



UNIVERSITY OF PADOVA

**Department of Developmental Psychology and Socialization
Department of General Psychology**

**Master's degree in Psicologia dello Sviluppo e dell'Educazione
Study track in Developmental and Educational Psychology**

Final Dissertation

**Failing and Succeeding at Fundamental Social Motives: An Adaptive Perspective on
Happiness**

Supervisor

Professor Peter K. Jonason

Candidate: Kassidy Patarino

Student ID: 2071366

Academic Year 2023-2024

Table of Contents

Abstract	3
Chapter 1: Introduction	4
Chapter 2: Theoretical Background	6
2.1 Fundamental Social Motives.....	6
2.2 Life History Theory	9
2.3 Agency and Communion	12
2.4 Happiness: An Adaptive Perspective.....	15
2.5 Success vs Failure: Negativity Bias.....	18
2.6 Summary and Hypotheses.....	20
Chapter 3: Method	22
3.1 Participants and Procedure.....	22
3.2 Measures	23
Chapter 4: Results.....	24
Chapter 5: Discussion	27
5.1 Primary Results and Implications	27
<i>Fundamental Social Motives</i>	28
5.2 Secondary Results and Implications	30
<i>Personality Traits</i>	30
<i>Agency</i>	30
<i>Communion</i>	33
<i>Agency versus Communion</i>	37
5.3 Limitations and Future Directions	38
5.4 Conclusion	41
References.....	44
Figures.....	57
Tables.....	58

Abstract

A person's definition of success depends on their goals and motivations. Having different motives means that different things will make people happy. If we define happiness as an indicator of success, then people should be happier when achieving the tasks they deem their most important goals. Some individuals have a fast life strategy, focusing on reproduction and immediate rewards, while others aim to live slowly, investing in social connections and future rewards. Thus, we studied happiness in response to the fundamental social motives: affiliation (group vs independence), status, self-protection, mate seeking, mate retention, disease avoidance, and kin care. Further, we examined the effect of individual differences in agency and communion on expected happiness. In an online survey, participants ($N = 297$) made predictions about their happiness when imagining succeeding or failing each motive. People were happier at the prospect of finding a new mate than they were about making friends, having autonomy, and avoiding disease. Some of the differences in happiness were related to sex (e.g., women expected to be unhappier than men when they failed at making sure they were safe and avoiding diseases), some were related to personality (e.g., agentic participants were happier than communal participants when finding new mates or earning status), and some were related to life history strategy (e.g., more communal men expected to be happier than less communal men when avoiding disease). This study has important implications for understanding happiness from an evolutionary standpoint and how to achieve it based on one's psycho-behavioral strategies.

Keywords: Happiness, Fundamental Social Motives, Agency, Communion, Affective Forecasting, Sex Differences

Chapter 1: Introduction

Evolutionary success is driven by thousands of daily decisions. They may seem inconsequential when considered individually, but altogether influence if we are moving closer to or further away from happiness. If we consider happiness as a feedback system that tells us whether we have succeeded, then a person will presumably be happier when they achieve adaptive tasks and unhappier when they fail at them (Jonason & Tome, 2019). If people have different ideas of what success means to them, then they will be focused on achieving different goals. Thus, people may differently prioritize the fundamental social motives: affiliation (group vs independence), status, self-protection, mate seeking, mate retention, disease avoidance, and kin care (Neel et al., 2016). Behavior is driven by motivation, and the happiness one may feel in response to achieving the motives may be driven by evolutionary adaptations. A person does not value one thing over another at random, they make decisions based on the most beneficial strategy for their current environment. The mechanisms underlying this behavior may be related to a person's life history strategy. This is a person's approach to how they prioritize adaptive goals in order to best spend their time and energy towards increasing evolutionary fitness (Alonzo & Kindsvater, 2008; Stearns, 2000). For people in stable, relatively safe, and slower-paced environments, a slow life history strategy may be the most beneficial. In this way they can put metabolic energy into growth and social connections that they can later benefit from. In a different environment where an organism may live in unstable or dangerous conditions, it may be more adaptive to focus on reproductive effort and immediate rewards. When an organism does not know how long they will live, engaging in short-term mating with multiple partners before an untimely death may be the most efficient course of action. While neither strategy is better than the other, they may lead to different types of evolutionary success.

In this study we aim to explore which fundamental social motives make people the happiest to achieve or the unhappiest to fail. We are also interested in investigating how the sex of the participant impacts these variables. Although men and women may face similar adaptive challenges, the most beneficial way to solve them is likely different. Because of biological niches and social pressures, men and women have evolved distinct roles within society and therefore may vary in the amount of happiness they predict to feel when succeeding at the fundamental social motives. To provide further nuance at the individual level, we explore how a person's personality traits, like agency and communion, modify or qualify these patterns. Under the assumption that personality is shaped by a person's life history strategy and influence social behaviors, we expect that a person's affective forecasts, or predictions of happiness, will vary in response to failing or achieving each motive. This study will help us understand what makes people happy and how different fundamental social motives may uniquely contribute to evolutionary success.

Chapter 2: Theoretical Background

2.1 Fundamental Social Motives

Motivation drives behavior. While this unites people, it also differentiates us because we each think, feel, and act in unique ways based on our different motives. Systems of motivation may have been shaped by the unique constraints of our social environments. A person's "fundamental social motives" may be expressions of antecedent processes, including innate psychological needs shaped by adaptive challenges and opportunities that come from living within groups (Maner et al., 2012). To date, the recognized fundamental social motives include affiliation (group vs independence), status, self-protection, mate seeking, mate retention, disease avoidance, and kin care (Neel et al., 2016). These motives serve to guide behavior in navigating everyday challenges and working towards evolutionary fitness. The fundamental social motives framework provides a lens through which to examine individual differences and behavioral adaptations with implications not only for day-to-day living, but evolution as well.

