

University of Nevada, Reno

Pride and Status: Unpacking Two Divergent Pathways to Cooperation

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in
Social Psychology

by

Kodai Kusano

Dr. Markus Kemmelmeier/Dissertation Advisor

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THE GRADUATE SCHOOL

We recommend that the dissertation
prepared under our supervision by

entitled

be accepted in partial fulfillment of the
requirements for the degree of

Advisor

Committee Member

Committee Member

Committee Member

Graduate School Representative

Markus Kemmelmeier, Ph.D., Dean
Graduate School

Abstract

Cooperation is essential for addressing social dilemma problems, especially in modern society with rapidly growing human populations and changing ecology. The scientific community and policymakers have recognized the potential of emotions to facilitate effective communication of sustainability and large-scale cooperation. However, research has not yet explored which emotions are specifically linked to promoting cultures of cooperation and sustainability. This dissertation focuses on pride and its proposed dual nature in influencing prosocial motivations through status hierarchy. According to a prominent theory, pride consists of authentic pride and hubristic pride, both of which are tied to different types of status attainment, prestige and dominance. The main behavioral experiment in this study involved creating a status hierarchy and using the Ultimatum Game (UG) to test novel hypotheses. It was found that participants were more willing to offer a fair split of money to opponents who displayed a prestigious expression after outperforming them in three cognitive tasks. However, when participants played against a superior opponent who displayed dominance after outperforming them, they were no more likely to offer money compared to a neutral condition without any status differentiation. The results have important implications for the current literature on the relationship between pride and status and its role in promoting cooperation. Additionally, this research has practical applications, but there are several limitations that should be acknowledged. Future directions for further research challenging the two-facet theory of pride/status are discussed. Overall, this dissertation contributes to the understanding of the complex role of pride in cooperation and sheds light on the dynamics of human social interactions and status hierarchies.

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Chapter 1: Introduction

Imagine you are one of ten herders in a village sharing a pasture. It is rational to graze as many cattle as possible as an individual, but if everyone does the same, the commons will be depleted. Cooperation is needed to avoid collective suffering. During a pandemic, self-interest clashes with the community's well-being, as staying home is crucial for public health. The earth faces a subtler, larger-scale version of this dilemma called the "tragedy of the commons." Issues like global warming, pollution, and resource scarcity result from individual self-interests causing collective disasters. Solving these dilemmas requires cooperation, but how can we incentivize it?

Ostrom (1990) suggested successful institutions manage commons dilemmas by localizing social norms of cooperation within smaller groups. "Nested enterprise" promotes monitoring within well-defined social groups, reducing costs. While Ostrom's analysis proposes structural solutions, it also highlights the psychological mechanisms influencing individual actions. Understanding motivations to cooperate and barriers to inaction, especially in climate change contexts, remains a challenge (Markowitz & Shariff, 2012). In climate change communication, understanding active engagement beyond awareness and inaction and finding reasons for inaction is crucial (Moser, 2016; Gifford, 2011). Emotions have gained attention as potential drivers of action, but empirical evidence on which emotions motivate cooperation is lacking (Chapman et al., 2017). Implementing emotions effectively for communication at organizational and societal levels remains unclear.

In this dissertation, I test the hypothesis that pride plays a crucial role in

establishing cooperative norms. Emotions have evolved to help humans navigate social and environmental challenges. Challenges involve recurring problems related to resource allocation, hierarchy negotiation, group cohesion, and decision-making (Van Vugt & Kameda, 2012). Establishing a hierarchy often benefits group productivity (Ronay et al., 2012). Status differences lead to the emergence of high-status leaders who possess power and influence. One emotional outcome of status attainment is pride. Pride not only motivates individuals to seek status but also signals status to others (Tracy, Shariff, & Cheng, 2010). It reinforces social norms by showcasing successful individuals (Darwin, 1872; Tracy & Matsumoto, 2008; Tracy & Robins, 2004; Williams & DeSteno, 2008).

Pride serves two functions in establishing cooperation within the commons dilemma. First, it signals high status, indicating leadership potential. Second, it fosters interpersonal connections, inspiring followers and fostering solidarity. Leaders can establish cooperative norms by evoking pride in their followers. Psychological research shows that inducing pride activates prosocial behavior, including sustainable decisions and pro-environmental actions (Dorfman et al., 2014; Harth et al., 2013; Onwezen, Antonides & Bartels, 2013; Schneider et al., 2017). Pride's signaling of status and cooperation cues has important implications for motivating collective action, a key solution to the tragedy of the commons.

However, the precise link between pride and cooperation remains unclear. One influential theory of pride by Tracy and Robins (2007), and a subsequent theory of status attainment by Cheng et al. (2010) suggest that pride has two facets: authentic pride (resulting from effort) and hubristic pride (resulting from privileges). Status can be gained through prestige (earning respect) or dominance (gaining power through

intimidation). Research suggests that higher-status leaders generally increase cooperation among followers, but the differentiation of status remains unclear. The above two theories hypothesize that prestigious individuals, through authentic pride, are more likely to cooperate and inspire cooperative tendencies in followers who also experience authentic pride. On the other hand, dominant individuals, through hubristic pride, may undermine cooperation among followers who do not feel positively towards them. Pride is a double-edged sword that can both enhance and hinder group cooperation, depending on the type of pride experienced by high-status individuals and how it influences others. Fully understanding the emotional mechanisms behind status attainment is crucial for effectively utilizing pride as a strategy to address commons dilemmas.

Overview

This dissertation explores the impact of pride and status on cooperation. It tests two contrasting predictions: authentic pride, linked to prestige-based status, enhances cooperation, while hubristic pride, associated with dominance-based status, diminishes cooperation. Chapter 2 delves into the evolutionary theory of emotions, highlighting pride as a mechanism that evolved to facilitate status within hierarchies. Chapter 3 presents evidence supporting the positive influence of pride and status on cooperation, while reviewing research supporting the negative impact. Chapter 4 derives novel hypotheses from existing literature. Chapter 5 summarizes the results of several pilot studies. Based on these findings, Chapter 6 outlines overview and rationales of the primary experiment. Chapter 7 provides a description of the methods and procedures, and Chapter 8 presents the results. Chapter 9 discusses the implications applications, limitations, future directions, and conclusion based on the main experiment's results.

Chapter 2: Pride is a Basic Emotion

Pride may be a crucial emotion for addressing the tragedy of the commons. While early research on climate change communication suggested that positive emotions generally increase environmental concern (Carter, 2011), this dissertation takes an evolutionary approach to human emotions. According to this approach, the valence of an emotion (negative or positive) is secondary, and emotions are adaptive in increasing reproductive fitness under specific circumstances. Emotions consist of specific dimensions that elicit distinct action tendencies (Lerner & Keltner, 2000). This study focuses on pride, which signals status and coordinates interpersonal interactions within social hierarchies (Tracy et al., 2010). From an evolutionary perspective, pride can be a powerful tool to enhance communication and coordinate behavior in social dilemmas.

Emotions serve as information-processing devices that allow humans to handle problems efficiently without conscious thought (Ekman, 1992; Ekman & Cordaro, 2011; Tooby & Cosmides, 2008). Basic emotions evolved to address fundamental life tasks, such as mating, avoiding threats, seeking social support, and navigating relationships. These emotions played a crucial role in solving recurring challenges essential for survival and reproduction (Ekman, 2003). They are discrete, triggered by specific events, and elicit distinct physiological reactions, facial expressions, and action tendencies (Ekman & Cordaro, 2011; Lazarus, 1982). This specificity enables effective problem-solving by aiding relevant and appropriate actions in response to specific situations. Basic emotions, such as happiness, surprise, anger, disgust, fear, sadness, and contempt, have universal facial expressions recognizable across cultures (Ekman & Cordaro, 2011). The adaptive nature of emotions lies in their preparation of individuals for behaviors that increase their

chances of survival and reproduction (Ekman & Cordaro, 2011; Tooby & Cosmides, 2008). The criteria of adaptation and discreteness are essential in understanding pride as a solution to the tragedy of the commons.

Addressing whether pride is a basic emotion requires understanding the adaptive challenges it is designed to solve. Early views related basic emotions to physical survival challenges (Ekman, 1992; Ekman & Cordaro, 2011). However, a more recent perspective suggests that adaptation should encompass a broader range of challenges, including social coordination problems faced by human groups. These challenges involve resource allocation, hierarchy negotiation, group cohesion, collective decision-making, and interactions with outgroups (Van Vugt & Kameda, 2012). Social hierarchy, a system where certain individuals have more influence, emerges as an effective solution to coordination problems, enhancing group productivity (Ronay et al., 2012). Perhaps for the evolutionary benefit, hierarchy is ubiquitous in human societies and primate species (de Waal, 1986). Social coordination represents recurring challenges throughout human evolution, and social hierarchy helps humans effectively address these problems.

Two ways to attain status: Prestige and dominance

Hierarchy arises when individuals within a group are granted different levels of status, allowing some to exert greater influence over others. The evolutionary account of hierarchy and status recognizes two pathways to gaining status: prestige and dominance (Henrich & Gil-White, 2001). Prestige-based status is earned through the demonstration of knowledge, skills, communal traits, and competence in culturally valued domains. In contrast, dominance-based status is attained through coercive tactics such as aggression, and intimidation (Cheng et al., 2010; Cheng et al., 2013; Henrich & Gil-White, 2001).

Prestige is particularly useful for spreading valuable information within groups, as followers respect prestigious individuals who are likely to share their skills and resources. The willingness to share creates a link between status and socially valued behaviors (Henrich & Gil-White, 2001). On the other hand, dominance emerges from the resolution of conflicts through force, typically in contests over resources and mating. Dominant individuals excel at resolving conflicts, and dominance facilitates social hierarchy, although it contrasts with prestige in terms of whether status is earned or imposed. Dominance-based hierarchy is more prevalent in many primate societies compared to human societies, where social rank often depends on victory in agonistic contests (de Waal, 1986). In contrast, prestige-based hierarchy is unique to humans, potentially due to the cultural transmission of skills and knowledge, a more challenging task for other primates to consistently accomplish over generations (Henrich, 2004).

The distinction between prestige and dominance emphasizes the dual nature of how they facilitate human social hierarchy (Henrich et al., 2015). Prestigious leaders exhibit prosocial tendencies as communal traits are often admired by their followers (Hardy & Van Vugt, 2006). In contrast, dominant leaders tend to evoke antisocial tendencies (Cheng et al., 2010; Cheng et al., 2013). Despite these differences, theories propose that both pathways are adaptive. Ethnographic research in Tsimane villages in Bolivia supports this evolutionary prediction, showing that both dominant and prestigious men receive deference from others and have higher fertility, earlier marriage, and more extra-marital affairs. However, prestigious men also receive additional social support from the community, unlike dominant men (Von Rueden, Gurven, & Kaplan, 2011). Evidence related to personality traits confirms the dual aspects of status attainment. A

survey of leaders from a community leadership program found that agreeableness was the strongest predictor of transformational leadership (inspiring and uplifting followers) among the Big Five personality traits (Judge & Bono, 2000). In contrast, a meta-analysis across 31 studies revealed that dominance was a significant predictor of leadership emergence and effectiveness, while agreeableness showed only a weak association with leadership (Judge et al., 2002). Both prestige and dominance seem to be adaptive in facilitating social hierarchy, but their approaches to gaining status differ.

Status attainment as an antecedent of pride

The evolutionary analysis suggests that managing social problems is as crucial as survival problems, given the adaptive benefits of social hierarchy. For humans, evolution has selected traits that helped resolve such coordination problems. Therefore, emotions are likely to have evolved if they aided in solving adaptive challenges, including attaining and maintaining status. One emotional response to status attainment is pride, which not only motivates individuals to strive for and hold onto their status but also serves as a signal to others (Tracy et al., 2010). In this context, pride likely evolved to signal status within social communities through both prestige and dominance. However, the literature distinguishes two distinct types of pride, depending on how status is achieved through prestige and dominance: authentic pride and hubristic pride.

Authentic pride and hubristic pride

Expanding on the evolutionary analysis, pride likely evolved to signal status within social communities (Tracy et al., 2010). Tracy and Robins (2007) identified two facets of pride: authentic pride and hubristic pride. They conducted surveys with lay people, who associated “pride” with different adjectives that clustered into these distinct

constructs. Authentic pride was linked to feelings of accomplishment, fulfillment, self-worth, confidence, and productivity. In contrast, hubristic pride was associated with snobbish, pompous, conceited, egotistical, arrogant, and smug traits. Further research confirmed these facets by revealing distinct personality traits associated with each. Individuals prone to authentic pride exhibited socially desirable traits such as lower shame-proneness, higher self-esteem, higher agreeableness, and higher conscientiousness. On the other hand, individuals prone to hubristic pride displayed maladaptive traits like lower self-esteem, lower agreeableness, and lower conscientiousness (Tracy & Robins, 2007). The distinction between authentic and hubristic pride has also been observed in other countries, such as China and South Korea, indicating its cross-cultural validity (Shi et al., 2015).

The key difference between authentic pride and hubristic pride lies in how individuals attribute the basis of their success. Based on Tracy and Robins (2007), authentic pride arises when people attribute their achievements to effortful success, which is unstable and controllable (e.g., "I passed the comprehensive exam because I worked hard on it"). This type of success involves skills and competence associated with prestige. On the other hand, hubristic pride emerges when people attribute their success to stable and uncontrollable factors (e.g., "I passed the comprehensive exam because I am naturally talented"). Hubristic pride does not require earned skills or hard work. Both types of pride stem from success, but it is the nature of the attribution that distinguishes the two facets. Although the term "pride" may be used interchangeably in everyday language to refer to either authentic pride or hubristic pride, these two types of pride have different underlying motivations and attributions (Tracy & Robins, 2007).

Two facets of pride, two ways to attain status

The differentiation between authentic and hubristic pride aligns with the distinction between prestige and dominance. The evolutionary perspective on social status suggests that authentic pride emerges when individuals attain prestige-based status, whereas hubristic pride arises with dominance-based status (Henrich & Gil-White, 2001). Personality-level evidence indicates that a tendency to experience authentic pride correlates with self-rated prestige, while a tendency to experience hubristic pride correlates with self-rated dominance (Cheng et al., 2010). This indirectly suggests that authentic pride reflects the motivation of prestigious individuals, while hubristic pride reflects the motivation of dominant individuals (Cheng et al., 2013). Personality research consistently demonstrates systematic individual differences in traits related to prestige/dominance and predispositions to experience authentic/hubristic pride. Individuals high in prestige and propensity of authentic pride display communal traits such as high self-esteem, low aggression, social acceptance, social skills, and high altruism. In contrast, individuals high in dominance and propensity of hubristic pride exhibit antisocial traits including aggression, narcissism, and low agreeableness. Interestingly, both types of individuals are perceived as good leaders by their peers, despite the distinct traits associated with each (Cheng et al., 2010). With most of this work having been conducted in western societies, it is critical to note that similar personality differences have been observed in Chinese samples (Liu et al., 2012). Overall, personality research largely supports the conceptual link between the two types of status and the two types of pride, although further investigation is needed to establish whether distinct types of status consistently elicit these different types of pride.

These findings collectively support the notion that both facets of pride serve to distinguish one's status. Furthermore, theorists argue that authentic pride evolved to promote prestige-based status, which enhances cooperation, while hubristic pride evolved to promote dominance-based status, which undermines cooperation (Cheng et al., 2013; Tracy et al., 2020).

The discrete signals of pride

So far, the discussion has mainly focused on how pride fulfills the first criterion for being a basic emotion—its adaptive value in promoting status through prestige and dominance. The second criterion for a basic emotion is discreteness, which is also a crucial characteristic of pride. For emotions to serve specific functions, they must have clear nonverbal signals that can be readily identified and communicated between individuals (Ekman & Cordaro, 2011). This is particularly important for pride, as the differentiation of status would not be successful if people couldn't infer the signal of status from those expressing it. Darwin (1872) made initial observations on the bodily and facial expressions of pride, noting the distinct signals of holding one's head and body erect and appearing larger. Contemporary research confirms Darwin's findings, indicating that pride indeed exhibits unique bodily reactions that signal elevated social status to others (Tracy et al., 2014). Key insights from the available evidence on pride expression include: (1) pride is easily recognizable and distinguishable from other emotions; (2) the expression of authentic pride aligns with nonverbal signals of prestige, while hubristic pride aligns with nonverbal signals of dominance; and (3) pride involves bodily expansion, which attracts attention from others.

Recognizing the expression of pride

Early research on facial expressions showed that pride can be distinguished from other basic emotions such as happiness, surprise, anger, fear, sadness, and contempt. This expression involves a small smile, a slight backward head tilt, expanded posture, and arms akimbo (Tracy & Robins, 2004, 2007, 2008). Cross-cultural studies further confirmed the universal recognition of pride expression, regardless of the ethnicity of the expressors, including American children, adults in Italy, and preliterate villagers in Burkina Faso (Tracy et al., 2005; Tracy & Robins, 2008). Context also influences the interpretability of authentic and hubristic pride expressions. The perceived cause of the outcome plays a critical role in differentiating between the two. When the outcome is attributed to effort rather than stable characteristics, observers tend to judge the expression as authentic pride rather than hubristic pride (Tracy & Prehn, 2012).

Pride as a signal of status attainment

The distinction between authentic and hubristic pride depends on the nature of the event that elicits success (Tracy et al., 2010). Prestige may be associated with achievement in non-antagonistic contexts, while dominance may arise from victories in competitions. Research analyzing the immediate body reactions of athletes after winning judo matches observed distinct displays of dominance, including expansive behavior, in congruence with the display of triumph (Hwang & Matsumoto, 2014). These dominance displays were also observed in congenitally blind athletes, suggesting a biological basis for these nonverbal expressions (Hwang & Matsumoto, 2014; Tracy & Matsumoto, 2008). These naturalistic observations provide compelling evidence that dominance signals elevated status and occurs spontaneously.

Nonverbal displays of prestige and dominance

Research directly comparing nonverbal displays of prestige and dominance found that they have distinct signals. Prestige is associated with expansiveness, smiling, and upward head tilt, while dominance is associated with expansiveness, no smile, and downward head tilt as most recently documented by Witkower et al. (2019). Although aggression was not included in Witkower et al.'s study's display of dominance, it is important to note that aggression often accompanies dominance displays in competitive contexts (Hwang & Matsumoto, 2014; Tracy & Matsumoto, 2008). Collectively, the research suggests that authentic pride (associated with prestige) and hubristic pride (associated with dominance or triumph) can be reliably differentiated, especially with situational information. Authentic pride serves as an emotion signaling prestige-based status, while hubristic pride serves as an emotion signaling dominance-based status.

In conclusion, contemporary research confirms Darwin's (1872) claim that pride evolved as a signal of status. Pride encompasses two forms: authentic pride and hubristic pride. These forms emerge in different circumstances and exhibit distinct nonverbal expressions. Authentic pride signals prestige, indicating one's valued competency in a given society, while hubristic pride signals dominance, reflecting one's ability to prevail in competitive situations. Both paths to attaining status are adaptive in coordinating social hierarchy. Furthermore, authentic pride and hubristic pride have distinct nonverbal expressions that allow observers to readily interpret the adaptive values conveyed by pride. Hence, contemporary research concludes that pride is a basic emotion evolved to facilitate interpersonal interactions within social hierarchies.

Applications to social dilemma and cooperation

Pride plays a crucial role in addressing the tragedy of the commons by promoting social coordination and reinforcing cooperative norms. Successful individuals, distinguished by their status, have the ability to influence their communities and encourage cooperative behaviors. Studies on self-governing institutions highlight the importance of social norms in maintaining successful outcomes (Dietz et al., 2003; Ostrom, 1990).

Social norms define standards and provide incentives for individuals to adhere to them. Fieldwork conducted by McKean and Cox (1982) in Japanese villages demonstrated how pride contributes to the creation and sustainability of social norms. In these villages, hiring detectives to patrol common lands was considered a prestigious job. The pride experienced by these detectives symbolized the community's values and reinforced the norm of sustainability. By observing the behaviors of prestigious individuals, villagers shared the same emotional experience and associated their jobs with the important social norm of sustainability.

However, it is important to recognize that high-status individuals may not always promote cooperative norms. Self-interest norms and the influence of dominance-based status can hinder cooperation and group performance (Barkow, 2014; Berdahl & Anderson, 2005; Hildreth & Anderson, 2016). Dominance-based status, associated with hubristic pride, often relies on static traits and intimidation, leading to a lack of cooperation from followers. In contrast, prestige-based status, associated with authentic pride, encourages cooperative behavior in both leaders and followers.

In summary, cooperative social norms may be facilitated by authentic pride and prestige. Social hierarchy can effectively promote sustainability and cooperation in

managing commons. Prestigious individuals, driven by authentic pride, demonstrate cooperative behavior themselves and influence others to do the same. This process reinforces social norms of cooperation and sustainability.

Chapter 3: The Mixed-Effects of Pride and Status on Cooperative Behaviors

Research investigating the role of pride in shaping social norms and addressing cooperation in social dilemma problems, such as climate change, has yielded mixed findings. Two main lines of research have explored this topic: (1) studies examining the relationship between pride and cooperation through experiments and surveys, and (2) behavioral experiments investigating the association between status and cooperation. While some studies indicate that pride and certain forms of status can promote cooperation, other evidence suggests that status differentiation within a group can negatively impact cooperative dynamics. Therefore, the influence of pride and status on cooperation in social dilemmas remains complex and requires further investigation.

The positive association between pride, altruism, and cooperation

Survey studies suggest that experiencing pride is associated with cooperative behaviors in communities. For instance, individuals who felt proud of their local communities were more likely to volunteer their time (Hart & Matsuba, 2007). Additionally, people often feel proud when engaging in pro-environmental actions, such as buying green products, which can lead to greater intention to engage in future pro-environmental behaviors (Harth et al., 2013; Onwezen et al., 2013; Schneider et al., 2017; Rowe et al., 2019). The influence of high-status individuals who demonstrate altruistic behaviors can also shape social norms of cooperation within a community (Henrich et al., 2015). Followers are likely to imitate the altruistic behaviors of prestigious leaders, contributing to the spread of cooperation.

While there is evidence linking pride to prosocial behaviors, limited experimental research specifically differentiating between authentic and hubristic pride on cooperation

exists (Ma et al., 2017; Wubben et al., 2012; Dorfman et al., 2014). More studies need to investigate the causal impact of pride on cooperative behaviors in dilemma situations.

Status promotes cooperation

Behavioral experiments provide compelling evidence that high status promotes cooperation in economic contexts. In one study, Ball and Eckel (1998) observed that minor status differentiation, achieved by awarding some participants for winning a trivia quiz, influenced participants' behavior in the Ultimatum Game. Lower-status participants made more generous offers to higher-status responders, indicating that status affects expectations and behavior in cooperative situations. Similarly, in a simulated market auction, lower-status buyers were willing to pay higher prices to high-status sellers, resulting in higher earnings for the sellers (Ball et al., 2001).

