguez, S. (2022). Awake together: Sociopsychological processes of engagement in conspiracist communities. *Current Opinion in Psychology, 47*, Article 101417.

Wang, X. T., Kruger, D. J., & Wilke, A. (2009). Life history variables and risk-taking propensity. *Evolution and Human Behavior, 30*, 77–84.

Wassens, R. (2020). *Brand in zendmasten lijkt gevoed door complottheorieën* [Cell tower fires appear to be fueled by conspiracy theories]. NRC.

Weidmann, R., Chopik, W. J., Ackerman, R. A., Allroggen, M., Bianchi, E. C., Brecheen, C., Campbell, W. K., Gerlach, T. M., Geukes, K., Grijalva, E., Grossmann, I., Hopwood, C. J., Hutteman, R., Konrath, S., Küfner, A. C. P., Leckelt, M., Miller, J. D., Penke, L., Pincus, A. L., Renner, K. H., … Back, M. D. (2023). Age and gender differences in narcissism: A comprehensive study across eight measures and over 250,000 participants. *Journal of Personality and Social Psychology, 124*(6), 1277–1298.

Whetten, K., Leserman, J., Whetten, R., Ostermann, J., Thielman, N., Swartz, M., & Stangl, D. (2006). Exploring lack of trust in care providers and the government as a barrier to health service use. *American Journal of Public Health, 96*, 716–721.

Whitson, J. A., & Galinsky, A. D. (2008). Lacking control increases illusory pattern perception. *Science, 322*(5898), 115–117.

Whitson, J. A., Galinsky, A. D., & Kay, A. (2015). The emotional roots of conspiratorial perceptions, system justification, and belief in the paranormal. *Journal of Experimental Social Psychology, 56*, 89–95.

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.

Williams, M. N., Marques, M. D., Kerr, J. R., Hill, S. R., Ling, M., & 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*. Advance online publication.

Windsor, T. D., & Anstey, K. J. (2008). A longitudinal investigation of perceived control and cognitive performance in young, midlife and older adults. *Aging, Neuropsychology, and Cognition, 15*(6), 744–763.

Wood, M. J., Douglas, K. M., & Sutton, R. M. (2012). Dead and alive: Beliefs in contradictory conspiracy theories. *Social Psychological and Personality Science, 3*(6), 767–773.

Yang, Z. (2022). Similar attitudes, different strategies: Exploring GMOs conspiracy theories in Chinese online science communication. Public Understanding of Science, 31(5), 606–622.

Yelbuz, B. E., Madan, E., & Alper, S. (2022). Reflective thinking predicts lower conspiracy beliefs: A meta-analysis. *Judgment and Decision Making, 17*(4), 720–744.

Zajenkowski, M., & Matthews, G. (2019). Intellect and openness differentially predict affect: Perceived and objective cognitive ability contexts. *Personality and Individual Differences, 137*, 1–8.

Zajenkowski, M., Jonason, P. K., Leniarska, M., & Kozakiewicz, Z. (2020). Who complies with the restrictions to reduce the spread of COVID-19?: Personality and perceptions of the COVID-19 situation. *Personality and Individual Differences, 166,* 110199.

Zarazińska, A., & Jonason, P. K. (2024). Developing conspiracy theories: Conspiracy beliefs are correlated with perceived childhood adversity. *Evolutionary Behavioral Sciences.* Advance online publication.

Zawistowska, A., Kopecký, R., Příplatová, L., Boschetti, S., Talmont-Kamiński, K., & Flegr, J. (2025). Superstitions, religious identity, and COVID-19 conspiracy beliefs in secularized Czechia. *Journal of Religion in Europe, 18*(2), 1–23.

Zeng, Z. X., Tian, C. Y., Mao, J. Y., van Prooijen, J. W., Zhang, Y., Yang, S. L., Xie, X. N., & Guo, Y. Y. (2024). How does economic inequality shape conspiracy theories? Empirical evidence from China. *The British Journal of Social Psychology, 63*(2), 477–498.

Zhou, Y., & Shen, L. (2021). Confirmation bias and the persistence of misinformation on climate change. *Communication Research, 49*(4), 500–523.

Zisserson, R. N., & Palfai, T. P. (2007). Behavioral activation system (BAS) sensitivity and reactivity to alcohol cues among hazardous drinkers. *Addictive Behaviors, 32*(10), 2178–2186.

Zsidó, A. N. (2024). The effect of emotional arousal on visual attentional performance: A systematic review. *Psychological Research, 88*(1), 1–24.

APPENDICES

Appendix A. Materials and Manipulations

Appendix A1

Local Beliefs in Conspiracies Scale

Instruction. People hold diverse views and beliefs about global events. Please rate the extent to which you agree with the following statements using a scale:

1 = *Strongly disagree*
2 = *Disagree*
3 = *Neither agree nor disagree*
4 = *Agree*
5 = *Strongly agree*

1. Big Pharma is a global conspiracy of doctors and pharmaceutical companies that first create new diseases to then profit from selling vaccines and medications.
2. The world is ruled by the Illuminati, who are behind most significant political decisions, and the rulers and leaders of specific countries are merely puppets in their hands.
3. Coronavirus is a myth and does not actually exist.
4. The 5G network is responsible for spreading COVID-19.
5. The cause of the Polish TU-154 plane crash near Smoleńsk was either an attack or some deliberate action.
6. Global warming is a myth and does not pose as much of a threat as scientists claim.
7. The coronavirus was created by Bill Gates to take control of the world.
8. The real reason for Russia's attack on Ukraine is that secret laboratories in Ukraine, initiated by the United States, were producing biological weapons.
9. Contrails, the white streaks left in the sky by airplanes, are deliberately dispersed toxic chemicals containing radioactive isotopes, viruses, bacteria, and heavy metals.
10. Pharmaceutical companies and the Polish government exaggerate the scale of the pandemic in our country.

Appendix A2

General Childhood Perception

Instruction. Below are statements relating to your childhood. Please indicate how much you agree with each statement using the following scale:

1 = *Strongly disagree*
2 = *Disagree*
3 = *Neither agree nor disagree*
4 = *Agree*
5 = *Strongly agree*

1. My childhood was stable. (R)[9]
2. My childhood was predictable. (R)
3. My childhood was harsh.
4. My childhood was privileged. (R)
5. My childhood was good. (R)
6. My childhood was easy. (R)
7. My childhood was stressful.
8. My childhood was difficult.

[9] *R* = Reversed-coded item.