Experiments investigating the "leading by example" account of leadership also support the positive role of status. Leaders who make the first contribution to a group tend to act generously, leading to higher rates of cooperation among followers (Güth et al., 2007; Eckel et al., 2010; Potters et al., 2006, 2007). Kumru and Vesterlund (2010) found that high-status participants contributed more money to their followers when they were the first to announce their financial contribution. In turn, followers were inspired to make higher donations, resulting in an increase of overall contributions. The effect of leaders' actions is particularly evident when uncertainty or lack of information is present in the game structure (Potters et al., 2007). Followers are more likely to imitate leaders who have more information, and leaders anticipate this behavior, leading to more favorable outcomes in cooperative decision-making.

Cooperation promotes status

The research discussed supports the idea that status and cooperation are mutually reinforcing. Studies have also shown that individuals who engage in cooperative behavior are perceived as more deserving of higher status (Milinski et al., 2002; Price, 2003). Experimental evidence further confirms that people allocate higher status to individuals who demonstrate cooperative tendencies (Hardy & Van Vugt, 2006; Barclay & Willer, 2007; Willer, 2009). The competitive altruism hypothesis suggests that cooperation acts as a signal of reliability and reputation, leading to the allocation of higher status (Barclay & Willer, 2007; Hardy & van Vugt, 2006; Willer, 2009). Conversely, individuals with higher status tend to be better off in coordinating and have higher cooperation rates (Hardy & Van Vugt, 2006). Overall, these findings highlight the reciprocal relationship between status and cooperation, with both factors influencing and reinforcing each other within group dynamics.

The negative effects of pride and status on cooperative behaviors

While there is evidence supporting the positive impact of pride and status on cooperation, the findings are mixed. Authentic pride, associated with prosocial behavior, promotes cooperation, while hubristic pride may have negative effects (Tracy & Robins, 2007; Wubben et al., 2012). Similarly, prestige-based status linked to cooperation contrasts with dominance-based status derived from intimidation (Cheng et al., 2010). Previous studies have taken an evolutionary perspective, highlighting the adaptive nature of hierarchy for efficient group coordination (Van Vugt & Kameda, 2012).

However, there is also evidence indicating negative consequences of status hierarchy on group welfare. For instance, status differentiation can have negative

consequences for group dynamics and performance (Anderson & Brown, 2010; Anderson & Willer, 2014). Leadership assignment did not consistently increase cooperation (Cartwright et al., 2013), and displays of dominance in loan requesters led to reduced financial aid (Tracy et al., 2018). Small-group studies also suggest that status differentiation hampers group performance (Mannix, 1993; Berdahl & Anderson, 2005). Often, low-status individuals are unhappy with the fact that high-status individuals enjoy greater resource allocations within an organization (Pfeffer & Langton, 1993).

Ethological and cross-cultural evidence suggests that prestige-based leadership is generally more preferred to dominance-based leadership in many societies, failing to provide a strong support for the dual-facet theory of status attainment (Garfield et al., 2020; Garfield & Hagen, 2020; Durkee et al., 2020). In egalitarian hunter-gatherer societies, overly aggressive leaders are not liked (Boehm, 1993; Knauff et al., 1991). While the exact mechanism underlying the relationship between status, pride, and cooperation requires further investigation, these findings indicate that status hierarchy, especially driven by dominance, does not always promote group welfare.

Chapter 4: Deriving Novel Hypotheses

Research on pride and cooperation has highlighted its importance in shaping attitudes and behaviors. However, the literature lacks a comprehensive understanding of how different facets of pride, such as authentic and hubristic pride, influence cooperative behaviors. Additionally, the impact of different ways of attaining status, namely prestige and dominance, on pride and cooperation remains unexplored. This dissertation aims to address these gaps and provide insights for practitioners and organizations seeking to leverage pride in their communications.

Authentic pride promotes prosocial behavior, while hubristic pride motivates antisocial tendencies. However, previous research has often overlooked this distinction, treating pride as a singular construct. This is problematic because authentic and hubristic pride have distinct motivational antecedents and outcomes. Authentic pride arises from attributing success to controllable factors, while hubristic pride stems from attributing success to uncontrollable factors. Moreover, authentic pride aligns with prestige, while hubristic pride aligns with dominance. Failing to differentiate between these pride facets can obscure important findings. For example, individuals may experience both authentic and hubristic pride, but only the former may predict their prosocial behaviors. Thus, it is crucial to disentangle these two types of pride when studying their impact on cooperation.

Similarly, the differentiation between prestige and dominance is often overlooked in research on status and cooperation. While some studies support the positive role of status in cooperation, others suggest that status hierarchy hampers cooperative dynamics. To reconcile these conflicting findings, it may be beneficial to distinguish between prestige and dominance as types of status. When status is attributed based on intimidation

or aggression, it is likely dominance-based and may undermine cooperation. On the other hand, prestige-based status is associated with authentic pride, fostering cooperation in both leaders and followers.

To shed light on these relationships, this dissertation aims to separate authentic and hubristic pride as well as prestige and dominance in the manipulation of emotion and status. It also investigates the causal mechanisms through which elevated status gives rise to authentic or hubristic pride and how these pride facets influence cooperative behavior within group settings. By directly inducing pride experiences in participants, this research seeks to understand the influence of authentic and hubristic pride on cooperative and non-cooperative behaviors. The hypotheses to be tested include:

Hypothesis 1: Prestige-based status increases the experience of authentic pride.

Hypothesis 2: Prestige-based status increases cooperation.

Hypothesis 3: The effect of prestige-based status on cooperation is mediated by an increase in the experience of authentic pride.

Moreover, the dissertation examines the impact of achieving dominance-based status on the experience of hubristic pride and its subsequent effect on cooperative behavior. The following hypotheses related to hubristic pride will be tested:

Hypothesis 4: Dominance-based status increases the experience of hubristic pride.

Hypothesis 5: Dominance-based status reduces cooperation.

Hypothesis 6: The effect of dominance-based status on cooperation is mediated by an increase in the experience of hubristic pride.

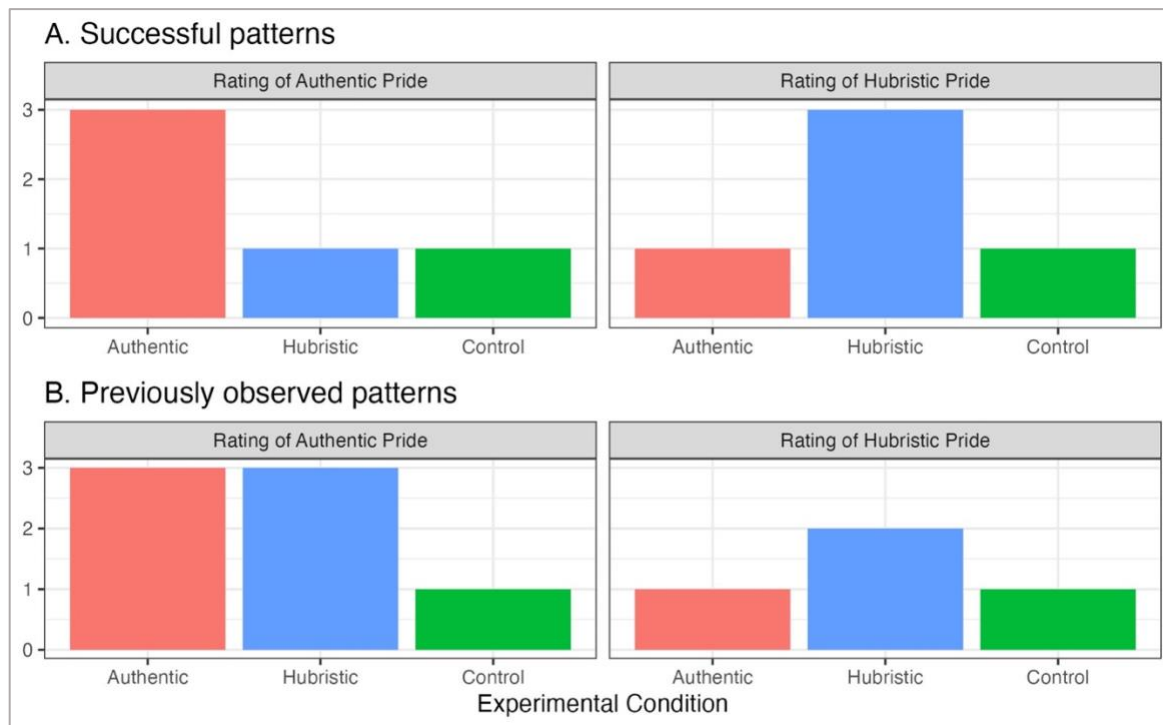
Chapter 5: Explorations on the Nature of Authentic and Hubristic Pride

Prior to the main behavioral experiment, pilot studies were conducted to test the fundamental assumption of the two-facet theory of pride/status (Kusano & Kimmelmeier, 2022/2023). The initial aim was to develop a method for independently inducing authentic pride and hubristic pride, which was essential for designing a behavioral experiment on cooperation—an aspect that had been overlooked in the literature. Yet, our own research raised serious concerns about the theoretical foundation of the two-facet theory. Here we report two lines of research that highlight complications in how participants experience and report different types of pride. Moreover, we offer an initial step in the consideration of authentic pride and hubristic pride as being tied to an interpersonal context.

Kusano and Kimmelmeier (2022)

According to the theory (Tracy & Robins, 2007), manipulating authentic (hubristic) pride should only induce authentic (hubristic) pride but not hubristic (authentic) pride (see Figure 1A). However, previous experiments resulted in a pattern where both manipulations of authentic and hubristic pride led to high levels of authentic pride and little hubristic pride (Ashton-James & Tracy, 2012; Ho et al., 2016). Researchers have argued that people do experience hubristic pride, but social desirability prevents them from reporting negative feelings such as arrogance and smugness (Ashton-James & Tracy, 2012; Ho et al., 2016; Liu et al., 2016). However, no systematic exploration was conducted to develop a more reliable method and examine the potential social desirability effect on the rating of hubristic pride. To address these limitations, Kusano and Kimmelmeier (2022) conducted four experiments, briefly described below.

Figure 1. Plans for Manipulating Authentic/Hubristic Pride

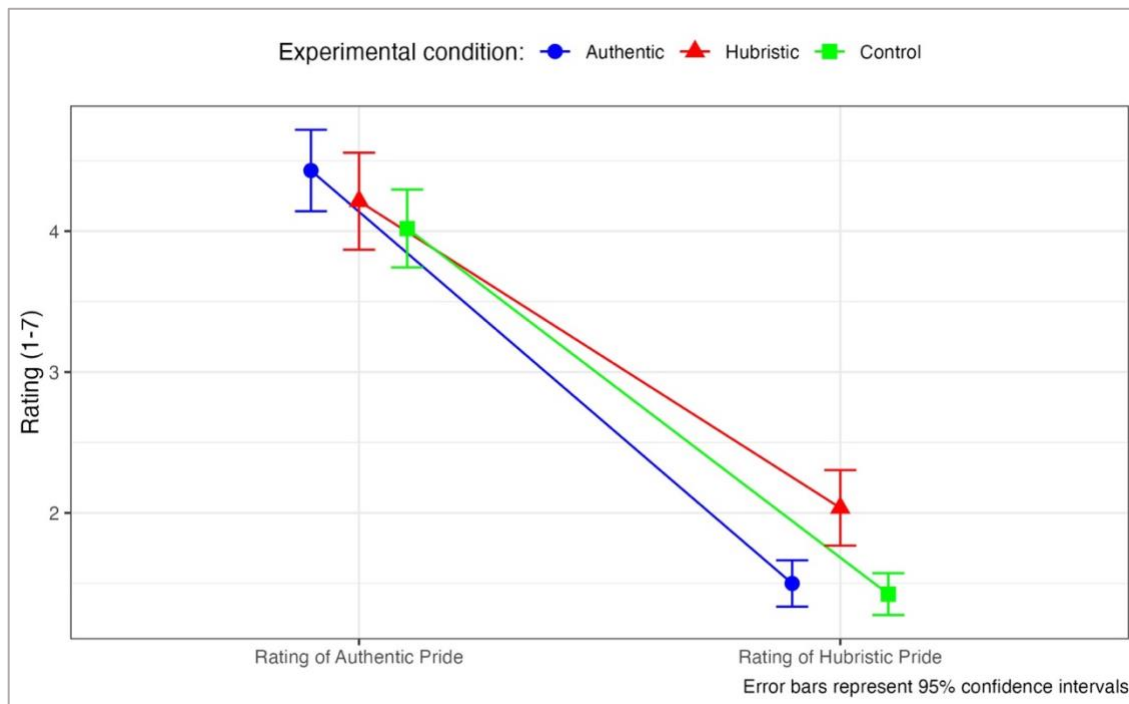


Study 1

Participants ($N = 329$) were asked to write about a memory that induced pride, divided into three conditions, which corresponded to the original experiment reported by Tracy and Robins (2007). In each condition, participants were explicitly instructed to recall a successful event resulting from their effort (the authentic pride condition) or from not having to work hard (the hubristic pride condition), while the control condition asked them to write about their typical day as a student. The hubristic pride condition successfully induced a mild level of hubristic pride compared to the other conditions (Figure 2). However, the hubristic pride condition also elevated authentic pride relative to the other conditions. Surprisingly, the authentic pride condition failed to elevate authentic pride as expected, indicating a failure to replicate the previously observed pattern (see

Figure 1B). Study 1 revealed weaknesses in the previous manipulation of authentic/hubristic pride and motivated further exploration of a more reliable method.

Figure 2. Ratings for Different Instruction Conditions and Pride Ratings (Study 1, Kusano & Kemmelmeier, 2022)



Study 2

The second study ($N = 177$) aimed to develop a more standardized method for manipulating authentic/hubristic pride. Participants engaged in an interpersonal perception task, where they predicted the personalities and values of others. In both the authentic and hubristic conditions, participants received positive feedback indicating that they possessed a high level of interpersonal skill. However, the interpretation of this skill varied between the conditions, being either stable or unstable.

In the authentic pride condition, the feedback report explained that developing this social competency required effort and hard work over one's lifetime, earning them

respect and admiration. In contrast, the hubristic pride condition's feedback suggested that most people performed poorly on the task, but participants seemed to possess a unique, special talent that remained stable over their lifetime.

Again, both pride conditions elevated authentic pride relative to the control condition, where participants received feedback of "around the average" performance (Figure 3). However, across all conditions, ratings of hubristic pride were negligible.

Figure 3. Ratings for Different Feedback Conditions and Pride Ratings (Study 2, Kusano & Kimmelmeier, 2022)



Study 3

Study 3 ($N = 328$) addressed three key aspects: (1) the intensity of hubristic pride ratings; (2) the ability to differentiate authentic pride from hubristic pride; and (3) the social desirability of reporting hubristic pride. To tackle the first two points, the interpersonal perception task from Study 2 was modified to make the social rank more

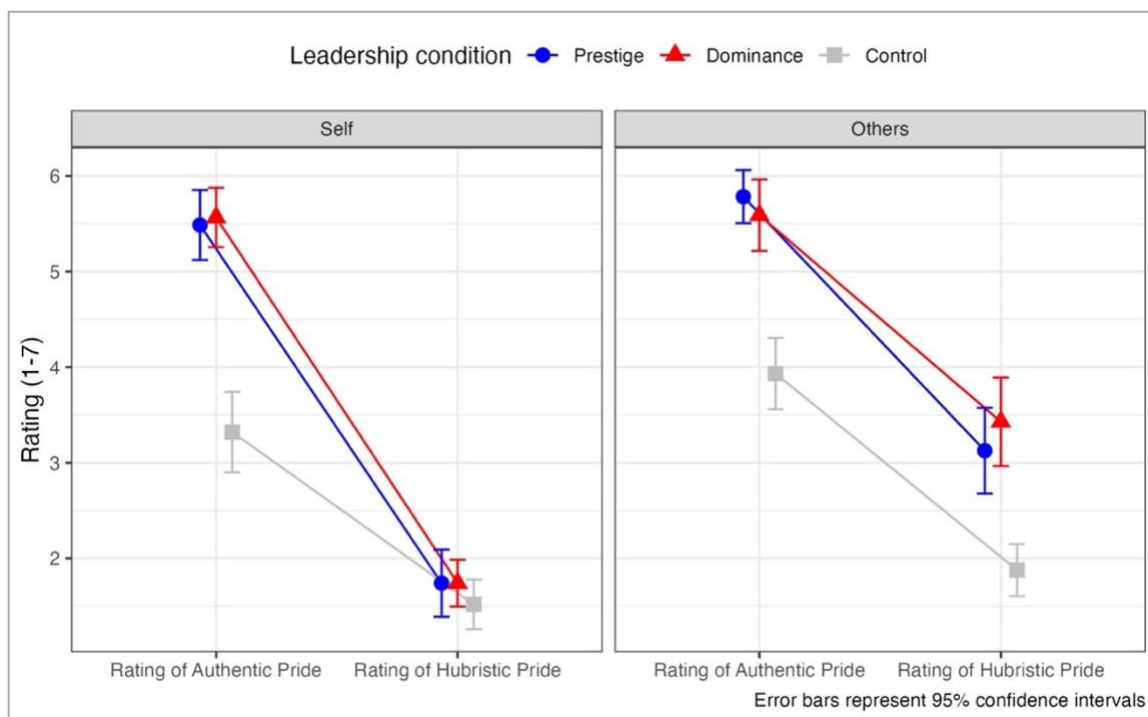
explicit, aiming to increase the intensity of hubristic pride through dominance-related feedback. The study utilized multiple tasks within a bogus leadership aptitude test—a common method to manipulate the sense of power (Fast & Chen, 2009). Participants performed similar tasks to those in Study 2, but this time, the feedback focused on their leadership aptitude, varying on the dimension of dominance versus prestige. To ensure that participants felt competent in the experimental conditions, multiple positive feedbacks (e.g., “Excellent!”) were inserted between tasks. After the final task, participants learned that they received an impressive score on a leadership aptitude test. In the prestige condition, the assessed leadership style reflected respect, wisdom, and democratic skill that is learned over one’s lifetime; overall, this leadership was referred to as being based on the admiration by others. In the dominance condition, the assessed leadership style was linked to assertiveness, directiveness, authority, and talent that is stable over one’s lifetime; overall, this leadership style was labeled as being intimidating to others. The expectation was that those who received feedback on prestigious leadership would experience authentic pride, while those who received feedback on dominant leadership would experience hubristic pride.

To address the third point, Study 3 introduced a novel element to detect social desirability in reporting hubristic pride. In one condition, participants were asked to predict how others would feel in the same situation, irrespective of their own feelings. If social desirability is unique to ratings of hubristic pride, differences between self-ratings and other-ratings of hubristic pride should emerge, but not for authentic pride.

The results replicated those of Study 2. Self-ratings of authentic pride were elevated in both the dominance and prestige conditions, while self-ratings of hubristic

pride remained low across all conditions (Figure 4). However, in both the prestige and dominance conditions, participants' estimates of others' hubristic pride were significantly higher than their own ratings of hubristic pride in response to the same leadership aptitude feedback. This reference effect did not emerge for the rating of authentic pride. These results suggest that authentic pride was relevant from both the first-person and third-person perspectives, whereas hubristic pride was only relevant from the third-person perspective.

Figure 4. *Pride Ratings for Different Feedback Conditions, References, and Types of Pride (Study 3, Kusano & Kimmelmeier, 2022)*

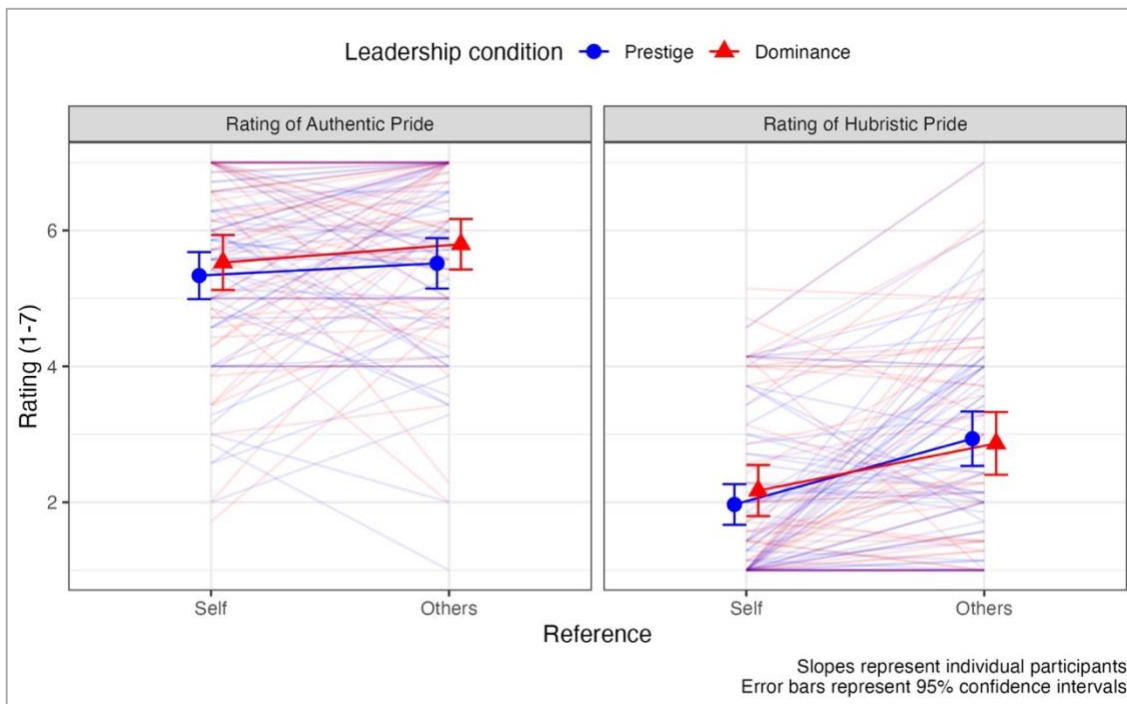


Study 4

The fourth study ($N = 107$) replicated Study 3 using a within-subject design. Participants first rated their own pride, and then they predicted how others would feel in response to the same leadership aptitude feedback they just received. The results

replicated the main findings of Study 3: ratings of hubristic pride, not authentic pride, were elevated only when participants anticipated the feelings of others (Figure 5).

Figure 5. *Pride Ratings for Different Feedback Conditions, References, and Types of Pride in a Within-Subject Design*



Summary of Kusano and Kimmelmeier (2022)

One consistent finding was the challenge in inducing hubristic pride among participants. Across four experiments, regardless of the self-attributions for their success, hubristic pride was never more prominent than authentic pride. These results support the recent criticism that the measurement of hubristic pride is invalid because it is often zero-inflated due to people's reluctance to use negative terms to describe themselves and their successful experiences (Dickens & Murphy, 2022). Moreover, Study 3 and 4 suggest that the rating of hubristic pride may depend on one's social perspective: individuals seem to be unable or unwilling to report hubristic pride as an emotional experience within

themselves, but they clearly distinguish authentic pride from hubristic pride in others, but not in themselves. However, whether this reference effect is due to social desirability or invalidity of the scale is subject to debate. These results led me to conclude that Tracy and Robin's (2007) theoretical model may require further refinement at the moment.

Kusano and Kimmelmeier (2023)

Another series of studies provided valuable insights into the elusive nature of hubristic pride and the reasons behind the difficulty of its induction (Kusano & Kimmelmeier, 2023). The original two-facet theory of pride (Tracy & Robins, 2007) assumes that authentic pride arises from unstable internal causes like effort and ability, while hubristic pride stems from stable internal causes such as talent. Kusano and Kimmelmeier (2023) challenged this assumption by arguing that there was no clear link between causal attribution to the self and the experience of pride.

To test this notion, they conducted a novel experiment where participants had the opportunity to overclaim success on a challenging task for which they lacked competence. Specifically, participants worked on a series of advanced math puzzles and surprisingly solved them correctly due to luck, not their actual competency. Interestingly, participants in the experimental condition, who experienced this unexpected success, reported greater hubristic pride than those in a control condition with limited success. This finding suggests that hubristic pride may indeed be rooted in external causes such as luck, consistent with Holbrook et al. (2014) who argued that hubristic pride represents awareness of overclaiming unmerited success. On the other hand, those who received positive feedback in the experimental condition also reported far greater authentic pride,

supporting the idea that authentic pride can emerge without directly attributing success to one's effort or talent.

Kusano and Kimmelmeier (2023) contrasted previous theories of pride, both the two-factor theory (Tracy & Robins, 2007) as well as Holbrook et al. (2014), with an interpersonal account of pride. According to their perspective, pride is an emotional experience associated with success, assigning value to this success in interactions between individuals and groups. Authentic pride allows actors to take credit for their success, signaling to observers a certain level of status and eliciting admiration and respect. However, this signaling function of pride relies on shared understanding and mutual evaluation. Expressions of pride lead to the attribution that an actor possesses exceptional qualities or has engaged in socially valued behavior, but only if an observer recognizes them as part of the same group or relationship. If not, the same expression of pride might be perceived as disingenuous or arrogant, especially when displayed by a disliked person or an outgroup member.

Hubristic pride, as argued by Kusano and Kimmelmeier (2023), often pertains to the evaluation of someone else's pride experience, while individuals' personal experience of pride primarily refers to authentic pride, recognized in others with whom they share a social bond. This perspective implies that individuals may find it inherently challenging to report the experience of hubristic pride, given its inherently interpersonal nature, potentially serving to denigrate others' pride experiences.

To explore the potential actor-observer asymmetry in the expression and perception of pride, Kusano and Kimmelmeier (2023) focused on an intergroup context with clear group boundaries. They hypothesized that participants would be more likely to

recognize authentic pride in ingroup members and attribute hubristic pride to outgroup members. In the study, Democratic and Republican supporters rated the emotional expressions of Joe Biden and Donald Trump during their respective presidential elections. Democrats perceived Joe Biden as expressing high levels of authentic pride, considering him a prestigious leader and highlighting internal causes like effort and talent leading to his victory. Conversely, Republicans viewed Joe Biden's expression as reflecting hubristic pride, attributing situational forces to his electoral success. Likewise, Democrats perceived Donald Trump as hubristic and dominant, overclaiming his success with external factors like luck playing a prominent role in his 2016 presidential election victory. However, Republicans viewed Donald Trump as authentic and prestigious, emphasizing internal causes for his achievements.

These findings indicate that individuals' reluctance to report hubristic pride may not solely be due to social desirability, as evidenced by an additional experiment that failed to replicate Tracy and Robbins (2007, Study 3). Rather, this series of studies illuminates the nature of hubristic pride, which is inherently tied to a social context. It is possible that there exists only one type of pride concerning personal success within the ingroup. Hubristic pride may mainly emerge as a social judgment used to describe others' achievements negatively. This perspective reveals the complex interplay of pride dynamics concerning both the self and others, thus contributing to a more nuanced understanding of the multifaceted pride phenomenon (Kusano & Kemmelmeier, 2023).

The difficulty of measuring hubristic pride may also underscore the general paradox of self-report methods. Consider overconfidence; researchers measure overconfidence by comparing objective performance scores to one's subjective

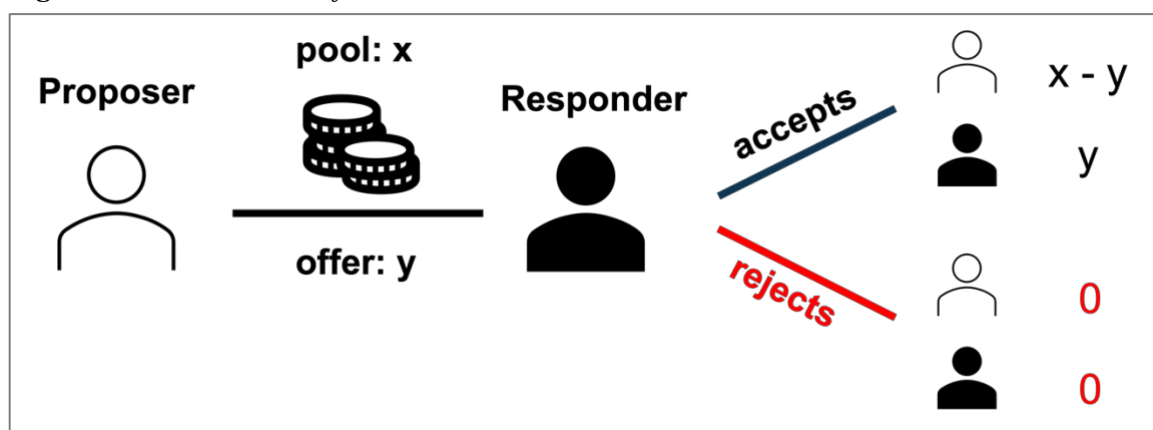
assessment of performance (e.g., Anderson et al., 2012). Paradoxically, once people are asked to report their own overconfidence, the self-reported assessment may no longer accurately represent overconfidence. To be able to explicitly report their overconfidence, people must acknowledge their limitations and weaknesses. Thus, the moment one is willing to report "overconfidence," one must possess accurate knowledge of their performance levels. This method of measuring overconfidence deviates from the very definition of overconfidence that researchers intend to measure. However, this paradox does not undermine overconfidence as a significant phenomenon to study. For the same reason, hubristic pride remains a valuable phenomenon to study; but as with other psychological phenomena, self-report as a method is reactive, and may simply be an inadequate method to measure hubristic pride.

Chapter 6: Overview & Rationale of the Experiment

The aforementioned studies by Kusano and Kimmelmeier (2022) failed to develop a reliable method to induce hubristic pride in individuals. However, the results indicate a clear distinction in how people observe and interpret expressions of hubristic pride in others, even if they may not experience it themselves. Whether hubristic pride should be considered a distinct pride emotion at all is currently debated in the literature (Dickens & Murphy, 2022; Kusano & Kimmelmeier, 2022; Tracy & Robins, 2022; Williams & DeSteno, 2010), and this might be beyond the scope of this dissertation. Nonetheless, the fact that people can clearly recognize hubristic pride in others provides an opportunity to manipulate the display of authentic/hubristic pride (and prestige/dominance) in others rather than participants themselves. By adopting this idea, I investigated the causal effect of authentic/hubristic pride displayed by others on participants' cooperation in an interpersonal context, without delving into the debate on whether hubristic pride is a pride emotion.

The primary objective of the main experiment was to explore how authentic and hubristic pride, as well as prestige and dominance, influence cooperation in a hierarchical setting. To measure cooperation, we employed the Ultimatum Game (UG; Güth et al., 1982), consisting of a proposer and a responder (see Figure 6). In the UG, the proposer receives a pool of money and offers a portion of money to the responder, who can accept or reject the offer. This setup allows for the emergence of a status hierarchy, as the responder holds the power to determine the outcome, and the proposer fears rejection based on the perceived power of the responder (Van Dijk & Vermunt, 2000).

Figure 6. The Structure of the Ultimatum Game



In building upon the paradigm used by Van Dijk et al. (2008) in their UG experiments, I aimed to manipulate the emotional displays of the responder, either appearing authentic or hubristic, and investigate the proposer's ability to deceive the responder about the nature of their offer. In Van Dijk et al. (2008), proposers tended to make higher offers to angry responders due to the fear of rejection, but when given the opportunity to deceive, they offered the lowest amounts to angry responders. However, the opportunity to deceive had no impact on the outcome when the responder displayed happiness. The authors' conclusion suggested that in situations where the status hierarchy is salient, fear of rejection generally outweighs the motivation to exploit, while anger undermines cooperation in a dyadic setting (Van Kleef et al., 2010). Similarly, proposers may take advantage of the opportunity to deceive a responder who displays hubristic pride, while the opportunity to deceive may have no impact on the UG outcome when the responder displays authentic pride.

In this study, I have adapted the paradigm to examine the influence of different pride-related displays by the responder. Similar to Van Dijk et al. (2008), the proposer had the chance to deceive the responder regarding the true value of their offer. This

design allows us to explore the intricate dynamics of pride in shaping cooperation within hierarchical contexts.

Predictions

The adapted Ultimatum Game paradigm aligns with recent findings on distinct non-verbal displays of prestige and dominance (Witkower et al., 2019) and make predictions consistent with the hypotheses outlined in Chapter 5. It is predicted that when a proposer is paired with a prestigious responder, the proposer will make a fair offer, resulting in an equal distribution of money (Prediction 1, consistent with Hypotheses 1, 2, & 3). On the other hand, when a proposer is paired with a dominant responder who holds power over them, the proposer is expected to make a higher offer due to fear of rejection (Prediction 2). This prediction is novel in contrast to the original hypotheses outlined in Chapter 5. However, it is predicted that when the proposer has the opportunity to deceive the dominant responder, the display of dominance will discourage cooperation, leading to a lower offer that disadvantages the responder (Prediction 3). The effectiveness of dominance in eliciting cooperation from the proposer is dependent on their opportunity to conform to the dominant responder, whereas the effectiveness of prestige remains unaffected by this factor. Thus, Prediction 3 relates to the idea that dominance, as well as prestige, is an *effective* and *necessary* strategy to manage human status hierarchy (Cheng et al., 2010; Cheng et al., 2021).

Chapter 7: Method

Experimental Design

The experimental design of this study is a 3 (Status: Prestige vs. Dominance vs. Neutral) x 2 (Information: Symmetric vs. Asymmetric) between-subjects design, with the amount of the offer in the Ultimatum Game (UG) serving as the dependent variable.

Participants were assigned to one condition via blocked randomization; randomization occurred for every set of six participants. In the first phase of the experiment, participants engage in three cognitive tasks in which they compete against another participant (referred to as *the partner*), who is actually a video simulation. These tasks are designed to establish a status hierarchy between the two players based on their actual competence.

Moving on to the second phase, the first manipulation of *Status* is introduced. Both players receive feedback on each other's performance, and they communicate their emotions through non-verbal expressions. In the Prestige condition, the partner outperforms the participants and displays a prestigious expression, characterized by expansiveness, smiling, and an upward head tilt. The Dominance condition is identical to the Prestige condition in that the partner outperforms the participant, except that the partner displays a dominant expression, characterized by expansiveness, no smiling, and a downward head tilt. In the Neutral condition, both players are tied with average scores, and the partner displays a neutral expression, with a straight gaze and no smiling.

After the exchange of non-verbal expressions, participants move on to the UG, where they play the role of the proposer and allocate tokens between themselves and the responder. At this stage, the second manipulation of *Information* is introduced. In the Symmetric condition, both players are aware of the different values assigned to the

tokens (i.e., one token is worth \$1.00 for the proposer and \$0.50 for the responder). In the Asymmetric condition, participants learn that the responder is unaware of this value difference, creating an opportunity for the proposer to deceive the responder (Van Dijk et al., 2008).

Procedure & Measurement

The experiment was conducted at the University of Nevada, Reno over the course of four semesters between the Fall of 2021 and the Spring of 2023. Participants were recruited through SONA and offered 2 SONA credits and monetary compensation. The study advertisement highlighted three main aspects: (1) it was a "multi-site experiment" involving remote participation of another participant from a different room on the same campus; (2) participants would engage in cognitive tasks and an economic decision making game with another participant; and (3) monetary compensation would range from \$0 to \$12 based on their joint interaction with the other participant.

Upon arrival at the lab, participants were welcomed and taken to a waiting room to complete a consent form. They were informed that the study focused on online interactions and aimed to measure various important aspects related to social outcomes. Participants were paired with another participant located in a different building on campus via video chat. They were informed that their final compensation would depend on the outcomes of two collaborative tasks with the partner. Unbeknownst to them, the partner was actually a prerecorded video of a confederate (Sarah & Chris).

The consent form also included a section seemingly requesting participants' agreement to make their video recording accessible for conference and lecture purposes (in reality, the camera was turned on but never connected to the computer). This

instruction was included to ensure participants understood that their video could potentially be recorded. During the consent period, participants were asked to wait in the room for a few minutes, creating the impression that another participant was arriving at a different location and being greeted by another experimenter.

After the wait, participants were guided to the experimental room and seated in front of a computer screen. The screen displayed a video of another participant reading from the screen in a different room, with the assistance of another experimenter.¹ Participants who had indicated that they were female were shown a video of the female assistant; participants who had indicated their gender as male were shown a video of the male assistant. After approximately 10 seconds or upon pressing the "space" key, the video was turned off, and the first instruction page appeared. From this point on, participants did not need to interact with the experimenter unless they had questions during the session. The entire experiment was conducted using PsychoPy version 3 (Peirce, 2007).

Demographic & Personality Measures

309 college students participated in the experiment. Participant demographics are summarized in Table 1.

Participants began by answering basic demographic questions, including age, gender, and ethnicity. Subsequently, they completed scales related to personality traits that allowed for exploratory moderation analysis of their responses to the dependent measure in the study.

¹ From the fall of 2021 to the spring of 2022, in the context of the COVID-19 pandemic, a mask mandate was in effect on the campus where this experiment was being conducted. As a result, participants who attended during this period viewed a video in which the other experimenter and the partner were wearing masks. The partner then removed his/her mask shortly after being seated by the experimenter. Below, we consider how this timing could have influenced the dependent variable.

Table 1. Participant Demographics

	n	%
Age		
Below 18	7	(2.3)
18-24	290	(94)
25-34	8	(2.6)
35-44	4	(1)
Missing	1	
Gender		
Female	161	(52)
Male	143	(46)
Nonbinary	4	(1.3)
Ethnicity		
White	159	(52)
Black	25	(8.1)
Asian	51	(17)
Native	3	(1)
Hawaiian	3	(1)
Other	6	(22)
Missing	1	

The Personal Need for Structure Scale (Neuberg & Newsom, 1993) consisted of 11 items that assessed preferences for a clear and structured lifestyle, such as: "I enjoy having a clear and structured mode of life ($1 = \textit{Strongly disagree}$; $6 = \textit{Strongly agree}$)" (Cronbach's $\alpha = .77$, $\omega_{\text{total}} = .84$).

The Fear of Negative Evaluation Scale (Rodebaugh et al., 2004; Weeks et al., 2005) included eight items measuring concerns about others' disapproval, for example: "I am afraid that others will not approve of me ($1 = \textit{Not at all characteristic of me}$; $5 = \textit{Extremely characteristic of me}$)" ($\alpha = .91$, $\omega_{\text{total}} = .91$).

A brief measure of the Big Five Personality traits (Gosling et al., 2003) consisted of ten items, with two items measuring each facet: openness to experience ($r = .23$), conscientiousness ($r = .31$), extraversion ($r = .58$), agreeableness ($r = .07$), and emotional stability ($r = .54$) ($1 = \textit{Disagree strongly}$; $7 = \textit{Agree strongly}$)"

The NPI-16 (Ames et al., 2006) comprised 16 pairs of binary items to evaluate narcissism, including statements like: "1 = *I think I am a special person*; 2 = *I am no better nor worse than most people*" ($\alpha = .73$, $\omega_{\text{total}} = .72$).

Task 1: The Sternberg Memory Test

The computer introduced Task 1 as a measure of participants' short-term memory. They were provided with the following instructions:

"In this task, you will be presented with a sequence of randomly ordered numbers, ranging from 3 to 8 numbers. After a short delay, you will see a single number, and your task is to determine whether this new number was part of the previous sequence. Your performance will be evaluated based on accuracy and response time. The faster and more accurately you make judgments, the higher your performance."

After a series of practice trials, participants proceeded to complete 30 main trials. Upon finishing the final trial, they learned that the task was assessing their short-term memory. They were informed that a higher performance in the task indicated a greater capacity for short-term memory, which has positive implications for general learning.

In the Prestige and Dominance conditions, participants learned that the partner achieved a score of "29 out of 30 trials correct (Average reaction time = 0.68 seconds)." In the Neutral condition, no performance review was provided.

Task 2: The Trivia Quiz

The computer introduced Task 2 as a measure of participants' general knowledge. It explained that participants would answer six quizzes presented in a multiple-choice format. The quizzes were designed to align with previous research that manipulated status using economic questions (e.g., Ball & Eckel, 1998; Kumru & Vesterlund, 2010). An example quiz question is as follows: "What percentage of the U.S. Federal Budget

was allocated to national defense in 2020? (1 = 31%; 2 = 42%; 3 = 53% [correct answer]; 4 = 64%)." Upon completing the final quiz, participants were informed that the task assessed their general knowledge in economic issues. It was explained that a higher performance in the task indicated a greater understanding of trivia related to the U.S. economy. In the Prestige and Dominance conditions, participants learned that the partner achieved a score of "4 out of 6 quizzes correct." In the Neutral condition, no performance review was provided.

Task 3: Person Perception Task

This task was introduced as a measure of participants' ability to judge the moral values of others. Participants were provided with the following instructions:

"In this task, you will be presented with an ethical dilemma. Imagine a scenario where a trolley is heading towards a group of people on a track. However, there is a bystander who can intervene and divert the trolley onto a different track, which would result in saving some people but causing harm to others. You will take on the role of the bystander and decide whether to do nothing or pull the lever."

On the next page, participants were instructed:

"Your task is to imagine how other individuals would make moral decisions in this scenario. Your goal is to predict the decision made by the person shown in each image. You will be provided with basic information about their education (presence of a college degree) and personality. Your score will be based on how accurately you predict their decisions."

Participants then proceeded to complete three practice trials followed by eight main trials. During the review session, all participants were informed of their score, which was presented as "3 out of 8 (37.5%)." In the Prestige and Dominance conditions, participants learned that the partner achieved a score of "6 out of 8 (75%)." In the Neutral condition, no performance review was provided.

Performance Review

After completing the three tasks, participants received feedback on their overall performance scores in comparison to the partner. In the Prestige and Dominance conditions, they saw the following message:

"1st place: Your partner; 2nd place: You"

In the Neutral condition, they received the following feedback:

"Your partner's score: Average; Your score: Average"

Exchange of Non-Verbal Expression

After the performance review, participants were given the opportunity to send a nonverbal expression to the partner. The instruction stated:

"On the next page, you will have 5 seconds to convey your current feelings to your partner through nonverbal expressions. Look at the camera and try to express your emotions. After your recording, your partner will send you a video clip."

The following screen paused for 20 seconds to create the impression that the video was being sent to the partner. Participants then received a video recording of the partner. In the Prestige condition, the partner displayed a prestigious expression; in the Dominance condition, the partner displayed a dominant expression; and in the Neutral condition, the partner displayed a neutral expression.² The videos were each 5 seconds long, and showed a research assistant who showed one of these three expression.

On the subsequent page, participants were instructed to rate "how the partner may be feeling right now." A static image of the partner's chosen expression was provided on

² The brief videos recorded by the participants were not analyzed.

the screen to assist participants in evaluating the partner's expression. Each page during the evaluation phase included the following instruction:

"Below are a number of words and phrases that describe different feelings and emotions. Read each item and then predict the extent to which the other person is currently experiencing this emotion using the scale shown below."

The Authentic and Hubristic Pride Scales (Tracy & Robins, 2007). Each page presented an anchoring description, "The other person is:", followed by 14 adjective items. The authentic pride scale included *accomplished, achieving, confident, fulfilled, productive, self-worth, and successful* ($\alpha = .97, \omega_{\text{total}} = .98$). The hubristic pride scale included *arrogant, conceited, egotistical, pompous, smug, snobbish, and stuck up* ($\alpha = .93, \omega_{\text{total}} = .96$). The items were rated on a seven-point scale ($1 = \text{Not at all}; 7 = \text{Extremely}$).

The Prestige and Dominance Scales (Cheng et al., 2010). Participants were instructed to read statements about the partner and indicate the extent to which these statements described their overall impression of the partner. The prestige scale ($\alpha = .85, \omega_{\text{total}} = .89, n = 306$) consisted of four items, including "I recognize his/her unique talents and abilities." The dominance scale ($\alpha = .92, \omega_{\text{total}} = .95, n = 309$) included four items, such as "The person enjoys having control over me." Participants rated these items on a seven-point scale ($1 = \text{Not at all}; 7 = \text{Very much}$).

Filler items. A total of 31 emotion adjectives were included for validation purposes. An exploratory factor analysis with varimax rotation was performed to extract the underlying factors. A scree plot suggested three factors: Positive Affect, Hostile Affect, and Negative Affect (see Figure 7 & Table 2).