Appendix A3

Living Condition Questionnaire

Instruction. In the following 12 questions, we will ask you to evaluate your living environment in several ways and at three points in time: past, present, and future. To standardize this, we provide the following definitions.

Stability: a stable environment is consistent and lacks lots of change from day-to-day in terms of finances, relationships, and family. An environment where things are calm and predictable.

Harshness: a harsh environment is one where there are insufficient resources to pay bills and get food. An environment where life was difficult to get by day-to-day.

Competitiveness: a competitive environment is one where you feel the need to beat others for safety and resources within your family and externally. An environment where there are strong divisions between the haves and have-nots.

Dangerousness: a dangerous environment is one where you fear for your life, both from those in your house and others in your community. An environment where mortality is potentially high.

Rate, according to the dimensions below, what were your living conditions like **when you were a child**?

	Very low	**Low**	**Moderate**	**High**	**Very high**
Stability					
Harshness					
Competitiveness					
Dangerousness					

Rate, according to the following dimensions, what are your living conditions like **at this moment**?

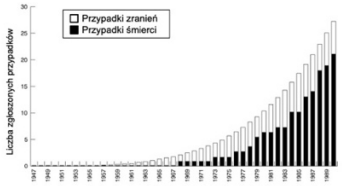
	Very low	**Low**	**Moderate**	**High**	**Very high**
Stability					
Harshness					
Competitiveness					
Dangerousness					

Rate, according to the following dimensions, what will your living conditions look like **in one year from now**?

	Very low	**Low**	**Moderate**	**High**	**Very high**
Stability					
Harshness					
Competitiveness					
Dangerousness					

Appendix A4

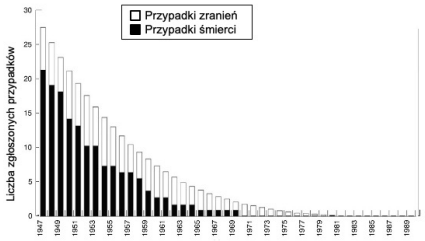
Harshness Manipulation: Original Polish Version

1.	**Dom, Niebezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Wzrasta**	**5.**	**Dom, Niebezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Wzrasta**  **Prognozy Ministerstwa Zdrowia dotyczące wskaźnika wypadków dostarczyły również zaskakujących dowodów na złe nawyki dotyczące bezpieczeństwa w naszym kraju. Wskaźniki urazów i zgonów w wyniku wypadków w gospodarstwie domowym wzrosły o ponad 200% od 1971 roku.**
2.	**Dom, Niebezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Wzrasta**  **Chociaż większość Polaków czuje się bezpiecznie w domu, zdecydowana większość poważnych wypadków ma właśnie w nim miejsce. W zeszłym roku w Polsce doszło do 33 000 zgonów i 8 000 000 obrażeń powodujących kalectwo w domu lub wokół niego.**	**6.**	**Dom, Niebezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Wzrasta**  **Upadek stał się główną przyczyną śmierci w domu. Schody, drabiny, śliskie płytki łazienkowe i pisanie wiadomości tekstowych podczas poruszania się są przyczyną rosnącego poziomu śmiertelności związanej z potykaniem się.**
3.	**Dom, Niebezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Wzrasta**  **Statystyki wskazują, że kuchnia jest miejscem numer jeden pożarów w domu. Pomimo lepszej technologii gotowania, wadliwe urządzenia elektryczne i wyciek gazu w piekarniku nadal powodują około 114 000 pożarów w kuchni rocznie.**	**7.**	**Dom, Niebezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Wzrasta**  **Ekonomiści martwią się, że rosnąca liczba urazów w Polsce może potencjalnie przepełnić możliwości naszych szpitali i spowodować szokujące zadłużenie finansowe wielu Polaków.**
4.	**Dom, Niebezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Wzrasta**  **Ponieważ więcej osób niż kiedykolwiek próbuje gotować w domu, coraz więcej z nich robi sobie krzywdę podczas gotowania. Oparzenia olejem i zranienia nożem stały się częstymi przyczynami wizyt na izbie przyjęć.**		

Note. The number is the order of the displayed slides.

Appendix A5

Safety Manipulation: Original Polish Version

1.	**Dom, Bezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Maleje**	**5.**	**Dom, Bezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Maleje**  **Prognozy Ministerstwa Zdrowia dotyczące wskaźnika wypadków dostarczyły również zaskakujących dowodów na bardzo dobre nawyki dotyczące bezpieczeństwa w naszym kraju. Wskaźniki urazów i zgonów w wyniku wypadków w gospodarstwie domowym spadły o ponad 200% od 1971 roku.**
2.	**Dom, Bezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Maleje**  **Większość Polaków czuje się bezpiecznie w swoim domu, gdyż zdecydowanie maleje liczba poważnych wypadków w domu. W zeszłym roku w Polsce doszło do niewielkiej liczby zgonów i obrażeń powodujących kalectwo, powstałych w domu lub wokół niego.**	**6.**	**Dom, Bezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Maleje**  **Upadek już nie stanowi głównej przyczyny śmierci w domu. Coraz bezpieczniejsze schody, drabiny i płytki łazienkowe, uważniejsze pisanie wiadomości tekstowych podczas poruszania się po domu już nie stanowią przyczyny rosnącego poziomu śmiertelności związanej z potykaniem się.**
3.	**Dom, Bezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Maleje**  **Statystyki wskazują, że kuchnia jest miejscem, w którym znacznie spadła liczba wypadków, takich jak pożary. Dzięki coraz lepszej technologii gotowania, bezpieczniejszych urządzeń elektrycznych i skutecznych zabezpieczeń przed wyciekiem gazu w piekarniku liczba pożarów w kuchni znacznie spada z roku na rok.**	**7.**	**Dom, Bezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Maleje**  **Ekonomiści informują, że malejąca liczba urazów w Polsce i odpowiednie możliwości naszych szpitali mogą spowodować oszałamiające oszczędności finansowe wielu Polaków.**
4.	**Dom, Bezpieczny Dom: Liczba Poważnych Wypadków w Gospodarstwie Domowym Maleje**   **Więcej osób niż kiedykolwiek próbuje gotować w domu i coraz mniej z nich robi sobie krzywdę podczas gotowania. Oparzenia olejem i zranienia nożem nie stanowią już częstej przyczyny wizyt na izbie przyjęć.**		

Note. The number is the order of the displayed slides.

Appendix A6

Unpredictability Manipulation: Original Polish Version

Niczego nie jesteśmy w stanie przewidzieć. Czy czeka nas najgorsze?

02.03.2023 15:14

fot. Filip Jaworski / / PARP

Chociaż inflacja znacznie nadwyrężyła nasze portfele i jak pokazało badanie Krajowego Rejestru Długów, w ostatnim półroczu 2/3 Polaków ograniczyło koszty życia, to nie brakuje też takich osób, u których inflacja nie wpłynęła na sytuację finansową. Część Polaków rezygnuje z wyjść do restauracji czy zakupu nowych ubrań, cięcia dotyczą też różnych wydatków, to nie brakuje też takich osób, które nie muszą sobie niczego odmawiać.

Jaka więc jest naprawdę sytuacja finansowa Polaków?

Dane dotyczące aktualnej sytuacji ekonomicznej w Polsce, która przekłada się bezpośrednio na kondycję finansową polskiej rodziny są sprzeczne. Z badań GUS wynika, że niewielkie oszczędności (27% nie ma w ogóle oszczędności), coraz częstsze ograniczanie korzystania z zasobów (woda, prąd, paliwo) odzwierciedlają rozwijający się kryzys gospodarczy w Polsce. Z kolei dane CBOP pokazują, że coraz lepsze kompetencje finansowe społeczeństwa głównie w mniejszych ośrodkach miejskich i wiejskich powodują, że oszczędności finansowe Polaków są coraz większe. **W takim razie, gdzie leży prawda co do sytuacji finansowej Polaków?**

Bez kredytu czy kredyt na życie?

Wysokie stopy procentowe, inflacja i codzienne koszty niewątpliwie mają wpływ na życie Polaków. **Czy Polacy coraz częściej żyją na kredycie**? Blisko co drugi Polak obecnie posiada zobowiązania finansowe w postaci kredytów, pożyczek itp. Zatrważa również procent badanych, mających problemy ze spłatą raty. Co piąty ankietowany przyznaje, że zdarza się, że zalega ze spłatą zobowiązań, a 14%, że został już wszczęty wobec niego proces windykacji z powodu ich niespłacania. **Jednak eksperci nie potrafią jednoznacznie określić, czego możemy się spodziewać co do dalszej sytuacji finansowej w Polsce.**

- *Wszystkie nasze dotychczasowe przewidywania w związku z inflacją, która od wielu miesięcy uszczupla portfele Polaków, okazały się nietrafne – sytuacja w Polsce jest tak zmienna, że trudno jest powiedzieć czy i jakie obszary ulegną zmianie na lepsze lub na gorsze. Jest to o tyle trudne, że grono osób mających problemy ze spłatą zaciągniętych zobowiązań z jednej strony rośnie, dotyczy to zwłaszcza konsumentów, którzy wzięli kredyty w czasie, kiedy obowiązywały niższe stopy procentowe i nie mogą teraz wesprzeć się oszczędnościami. Z drugiej strony nie brakuje osób, które nie mają problemów ze spłatą zobowiązań.* – mówi Kazimierz Wolski z KRD.

Z kolei z badań przeprowadzonych przez KPP wynika, że **ponad połowa Polaków deklaruje, że nie wie, jaka będzie ich sytuacja finansowa za pół roku. 80 proc. zauważa wzrost opłat i zobowiązań, co szósty ma problemy z ich spłatą, co trzeci respondent planuje wziąć kredyt lub pożyczkę na bieżące wydatki. Ponadto 75 proc. Polaków odczuwa strach i niepewność co do swojej przyszłości.**

Co jest przyczyną tak nieprzewidywalnej sytuacji w Polsce?

Sytuacja w Polsce jest na tyle trudna, że eksperci i ekonomiści nie są w stanie postawić pewnych prognoz dotyczących sytuacji finansowej wielu polskich rodzin w najbliższym czasie. Niewątpliwie rosnące ceny energii, gazu, czynszów powodują stopniowe powstawanie wielu problemów. Jak przekonuje Paweł Ronkiewicz – *W pierwszej kolejności Polacy próbują oszczędzać na okazjonalnych wydatkach, jak wizyta w restauracji czy kinie.* ***Jednak nie wiadomo czy to wystarczy.***

Inflacja przyniosła tu poniekąd powtórkę z pandemii. Tyle że to już nie strach przed wirusem powstrzymuje od wyjścia z domu, a obawa przed wysokimi cenami i ich skutkami dla portfela. Wszechobecny jest także strach o to, co przyniesie jutro.

Czy możemy powiedzieć, że najgorsze już za nami? ***Odpowiedź na to pytanie nie jest możliwa****, gdyż jak pokazały dotychczasowe doświadczenia, w ciągu ostatnich 3 lat miało miejsce wiele rzeczy, których nie udało się przewidzieć – dlatego nie możemy z całą pewnością stwierdzić, że będzie już tylko lepiej* – dodaje Paweł Ronkiewicz.

Nie wiemy co nas czeka

Aktualna sytuacja gospodarcza jest efektem wielu nieprzewidzianych czynników – działań polityków, spóźnionej reakcji Banku Centralnego, a także wojny na Ukrainie – mówi Mariusz Garbacz z Katedry Ekonomii Akademii Leona Koźmińskiego.

Kilkukrotny wzrost cen m.in. gazu oraz energii na rynkach światowych spowodował, że wiele przedsiębiorstw zaczęło balansować na granicy rentowności, a nawet stracie. Przełożyło się to na rosnący poziom bezrobocia w Polsce, szczególnie w małych i średnich przedsiębiorstwach, które nie dość, że mają problem z popytem na swoje towary lub usługi, to jeszcze często nie są w stanie utrzymać swoich pracowników. Nie wiemy, czy ten trend się odmieni. – dodaje.

Zdaniem ekonomisty dla gospodarki trudno o gorsze wieści.

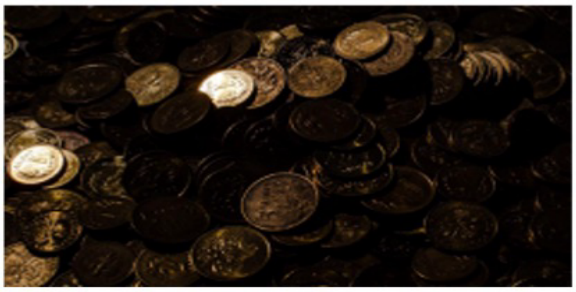
– Wraz ze wzrostem inflacji coraz gorzej oceniamy nasze perspektywy na przyszłość, szczególnie że wynagrodzenia w ujęciu realnym tracą swoją siłę nabywczą. Nawet w tej mniejszej części społeczeństwa posiadającej oszczędności obserwujemy coraz szybszą utratę poczucia bezpieczeństwa, proporcjonalnie do szybkości wyczerpywania się zasobów – mówi. *– Nie możemy mieć złudzeń, nie jesteśmy w stanie przewidzieć czy sytuacja życiowa Polaków ulegnie poprawie. Dobry nastrój się skończył. Coraz mniej przekonuje nas sentencja, że „jakoś to będzie"* – dodaje.