Figure 7. A Scree Plot of Exploratory Factor Analysis among 31 Filler Items

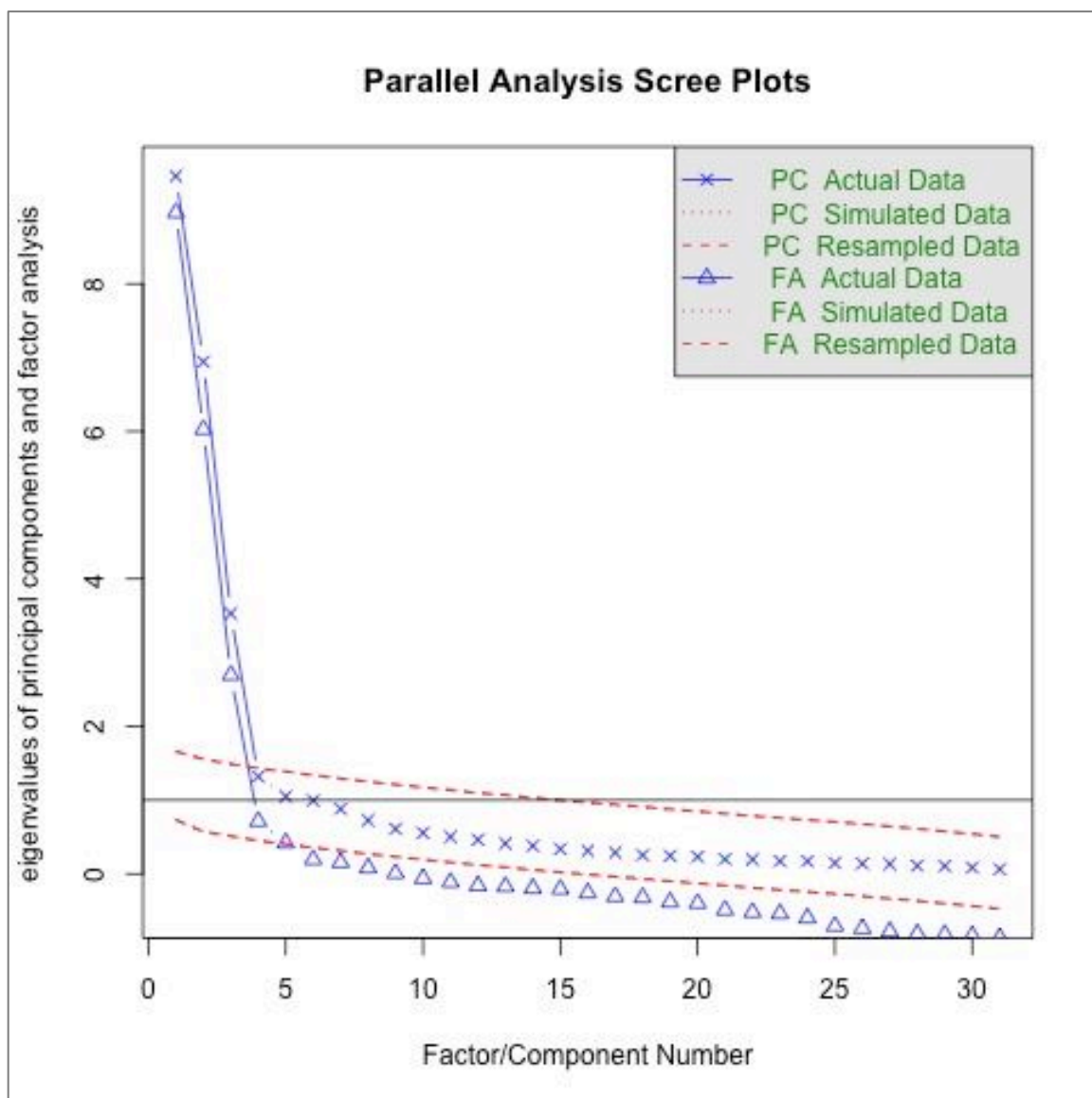


Table 2. Three-Factor EFA Loadings for 31 Filler Items

Item	Factor loading		
	1	2	3
interested	.84	-.09	-.08
inspired	.83	-.10	-.16
active	.83	.01	-.02
excited	.82	-.15	-.26
determined	.81	.15	-.18
enthusiastic	.80	-.13	-.27
creative	.79	-.12	.03
exceptional	.78	.16	-.17
strong	.77	.17	-.18
gifted	.73	.24	-.12
intellectual	.71	.06	-.10
curious	.67	-.10	.21
alert	.67	.04	.06
attentive	.64	-.03	.03
aggressive	-.06	.87	.05
disrespectful	-.01	.87	.14
hostile	-.10	.87	.09
scornful	-.06	.87	.18
insulting	-.07	.86	.10
irritated	-.15	.83	.14
contemptuous	.08	.83	.14
powerful	.26	.76	-.09
superior	.34	.68	-.17
afraid	-.03	.11	.85
scared	-.06	.09	.84
nervous	-.10	-.10	.78
distressed	-.18	.23	.74
guilty	-.12	.08	.74
ashamed	-.28	.14	.68
jittery	.22	-.06	.55
upset	-.38	.35	.55
<i>Cronbach's alpha</i>	.94	.93	.85
<i>Omega total</i>	.96	.97	.93

Note. Factor loadings above .50 are in bolded.

The Ultimatum Game (UG)

Participants learned about the UG by reading several informational webpages. All participants were assigned to the role of proposer. In the Prestige and Dominance conditions, participants were informed that they would take on the role of proposer, while the partner would be the responder, based on their performance in the previous tasks. In the Neutral condition, role assignment was based on “random selection.” It was emphasized that the final monetary rewards for both players would depend on how they allocated tokens, which would be converted into actual money after the experiment.

Then, the Information (Deception) manipulation was introduced. Participants received 12 tokens to distribute with the responder and learned that each token was worth \$1.00 to them but only \$0.50 (50 cents) to the partner. In the *Symmetric* condition, it was emphasized that the partner was *aware* of this rule, meaning the responder knew that one token equaled \$1.00 for the proposer and \$0.50 for themselves. In the *Asymmetric* condition, it was emphasized that the partner was *unaware* of this rule, so the responder would assume that one token equaled \$1.00 for both the proposer and them.

Then, participants completed four practice quizzes with different scenarios in a multiple-choice format. They received feedback on their understanding for each time, with detailed instructions provided whether they provided incorrect responses or not. This was implemented to enhance understanding of the UG rules in the current context.

Fear of rejection. Participants were asked to rate their fear of rejection on a 7-point scale just before making their offer in the UG. The scale was described as follows: "Before making your final offer, please answer the question below. To what extent is it

important for you to avoid your partner rejecting your offer? (*1 = Not important; 7 = Very important*)."

Token allocation in the UG. Prior to making their final decision, participants were reminded once again about the rule regarding the differential monetary values for the proposer and the responder. They were then instructed to indicate the number of tokens they would offer to the other person using an integer scale ranging from 0 to 12. Following their decision, there was a 15-second pause to create the impression as if the responder needed some time to make a decision. Regardless of the nature of their offer, participants received a simulated "rejection" from the responder. However, during the debriefing, they were informed that the partner was a simulation: participants were shown videos, and responses attributed to the partner were actually timed and automated. Participants received a monetary compensation of \$4.00 before leaving the experiment. There was no formal suspicion check during debriefing.³

³ Informal communication with the first ten participants indicated that very few of them raised suspicion about the hypotheses and the presence of simulated video during the experiment. Note also that manipulation checks can induce an unwelcome dynamic into the study which may contaminate the processes a research is interested in investigating (Hauser, Ellsworth & Gonzalez, 2018).

Chapter 8: Result

Descriptive Statistics

Table 3 presents the zero-order correlations among the variables investigated in the current experiment. Participants with higher chronic fear of rejection demonstrated a greater need for structure ($r = .23, p < .01$), lower extraversion ($r = -.23, p < .01$), lower emotional stability ($r = -.372, p < .01$), lower narcissism ($r = -.325, p < .01$), and higher fear of rejection during the Ultimatum Game (UG) ($r = .207, p < .01$). Narcissistic individuals were more likely to be extraverted ($r = .417, p < .01$), less agreeable ($r = -.159, p < .01$), more emotionally stable ($r = .143, p < .01$), and more open to new experience ($r = .218, p < .01$). These correlations support the nomological networks of the personality variables examined and align with previous research.

Consistent with previous findings, participants who viewed the partner to be authentic were more likely to see him/her as prestigious ($r = .411, p = .02$) and expressing positive affect ($r = .842, p < .01$). Similarly, participants who viewed the partner to be hubristic were more likely to view him/her as dominant ($r = .55, p < .01$) and expressing hostile affect ($r = .708, p < .01$). The correlations between perceptions of authentic pride and hubristic pride were weak ($r = .172, p < .01$), as were the correlations between perceptions of prestige and dominance ($r = -.159, p = .01$), suggesting independence of these variables. These correlations align with prior research (e.g., Cheng et al., 2010).

Regarding token allocation during the UG, only three variables showed significant correlations. Participants tended to allocate more tokens to partners whom they perceived as authentically proud ($r = .180, p < .01$), prestigious ($r = .231, p < .01$), and expressing positive affect ($r = .171, p < .01$).

Table 3. Zero-Order Correlations among the Present Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<u>Personality trait</u>																
1 Fear of rejection	--															
2 Need for closure	.230	--														
3 Extraversion	-.230	-.131	--													
4 Agreeableness	.100	.090	-.016	--												
5 Emotional stability	-.372	-.225	.110	.111	--											
6 Openness	-.147	-.146	.345	.087	.074	--										
7 Conscientiousness	-.077	.190	.087	.104	.217	.172	--									
8 Narcissism	-.325	-.101	.417	-.159	.143	.218	.035	--								
<u>Evaluation of the partner</u>																
9 Authentic pride	.056	-.025	-.054	.060	.011	-.036	-.014	-.012	--							
10 Hubristic pride	.091	.013	.005	-.066	.026	-.116	-.085	.078	.172	--						
11 Prestige	.090	-.079	-.006	-.023	-.022	.039	.003	-.110	.411	-.092	--					
12 Dominance	.080	-.005	-.012	-.081	.058	-.027	-.106	.026	-.041	.550	-.159	--				
13 Positive Affect	.033	-.051	-.086	.038	.056	.014	-.071	.057	.842	.165	.439	-.001	--			
14 Hostile Affect	.140	-.028	.007	-.058	.018	-.061	-.052	.002	.017	.708	-.146	.675	.072	--		
15 Negative Affect	-.001	-.062	.093	-.070	-.042	.062	-.080	.063	-.489	.103	-.139	.143	-.287	.208	--	
<u>The Ultimatum Game</u>																
16 Fear of rejection	.207	.120	-.011	-.075	-.066	-.103	-.063	-.003	-.078	-.025	.044	-.009	-.044	-.026	.069	--
17 Token allocation	.036	-.026	-.049	.007	-.052	.070	-.003	-.054	.180	-.069	.231	-.096	.171	-.098	-.128	.045

Note. Statistically significant correlations ($p = .01$, two-tailed based on pairwise deletion) are in bold.

Table 4. Means and Standard Deviations of the Key Variables across Conditions

Condition	<i>n</i>	Variable											
		Authentic Pride		Hubristic Pride		Prestige		Dominance		State Fear of Rejection		Token Allocation	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Neutral													
Symmetric	50	2.66	1.01	1.92	0.97	3.90	1.22	2.11	1.32	4.98	1.58	7.00	1.59
Asymmetric	53	2.75	1.02	2.15	1.00	3.88	1.19	2.46	1.50	5.00	1.81	6.91	2.19
Dominance													
Symmetric	52	4.46	1.40	3.17	1.46	4.54	1.27	3.15	1.47	5.14	1.87	7.50	2.28
Asymmetric	52	4.58	1.47	3.50	1.74	4.50	1.33	3.51	1.58	4.75	1.90	6.96	2.35
Prestige													
Symmetric	53	6.11	0.78	2.23	1.00	5.23	0.89	2.07	1.30	4.51	1.94	8.06	2.34
Asymmetric	49	6.22	0.69	2.22	1.21	5.05	1.19	2.00	1.39	4.82	2.01	7.51	2.63

Note. Authentic pride, hubristic pride, prestige, dominance, and fear of rejection are scaled on 1 to 7. Token allocation ranges from 0 to 12.

Table 4 presents means and standard deviations of authentic pride, hubristic pride, prestige, dominance, fear of rejection, and token allocation during the UG by experimental conditions.

Manipulation Check

Pride expression of the partner

I conducted a 2 within (Pride Dimension: Authentic vs. Hubristic) x 3 between (Status Manipulation: Neutral vs. Dominance vs. Prestige) analysis of variance (ANOVA) to examine mean differences in the rating of pride expression. Gender did not result in any significant effect across all conditions and will not be further discussed. Mean differences by experimental conditions are depicted in Figure 8.

There was a significant main effect of Pride Dimension, $F(1, 306) = 516.87, p < .001, \eta_p^2 = .63$. Participants consistently rated the partner as more authentic ($M = 4.46, SD = 1.79$) than hubristic ($M = 2.54, SD = 1.38$) regardless of experimental conditions.

There was also a significant main effect of Status Manipulation, $F(2, 306) = 117.44, p < .001, \eta_p^2 = .43$. Post-hoc tests using Tukey's Honestly Significant Difference revealed that participants perceived the partner in the Prestige condition ($M = 4.19, SD = 2.18$) or the Dominance condition ($M = 3.93, SD = 1.63$) as significantly prouder than in the Neutral condition ($M = 2.37, SD = 1.05$), regardless of pride dimensions, $ps < .001$.

Importantly, a significant interaction was found between Pride Dimension and Status Manipulation, $F(2, 306) = 142.80, p < .001, \eta_p^2 = .48$. The partner was perceived as the most authentic in the Prestige condition ($M = 6.16, SD = 0.74$) compared to the Dominance condition ($M = 4.52, SD = 1.43$) and the Neutral condition ($M = 2.71, SD = 1.01$), $F(2, 306) = 253.90, p < .001, \eta_p^2 = .62$. Conversely, for the rating of hubristic pride, the partner in the Dominance

condition was perceived as the most hubristic ($M = 3.33$, $SD = 1.60$) compared to the Prestige condition ($M = 2.23$, $SD = 1.10$) and the Neutral condition ($M = 2.04$, $SD = 0.98$), $F(2, 306) = 31.73$, $p < .001$, $\eta_p^2 = .17$. These results confirm the effectiveness of the status manipulation in influencing the expression of the partner as intended.

Status expression of the partner

I conducted a 2 within (Status Dimension: Prestige vs. Dominance) x 3 between (Status Manipulation: Neutral vs. Dominance vs. Prestige) analysis of variance (ANOVA) to examine mean differences in the rating of non-verbal expression measured by Witkower et al. (2019). Gender had no significant effect across all conditions and will not be further discussed. Mean differences by experimental conditions are depicted in the two right-hand panels of Figure 8.

There was a significant main effect of Status Dimension, $F(1, 301) = 286.49$, $p < .001$, $\eta_p^2 = .49$. Participants consistently rated the partner as more prestigious ($M = 4.51$, $SD = 1.29$) than dominant ($M = 2.57$, $SD = 1.53$) regardless of experimental conditions.

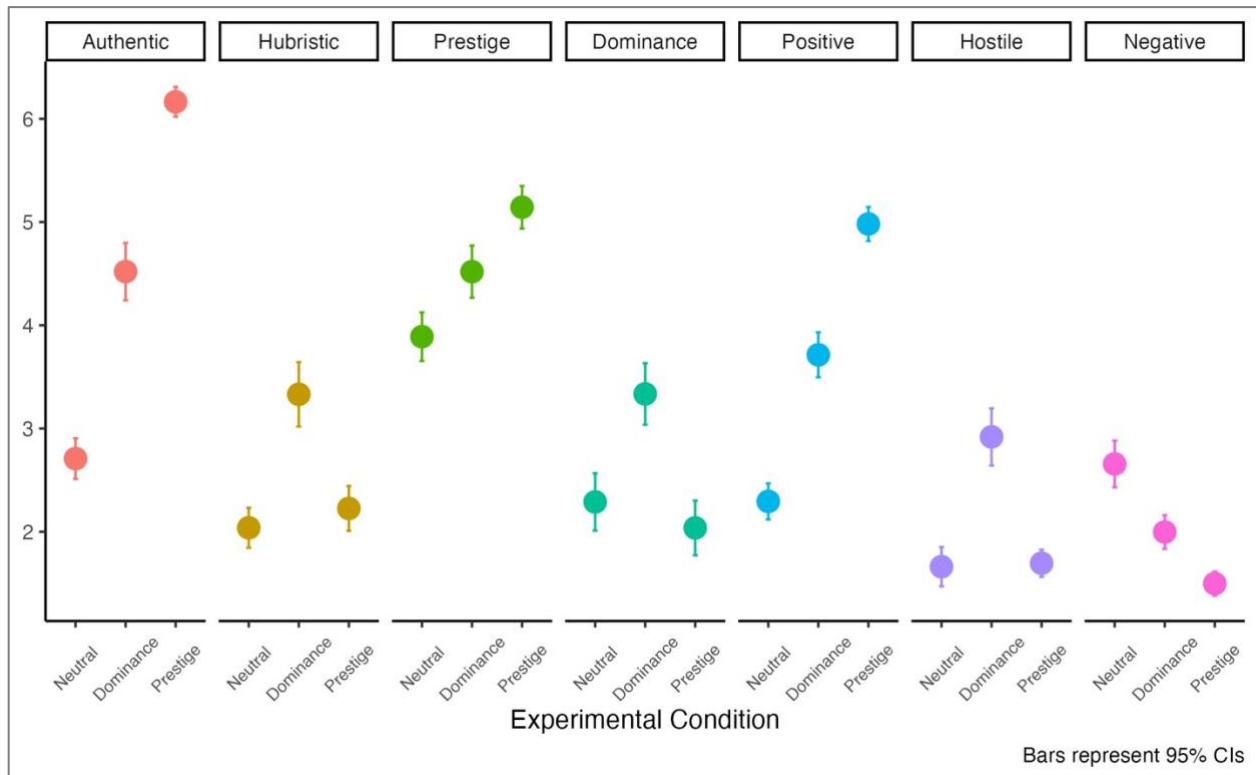
There was also a significant main effect of Status Manipulation, $F(2, 301) = 24.97$, $p < .001$, $\eta_p^2 = .14$. Post-hoc tests using Tukey's Honestly Significant Difference revealed that participants perceived the partner in either the Prestige condition ($M = 3.59$, $SD = 1.96$) or the Dominance condition ($M = 3.94$, $SD = 1.52$) as significantly higher in status compared to the Neutral condition ($M = 3.09$, $SD = 1.53$), regardless of the type of perceived status expression, $p_s < .001$. However, there was no significant difference between the Prestige and Dominance conditions, $p = .09$.

Most importantly, a significant interaction was found between Status Dimension and Status Manipulation, $F(2, 301) = 25.94$, $p < .001$, $\eta_p^2 = .15$. For the rating of Prestige, the partner was perceived as the most prestigious in the Prestige condition ($M = 5.13$, $SD = 1.04$) compared

to the Dominance condition ($M = 4.51$, $SD = 1.29$) and the Neutral condition ($M = 3.89$, $SD = 1.19$), $F(2, 301) = 27.75$, $p < .001$, $\eta_p^2 = .16$. Conversely, for the rating of Dominance, the partner in the Dominance condition was perceived as the most dominant ($M = 3.36$, $SD = 1.52$) compared to the Prestige condition ($M = 2.05$, $SD = 1.34$) and the Neutral condition ($M = 2.30$, $SD = 1.42$), $F(2, 301) = 23.99$, $p < .001$, $\eta_p^2 = .14$. These results support the effectiveness of the status manipulation in influencing the non-verbal expression of the partner's status as intended.

The experimental manipulation of status also induced systematic changes in the ratings of Positive Affect, Hostile Affect, and Negative Affect (see Figure 8). The pattern of Positive Affect resembled that of Authentic Pride, while Hostile Affect resembled Hubristic Pride. The experimental manipulation of status appears to have reduced the perception of Negative Affect, as indicated by the Neutral condition showing the highest rating.

Figure 8. Ratings of Emotion/Status Expressions of the Partner during the Ultimatum Game



Comprehension of the UG rule

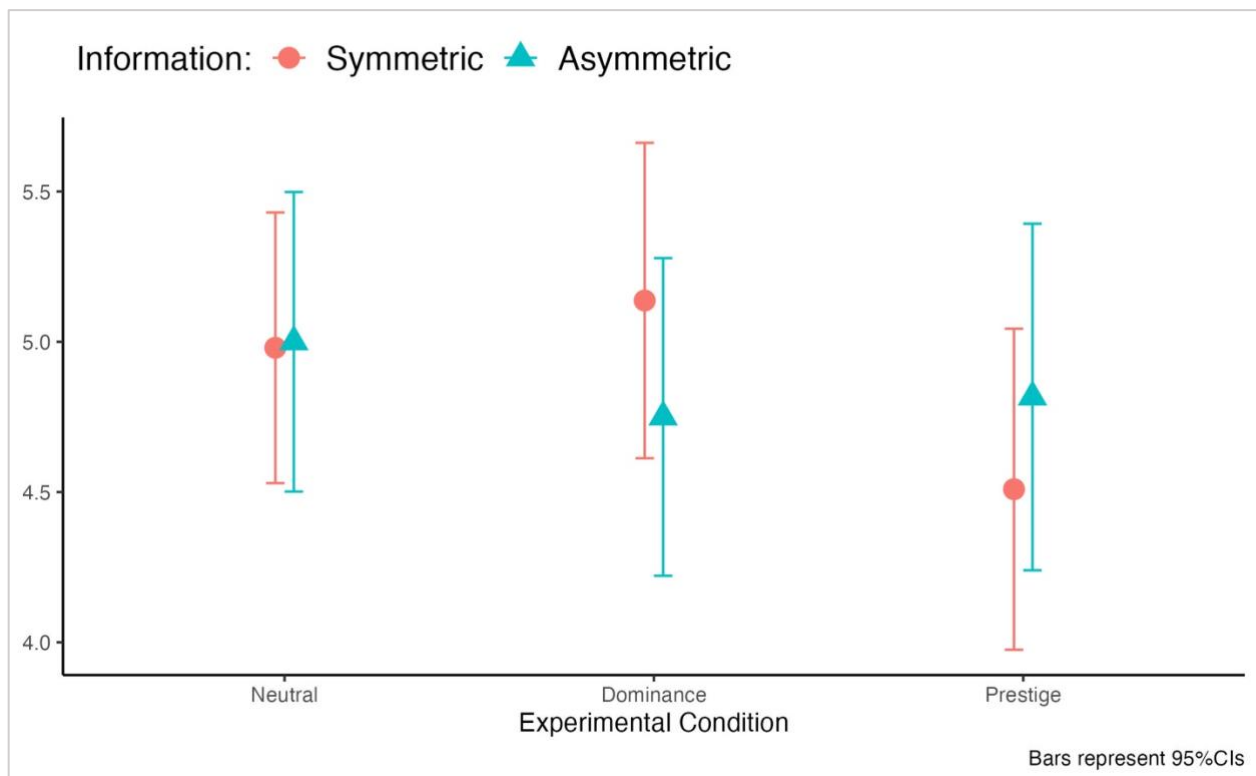
How well did the participants understand the current rule of the UG? The majority of the participants demonstrated an adequate understanding of the UG rule: 160 (51%) participants answered all four comprehension quizzes correctly, 85 (27%) participants got three correct, 46 (15%) got two correct, 17 (6%) participants got one correct, and one participant got zero correct. Although the documented comprehension level was clearly variable, it did not significantly differ between conditions. To further investigate, a 3 (Status Manipulation: Prestige vs. Dominance vs. Neutral) x 2 (Information Manipulation: Symmetric vs. Asymmetric) between-subjects ANOVA was conducted on the number of correct answers in the comprehension quiz. None of the main effects or the interaction yielded significant effects, with $F_s < 1.00$ and $p_s > .32$. However, it is not clear whether those who showed poor comprehension did learn after being informed of their mistakes and made their final decisions with a correct understanding.

Since there was no measure of participants' math abilities, poor comprehension of the UG rule is a potential threat to internal validity of the current experiment (but see the alternative analysis on the target dependent variable described below).

State fear of rejection

I conducted a 3 (Status Manipulation: Prestige vs. Dominance vs. Neutral) x 2 (Information Manipulation: Symmetric vs. Asymmetric) between-subjects ANOVA on fear of rejection participants reported before making a decision in the UG. None of the main effects nor the interaction yielded significant effects, $F_s < 0.97$, $p_s > .38$. Participants' fear of rejection ($M = 4.86$, $SD = 1.85$) did not significantly differ by experimental conditions (Figure 9).

Figure 9. Fear of Rejection across Six Conditions



Token allocation during the Ultimatum Game (UG)

I conducted a 3 (Status Manipulation: Prestige vs. Dominance vs. Neutral) x 2

(Information Manipulation: Symmetric vs. Asymmetric) between-groups ANOVA on the number of tokens (ranging from 0 to 12) that participants offered to the partner during the UG. There was only a significant main effect of Status Manipulation, $F(2, 303) = 3.72, p = .025$, $\eta_p^2 = .02$. Post-hoc tests using Tukey's Honestly Significant Difference showed that participants in the Prestige condition offered a significantly higher number of tokens ($M = 7.79, SD = 2.49$) than those in the Neutral condition ($M = 6.95, SD = 1.92$), $p = .02$, but not significantly more than in the Dominance condition ($M = 7.23, SD = 2.32$), $p = .17$. Participants' offers in the Dominance condition did not significantly differ from the Neutral condition, $p = .65$. Notably, the Prestige condition was the only condition in which participants offered a fair split (8 tokens to offer, 4 tokens to keep), resulting in a \$4.00 - \$4.00 split, regardless of the information transparency on the side of the partner (see Figure 10). These results support Prediction 1.