Appendix A7

Predictability Manipulation: Original Polish Version

W końcu stabilnie! Coraz niższy poziom bezrobocia i coraz większe oszczędności Polaków.

02.03.2023 15:14



fot. Filip Jaworski / / PARP

Chociaż inflacja na początku 2022 roku istotnie uszczupliła nasze portfele, to jak pokazuje badanie Krajowego Rejestru Długów, w ostatnim półroczu 2/3 Polaków poprzez ograniczenie kosztów życia zwiększyło swoje oszczędności. Rozsądne gospodarowanie pieniędzmi i racjonalne przeznaczanie ich na wyjście do restauracji czy zakup nowych ubrań, kontrolowanie wydatków na wyposażenie domu, kulturę i rozrywkę oraz podróże przekłada się na wzrost oszczędności Polaków.
60 proc. ankietowanych będzie dalej oszczędzać pieniądze i kontrolować wydatki również w kolejnych miesiącach.

Coraz lepsza sytuacja finansowa wielu Polaków
Aktualna sytuacja ekonomiczna w Polsce przekłada się bezpośrednio na kondycję finansową oraz zarządzanie budżetem w polskich rodzinach. Coraz większe oszczędności (aż 73% badanych posiada oszczędności), coraz częstsze ograniczanie korzystania z zasobów (woda, prąd, paliwo) **odzwierciedlają rozwijającą się świadomość finansową w Polsce**. Do tego coraz większe kompetencje finansowe społeczeństwa, również w mniejszych ośrodkach miejskich i wiejskich powodują, że oszczędności finansowe Polaków będą się zwiększać, a ich sytuacja finansowa będzie stabilna.

Bez kredytu na życie
Chociaż wysokie stopy procentowe, inflacja i codzienne koszty sprawiają, że każdy zaczyna sprawdzać portfel, **to Polacy coraz rzadziej żyją na kredycie**. Blisko **co drugi Polak obecnie nie posiada już zobowiązań finansowych w postaci kredytów**, pożyczek itp. Dane są bardzo optymistyczne, procent badanych mających problemy ze spłatą raty stale się zmniejsza. Coraz mniej ankietowanych przyznaje, że zdarza im się zalegać ze spłatą zobowiązań, a jedynie 5% badanych stwierdza, że został już wszczęty wobec nich proces windykacji z powodu ich niespłacania.
Eksperci są **optymistyczni co do dalszej sytuacji finansowej w Polsce.**
- *Nasze prognozy co do poziomu inflacji i sytuacji finansowej w kraju w ostatnich miesiącach okazały się trafne. Analizując sytuację w kraju i na świecie, przewidujemy, że inflacja, która od wielu miesięcy uszczuplała portfele Polaków, znacząco będzie spadać i będzie zmniejszać grono osób mających problemy ze spłatą zaciągniętych zobowiązań. Dotyczy to zwłaszcza konsumentów, którzy wzięli kredyty w czasie, kiedy obowiązywały niższe stopy procentowe, a nie mogli teraz wesprzeć się oszczędnościami, ich sytuacja znacząco się poprawi* – mówi Kazimierz Wolski z KRD.

Z kolei z badań przeprowadzonych przez CBOP wynika, że **ponad połowa Polaków deklaruje, że ich sytuacja finansowa nie pogorszyła się i jest stabilna, chociaż 80 proc. zauważa wzrost opłat i zobowiązań, to jedynie co 10 respondent ma problemy z ich spłatą, a co 20 planuje wziąć kredyt lub pożyczkę na bieżące wydatki.**

Co spowodowało poprawę sytuacji w Polsce?
Chociaż rosnące ceny energii, gazu, czynszów powodowały stopniowe powstawanie problemów z wywiązywaniem się z drobnych regularnych płatności, ta sytuacja uległa zmianie. Jak przekonuje Paweł Ronkiewicz – *W pierwszej kolejności Polacy zwiększając swoją świadomość finansową, próbują oszczędzać na okazjonalnych wydatkach, jak wizyta w restauracji czy kinie. Z całą pewnością możemy powiedzieć, że sytuacja w Polsce jest stabilna.*

Lepsze jest przed nami
Aktualna sytuacja gospodarcza jest efektem wielu czynników, w tym wojny na Ukrainie – mówi Mariusz Garbacz z Katedry Ekonomii Akademii Leona Koźmińskiego. *Kilkukrotny wzrost cen m.in. gazu oraz energii na rynkach światowych spowodował, że wiele przedsiębiorstw zaczęło balansować na granicy rentowności. Jednak mimo trudności stopa bezrobocia wynosi zaledwie 5,2% i stale będzie spadać* – dodaje.
Zdaniem ekonomisty dla gospodarki są to bardzo dobre wieści.
*– Mimo wzrostu inflacji coraz lepiej oceniamy nasze perspektywy na przyszłość, biorąc pod uwagę wzrost wynagrodzeń w wielu sektorach. Coraz większe oszczędności finansowe Polaków, rosnąca zdolność do oszczędzania i kontrolowania domowego budżetu powoduje, że **Polacy nie boją się o swoją przyszłość**, ponieważ mają poczucie bezpieczeństwa* – mówi. *– Prognozy są niezwykle obiecujące i wprawiają w dobry nastrój. Towarzyszy nam sentencja „będzie dobrze!"* – dodaje.