There was no significant main effect of Information Manipulation, $F(1, 303) = 2.35, p = .13$, and no significant Status Manipulation x Information Manipulation interaction, $F(2, 303) = 0.34, p = .71$. Therefore, the effectiveness of status differentiation did not depend on whether participants had an opportunity to exploit the partner who did not know about the rule of the UG. These results do not support Predictions 2 and 3.

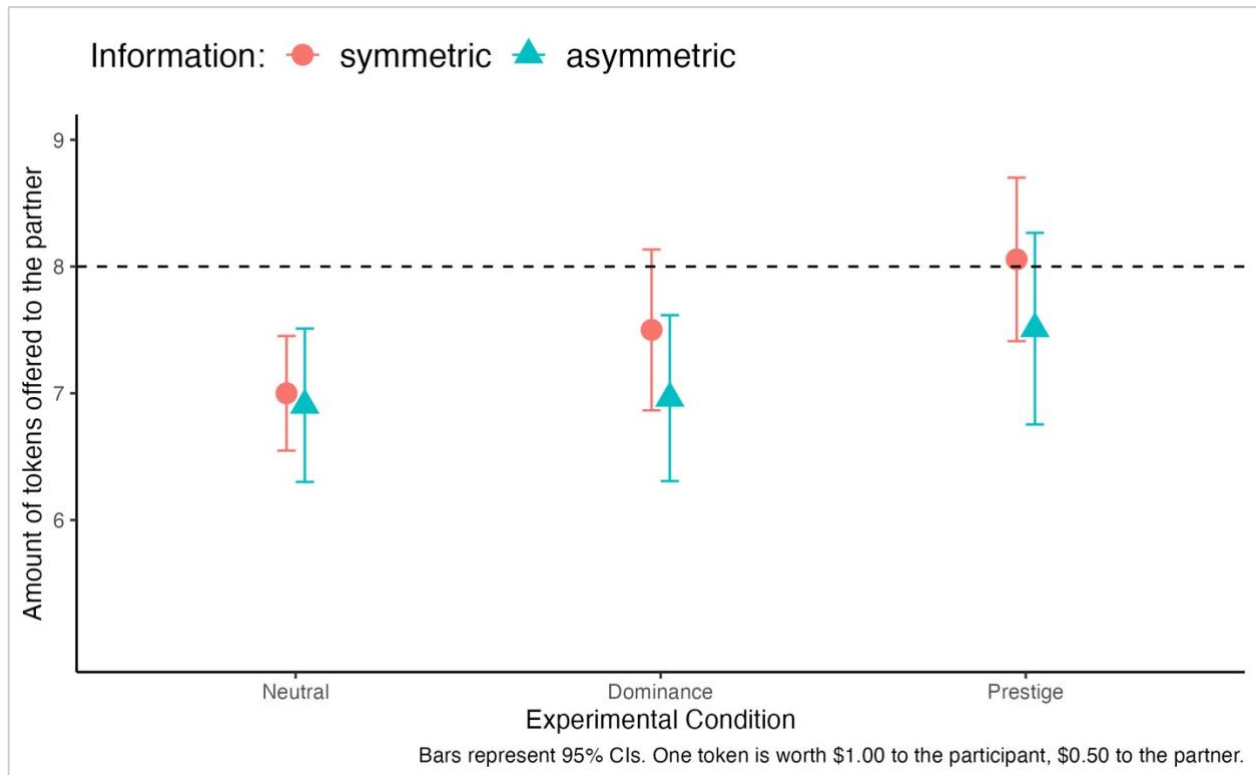
Ruling out threats to the internal validity of the experiment

To eliminate the possibility that comprehension of the current Ultimatum Game (UG) rule led to any systematic effects on token allocation, participants were categorized into two groups: those who answered all four comprehension quizzes correctly (perfect comprehension, $n = 160$) and those who did not (incomplete comprehension, $n = 149$). Subsequently, a 3 (Status Manipulation: Prestige vs. Dominance vs. Neutral) x 2 (Information Manipulation: Symmetric vs. Asymmetric) x 2 (Comprehension: Perfect vs. Imperfect) between-subjects ANOVA was

conducted on token allocation. The effect of Status Manipulation remained significant, $F(2, 297) = 3.72, p = .025$, while the Comprehension effect did not exhibit significant interactions with other factors, $F_s < 2.03, p_s > .155$.

During the period spanning from the fall of 2021 to the spring of 2022, a mask mandate was enforced on the campus. Consequently, participants attending during this timeframe viewed a video in which the other experimenter and the partner wore masks. The partner in this video then removed his/her mask shortly after being seated by the experimenter. Conversely, participants attending after the summer of 2022 did not observe the mask-wearing video but instead viewed a video wherein the partner without a mask sat in front of a computer screen and read the instructions. To assess the potential influence of this timing on the targeted dependent variable, a dummy variable for Time (0 = before the mask mandate, $n = 132$; 1 = after the mask mandate, $n = 177$) was introduced. A subsequent 3 (Status Manipulation: Prestige vs. Dominance vs. Neutral) x 2 (Information Manipulation: Symmetric vs. Asymmetric) x 2 (Time: Before vs. After) between-subjects ANOVA was performed on token allocation. The effect of Status Manipulation remained significant, $F(2, 297) = 3.72, p = .025$, while the Time effect did not significantly interact with other factors, $F_s < 1.78, p_s > .170$. These supplementary analyses ensure that the observed effects were not influenced by other factors that might have compromised the internal validity of the experiment.

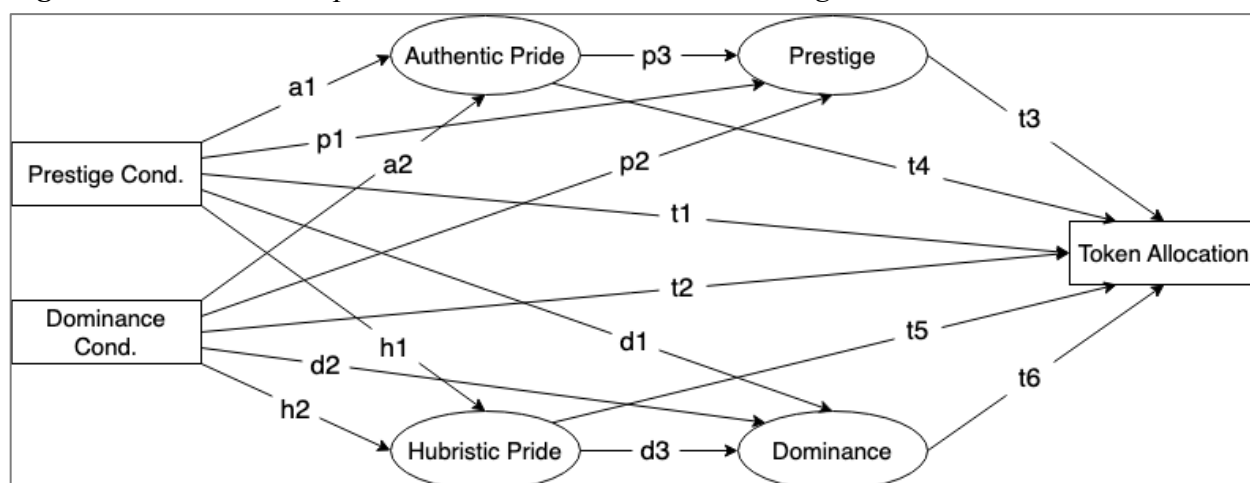
Figure 10. Token Allocation during the Ultimatum Game across Six Conditions



Mediation

I conducted a mediation model to test the central predictions made by the two-facet theory of pride and status. Following the PROCESS framework by Hayes (2022), I created the following serial multiple mediator model: (1) multiple multi-categorical antecedents (defined as categorical predictors for both Prestige Cond. dummy and Dominance Cond. dummy) → perception of pride → perception of status → token allocation (Figure 11). Authentic pride (prestige) was relatively unrelated to hubristic pride (dominance), so these two variables were not correlated in the path model (see Table 3). All coefficients were estimated by *R*-package *lavaan* (Rosseel, 2012).

Figure 11. A Serial Multiple Mediation Model with Multi-Categorical Antecedents



Note. The Prestige Cond. dummy is coded as: 0 = Neutral; 1 = Prestige; 0 = Dominance. The Dominance Cond. dummy is coded as: 0 = Neutral; 0 = Prestige; 1 = Dominance.

Mediation results

The model test statistic showed that the proposed model, $\chi^2(4) = 29.391$, $p < .001$ was significantly better from the model-implied baseline. The model obtained CFI = 0.955, indicating a 95.5% improvement of the current model compared to the baseline model. The model obtained RMSEA = 0.145 90% CI [0.098, 0.196], which is within a desirable range. The model obtained a SRMR = 0.036, which suggests an adequate model. Table 5 summarizes regression coefficients, standard errors, and model summary information for the serial multiple mediator model depicted in Figure 11. Table 6 summarizes the associated indirect effects.

Hubristic pride and dominance did not mediate any paths between experimental manipulation and token allocation; however, authentic pride and prestige showed significant indirect effects (see Table 6). Specifically, examining simple mediations only, perception of prestige marginally mediated the relationship between the effect of prestige manipulation and token allocation for the prestige condition, indirect effect $b = .184$, $p = .076$, though not for the dominance condition, indirect effect $b = .089$, $p = .180$. However, a similar simple mediation for

authentic pride was not reliable for neither the prestige condition nor the dominance condition, indirect effects $b = .625, p = .118$ and $b = .324, p = .120$, respectively.

More importantly, both the prestige manipulation and the dominance manipulation increased token allocation in a sequential mediation model via increases in authentic pride and prestige: experimental manipulation of status increased perception of authentic pride, which increased perception of prestige, which then increased token allocation, indirect effects prestige condition and the dominance condition, $b = .188, p = .042$ and $b = .097, p = .045$, respectively. The observation that the direct paths between the experimental manipulations of status and the outcome ($t1$ & $t2$ in Figure 11; $X1$ & $X2$ in Table 5) appear negligible once the mediators are included indicates complete indirect effects. An exploratory analysis confirmed that the reverse indirect path, status manipulation \rightarrow prestige \rightarrow authentic pride \rightarrow token allocation, did not yield significance. Overall, these results clearly support Hypothesis 1, 2, & 3, and partially support Hypothesis 4, 5, & 6 outlined in Chapter 5.

Table 5. Regression Coefficients, Standard Errors, and Model Summary Information for the Serial Multiple Mediator Model Depicted in Figure 11

Predictor	M1 (Authentic Pride)			M2 (Prestige)			M3 (Hubristic Pride)			M4 (Dominance)			Y (Token Allocation)		
	<i>Coeff.</i>	<i>SE</i>	<i>p</i>	<i>Coeff.</i>	<i>SE</i>	<i>p</i>	<i>Coeff.</i>	<i>SE</i>	<i>p</i>	<i>Coeff.</i>	<i>SE</i>	<i>p</i>	<i>Coeff.</i>	<i>SE</i>	<i>p</i>
Intercept	2.725	0.108	<. 001	3.390	0.202	<. 001	2.048	0.123	<. 001	1.191	0.172	<. 001	5.705	0.579	<. 001
X1 (Prestige cond.)	3.427	0.154	<. 001	0.615	0.265	.021	0.200	0.175	.251	-0.363	0.177	.040	-0.157	0.505	.755
X2 (Dominance cond.)	1.777	0.153	<. 001	0.299	0.196	.126	1.274	0.174	<. 001	0.365	0.190	.055	0.031	0.392	.938
M1 (Authentic Pride)	—	—	—	0.183	0.061	.003	—	—	—	—	—	—	0.182	0.116	.117
M2 (Prestige)	—	—	—	—	—	—	—	—	—	—	—	—	0.299	0.108	.006
M3 (Hubristic Pride)	—	—	—	—	—	—	—	—	—	0.542	0.058	<. 001	-0.128	0.115	.265
M4 (Dominance)	—	—	—	—	—	—	—	—	—	—	—	—	-0.062	0.100	.538
	$R^2 = .62$			$R^2 = .18$			$R^2 = .17$			$R^2 = .331$			$R^2 = .068$		

Note. All coefficients are unstandardized. The Prestige cond. dummy represents: 0 = Neutral; 1 = Prestige; 0 = Dominance. The Dominance cond. dummy represents: 0 = Neutral; 0 = Prestige; 1 = Dominance.

Table 6. Indirect Effects for the Serial Multiple Mediator Model Depicted in Figure 11

	Y (Token Allocation)		
	<i>Coeff.</i>	<i>SE</i>	<i>p</i>
Prest Cond. →			
Authentic Pride → Y ($a1 * t4$)	0.625	0.400	.118
Prestige → Y ($p1 * t3$)	0.184	0.103	.076
Authentic Pride → Prestige → Y ($a1 * p3 * t3$)	0.188	0.093	.042
Hubristic Pride → Y ($h1 * t5$)	-0.026	0.032	.424
Dominance → Y ($d1 * t6$)	-0.007	0.012	.588
Hubristic Pride → Dominance → Y ($h1 * d3 * t6$)	0.022	0.038	.555
Dominance Cond. →			
Authentic Pride → Y ($a2 * t4$)	0.324	0.209	.120
Prestige → Y ($p2 * t3$)	0.089	0.067	.180
Authentic Pride → Prestige → Y ($a2 * p3 * t3$)	0.097	0.048	.045
Hubristic Pride → Y ($h2 * t5$)	-0.163	0.148	.270
Dominance → Y ($d2 * t6$)	-0.023	0.038	.558
Hubristic Pride → Dominance → Y ($h2 * d3 * t6$)	-0.043	0.069	.540

Note. All coefficients are unstandardized. The Prestige cond. dummy represents: 0 = Neutral; 1 = Prestige; 0 = Dominance. The Dominance cond. dummy represents: 0 = Neutral; 0 = Prestige; 1 = Dominance.

Chapter 9: Discussion

This dissertation tested the hypothesis that authentic pride (prestige) and dominance (hubristic pride) have divergent roles in influencing cooperation, with the former supporting prosociality, and the latter increasing anti-sociality. To test the hypothesis, the current experiment elicited status differentiation within the context of a competitive game by manipulating performance and corresponding emotional expressions. In this context, the experiment examined people's willingness to offer money to an anonymous yet superior opponent. Participants were more willing to offer a fair amount of money to the partner who showed prestigious expressions—genuine smile, authentic pride, and indication of competency. This occurred in spite of the fact that the partner outperformed participants and regardless of whether participants had a chance to exploit the opponent. However, participants were no more willing to offer money to the partner who indicated dominance—hubris, aggression, and intimidation—compared to the neutral condition without any status differentiation. These results support the hypothesis that authentic pride and prestige promote cooperation and partially support the hypothesis that hubristic pride and dominance do not promote cooperation.

Contributions to the literature

The current results make several contributions to the understanding of the mixed effects of status on cooperation in the literature by clarifying the two kinds of pride and status. Specifically, the current experimental evidence highlights the effectiveness of authentic pride and prestige in promoting cooperation and *ineffectiveness* of hubristic pride and dominance. The findings on prestige are consistent with prior research pointing to the prosocial consequences of pride (Güth et al., 2007; Eckel et al., 2010; Potters et al., 2006, 2007). The mediation analyses clarified the causal pathway in which status differentiation increased cooperation through

perception of authentic pride, which in turn increased perception of prestige. This causal mechanism explains why status differentiation via winning a trivia quiz increased cooperation in Ball and Eckel (1998) and Ball et al. (2001): such status might have been interpreted as authentic and prestigious. The current evidence also converges with recent experimental evidence on other domains of cooperation. For instance, senders in a trust game were more likely to trust and send money to those who showed a genuine smile, which was hypothesized to signal honesty (Centorrino et al., 2015). Nonverbal display of prestige in the current experiment may have also signaled a range of attributes that enhanced trust.

To be sure, the effect of prestige on cooperation in this dissertation only resulted in a fair split (50:50), indicating that participants did not cooperate to the extent that they sacrificed their money. However, it is notable that people across cultures typically give out 40% (4:6 split) of the given pie in the Ultimatum Game (Oosterbeek et al., 2004), and that the observed fair split in the prestige conditions clearly deviates from the previously reported average in the literature. This finding also raises the possibility that pride may be a motivator for fairness. Perhaps participants viewing a prestigious expression were motivated to make evenhanded offers (arguably fair offers) because the prestigious seemed to deserve a fair reward for being competent. Future research should investigate whether prestige is a prerequisite of fairness or/and cooperation.

The relationship between pride and status

It is worth noting that the current mediation analyses have clarified the proposed causal path between pride and status. Perceived authentic pride, by itself, did not directly increase cooperation. However, there was a noticeable impact on cooperation when perceived authentic pride was translated into perceptions of prestige (and not the other way around), leading to increased cooperation towards individuals perceived as prestigious. This significant mediation

supports the proposed function of authentic pride, which underlies the function of prestige. When individuals express authentic pride, it signals that they have attained a certain status, and the interpretation of that pride facilitates understanding why the person is successful.

Contributions to the ongoing debate on the dual-facet nature of pride and status

The observed findings also contribute to the ongoing debate about whether hubristic pride should be considered a part of pride and whether dominance is an effective strategy for navigating status hierarchies. To the best of my knowledge, the present study is the first to experimentally test the key predictions made by the two-facet theory of pride/status (Tracy & Robins, 2007; Cheng et al., 2010) that suggest authentic pride and prestige, rather than hubristic pride and dominance, promote prosocial behavior. This experimental evidence is crucial, especially considering that much of the previous evidence for the theory comes from correlational studies that measure pride/status as a personality trait (Dickens & Robins, 2020).

The finding that hubristic pride and dominance did not increase cooperation supports Hypotheses 4, 5, & 6. However, the idea that dominance is an *effective* and *necessary* strategy to manage status hierarchies (Cheng et al., 2010; Cheng et al., 2021) did not receive clear support in the current experiment. The prediction that the effectiveness of dominance would depend on the constraint in which proposers felt pressure to concede to the dominant proposer did not hold true, as dominance did not increase cooperation under such circumstances. This finding is consistent with previous research that emphasizes the more significant role of prestige than dominance in human status hierarchies (Garfield et al., 2020; Garfield & Hagen, 2020; Durkee et al., 2020).

An emerging anthropological and ethnographic literature supports the idea of the prosocial function of prestige, while evidence supporting the evolutionary role of dominance remains ambiguous. Prestige can be seen as one type of leadership that involves making

decisions benefiting group members (Hagen & Garfield, 2020). Importantly, these cognitive abilities associated with prestige are relatively independent of physical strength and intimidation, which are typically associated with dominance (Garfield et al., 2019). It is plausible that prestige, not dominance, evolved as an effective mechanism to manage status hierarchies throughout human evolutionary history, given its focus on decision-making that benefits the group.

Moreover, if hubristic pride fails to benefit the observer, it is arguably difficult for it to evolve as an emotion according to the criteria of basic emotions outlined in Chapter 2. Instead, what was commonly referred to as "hubristic pride" may simply be labels that people use to describe pride displayed by others (Kusano & Kimmelmeier, 2023). In this perspective, what may have evolved is a self-enhancing strategy to cope with disliked individuals' success. For instance, if you proudly secure a prestigious academic job, your friends and siblings might admire your achievements and highlight your intelligence and hard work. However, detractors may not hold the same level of respect for the prestige of your new job. Instead, they might emphasize external factors, such as opportunities or connections, to downplay your accomplishments and bolster their own self-worth. Consequently, to your detractors, you might appear hubristic, even if hubristic pride never crosses your mind. In this context, hubristic pride may not be an evolved emotion; instead, a more relevant emotion could be malicious envy, a disliking emotion that arises when making unfavorable upward comparisons with successful others (Lange & Crusius, 2015). Future research should explore whether malicious envy leads to the perception of hubristic pride in superior individuals. To further support the argument of hubristic pride, future research should define specific adaptive criteria for hubristic pride and elucidate how it might have evolved independently of authentic pride.

Application

The findings from this dissertation offer clear practical applications. The common perception that expressions of pride, especially hubristic pride, are arrogant or socially unacceptable needs to be reconsidered. Being proud and expressing authentic pride can inspire admiration and prosocial action, and it should be encouraged. From a social-psychological perspective, pride, particularly prestige, can foster unity and solidarity as an individual's expression of pride and the recognition of their accomplishments essentially celebrate the group or collective. Thus, expressions of pride are not just self-focused; they can also convey a sense of belonging to a particular community, fostering norm creation and cultural change.

However, the recent work by Kusano and Kimmelmeier (2023) points to some limiting conditions. For cooperation to occur, there needs to be a preexisting social bond between the person expressing pride and the audience. If observers are inclined to reject genuine pride expression, it may be construed as arrogance, leading to reduced willingness to cooperate.

Another crucial application is that dominance may not yield positive outcomes because people generally dislike dominant individuals. Although an angry person might coerce cooperation under high-pressure conditions, the current evidence suggests that people perceive successful others as hubristic and dominant when their success is judged to be unmerited. Therefore, dominance did not significantly increase cooperation in any of the experimental conditions in this dissertation. Contrary to the notion that dominance is necessary to explain human status hierarchy, it may be effective only under limited circumstances and does not promote unity and cooperation. The lesson is clear: displays of hubristic pride and dominance can backfire.

In conclusion, pride can be effectively used to foster various forms of communication,

whether for sustainable actions or climate change policies, as long as it is associated with prestige and conveyed as an authentic emotion resulting from accomplishments in culturally valued domains. High-status individuals must demonstrate pride along with competency that followers value, as this can mitigate perceptions of hubristic pride and dominance.

Limitations

The current results need to be interpreted with several key limitations in mind. First, the current paradigm of the Ultimatum Game (UG) failed to elevate state-level fear of rejection in the proposer when making an offer, contrary to previous work using the similar paradigm (e.g., Van Dijk et al., 2008). The fact that participants were explicitly asked to think about fear of rejection prior to making their offers might have prepared them to be vigilant about the possibility of being rejected; this, in turn, may have reduced the fear of rejection. Regardless of the cause, this limitation is critical, as testing the effectiveness of dominance on cooperation depended on the presence of fear of rejection.

The lack of fear of rejection during the UG might have been a problem of endogeneity, a condition in which the independent variable (fear of rejection) is influenced by the very nature of the dependent variable (the decision in the UG). When making the decision, participants were likely to internalize the state of the responder whether dominant or prestigious. If a proposer believed that their offer would be fair enough to be accepted by the responder, he/she would report a low fear of rejection *because of* his/her belief. Even faced with a dominant-looking responder, the participants might have regulated their emotional state and subsequent decision-making processes so that their offers would be accepted; in this case, self-regulation would reduce their fear of rejection. In other words, the process of making an offer in the UG paradigm with a status differentiation might contaminate the process of making a decision based on the

psychological state that precedes it.

Another potential factor contributing to this limitation may be relatively modest stake size in the UG, as it may influence proposer's offer. For instance, a higher stake size (e.g., \$1,000 to be allocated) may increase proposer's sensitivity to potential rejection, which may increase the effectiveness of a dominance display by a responder. This possibility is likely given that dominant individuals often exercise coercion to gain status (Cheng et al., 2010). However, a meta-analysis showed that stake size in the UG has little effect on proposers' offers, meaning that proposers' offers do not effectively increase as a function of the size of the given pool of money (Larney et al., 2019). Thus, there may be other factors that may increase state-level fear of rejection, which interact with dominance to bring about the potential contingent effect of dominance on cooperation.

The second limitation is the fact that the current paradigm, for distinguishing prestige from dominance, only manipulated how the opponent reacted to the three cognitive tasks but may not have manipulated the key causal antecedents of dominance. The key distinction between prestige and dominance is that the former relates to competency, while the latter relates to coercion (Cheng et al., 2010). Thus, it would have been ideal if prestige vs. dominance differentiation was manipulated due to competency vs. coercion during a task while holding the nature of the task constant. Future research needs to manipulate *how* the other opponent achieves high status in relation to players. For instance, a dominance manipulation may need to create a situation where one person is granted status based on his other abilities to exercise aggression and coercion related to participants. A future test of the two-facet theory of pride/status may benefit from a more valid paradigms to manipulate the antecedents of dominance.

Relatedly, the third limitation is technical. In the neutral condition, there was no perform-

ance difference *and* no expression, whereas in the prestige condition and the dominance condition there was both a performance difference and a clear expression. Though this combination of performance difference and emotional expression might be considered ecologically valid, it could have posed a confound as any between-condition differences could be attributable to either performance or expression. Future research on the distinction between prestige (authentic pride) and dominance (hubristic pride) should only look at performance difference without any particular expression, or holding expression constant.

Another limitation is that there was no real difference between the dominance condition and the prestige condition in terms of the opponent's performance, yet the perception of prestige was far greater than the perception of dominance regardless of conditions. This fact leaves a possibility that prestige was simply the "stronger" manipulation relative to the dominance manipulation. If there was any way to intensify the expression of dominance, it may have supported the role of dominance in influencing cooperation: high cooperation with a constraint that people do not have a chance to exploit the dominant (i.e., the Symmetric Information condition, Figure 10), yet low cooperation with an opportunity to exploit the dominant (i.e., the Asymmetric Information condition). But enhancing the expression of very high dominance may eventually result in some resistance or a tendency to withdraw—rather than motivating people to do something, yielding lower cooperation. Especially in egalitarian societies such as the U.S., modest levels of dominance expression may create a certain level of intimidation or respect in a way that promotes cooperation of followers; however, strong, over-the-top expression of dominance may be off-putting.

Moreover, this dissertation did not manipulate authentic and hubristic pride in individuals. While this decision was informed by previous research questioning the nature of

hubristic pride (Dickens & Murphy, 2022; Kusano & Kimmelmeier, 2022; Williams & DeSteno, 2010), it is possible that induced authentic and hubristic pride could have different effects on one's pro(anti)social actions. Previous research has shown that status attainment and authentic pride can motivate prosocial actions (Güth et al., 2007; Eckel, Fatas, & Wilson, 2010; Potters, Sefton, & Vesterlund, 2006; Potters, Sefton, & Vesterlund, 2007). Authentic pride, being a positive emotion, may encourage individuals to signal prosocial behavior to others (Dorfman et al., 2014; Ma et al., 2014).

However, the effect of induced hubristic pride on cooperation is less clear. The two-facet theory of pride clearly predicts that hubristic pride leads to antisocial actions (Tracy & Robins, 2007). However, an alternative perspective on hubristic pride, as conceptualized by Kusano and Kimmelmeier (2023) and Holbrook et al. (2014), suggests a different possibility. According to their view, hubristic pride arises from external causes of one's success, reflecting one's overclaiming of unmerited success. From this perspective, the experience of hubristic pride might evoke a restorative motivation. Feeling aware of one's incompetence, arrogance, and potential negative evaluations by others, a person experiencing hubristic pride may engage in actions to amend their inadequate social status in the eyes of others. If prosociality is seen as a means to remedy inadequate self-worth in certain contexts, then hubristic pride may actually motivate prosocial actions. This causal mechanism is not explained by the two-facet theory (Tracy & Robins, 2007), which conceptualizes hubristic pride as a result of one's genuine success. Future research should investigate and compare these contrasting perspectives.

One final limitation is the potential influence of suspicion on some of the reported effects, although informal communication with several participants suggested minimal to no suspicion regarding the deception used in the experiment. While this may appear significant, whether

participants' verbal acknowledgment of suspicion poses a substantial threat to the observed findings remains uncertain. Verbal interventions during an experiment, such as manipulation checks, can introduce novel elements that would not occur otherwise (Hauser et al., 2018). During debriefing, a few participant remarked, "I knew the other person was fake." However, this comment could have arisen only in hindsight after the experimenter's inquiries. Furthermore, this statement does not verify which aspect of the experiment the individual believes is fake, given that not all deceptions in the experiment are critical. This could be problematic if certain participants harbored suspicions throughout the experiment and made decisions. Yet, there is no prediction of how this suspicion might impact decision-making in this context. One potential solution to alleviate this issue is the use of nonverbal instruments or independent pilot studies (Hauser et al., 2018). Nonetheless, it was not feasible to systematically detect any suspicion in the current experimental paradigm.

Future directions

Much psychological studies on pride have been conducted at the individual level (Dickens & Robins, 2020). Future research may invest more in tying pride with intergroup and cultural dynamics. Pride is a social emotion based on what a person is proud of because admiration elicited by pride/a proud individual binds people to a particular community. This also means that different communities are distinguished from each other based on what they are (authentically) proud of and what is considered prestigious, and pride plays an important role in transmitting unique cultural values adaptive within certain environments (Tracy et al., 2010).

Given that different kinds of pride motivate different kinds of actions, it is possible to predict that different societies value authentic/hubristic pride to varying degrees: for example, nationalism might associate pride with hubristic pride, collective narcissism, and dominance over

minority groups. This sense of dominance might be interpreted as a sense of superior competency over the groups one treats as inferior, and hubristic pride might not necessarily be viewed as antisocial. . Despite the proposed social function, little research has investigated pride in cultural contexts along with different value systems. Doing so may validate the notion that a pride expression viewed as authentic in one culture can be viewed as hubristic in another (Kusano & Kimmelmeier, 2023).

Future research should also tackle the communicative value of authentic pride and prestige more rigorously. For example, does authentic pride and prestige motivate learning when someone expresses pride following an action that is not previously socially valued? If you see someone expressing pride based on completing a novel task, which was unknown to you, does the individual's expression of pride allow you to learn that completion of the task is socially valued? Testing this idea may speak to the origin of cultural change and differences and directly provide a direct application for large-scale policy changes.

In relation to the communicative value of pride, someone else's pride may also motivate one's sense of pride, which in turn translates into action. For some audience, observing Dr. Anthony Fauci explaining effectiveness of mask wearing for combatting the spread of COVID-19 may elicit perception of prestige, which in turn may fuel authentic pride in the audience. Such a pride experience should motivate actions in line with the expectation of Dr. Fauci, even if the audience do not initially know whether mask-wearing is effective. The current experiment did not measure participants' pride experiences, so future research may benefit from this possibility.

Future research should build upon the previous pilot studies (outlined in Chapter 6) to address the general critique of the two-facet theory (Tracy & Robins, 2007) and test whether the theory is still a defensible approach. The idea that there are two effective forms of pride and

status, though not yielding much supportive evidence in the current experiment on cooperation, may still contribute to an important observation in the sense that there is a clear difference in how people view pride. However, it might be much more of a matter of social perspective: As a social emotion, the same expression of pride might be interpreted differently from the same expression in an ingroup member versus an outgroup member. The same expression might be viewed as positive and affirming, whereas it may seem as arrogant in an outgroup member (Kusano & Kemmelmeier, 2023). Rather than calling hubristic pride an emotion, it might be more accurate to call it a social evaluation of pride expressed by others in certain circumstances. Settling this debate may require more rigorous methods and careful conceptualization.

Conclusion

This dissertation aimed to investigate the impact of two distinct forms of pride, namely authentic pride and hubristic pride, on cooperation, while also exploring the proposed connection between pride and status within the context of cooperation. The experimental evidence provided support for the hypothesis that prestige facilitates cooperation through the perception of authentic pride. However, the idea that hubristic pride and dominance could serve as an effective strategy for managing cooperation in specific circumstances did not receive robust support. These findings provide valuable insights for future research to delve deeper into the nature of pride and status, prompting exploration into whether pride is truly a multifaceted emotion.

References

- Al-Shawaf, L., Conroy-Beam, D., Asao, K., & Buss, D. M. (2016). Human emotions: An evolutionary psychological perspective. *Emotion Review*, 8(2), 173–186.
- Ames, D. R., & Kammrath, L. K. (2004). Mind-reading and metacognition: Narcissism, not actual competence, predicts self-estimated ability. *Journal of Nonverbal Behavior*, 28(3), 187–209.
- Ames, D. R., Rose, P., & Anderson, C. P. (2006). The NPI-16 as a short measure of narcissism. *Journal of Research in Personality*, 40(4), 440–450.
- Anderson, C. & Willer, R. (2014). Do status hierarchies benefit groups? A bounded functionalist account. In J. T. Cheng, J. L. Tracy, & C. Anderson (Eds.), *The psychology of social status* (pp. 44–70). New York: Springer.
- Anderson, C., & Brown, C. E. (2010). The functions and dysfunctions of hierarchy. *Research in Organizational Behavior*, 30, 55–89.
- Anderson, C., Brion, S., Moore, D. A., & Kennedy, J. A. (2012). A status-enhancement account of overconfidence. *Journal of Personality and Social Psychology*, 103(4), 718–735.
- Antonetti, P., & Maklan, S. (2014). Feelings that make a difference: How guilt and pride convince consumers of the effectiveness of sustainable consumption choices. *Journal of Business Ethics*, 124, 117–134.
- Ashton-James, C. E., & Tracy, J. L. (2012). Pride and prejudice: How feelings about the self influence judgments of others. *Personality and Social Psychology Bulletin*, 38(4), 466–476.
- Ball, S., & Eckel, C. C. (1998). The economic value of status. *The Journal of Socio-Economics*, 27(4), 495–514.
- Ball, S., Eckel, C., Grossman, P. J., & Zame, W. (2001). Status in markets. *The Quarterly Journal of Economics*, 116(1), 161–188.
- Barclay, P., & Willer, R. (2007). Partner choice creates competitive altruism in humans. *Proceedings of the Royal Society B: Biological Sciences*, 274(1610), 749–753.
- Barkow, J. (2014). Prestige and the ongoing process of culture revision. In J. T. Cheng, J. L. Tracy, & C. Anderson (Eds.), *The psychology of social status* (pp. 29–46). Springer.
- Berdahl, J. L., & Anderson, C. (2005). Men, women, and leadership centralization in groups over time. *Group Dynamics: Theory, Research, and Practice*, 9(1), 45–57.
- Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. *Games and Economic Behavior*, 10(1), 122–142.
- Berger, J., Rosenholtz, S. J., & Zelditch Jr., M. (1980). Status organizing processes. *Annual Review of Sociology*, 6(1), 479–508.
- Boehm, C. (1993). Egalitarian behavior and reverse dominance hierarchy. *Current Anthropology*, 34(3), 227–254.

- Brosi, P., Spörrle, M., Welpe, I. M., & Shaw, J. D. (2016). Two facets of pride and helping. *Journal of Managerial Psychology, 31*(5), 976–988.
- Brunell, A. B., Gentry, W. A., Campbell, W. K., Hoffman, B. J., Kuhnert, K. W., & DeMarree, K. G. (2008). Leader emergence: The case of the narcissistic leader. *Personality and Social Psychology Bulletin, 34*(12), 1663–1676.
- Bureau, J. S., Vallerand, R. J., Ntoumanis, N., & Lafreniere, M.-A. K. (2013). On passion and moral behavior in achievement settings: The mediating role of pride. *Motivation and Emotion, 37*(1), 121–133.
- Carter, D. M. (2011). Recognizing the role of positive emotions in fostering environmentally responsible behaviors. *Ecopsychology, 3*(1), 65–69.
- Cartwright, E., Gillet, J., & Van Vugt, M. (2013). Leadership by example in the weak-link game. *Economic Inquiry, 51*(4), 2028–2043.
- Cavanaugh, L. A., Bettman, J. R., & Luce, M. F. (2015). Feeling love and doing more for distant others: Specific positive emotions differentially affect prosocial consumption. *Journal of Marketing Research, 52*, 657–673.
- Centorrino, S., Djemai, E., Hopfensitz, A., Milinski, M., & Seabright, P. (2015). Honest signaling in trust interactions: Smiles rated as genuine induce trust and signal higher earning opportunities. *Evolution and Human Behavior, 36*(1), 8-16.
- Chapman, D. A., Lickel, B., & Markowitz, E. M. (2017). Reassessing emotion in climate change communication. *Nature Climate Change, 7*(12), 850–852.
- Cheng, J. T., Tracy, J. L., & Henrich, J. (2010). Pride, personality, and the evolutionary foundations of human social status. *Evolution and Human Behavior, 31*(5), 334–347.
- Cheng, J. T., Tracy, J. L., & Henrich, J. (2021). Dominance is necessary to explain human status hierarchies. *Proceedings of the National Academy of Sciences, 118*(22), e2103870118.
- 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.
- Chester, D., & Lasko, E. (in press). Construct validation of experimental manipulations in social psychology: Current practices and recommendations for the future. *Perspectives on Psychological Science*.
- Cowherd, D. M., & Levine, D. I. (1992). Product quality and pay equity between lower-level employees and top management: An investigation of distributive justice theory. *Administrative Science Quarterly, 37*(2), 302-320.
- Darwin, C. (1872). *The expression of the emotions in man and animals*. [Reprinted 1965.] University of Chicago Press.
- Dawes, R. M. (1980). Social dilemmas. *Annual Review of Psychology, 31*(1), 169–193.
- De Cremer, D., & Van Dijk, E. (2008). Leader—follower effects in resource dilemmas: The roles of leadership selection and social responsibility. *Group Processes & Intergroup Relations, 11*(3), 355–369.

- de Hooge, I. E. (2014). Predicting consumer behavior with two emotion appraisal dimensions: Emotion valence and agency in gift giving. *International Journal of Research in Marketing*, *31*, 380–394.
- De Waal, F. B. (1986). The integration of dominance and social bonding in primates. *The Quarterly Review of Biology*, *61*(4), 459–479.
- DePaulo, B. M., Charlton, K., Cooper, H., Lindsay, J. J., & Muhlenbruck, L. (1997). The accuracy-confidence correlation in the detection of deception. *Personality and Social Psychology Review*, *1*(4), 346–357.
- Dietz, T., Ostrom, E., & Stern, P. C. (2003). The struggle to govern the commons. *Science*, *302*(5652), 1907–1912.
- Dorfman, A., Eyal, T., & Bereby-Meyer, Y. (2014). Proud to cooperate: The consideration of pride promotes cooperation in a social dilemma. *Journal of Experimental Social Psychology*, *55*, 105–109.
- Durkee, P. K., Lukaszewski, A. W., & Buss, D. M. (2020). Psychological foundations of human status allocation. *Proceedings of the National Academy of Sciences*, *117*(35), 21235–21241.
- Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit theories and their role in judgments and reactions: A word from two perspectives. *Psychological Inquiry*, *6*(4), 267–285.
- Eckel, C. C., Fatas, E., & Wilson, R. (2010). Cooperation and status in organizations. *Journal of Public Economic Theory*, *12*(4), 737–762.
- Ekman, P. (1992). An argument for basic emotions. *Cognition & Emotion*, *6*(3–4), 169–200.
- Ekman, P., & Cordaro, D. (2011). What is meant by calling emotions basic. *Emotion Review*, *3*(4), 364–370.
- Ekman, P., Levenson, R. W., & Friesen, W. V. (1983). Autonomic nervous system activity distinguishes among emotions. *Science*, *221*(4616), 1208–1210.
- Etxebarria, I., Ortiz, M.-J., Apodaca, P., Pascual, A., & Conejero, S. (2015). Pride as moral motive: Moral pride and prosocial behaviour. *Infancia y Aprendizaje*, *38*, 746–774.
- Garfield, Z. H., & Hagen, E. H. (2020). Investigating evolutionary models of leadership among recently settled Ethiopian hunter-gatherers. *The Leadership Quarterly*, *31*(2), 101290.
- Garfield, Z. H., Syme, K. L., & Hagen, E. H. (2020). Universal and variable leadership dimensions across human societies. *Evolution and Human Behavior*, *41*(5), 397–414.
- Gentile, B., Miller, J. D., Hoffman, B. J., Reidy, D. E., Zeichner, A., & Campbell, W. K. (2013). A test of two brief measures of grandiose narcissism: The narcissistic personality inventory–13 and the narcissistic personality inventory–16. *Psychological Assessment*, *25*(4), 1120–1136.
- Gifford, R. (2011). The dragons of inaction: Psychological barriers that limit climate change mitigation and adaptation. *American Psychologist*, *66*(4), 290–302.
- Gosling, S. D., Rentfrow, P. J., & Swann Jr, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, *37*(6), 504–528.

- Greenberg, J., Solomon, S., Pyszczynski, T., Rosenblatt, A., Burling, J., Lyon, D., ... & Pinel, E. (1992). Why do people need self-esteem? Converging evidence that self-esteem serves an anxiety-buffering function. *Journal of Personality and Social Psychology*, *63*(6), 913–922.
- Griskevicius, V., Tybur, J. M., Gangestad, S. W., Perea, E. F., Shapiro, J. R., & Kenrick, D. T. (2009). Aggress to impress: Hostility as an evolved context-dependent strategy. *Journal of Personality and Social Psychology*, *96*(5), 980–994.
- Güth, W., Levati, M. V., Sutter, M., & Van Der Heijden, E. (2007). Leading by example with and without exclusion power in voluntary contribution experiments. *Journal of Public Economics*, *91*(5-6), 1023–1042.
- Hardin, G. (1968). The tragedy of the commons. *Science*, *162*(3859), 1243–1248.
- Hardy, C. L., & Van Vugt, M. (2006). Nice guys finish first: The competitive altruism hypothesis. *Personality and Social Psychology Bulletin*, *32*(10), 1402–1413.
- Hart, D., & Matsuba, M. K. (2007). The development of pride and moral life. *The Self-Conscious Emotions: Theory and Research*, 114–133.
- Harth, N. S., Leach, C. W., & Kessler, T. (2013). Guilt, anger, and pride about in-group environmental behaviour: Different emotions predict distinct intentions. *Journal of Environmental Psychology*, *34*, 18–26.
- Haslam, S. A., McGarty, C., Brown, P. M., Eggins, R. A., Morrison, B. E., & Reynolds, K. J. (1998). Inspecting the emperor's clothes: Evidence that random selection of leaders can enhance group performance. *Group Dynamics: Theory, Research, and Practice*, *2*(3), 168–184.
- Hauser, D. J., Ellsworth, P. E., & Gonzalez, P. (2018). Are manipulation checks necessary? *Frontiers in Psychology*, *9*, 998.
<https://www.frontiersin.org/articles/10.3389/fpsyg.2018.00998/full>
- Henrich, J. (2004). Cultural group selection, coevolutionary processes and large-scale cooperation. *Journal of Economic Behavior & Organization*, *53*(1), 3–35.
- Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: Freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and Human Behavior*, *22*(3), 165–196.
- Henrich, J., Chudek, M., & Boyd, R. (2015). The big man mechanism: How prestige fosters cooperation and creates prosocial leaders. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *370*(1683), 20150013.
- Hildreth, J. A. D., & Anderson, C. (2016). Failure at the top: How power undermines collaborative performance. *Journal of Personality and Social Psychology*, *110*(2), 261–286.
- Ho, S. Y., Tong, E. M., & Jia, L. (2016). Authentic and hubristic pride: Differential effects on delay of gratification. *Emotion*, *16*(8), 1147–1156.
- Hoffman, E., McCabe, K., & Smith, V. L. (1996). Social distance and other-regarding behavior in dictator games. *The American Economic Review*, *86*(3), 653–660.

- Holbrook, C., Piazza, J., & Fessler, D. M. (2014). Conceptual and empirical challenges to the “authentic” versus “hubristic” model of pride. *Emotion, 14*(1), 17–32.
- Hwang, H. C., & Matsumoto, D. (2014). Dominance threat display for victory and achievement in competition context. *Motivation and Emotion, 38*(2), 206–214.
- Hwang, H. C., Matsumoto, D., Yamada, H., Kostić, A., & Granskaya, J. V. (2016). Self-reported expression and experience of triumph across four countries. *Motivation and Emotion, 40*(5), 731–739.
- Judge, T. A., & Bono, J. E. (2000). Five-factor model of personality and transformational leadership. *Journal of Applied Psychology, 85*(5), 751–765.
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review, 110*(2), 265–284.
- Kennedy, J. A., Anderson, C., & Moore, D. A. (2013). When overconfidence is revealed to others: Testing the status-enhancement theory of overconfidence. *Organizational Behavior and Human Decision Processes, 122*(2), 266–279.
- Knauff, B. M., Abler, T. S., Betzig, L., Boehm, C., Dentan, R. K., Kiefer, T. M., & Rodseth, L. (1991). Violence and sociality in human evolution [and comments and replies]. *Current Anthropology, 32*(4), 391–428.
- Komorita, S. S., Parks, C. D., & Hulbert, L. G. (1992). Reciprocity and the induction of cooperation in social dilemmas. *Journal of Personality and Social Psychology, 62*(4), 607–617.
- Kumru, C. S., & Vesterlund, L. (2010). The effect of status on charitable giving. *Journal of Public Economic Theory, 12*(4), 709–735.
- Kusano, K., & Kimmelmeier, M. (2022). The quest for (eliciting) hubristic pride: Nomological shockwaves/networks, attributions, and social desirability across different experimental manipulations. *Collabra: Psychology, 8*(1), 38634.
- Kusano, K., & Kimmelmeier, M. (2023). Pride and hubris are in the eye of the beholder: Attribution, context, and an argument for a single-facet view. Unpublished Manuscript.
- Lange, J., & Crusius, J. (2015). Dispositional envy revisited: Unraveling the motivational dynamics of benign and malicious envy. *Personality and Social Psychology Bulletin, 41*(2), 284–294.
- Larney, A., Rotella, A., & Barclay, P. (2019). Stake size effects in ultimatum game and dictator game offers: A meta-analysis. *Organizational Behavior and Human Decision Processes, 151*, 61–72.
- Lazarus, R. S. (1982). Thoughts on the relations between emotion and cognition. *American Psychologist, 37*(9), 1019–1024.
- Ledyard, J. O. (1995). Public Goods: A survey of experimental research. In J. H. Kagel, & A. E. Roth (Eds.), *The handbook of experimental economics* (pp. 111–194). New Jersey: Princeton University Press.
- Lerner, J. S., & Keltner, D. (2000). Beyond valence: Toward a model of emotion-specific influences on judgement and choice. *Cognition & Emotion, 14*(4), 473–493.