Table B1

An Exploratory Factor Analysis for beliefs in conspiracies measured by the Generic Conspiracist Beliefs scale and the Conspiracy Mentality Questionnaire

Item	Factor 1	Factor 2	Factor 3
CMQ1: Many very important things happen in the world, which the public is never informed about.	.27	**.76**	.20
CMQ2: Politicians usually do not tell us the true motives for their decisions.	.17	**.73**	.07
CMQ3: Government agencies closely monitor all citizens.	.33	**.55**	.20
CMQ4: Events which superficially seem to lack a connection are often the results of secret activities.	.43	**.47**	.32
CMQ5: There are secret organizations that greatly influence political decisions.	**.50**	.54	.31
GCBS1: The government is involved in the murder of innocent citizens and/or well-known public figures, and keeps this a secret.	**.56**	.49	.16
GCBS2: The power held by heads of state is second to that of small unknown groups who really control world politics.	**.65**	.32	.25
GCBS3: Secret organizations communicate with extraterrestrials, but keep this fact from the public.	.38	.07	**.74**
GCBS4: The spread of certain viruses and/or diseases is the result of the deliberate, concealed efforts of some organization.	**.55**	.34	.45
GCBS5: Groups of scientists manipulate, fabricate, or suppress evidence in order to deceive the public.	**.50**	.33	.30
GCBS6: The government permits or perpetrates acts of terrorism on its own soil, disguising its involvement.	**.57**	.48	.20
GCBS7: A small, secret group of people is responsible for making all major world decisions, such as going to war.	**.71**	.26	.24
GCBS8: Evidence of alien contact is being concealed from the public.	.12	.22	**.75**

Item	Factor 1	Factor 2	Factor 3
GCBS9: Technology with mind-control capacities is used on people without their knowledge.	**.61**	.21	.42
GCBS10: New and advanced technology which would harm current industry is being suppressed.	.41	**.44**	.05
GCBS11: The government uses people as patsies to hide its involvement in criminal activity.	**.57**	.53	.14
GCBS12: Certain significant events have been the result of the activity of a small group who secretly manipulate world events.	**.69**	.32	.27
GCBS13: Some UFO sightings and rumors are planned or staged in order to distract the public from real alien contact.	.25	.12	**.79**
GCBS14: Experiments involving new drugs or technologies are routinely carried out on the public without their knowledge or consent.	**.60**	.31	.31
GCBS15: A lot of important information is deliberately concealed from the public out of self-interest.	.28	**.69**	.14
Eigenvalue	4.76	4.03	2.88
% Variance	23.8	20.1	14.4
Cumulative %	23.8	44.0	58.4

Note. Extraction method: Principal Axis Factoring.

Table B2

Descriptive statistics and correlations between living conditions and life history strategies

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Instability	--											
2. Harshness	.43**	--										
3. Competitiveness	.08	.46**	--									
4. Dangerousness	.41**	.63**	.44**	--								
5. Life history strategy	-.45**	-.28**	.10	-.21**	--							
6. Insight, planning, and control	-.28**	-.17**	.12†	-.11†	.67**	--						
7. General altruism	-.14*	-.01	.10†	.01	.64**	.39**	--					
8. Religiosity	-.10†	.09	.07	.09	.34**	.10	.21**	--				
9. Romantic partner	-.24**	-.30**	-.13*	-.23**	.34**	.09	-.07	.05	--			
10. Parental relationship quality	-.44**	-.33**	.08	-.29**	.56**	.26**	.11†	.01	.13*	--		
11. Family social contact support	-.36**	-.25**	.08	-.16**	.72**	.39**	.38**	.02	.08	.45**	--	
12. Friends social contact support	-.21**	-.12†	.07	-.14*	.67**	.39**	.50**	-.07	.05	.22**	.52**	--
Cronbach's α	.69	.77	.85	.80	.89	.86	.71	.93	.79	.87	.93	.93
Overall *M* (SD)	2.36 (0.87)	2.03 (0.90)	2.52 (1.15)	1.66 (0.84)	3.87 (0.61)	4.39 (0.94)	3.21 (0.82)	2.57 (1.19)	4.44 (0.93)	4.51 (1.13)	3.88 (1.29)	4.08 (1.22)
Men *M* (SD)	2.41 (0.88)	2.07 (0.99)	2.61 (1.10)	1.71 (0.84)	3.77 (0.62)	4.26 (0.94)	3.10 (0.85)	2.64 (1.22)	4.48 (1.03)	4.42 (1.08)	3.72 (1.18)	3.73 (1.14)
Women *M* (SD)	2.32 (0.85)	1.99 (0.83)	2.46 (1.16)	1.61 (0.81)	3.94 (0.59)	4.47 (0.93)	3.29 (0.79)	2.25 (1.18)	4.42 (0.88)	4.58 (1.14)	3.99 (1.32)	4.27 (1.21)
t-test	0.86	0.64	1.05	0.98	-2.29**	-1.75†	-1.86†	0.64	0.53	-1.14	-1.75†	-3.67**
Hedges' *g*	0.10	0.09	0.13	0.12	-0.28	-0.23	-0.23	0.33	0.06	-0.14	-0.21	-0.46

† $p < .10$, * $p < .05$, ** $p < .01$

Table B4

Correlations between living conditions in three time points

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Stability in the Past	--											
2. Harshness in the Past	-.51**	--										
3. Competitiveness in the Past	-.09	.42**	--									
4. Dangerousness in the Past	-.47**	.56**	.42**	--								
5. Stability Now	.30**	-.20**	-.12*	-.25**	--							
6. Harshness Now	-.18**	.48**	.33**	.32**	-.39**	--						
7. Competitiveness Now	.08	.19**	.56**	.17**	-.11†	.36**	--					
8. Dangerousness Now	-.16**	.37**	.40**	.46**	-.34**	.53**	.37**	--				
9. Stability in the Future	.30**	-.12*	-.02	-.18**	.69**	-.30**	-.08	-.29**	--			
10. Harshness in the Future	-.13*	.34**	.33**	.31**	-.31**	.77**	.39**	.51**	-.40**	--		
11. Competitiveness in the Future	.05	.17**	.56**	.20**	-.09	.38**	.86**	.34**	-.14*	.47**	--	
12. Dangerousness in the Future	-.11†	.29**	.33**	.46**	-.28**	.47**	.32**	.77**	-.33**	.58**	.39**	--

† $p < .10$, * $p < .05$, ** $p < .01$

Table C1

Correlations for personality, motivational systems, and situational characteristics