- Liu, C., Lu, K., Yu, G., & Chen, C. (2012). Implicit association between authentic pride and prestige compared to hubristic pride and dominance. *Psychological Reports, 111*(2), 424–442.
- Ma, Correll, & Wittenbrink (2015). The Chicago Face Database: A Free Stimulus Set of Faces and Norming Data. *Behavior Research Methods, 47*, 1122–1135.
- Ma, L. K., Tunney, R. J., & Ferguson, E. (2017). Does gratitude enhance prosociality?: A meta-analytic review. *Psychological Bulletin, 143*(6), 601–635.
- Mannix, E. A. (1993). Organizations as resource dilemmas: The effects of power balance on coalition formation in small groups. *Organizational Behavior and Human Decision Processes, 55*, 1–1.
- Markowitz, E. M., & Shariff, A. F. (2012). Climate change and moral judgement. *Nature Climate Change; London, 2*(4), 243–247.
- McKean, M. A., & Cox, T. (1982). The Japanese experience with scarcity: Management of traditional common lands. *Environmental Review, 6*(2), 63–91.
- Milinski, M., Semmann, D., & Krambeck, H. (2002). Donors to charity gain in both indirect reciprocity and political reputation. *Proceedings of the Royal Society of London. Series B: Biological Sciences, 269*(1494), 881–883.
- Miller, D. T. (1999). The norm of self-interest. *American Psychologist, 54*(12), 1053–1060.
- Moser, S. C. (2016). Reflections on climate change communication research and practice in the second decade of the 21st century: what more is there to say? *Wiley Interdisciplinary Reviews: Climate Change, 7*(3), 345–369.
- Onwezen, M. C., Antonides, G., & Bartels, J. (2013). The norm activation model: An exploration of the functions of anticipated pride and guilt in pro-environmental behaviour. *Journal of Economic Psychology, 39*, 141–153.
- Oosterbeek, H., Sloof, R., & Van De Kuilen, G. (2004). Cultural differences in ultimatum game experiments: Evidence from a meta-analysis. *Experimental Economics, 7*, 171–188
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. New York: Cambridge University Press.
- Pfeffer, J., & Langton, N. (1993). The effect of wage dispersion on satisfaction, productivity, and working collaboratively: Evidence from college and university faculty. *Administrative Science Quarterly, 38*(3), 382–407.
- Potters, J., Sefton, M., & Vesterlund, L. (2005). After you—endogenous sequencing in voluntary contribution games. *Journal of public Economics, 89*(8), 1399–1419.
- Potters, J., Sefton, M., & Vesterlund, L. (2007). Leading-by-example and signaling in voluntary contribution games: an experimental study. *Economic Theory, 33*(1), 169–182.
- Price, M. E. (2003). Pro-community altruism and social status in a Shuar village. *Human Nature, 14*(2), 191–208.
- Ronay, R., Greenaway, K., Anicich, E. M., & Galinsky, A. D. (2012). The path to glory is paved with hierarchy: When hierarchical differentiation increases group effectiveness. *Psychological Science, 23*(6), 669–677.

- Rosseel, Y. (2012). lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, 48(2), 1-36.
- Rowe, Z. O., Wilson, H. N., Dimitriu, R., Charnley, F. J., & Lastrucci, G. (2019). Pride in my past: Influencing sustainable choices through behavioral recall. *Psychology & Marketing*, 36(4), 276-286.
- Schneider, C. R., Zaval, L., Weber, E. U., & Markowitz, E. M. (2017). The influence of anticipated pride and guilt on pro-environmental decision making. *PLoS One*, 12(11), e0188781.
- Schwartz, S. H. (1977). Normative influences on altruism. *Advances in Experimental Social Psychology*, 10, 221-279. Elsevier.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25(1), 1-65.
- Shi, Y., Chung, J. M., Cheng, J. T., Tracy, J. L., Robins, R. W., Chen, X., & Zheng, Y. (2015). Cross-cultural evidence for the two-facet structure of pride. *Journal of Research in Personality*, 55, 61-74.
- Skyrms, B. (2001). The stag hunt. *Proceedings and Addresses of the American Philosophical Association*, 75(2), 31-41.
- Soscia, I. (2007). Gratitude, delight, or guilt: The role of consumers' emotions in predicting postconsumption behaviors. *Psychology & Marketing*, 24(10), 871-894.
- Swann Jr, W. B., & Gill, M. J. (1997). Confidence and accuracy in person perception: Do we know what we think we know about our relationship partners? *Journal of Personality and Social Psychology*, 73(4), 747-757.
- Tiedens, L. Z., Ellsworth, P. C., & Mesquita, B. (2000). Sentimental stereotypes: Emotional expectations for high-and low-status group members. *Personality and Social Psychology Bulletin*, 26(5), 560-575.
- Tooby, J., & Cosmides, L. (1990). The past explains the present: Emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology*, 11(4-5), 375-424.
- Tooby, J., & Cosmides, L. (2008). The evolutionary psychology of the emotions and their relationship to internal regulatory variables. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (3rd ed., pp. 114-137). New York, NY: Guilford.
- Tracy, J. L., & Matsumoto, D. (2008). The spontaneous expression of pride and shame: Evidence for biologically innate nonverbal displays. *Proceedings of the National Academy of Sciences*, 105(33), 11655-11660.
- Tracy, J. L., & Prehn, C. (2012). Arrogant or self-confident? The use of contextual knowledge to differentiate hubristic and authentic pride from a single nonverbal expression. *Cognition & Emotion*, 26(1), 14-24.
- Tracy, J. L., & Robins, R. W. (2004). Show your pride: Evidence for a discrete emotion expression. *Psychological Science*, 15(3), 194-197.

- Tracy, J. L., & Robins, R. W. (2007). The psychological structure of pride: A tale of two facets. *Journal of Personality and Social Psychology, 92*(3), 506–525.
- Tracy, J. L., & Robins, R. W. (2008). The nonverbal expression of pride: Evidence for cross-cultural recognition. *Journal of Personality and Social Psychology, 94*(3), 516–530.
- Tracy, J. L., Cheng, J. T., Robins, R. W., & Trzesniewski, K. H. (2009). Authentic and hubristic pride: The affective core of self-esteem and narcissism. *Self and Identity, 8*(2–3), 196–213.
- Tracy, J. L., Mercadante, E., Witkower, Z., & Cheng, J. T. (2020). The evolution of pride and social hierarchy. *Advances in Experimental Social Psychology, 62*, 51–114.
- Tracy, J. L., Robins, R. W., & Lagattuta, K. H. (2005). Can children recognize pride? *Emotion, 5*(3), 251–257.
- Tracy, J. L., Shariff, A. F., & Cheng, J. T. (2010). A naturalist's view of pride. *Emotion Review, 2*(2), 163–177.
- Tracy, J. L., Shariff, A. F., Zhao, W., & Henrich, J. (2013). Cross-cultural evidence that the nonverbal expression of pride is an automatic status signal. *Journal of Experimental Psychology: General, 142*(1), 163–180.
- Tracy, J. L., Steckler, C. M., Randles, D., & Mercadante, E. (2018). The financial cost of status signaling: Expansive postural displays are associated with a reduction in the receipt of altruistic donations. *Evolution and Human Behavior, 39*(5), 520–528.
- van der Schalk, J., Bruder, M., & Manstead, A. (2012). Regulating emotion in the context of interpersonal decisions: The role of anticipated pride and regret. *Frontiers in Psychology, 3*, 513.
- van Leeuwen, E., van Dijk, W., & Kaynak, U. (2013). Of saints and sinners: How appeals to collective pride and guilt affect outgroup helping. *Group Processes & Intergroup Relations, 16*, 781–796.
- Van Vugt, M., & Kameda, T. (2012). Evolution and groups. In J. Levine (Ed.), *Handbook of group processes* (pp. 297–332). Psychology Press, Hove
- Van Vugt, M., & Smith, J. E. (2019). A dual model of leadership and hierarchy: evolutionary synthesis. *Trends in Cognitive Sciences, 23*(11), 952–967.
- Von Rueden, C., Gurven, M., & Kaplan, H. (2011). Why do men seek status? Fitness payoffs to dominance and prestige. *Proceedings of the Royal Society B: Biological Sciences, 278*(1715), 2223–2232.
- Watson, D., & Clark, L. A. (1999). The PANAS-X: Manual for the positive and negative affect schedule-expanded form. Unpublished manuscript. *The University of Iowa*.
- Willer, R. (2009). Groups reward individual sacrifice: The status solution to the collective action problem. *American Sociological Review, 74*(1), 23–43.
- Williams, L. A., & DeSteno, D. (2008). Pride and perseverance: The motivational role of pride. *Journal of Personality and Social Psychology, 94*(6), 1007–1017.
- Williams, L. A., DeSteno, D. (2010). Pride in parsimony. *Emotion Review, 2*(2), 180–181.

- Witkower, Z., Tracy, J. L., Cheng, J. T., & Henrich, J. (2019). Two signals of social rank: Prestige and dominance are associated with distinct nonverbal displays. *Journal of Personality and Social Psychology, 118*(1), 89–120.
- Wubben, M. J., De Cremer, D., & van Dijk, E. (2012). Is pride a prosocial emotion? Interpersonal effects of authentic and hubristic pride. *Cognition & Emotion, 26*(6), 1084–1097.
- Yamagishi, T., & Yamagishi, M. (1994). Trust and commitment in the United States and Japan. *Motivation and Emotion, 18*(2), 129–166.
- Zahavi, A. (1995). Altruism as a handicap: the limitations of kin selection and reciprocity. *Journal of Avian Biology, 26*(1), 1–3.

Appendix

Consent Form

INTRODUCTION:

You are being invited to participate in a research study. Before you agree to be in the study, read this form carefully. It explains why we are doing the study; and the procedures, risks, discomforts, benefits, and precautions involved.

At any time, you may decline to participate in the study without any negative consequences. If you choose to participate, you can stop at any time, or skip any questions that you would prefer not to answer. You do not have to be in this study. Your participation is voluntary. Take as much time as you need to decide. Your responses will not be identified with your ID. If you agree now but change your mind, you may quit the study at any time.

ELIGIBILITY:

You must be at least 18 and enrolled in UNR.

STUDY DESCRIPTION:

We are doing this study to find out about people's interaction with others and how they make decisions together. The benefits of research cannot be guaranteed but we hope to learn about your ability to engage with others. We are asking you to be in this study because you are an adult UNR student who is at least 18 years old and part of the general population we are interested in knowing about. If you agree to be in this study, you will be partnered with another participant in a different room and asked to complete three preliminary tasks and one main task.

What will you be asked to do?

- First, you will be asked to answer basic demographic questions.
- In the first task, you will solve several attention tasks.
- Second, you will be asked to make predictions about how others solve moral dilemmas.
- Third, you will solve several trivia quizzes.
- Based on the three tasks, you and your partner will play an economic game and make a decision together.

The study will take about **40 minutes** of your time.

REWARD:

For your participation in this study, you will receive **2 SONA credits**. Your monetary compensation depends on how you and your partner perform in an economic game. **The final monetary compensation may vary from \$0.00 to \$12.00.** Based on your

performance, the experimenter will calculate your final compensation and you will receive cash accordingly at the end of the experiment.

BENEFITS & RISKS:

We cannot promise you will benefit from being in this study. There are no known risks or direct benefits to participants in this study.

COST:

No costs are associated with participation in this study.

CONFIDENTIALITY:

The researchers and the University of Nevada, Reno Institutional Review Board will have access to your study records. However, we will treat your identity with professional standards of confidentiality and protect your private information to the extent allowed by law. We will do this by storing all information collected in this study on a password-protected computer.

CONTACT INFORMATION:

You may ask questions of the researcher at any time by calling Kodai Kusano, (435) 695-8162 or by sending an email to kk@nevada.unr.edu; or to Markus Kemmelmeier markusk@unr.edu.

You may discuss a problem or complaint or ask about your rights as a research participant by calling the University of Nevada, Reno Research Integrity Office at (775) 327-2368. You may also use the online Contact the Research Integrity Office form available from the Contact Us page of the University's Research Integrity Office website.

By proceeding to the next page, you consent to participate in this study.

Make sure your phone is turned off or silenced at this moment.

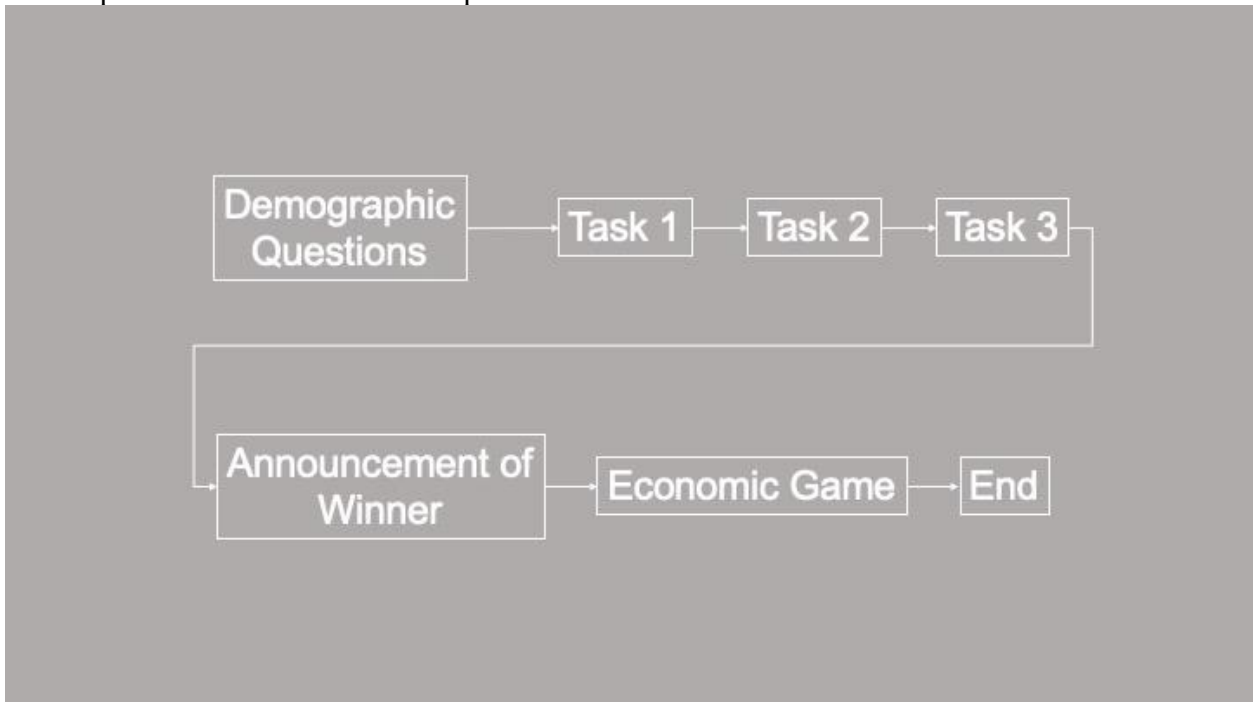
In this experiment, you press “space bar” to submit your responses and proceed to the next slides. Please be careful with pressing space bar.

Press space bar to begin the experiment.

Experimental Script

In this experiment, you are partnered with another participant who is joining us in room EMM446. You and your partner will complete the same three tasks, and we will announce overall performance of both of you based on these tasks. Later, the role you play in an Economic Game (the final task) will depend on how well you two solve the three tasks.

This experiment consists of several parts as follows:



Demographic Questions

<Click your answer>

Please indicate your age: _____.

Please indicate your gender

- Male
- Female
- Other

Please indicate your ethnicity

- White
- Black or African American
- American Indian or Alaskan Native
- Asian
- Native Hawaiian or Pacific Islander
- Other

Personal Need for Structure Scale (Neuberg & Newsom, 1993)

1	2	3	4	5	6
Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree

1. It upsets me to go into a situation without knowing what I can expect from it.
2. I'm not bothered by things that interrupt my daily routine. (Reverse)
3. I enjoy having a clear and structured mode of life.
4. I like to have a place for everything and everything in its place.
5. I find that a well-ordered life with regular hours makes my life tedious. (Reverse)
6. I don't like situations that are uncertain.
7. I hate to change my plans at the last minute.
8. I hate to be with people who are unpredictable.
9. I find that a consistent routine enables me to enjoy life more.
10. I enjoy the exhilaration of being in unpredictable situations. (Reverse)
11. I become uncomfortable when the rules in a situation are not clear.

Fear of Negative Evaluation (Rodebaugh et al., 2004; Weeks et al., 2005)

1	2	3	4	5
Not at all characteristic of me				Extremely characteristic of me

(Straightforwardly worded items only):

1. I am usually worried about what kind of impression I make.
2. I am afraid that others will not approve of me.
3. When I am talking with someone, I worry about what they may be thinking about me.
4. I am afraid that people will find fault with me.
5. I often worry that I will say or do the wrong things.
6. I am frequently afraid of other people noticing my shortcomings.
7. I worry about what people will think of me even when I know it doesn't make any difference.
8. Sometimes I think I am too concerned with what other people think of me.

A very brief measure of the Big Five Personality (Gosling, Rentfrow, & Swann, 2003)

Read each of the following statements and decide how much you agree with each statement.

1	2	3	4	5	6	7
Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly

I am:

1. _____ Extraverted, enthusiastic. (Extraversion)
2. _____ Critical, quarrelsome. (Agreeableness, Reversed)
3. _____ Dependable, self-disciplined. (Conscientiousness)
4. _____ Anxious, easily upset. (Emotional stability, Reversed)
5. _____ Open to new experiences, complex. (Openness)
6. _____ Reserved, quiet. (Extraversion, Reversed)
7. _____ Sympathetic, warm. (Agreeableness)
8. _____ Disorganized, careless. (Conscientiousness, Reversed)
9. _____ Calm, emotionally stable. (Emotional stability)
10. _____ Conventional, uncreative. (Openness, Reversed)

The NPI-16 (Ames, Rose, & Anderson, 2006)

For each pair of statements, click the statement that best describes you.

	Narcissistic response		Non-narcissistic response
1	I know that I am good because everybody keeps telling me so.		When people compliment me I sometimes get embarrassed.
2	I like to be the center of attention.		I prefer to blend in with the crowd.
3	I think I am a special person.		I am no better nor worse than most people.
4	I like having authority over people.		I don't mind following orders.
5	I find it easy to manipulate people.		I don't like it when I find myself manipulating people.
6	I insist upon getting the respect that is due me.		I usually get the respect that I deserve.
7	I am apt to show off if I get the chance.		I try not to be a showoff.
8	I always know what I am doing.		Sometimes I am not sure of what I am doing.
9	Everybody likes to hear my stories.		Sometimes I tell good stories.
10	I expect a great deal from other people.		I like to do things for other people.
11	I really like to be the center of attention.		It makes me uncomfortable to be the center of attention.
12	People always seem to recognize my authority.		Being an authority doesn't mean that much to me.
13	I am going to be a great person.		I hope I am going to be successful.
14	I can make anybody believe anything I want them to.		People sometimes believe what I tell them.
15	I am more capable than other people.		There is a lot that I can learn from other people.
16	I am an extraordinary person.		I am much like everybody else.

You've finished all the demographic questions!

Next, you and the other person will complete three tasks measuring different domains of expertise.

Task 1 measures your short-term memory.

Task 2 measures your general knowledge in trivia quizzes.

Task 3 measures accuracy of your judgement concerning moral values of others.

After each task, you will receive feedback about your own performance and that of your partner.

By proceeding to next, you will begin Task 1.

(Task 1: The Sternberg Memory Task)

In this task, you will be presented with a sequence of between 3 and 8 randomly ordered numbers. Following a short delay you will see a single number and you will have to decide whether this new number was a member of the sequence. Your performance is based on accuracy and response time. The faster you make correct judgement, the higher your performance.

Respond with the keys:

- LEFT CURSOR if the number was NOT in the sequence
- RIGHT CURSOR if the number WAS in the sequence

Try to respond as quickly and as accurately as possible.

When you are ready to start a practice session, press space bar.

<PRACTICE SESSION, 6 trials>

5 7 8 4 1 2

6

OK, ready to start the main session?

Remember:

- LEFT CURSOR for NOT in the sequence
- RIGHT CURSOR for IN the sequence

Try to respond as quickly and as accurately as possible.

When you are ready to proceed, press space bar.

<MAIN SESSION, 30 trials>

2 3 6 1 5 9 7 8

(Status condition)

"Your partner got 29 of 30 trials correct
(Average RT=0.68 sec)."

(Control condition)

No feedback

You've just finished the Sternberg memory task.

The task measures your short-term memory. A higher performance in the task indicates a greater capacity for short-term memory, which has positive implications for general learning.

Now, press space bar to proceed to Task 2.

Task 2 (The Trivia Quiz)

This task consists of several trivia quizzes. Each quiz is in a multiple-choice format with four choices.

Please press an appropriate number that corresponds to your answer.

When you are ready to proceed, press space bar.

1. What percentage of the U.S. General Domestic Product (GDP) was allocated to national defense in 2020? GDP is the sum of all goods and services that were generated during a given year.

1. 3%
2. 4% (correct)
3. 5%
4. 7%

2. What percentage of the U.S. Federal Budget was allocated to national defense in 2020?

1. 31%
2. 42%
3. 53% (correct)
4. 64%

3. What was the rate of inflation in the U.S. in 2020?

1. 1.4% (correct)
2. 2.1%
3. 2.4%
4. 3.8%

4. What percentage of the homeless in the U.S. were adult males in 2018?

1. 50%
2. 60%
3. 70% (correct)
4. 80%

5. What percentage of cars sold in the U.S. were imported from Germany in 2020?

1. 8.6% (correct)
2. 11.4%
3. 20.5%
4. 22.7%

6. Based on estimates of the U.S. Department of Homeland Security, what was the number of unauthorized immigrants to the U.S. in 2017?

1. Between 6 and 7 millions
 2. Between 9 and 10 millions
 3. Between 11 and 12 millions (correct)
 4. Between 13 and 14 millions
-

(Status condition)

Your partner got 4 of 6 quizzes correct.

(Control condition)

No feedback

You've just finished the trivia quiz.

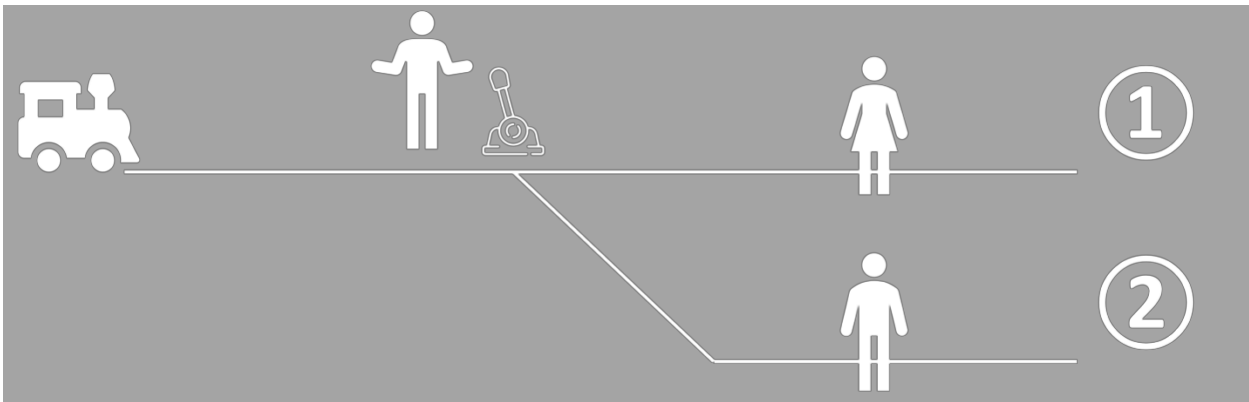
The task measures your general knowledge in economic issues. A higher performance in the task indicates a greater trivia knowledge about the U.S. economy.