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Openness/Intellect	--																
2. Conscientiousness	.37**	--															
3. Extraversion	.37**	.24**	--														
4. Agreeableness	.44**	.40**	.46**	--													
5. Emotional Stability	.29**	.23**	.39**	.13**	--												
6. Duty	.29**	.30**	.15**	.37**	.06	--											
7. Intellect	.28**	.28**	.16**	.32**	.11*	.75**	--										
8. Adversity	-.33**	-.31**	-.19**	-.28**	-.25**	-.15**	-.10*	--									
9. Mating	-.06	.06	.18**	.11*	.06	.26**	.34**	.24**	--								
10. pOsitivity	-.10*	.03	.22**	.10*	.20**	.14**	.20**	.08†	.45**	--							
11. Negativity	-.03	-.02	-.13**	-.04	-.33**	.21**	.21**	.31**	.20**	-.31**	--						
12. Deception	-.21**	-.15**	-.20**	-.09	-.24**	.05	.08†	.40**	.23**	-.07	.54**	--					
13. Sociality	.11*	.21**	.26**	.32**	.04	.43**	.44**	.01	.46**	.33**	.26**	.31**	--				
14. BIS	-.12*	-.04	-.27**	.02	-.49**	.12*	.03	.16**	-.01	-.19**	.30**	.17**	.03	--			
15. BAS Fun Seeking	.01	-.09†	.27**	.07	.08†	.07	.13**	.14**	.28**	.27**	.06	.08	.19**	-.05	--		
16. BAS Reward	.23**	.24**	.20**	.23**	.01	.33**	.31**	-.06	.27**	.17**	.14**	.07	.26**	.27**	.46**	--	
17. BAS Drive	.05	.07	.24**	-.01	.14**	.09†	.17**	.15**	.27**	.30**	.01	.06	.14**	-.14**	.62**	.54**	--

Note. BAS = Behavioral Activation System. BIS = Behavioral Inhibition System.

† $p < .10$, * $p < .05$, ** $p < .01$

Table D1

Descriptive statistics, correlations, and sex differences for childhood conditions, Dark Triad traits, life history strategy, general and local beliefs in conspiracies, and coping strategies

Variable	1	2	3	4	5	6	7	8	9	10
1. Machiavellianism	--									
2. Narcissism	.24**	--								
3. Psychopathy	.64**	.26**	--							
4. Life history strategy	-.11*	.18**	-.20**	--						
5. Difficult childhood	.11*	-.08	.05	-.32**	--					
6. Constructive coping strategies	.02	.29**	-.04	.35**	-.13*	--				
7. Problematic coping strategies	.20**	-.16**	.27**	-.18**	.07	-.21**	--			
8. Social coping strategies	-.29**	.11*	-.27**	.46**	-.23**	.26**	.02	--		
9. General beliefs in conspiracies	.30**	.15**	.21**	.01	.19**	.05	.19**	-.05	--	
10. Local beliefs in conspiracies	.14**	.15**	.19**	.06	.15**	.01	.09†	.03	.73**	--
Cronbach's α	.78	.76	.69	.78	.90	.50	.62	.58	.93	.90
Overall: *M* (SD)	3.11 (0.67)	2.73 (0.65)	2.35 (0.52)	0.95 (0.81)	2.85 (0.90)	1.72 (0.36)	1.12 (0.48)	1.35 (0.63)	2.70 (0.88)	1.91 (0.77)
Men: *M* (SD)	3.25 (0.63)	2.74 (0.64)	2.45 (0.52)	0.83 (0.76)	2.88 (0.83)	1.71 (0.35)	1.10 (0.50)	1.20 (0.60)	2.68 (0.87)	1.86 (0.73)
Women: *M* (SD)	2.96 (0.69)	2.72 (0.66)	2.24 (0.50)	1.09 (0.84)	2.82 (0.97)	1.74 (0.38)	1.15 (0.46)	1.51 (0.63)	2.72 (0.90)	1.96 (0.81)
t-test	-4.09**	-0.31	-3.92**	3.06**	-0.67	0.57	0.93	4.71**	0.37	1.18
Hedges' *g*	-0.44	-0.03	-0.41	0.33	-0.07	0.08	0.10	0.50	0.05	0.13

† $p < .10$, * $p < .05$, ** $p < .01$

Table D2

Descriptive statistics and correlations among coping strategies, as well as general and local beliefs in conspiracies

Variable	*M* (SD)	GBC	LBC	Steiger's *z*
Constructive coping strategies				
Active coping	2.05 (0.63)	-.09†	-.07	-0.37
Planning	2.07 (0.67)	-.08	-.11*	0.56
Reframing	1.57 (0.77)	.12*	.15**	-0.56
Acceptance	1.90 (0.61)	.02	-.05	1.30
Humor	1.06 (0.67)	.07	.05	0.37
Self-distraction	1.69 (0.72)	.11*	.02	1.67*
Problematic coping strategies				
Behavioral disengagement	0.96 (0.68)	.07	-.01	1.49
Denial	0.77 (0.72)	.18**	.22**	-0.76
Venting	1.48 (0.61)	.16**	.07	1.68*
Substance use	0.73 (0.92)	.12*	.02	1.86*
Self-blame	1.67 (0.82)	.08	-.01	1.67*
Social coping strategies				
Religion	0.80 (0.95)	.09†	.22**	-2.45**
Using emotional support	1.60 (0.83)	-.10†	-.07	-0.56
Using instrumental support	1.65 (0.79)	-.12*	-.13*	0.19

Note. GBC = General beliefs in conspiracies; LBC = Local beliefs in conspiracies; *z*s are Steiger's *z* to control for the correlation between beliefs in conspiracies.
† $p < .10$, * $p < .05$, ** $p < .01$

To determine if these correlations were consistent between men and women, we compared the zero-order correlations for each sex using Fisher's *z* test. We found that positive reframing was more strongly (Fisher's $z = -2.21$, $p < .05$) associated with general beliefs in conspiracies in women ($r = .24$, $p < .01$) than in men ($r = .01$). Conversely, self-blame was more strongly (Fisher's $z = 1.90$, $p < .05$) associated with general beliefs in conspiracies in men ($r = .18$, $p < .05$) than in women ($r = -.02$). Additionally, use of instrumental support was more strongly (Fisher's $z = 2.21$, $p < .05$) linked to local beliefs in conspiracies in women ($r = -.25$, $p < .01$) than in men ($r = -.02$). We acknowledge that if we corrected for type I error inflation, none of these effects would remain.

Appendix E. Supplementary Analyses and Reliability Statistics for Study 4

Table E1

Exploratory Factor Analysis Loadings for the Local Beliefs in Conspiracies Scale

Item	Factor 1
1. The coronavirus was created by Bill Gates to take control of the world.	.81
2. Big Pharma is a global conspiracy of doctors and pharmaceutical companies that first create new diseases to then profit from selling vaccines and medications.	.76
3. The world is ruled by the Illuminati, who are behind most significant political decisions, and the rulers and leaders of specific countries are merely puppets in their hands.	.76
4. Contrails, the white streaks left in the sky by airplanes, are deliberately dispersed toxic chemicals containing radioactive isotopes, viruses, bacteria, and heavy metals.	.75
5. The real reason for Russia's attack on Ukraine is that secret laboratories in Ukraine, initiated by the United States, were producing biological weapons.	.74
6. Coronavirus is a myth and does not actually exist.	.71
7. The 5G network is responsible for spreading COVID-19.	.68
8. Pharmaceutical companies and the Polish government exaggerate the scale of the pandemic in our country.	.68
9. Global warming is a myth and does not pose as much of a threat as scientists claim.	.54
10. The cause of the Polish TU-154 plane crash near Smoleńsk was either an attack or some deliberate action.	.53
% Variance accounted for	49.2
Eigen Value	5.40

Note. Extraction method: Principal Axis Factoring; rotation method: Oblimin. Number of iterations to convergence = 4.

Appendix F. Supplementary Analyses and Reliability Statistics for Study 5

Table F1

Confirmatory Factor Analysis for Local Beliefs in Conspiracies Scale

Item	Loading	*SE*	*Z*	*p*
LBC1	.75	0.04	18.2	< .001
LBC2	.78	0.04	19.5	< .001
LBC3	.62	0.03	20.7	< .001
LBC4	.43	0.02	18.1	< .001
LBC5	.68	0.05	14.4	< .001
LBC6	.58	0.04	15.6	< .001
LBC7	.57	0.03	22.7	< .001
LBC8	.62	0.03	20.9	< .001
LBC9	.55	0.03	20.9	< .001
LBC10	.93	0.05	18.5	< .001

Note. Extraction method: Maximum Likelihood. All items loaded significantly on the Local Beliefs in Conspiracies factor. Factor loadings ranged from .43 to .93. The full text of the item is in Appendix A1.

Appendix G. Additional Appendices

Table G1

Domain of beliefs in conspiracies and references

Domain	References
COVID-19	• Freeman et al., 2022
anti-vaccination	• Jolley & Douglas, 2014a, 2017; Shapiro et al., 2016; Taubert et al., 2024
GMO	• Yang, 2022; Erokhin & Komendantova, 2023
chemtrails	• Shearer et al., 2016; Tingley & Wagner, 2017
5G masts	• Ahmed et al., 2020; Flaherty et al., 2022
Jewish conspiracy	• Kofta & Sedek, 2005; Bilewicz et al., 2013
"New World Order"	• Cugler de Moraes Silva, 2024

Note. The complete list of references is provided in the References section.

Table G2

Overview of general hypotheses and predictions across studies

Study No.	Research Questions	Hypotheses and Predictions
1	**Q1.** Do beliefs in conspiracies relate to perceived ecological adversity (living conditions) across different developmental stages, specifically childhood, present, and future expectations? **Q2.** Are individuals with faster life history strategies more likely to endorse beliefs in conspiracies? **Q3.** Do the type of measurement (GCBS vs. CMQ) and sex moderate these associations? **Q4.** Are there sex differences in life history strategies, perceived adversity, and beliefs in conspiracies?	**General Hypothesis:** **H1:** *If beliefs in conspiracies are adaptively calibrated responses as proposed by life history theory, then they will be positively associated with the life history strategy and with subjective perception of ecological adversity.* **Predictions:** **P1.1.** Beliefs in conspiracies will be positively associated with perceived ecological adversity in childhood, in the present, and in the anticipated future. **P1.2.** Individuals with faster life history strategies will report stronger endorsement of beliefs in conspiracies. **P1.3.** The association in P1.1. and P1.2. will differ on the type of measurement (GCBS vs. CMQ) and sex. **P1.4.** Men will exhibit faster life history strategies than women. **P1.5.** Men will endorse stronger beliefs in conspiracies than women. **P1.6.** Men will rate their living conditions as more adverse than women.

Study No.	Research Questions	Hypotheses and Predictions
2	**Q5.** Are Big Five personality traits, motivational systems, and perceived situational characteristics linked to beliefs in conspiracies? **Q6.** Are situational perceptions of deception, adversity, negativity, and lower intellect associated with higher beliefs in conspiracies? **Q7.** (*Exploratory)* Do these associations differ by sex?	**General Hypothesis:** **H2:** *If beliefs in conspiracies are linked to dispositional, motivational, and situational factors, then these beliefs will be associated with personality traits, motivational systems, and perceived situational characteristics*. **Predictions:** **P2.1.** Agreeableness, conscientiousness, and intellect (within the domain of openness/intellect) will be negatively associated with beliefs in conspiracies. **P2.2.** Higher sensitivity of the Behavioral Inhibition System will be positively linked to beliefs in conspiracies. **P2.3.** Perceiving situations as higher in deception, adversity, and negativity will be positively associated with beliefs in conspiracies. **P2.4.** Perceiving situations as higher in intellect will be negatively linked to beliefs in conspiracies.
3	**Q8.** Are beliefs in conspiracies linked to developmental and personality factors such as childhood adversity, life history strategy, coping strategies, and the Dark Triad traits?	**General Hypothesis:** **H3:** *If beliefs in conspiracies serve as calibrated responses to early adversity, then they will be positively associated with developmental factors (childhood adversity, life history strategy, coping strategies) and antagonistic personality traits (Dark Triad).*

Study No.	Research Questions	Hypotheses and Predictions
	Q9. Do general and local beliefs in conspiracies differ in whether they are more strongly associated with developmental factors (life history strategy, childhood conditions, coping strategies) or personality traits? **Q10.** Do these associations differ by sex?	**Predictions:** **P3.1.** Perceived childhood adversity will be positively associated with beliefs in conspiracies. **P3.2.** Faster life history strategies will be linked with stronger endorsement of beliefs in conspiracies. **P3.3.** Dark Triad traits will be positively associated with beliefs in conspiracies. **P3.4.** Beliefs in conspiracies will be positively linked to problematic coping strategies. **P3.5.** The associations between childhood adversity, life history strategy, problematic coping strategies, the Dark Triad traits, and beliefs in conspiracies will be moderated by sex and by belief type (general vs. local). **P3.6.** Men will exhibit faster life history strategies than women. **P3.7.** Men will endorse stronger beliefs in conspiracies than women. **P3.8.** Men will perceive their childhood conditions as more adverse than women.
4	**Q11.** Does priming ecological harshness increase beliefs in conspiracies compared to the neutral condition?	**General Hypothesis:** **H4:** *If individuals are exposed to ecological cues of harshness, then their beliefs in conspiracies will increase.*