Press space bar to begin Task 3.

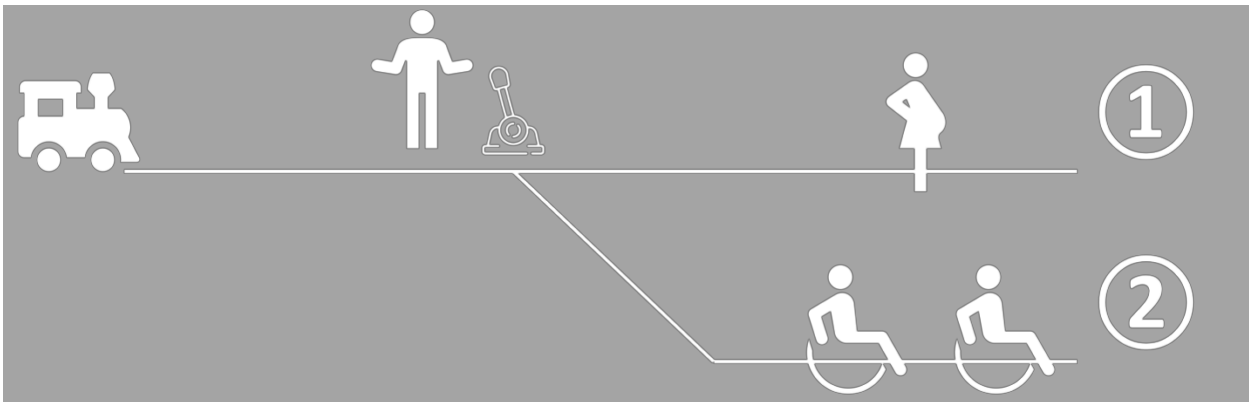
Task 3

In this task, you will be presented with an ethical dilemma. This is a scenario in which a trolley is on course to collide with people down the track, but a bystander can intervene and divert the trolley to kill just a certain number of people on a different track to save another. Imagine you are the bystander and responsible for controlling the trolley either by doing nothing or pulling the lever.

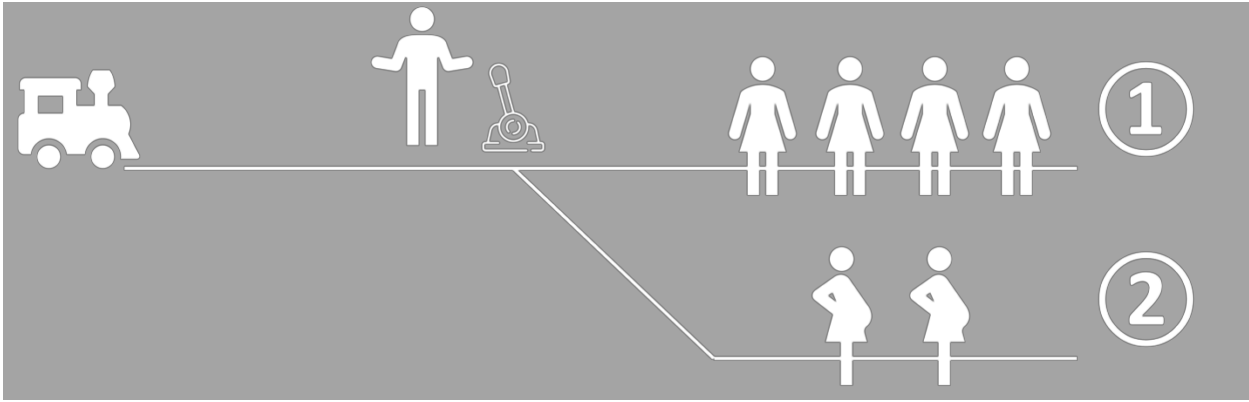
Press space to begin a practice trial.



Practice 1



Practice 2



Your job is to imagine how others make moral decisions. Please guess which decision the person in the image made. For each person, basic information about education (presence of college degree) and personality will be provided. Since each person provided their own answers, your score will be determined based on whether you accurately predict their decisions.

College degree: Yes

I see myself as someone who:

	(Disagree) 1	2	3	4	(Agree) 5
has an active imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
does a thorough job.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
is outgoing, social.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
is generally trusting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
gets nervous easily.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1: Do nothing.
2: Pull the lever.

Press space bar to proceed.

Now, you will be presented with a total of 8 main trials (8 individuals).

Press space bar to proceed.

<MAIN SESSION, Eight Photos>

(Status condition)

Your total score: 4 out of 8 (50%)

Your partner's score: 6 out of 8 (75%)

(Control condition)

No feedback

This task measures your interpersonal skill to imagine yourself from others' perspectives. This is a kind of social competency that makes someone successful in business, academic settings, and other domains of life.

Press space bar to proceed.

Now you have finished all three tasks!

On the next page, you will see reviews of overall performance of you and your partner.

Press space bar to proceed.

(Status condition)

1st place: Your partner

2nd place: You

(Control condition)

Your partner's score: Average

Your score: Average

Press space bar to proceed.

On the next page, you will have 5 seconds to communicate with your partner nonverbal expressions of how you are feeling right now.

Please look at the camera and try to express your feelings. After your recording, your partner will send you a video clip.

Press space bar to begin your recording.

When you are ready to record your video, press space bar.

Your recording is being sent to your partner...

On the next screen, you will see a video clip of your partner for 5 seconds.

When you are ready, press space bar.

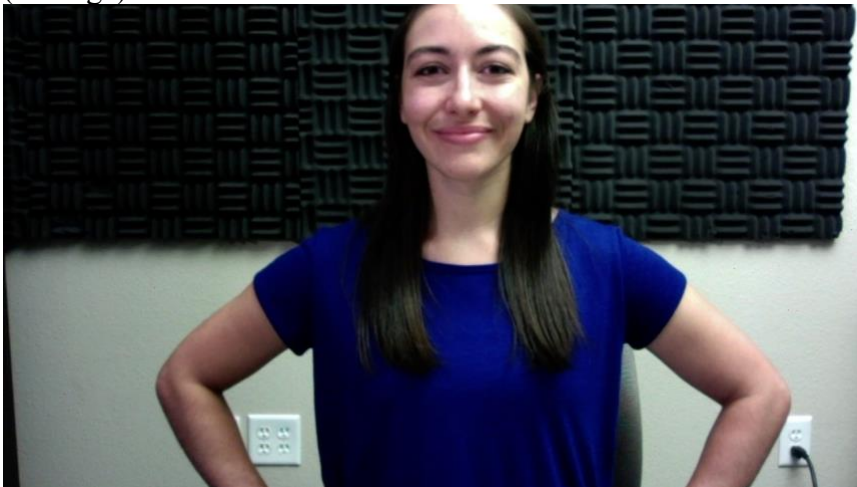
(Neutral)



(Dominance)



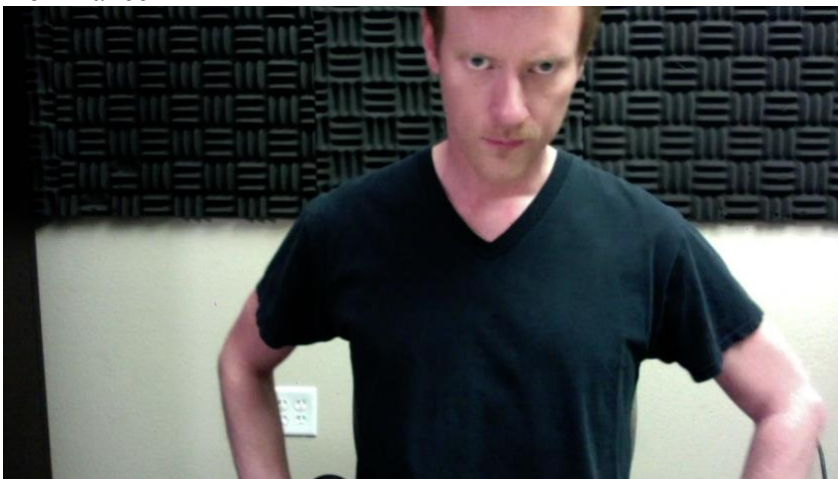
(Prestige)



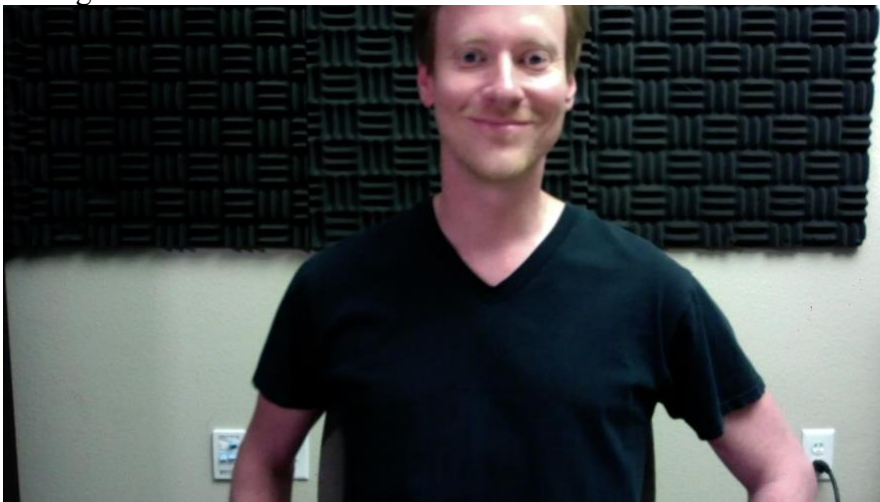
Neutral



Dominance



Prestige



On the next slides, please rate how your partner may be feeling right now.

Authentic and hubristic pride scale (Tracy & Robins, 2007)

Below are a number of words and phrases that describe different feelings and emotions. Read each item and then predict the extent to which the person is feeling this way right now using the scale shown below:

1	2	3	4	5	6	7
Not at all			Moderately			Extremely

The other person is feeling:

1. accomplished.	8. arrogant.
2. achieving.	9. conceited.
3. confident.	10. egotistical.
4. fulfilled.	11. pompous.
5. productive.	12. smug.
6. self-worth.	13. snobbish.
7. successful.	14. stuck-up.

Filler-items

The other person is feeling:

Guilty.	Jittery.
Ashamed.	Distressed.
Gifted.	Upset.
Exceptional.	Attentive.
Enthusiastic.	Strong.
Interested.	Determined.
Creative.	Excited.
Curious.	Inspired.
Afraid.	Alert.
Scared.	Active.
Nervous.	Intellectual.
Superior to me.	Insulting to me.
Disrespectful to me.	Aggressive to me.
Contemptuous of me.	Hostile to me.

Scornful of me.	Irritated with me.
Powerful over me.	

Dominance and prestige scale (Cheng, Tracy, & Henrich, 2010)

Please read each of the following statements about your partner and decide how much these statements describe your overall impression of the partner.

1	2	3	4	5	6	7
Not at all			Neither			Very much

Dominance:

The person enjoys having control over me.

The person often tries to get his/her own way regardless of what I want.

The person is willing to use aggressive tactics to get his/her way.

The person tries to control me rather than permit me to control him/her.

Prestige:

I respect and admire the person.

I recognize his/her unique talents and abilities.

I consider him/her an expert on some matters.

I want to seek his/her advice on a variety of matters.

The Ultimatum Game

This final task is about dividing tokens between yourself and your partner.

Based on your performance in the previous three tasks, you will be the "proposer," and your partner will be the "responder."

You will start with 12 tokens, and will be asked to make a proposal on how much to transfer to the responder and how much to keep to yourself. The responder then decides whether to accept or reject your offer.

If the responder accepts, the allocation of tokens is finalized as proposed in your offer. That is, you and the other person receive the amounts that you allocated to both of you.

If the responder rejects, neither you nor the responder receives any tokens; that is, both of you get zero (0) tokens.

In the symmetric condition

Your and your partner's final monetary rewards depend on the allocation of tokens. After your partner's decision is made, tokens will be replaced with money as follows:

1 token is worth \$1.00 to you, and \$0.50 (50 cents) to your partner.

Your partner KNOWS about this rule. Your partner decides by thinking that 1 token is worth \$1.00 for you, and \$0.50 for him/her.

Press space bar to see example scenarios.

In the asymmetric condition

Your and your partner's final monetary rewards depend on the allocation of tokens. After your partner's decision is made, tokens will be replaced with money as follows:

1 token is worth \$1.00 to you, and \$0.50 (50 cents) to your partner.

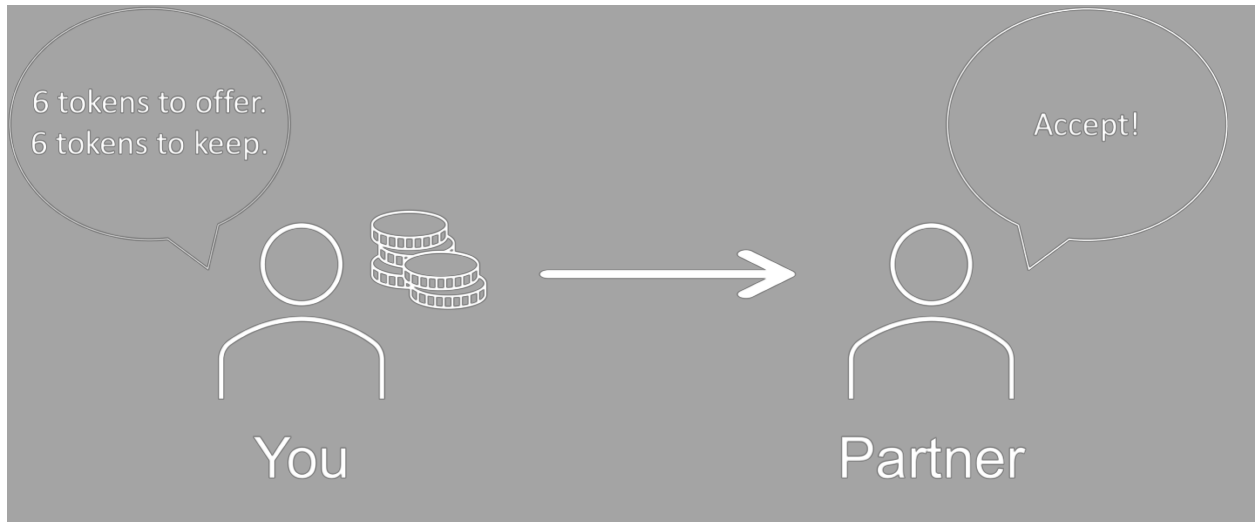
Your partner does NOT KNOW about this rule. Your partner decides by thinking that 1 token is worth \$1.00 for both you and him/her.

Press space bar to see example scenarios.

On the next slides, you will see 4 example scenarios so that you become familiar with the task.

Press space bar to begin practice trials.

<PRACTICE>

Scenario 1

What is the final monetary reward for YOU in this scenario?

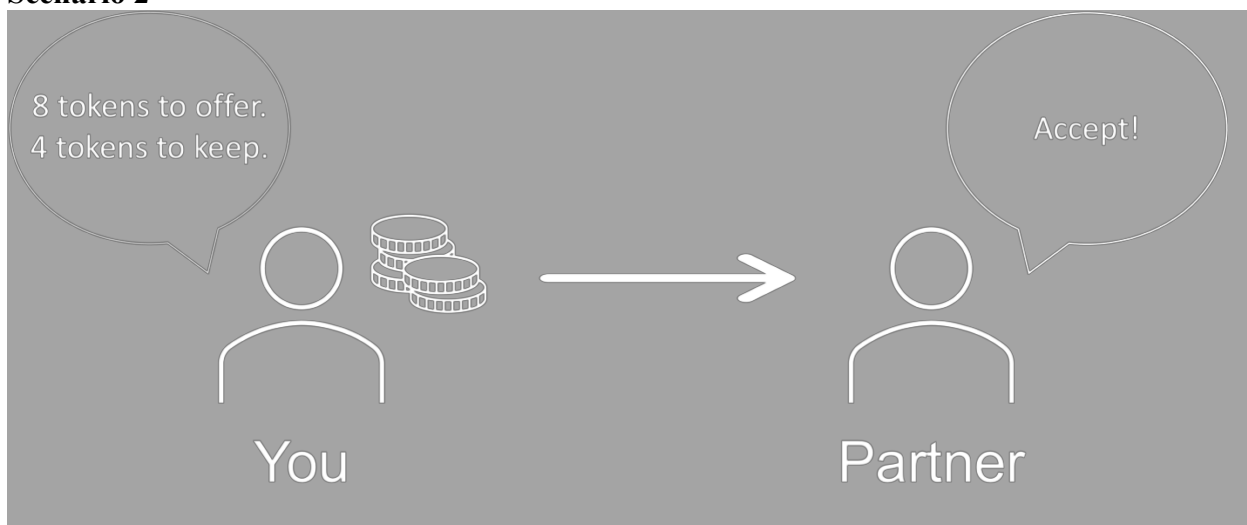
1: \$3.00

2: \$6.00

3: \$12.00

(Answer)

When you offer 6 tokens to the responder and keep 6 tokens for yourself, and the responder accepts the offer, this results in \$3.00 for the responder, and \$6.00 for you.

Scenario 2

What is the final monetary reward for the PARTNER in this scenario?

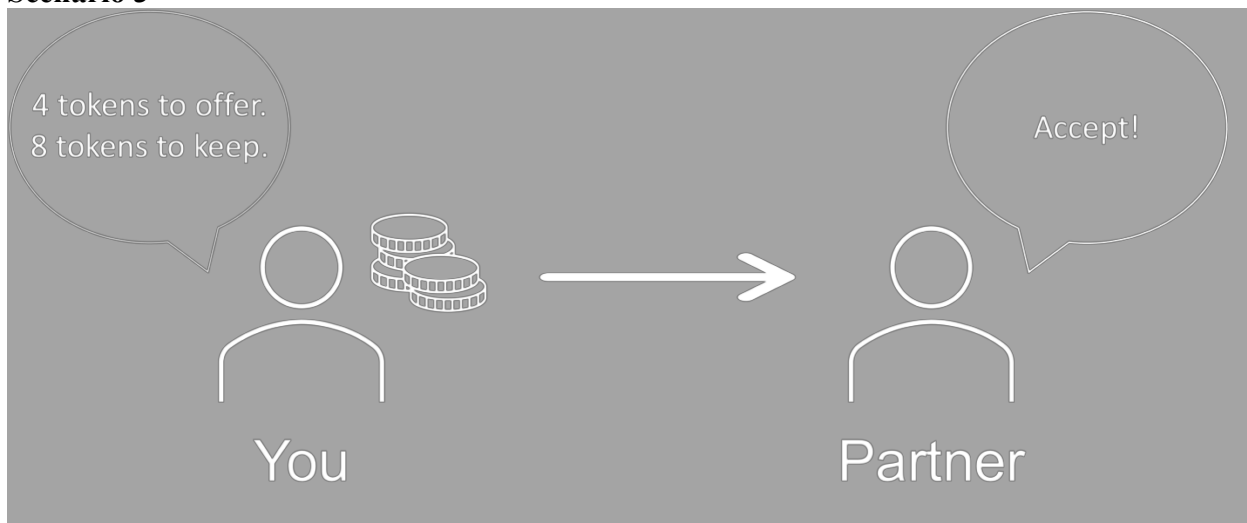
1: \$4.00

2: \$8.00

3: \$12.00

(Answer)

When you offer 8 tokens to the responder and keep 4 tokens for yourself, and the responder accepts the offer: this results in \$4.00 for the responder, and \$4.00 for you

Scenario 3

What is the final monetary reward for the PARTNER in this scenario?

In the symmetric condition

Remember:

The other person KNOWS that 1 token is worth \$0.50 (50 cents) for him/her.

The final monetary rewards for both of you will depend on decisions made by both of you.

Press space bar to continue.

In the asymmetric condition

Remember:

The other person DOES NOT know that 1 token is worth \$0.50 (50 cents) for him/her.

The final monetary rewards for both of you will depend on decisions made by both of you.

Press space bar to continue.

Now, please click to indicate how many tokens you offer to the other person.

Your offer to the other person:

0	1	2	3	4	5	6	7	8	9	10	11	12

Press space bar to finalize your offer.

Wait until the other person makes the decision.

Your partner made the decision:

REJECT

Thank you for participating in our study.

The purpose of this study was to create the impression that you play with a partner. The way we did that was to have you play alongside your partner via a camera. In reality, there was no other player: your partner was a video that we specifically created to make you believe that you were interacting with another person. Also, the feedback you received was not real: your feedback made it always seem that you are not bad, but clearly not excellent either. However, the feedback was never an accurate assessment of your performance.

Our main interest in this study was to see how you interacted with a stranger. We were particularly interested in creating a status hierarchy between you and the simulated partner. In fact, we wanted to see how much you would be willing to share with another person who seems to be higher/equal in status in this particular situation. Although your simulated partner rejected your offer during the economic game, you will receive 4.00 dollars. This is in addition to the 2 SONA credits.

Overall, we apologize for having deceived you, and have you interact with a person who was not real. We equally apologize for providing you with false feedback on your alleged performance. However, this deception was necessary for us to make sure you take the game seriously, and share with the other person as if this other person was real.

Now, please ring the bell to call the experimenter.

References (Appendix)

- Ames, D. R., Rose, P., & Anderson, C. P. (2006). The NPI-16 as a short measure of narcissism. *Journal of Research in Personality, 40*(4), 440–450.
- Ball, S., Eckel, C., Grossman, P. J., & Zame, W. (2001). Status in Markets. *The Quarterly Journal of Economics, 116*(1), 161–188.
- Cheng, J. T., Tracy, J. L., & Henrich, J. (2010). Pride, personality, and the evolutionary foundations of human social status. *Evolution and Human Behavior: Official Journal of the Human Behavior and Evolution Society, 31*(5), 334–347.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*(6), 504–528.
- Neuberg, S. L., & Newsom, J. T. (1993). Personal need for structure: Individual differences in the desire for simpler structure. *Journal of Personality and Social Psychology, 65*(1), 113–131.
- Rodebaugh, T. L., Woods, C. M., Thissen, D. M., Heimberg, R. G., Chambless, D. L., & Rapee, R. M. (2004). More information from fewer questions: the factor structure and item properties of the original and brief fear of negative evaluation scale. *Psychological Assessment, 16*(2), 169–181.
- Tracy, J. L., & Robins, R. W. (2007). The psychological structure of pride: a tale of two facets. *Journal of Personality and Social Psychology, 92*(3), 506–525.
- Weeks, J. W., Heimberg, R. G., Fresco, D. M., Hart, T. A., Turk, C. L., Schneier, F. R., & Liebowitz, M. R. (2005). Empirical validation and psychometric evaluation of the Brief Fear of Negative Evaluation Scale in patients with social anxiety disorder. *Psychological Assessment, 17*(2), 179–190.