Study No.	Research Questions	Hypotheses and Predictions
	Q12. Does the effect of an ecological harshness prime differ between general and local beliefs in conspiracies? **Q13.** (*Exploratory)* Does the effect of the harshness prime differ by sex?	**Predictions:** **P4.1.** Participants exposed to the ecological harshness prime will report higher beliefs in conspiracies than participants in the neutral condition. **P4.2.** Participants exposed to the ecological harshness prime will exhibit a larger increase in general than in local beliefs in conspiracies.
5	**Q14.** Does priming ecological unpredictability increase beliefs in conspiracies compared to the neutral condition? **Q15.** Does the effect of an ecological unpredictability prime differ between general and local beliefs in conspiracies? **Q16.** (*Exploratory)* Does the effect of the unpredictability prime differ by sex?	**General Hypothesis:** **H5**: *If individuals are exposed to ecological cues of unpredictability, then their beliefs in conspiracies will increase.* **Predictions:** **P5.1.** Participants exposed to the ecological unpredictability prime will report higher beliefs in conspiracies than participants in the neutral condition. **P5.2.** Participants exposed to the ecological unpredictability prime will exhibit a larger increase in general than in local beliefs in conspiracies.

Note. This table summarizes the hypotheses and predictions tested in the present dissertation, compiled across all empirical studies (Studies 1-5).

Table G3

Cronbach's alpha in previous validation studies

Construct	Instrument	Language	Subscales	*α*
Beliefs in conspiracies	Generic Conspiracist Beliefs Scale	English Polish	—	.93 (both versions)
	Conspiracy Mentality Questionnaire	English	—	.85
Life history strategy	*K*-SF-42	English	—	.84 to .89
	Mini-*K* Scale	English Polish	—	.66 to .85 .76
Personality traits	International Personality Item Pool	Polish	extraversion agreeableness conscientiousness emotional stability openness/intellect	.78 .71 .75 .70 .65
	Short Dark Triad	Polish	Machiavellianism narcissism psychopathy	.73 .73 .67
Motivational systems	BIS-BAS Scale	Polish	BIS BAS Drive BAS Reward Responsiveness BAS Fun Seeking	.74 .78 .58 .69
Coping strategies	Mini-COPE	Polish	—	.78
Situational characteristics	*S8** Scale	Polish	duty intellect adversity mating positivity negativity deception sociality	.89 .84 .73 .67 .89 .93 .87 .77

Note. Cronbach's *α* values are reported from previous validation studies for the language versions of the instruments used in this dissertation.

Table G4

Summary table of all studies

Study No.	Aim and Participants	Results	Key conclusions
1	**Evolutionary-developmental correlational test** We tested links between beliefs in conspiracies, life history strategy, and perceived ecology across childhood, the present, and the anticipated future. *N* = 285 adults, international sample.	• Beliefs in conspiracies increased with perceptions of a Harsh, Competitive, and Dangerous ecology across all time frames. • The global life history speed index did not show a clear direct link. • Instrument differences were small. • Sex differences were minor. **Harshness ↑. Dangerousness ↑. Competitiveness ↑.**	• Partial support for adaptive calibration. • Perceived ecology is more informative than a single global life history score.
2	**Dispositional, motivational and situational factors** We included the Big Five, BIS and BAS, and DIAMONDS to test dispositional, motivational, and situational links with beliefs in conspiracies. *N* = 429 Polish adults.	• Higher beliefs in conspiracies correlated with lower Intellect (aspect of openness), lower Emotional Stability, higher BAS Drive and BAS Fun Seeking. • Perception of Adversity, Deception, Negativity, Positivity, Sociality, Mating is positively linked with beliefs in conspiracies. **Intellect ↓. Emotional Stability ↓. BAS Drive ↑. BAS Fun Seeking ↑. Adversity ↑. Deception ↑. Negativity ↑. Positivity ↑. Sociality ↑. Mating ↑.**	• Personality, motivation, and perceived situations relate to beliefs in conspiracies. • Motivational and situational paths are clearer than broad Big Five effects.
3	**Expanded evolutionary-developmental and personality model**	• Childhood adversity related positively to both general and local beliefs in conspiracies.	• Early adversity and antagonistic disposition,

	We added the Dark Triad, coping, life history strategy, and perceived childhood adversity. We compared general and local beliefs in conspiracies and explored sex moderation. *N* = 360 Polish adults.	• Global life history strategy showed no clear association. • DT associated with beliefs in conspiracies. • Machiavellianism partially mediated the link between childhood adversity and general beliefs. **childhood adversity ↑.** **Machiavellianism ↑. narcissism ↑. psychopathy ↑.** GBC > LBC	especially Machiavellianism, relate to beliefs in conspiracies. • Global life history speed and coping were not robust predictors.
4	**Situationally evoked responses** Experimental induction of ecological harshness versus safety versus neutral. We tested domain and sex moderation. *N* = 816 Polish adults.	• Very strong domain effect with general beliefs in conspiracies higher than local. • No main effect of condition. • Small sex differences only. • Small domain and sex interaction GBC > LBC	• Brief text primes did not change endorsement of beliefs in conspiracies. • The general over local pattern was robust.
5	**Situationally evoked responses** Experimental induction of ecological unpredictability versus predictability versus neutral. *N* = 687 Polish adults.	• Very strong domain effect with general beliefs in conspiracies higher than local. • No main effect of condition. Small main effect of sex. GBC > LBC	• Unpredictability primes did not change endorsement. • The general over local pattern replicated.
4 & 5	**Situationally evoked responses**	• Strong domain effect with general beliefs in conspiracies higher than local.	• Brief predictability and unpredictability primes

	Pooled experimental comparison. We compared brief contextual primes of harshness, safety, unpredictability, predictability, and neutral, and tested domain and sex moderation.	• No domain and condition interaction and no interactions with sex. **safety ↑. harshness ↑.** **neutral ↑ (vs. predictability, unpredictability).** GBC > LBC	did not raise beliefs in conspiracies. • The domain gap is stable across conditions and sex.

Note. ↑ Positive correlation or a higher level of beliefs in conspiracies. ↓ Negative correlation or a lower level of beliefs in conspiracies.
GBC = General beliefs in conspiracies. LBC = local beliefs in conspiracies.