If the fundamental social motives reflect a pursuit of reproductive fitness, then achieving goals based on these motives means progressing towards evolutionary success. While humans face a large set of adaptive challenges, we can broadly categorize them into overarching domains, thus the seven fundamental social motives. For organisms to develop effectively until reproductive age they need self-preservation instincts, minimized contact with predators and disease, parental or family care, and to be able to navigate the dynamics of social groups and resource-sharing (Neel et al., 2016; Schaller et al., 2017). Successfully achieving each of these goals requires unique, and sometimes contrasting, behavior, emotions, and cognitive responses (Kenrick et al., 2010). The fundamental social motives outline adaptive goals that shape behavior in terms of survival, social, and reproductive tasks.

However, not everyone prioritizes these motives in the same way. There are individual differences in how people solve adaptive tasks based on their motivational priorities and definitions of evolutionary success (Jonason & Zeigler-Hill, 2018). Different relationships and problems require functionally specific reactions and navigation that may vary between situations and people. Think of behavior during the Covid-19 pandemic; a person who is most concerned with avoiding diseases would behave differently than a person who was most concerned with caring for family, likely choosing to stay isolated versus risk contamination with loved ones.

Many things could influence how people differ in their prioritization of the fundamental social motives. Different environments, individual values, life history strategies, or personality traits may bias people towards sensitivity to certain feedback, therefore motivating them to invest more energy into certain motives over others. For example: people with darker personality traits, like psychopathy or Machiavellianism, are more likely to prioritize fast life history motives, like status and mate seeking, and deprioritize slow life history motives, like kin care and group affiliation (Jonason & Ziegler-Hill, 2018). Individual differences in the fundamental social motives may also change as a person's environment changes across the lifespan and presents new evolutionary challenges. In multiple studies, people with unstable childhoods were more concerned with mate seeking and less concerned with mate retention and kin care (Neel et al., 2016; Schaller et al., 2017). As different behavioral strategies may be more adaptive within different environmental constraints, a person may need to prioritize different motives to survive. In an uncertain or dangerous world, favoring mate seeking may be more adaptive so an individual can reproduce before it is too late, rather than investing in long-term relationships they will never get to benefit from. Someone in a more stable and predictable environment may have

a different approach to prioritizing motives, in which they can invest in connections that help their health and well-being in the future, such as kin care and mate retention.

Another factor that may affect how people prioritize the fundamental social motives is sex of the individual. While people may face similar adaptive challenges, there are unique costs and benefits for how men and women have had to solve these problems, thus they may prioritize fundamental social motives differently. In previous studies, men cared more about mate seeking and earning status than women, while women cared less about mate-seeking, but more about mate retention, kin care, and personal safety than men (Buss & Schmitt, 1993; Neel et al., 2016). Women were also more motivated to help family, avoid threats, and help others than men were (Baumeister & Leary, 1995). There are differences in social roles and biological niches that could explain the emphasis of certain motives over others for men or women. Because women carry offspring, they have a biologically greater investment and parental obligation than men and face more reproductive costs when it comes to mating (e.g., pregnancy, gestation, birth, lactation). Therefore, women may be more selective and cautious about who they mate with, rather than men who often opt for short-term mating strategies with more partners (Buss & Schmitt, 1993; Schaller et al., 2017). If women are more restrained in their mating behaviors, the competition among men may increase for finding desirable partners. When it comes to mating, women are generally more receptive to cues about social status, access to resource, and physical formidability, thus putting the pressure on men to make themselves stand out and signal their worth to potential partners (Schaller et al., 2017). Men may also be less concerned than women about personal safety because they are generally larger and have greater physical dominance; a recurrent condition across mammals that may have shaped adaptive biases through natural selection (Daly & Wilson, 1988). Thus, women learned to prioritize protecting themselves from

threats and forming stronger bonds within their community, while men are free to prioritize mate and status seeking (Buss & Schmitt, 1993; Jonason & Ziegler-Hill, 2018).

While the fundamental social motives may inspire people's behavior, the importance of each motive varies by individual. Which motive a person prioritizes may affect how they interact with and respond to their environment. Many things can affect how we prioritize the motives, including personality, sex, or behavioral strategy in response to the constraints of one's environmental niche, otherwise known as life history strategy.

2.2 Life History Theory

Life history theory is the conceptual framework through which we view the current study. It is an evolutionary concept that describes how different species prioritize adaptive goals to best allocate their resources and maximize their fitness in terms of survival, growth, development, and reproduction (Stearns, 2000). Organisms have a finite amount of time and energy within their unique physiological, developmental, or genetic constraints, and must therefore choose carefully how to spend it (Alonzo & Kindsvater, 2008). In the context of behavior, organisms can put their resources towards "somatic effort," furthering their own individual survival, or "reproductive effort," furthering the production and survival of their offspring (Figueredo et al., 2005). Putting effort into mating and reproduction means you have less to put towards health and safety, and vice versa. It is necessary to make tradeoffs in pursuit of survival goals and understanding how these decisions are made can reveal the priorities of an organism, as well as explain variations in maturation, physical growth, sexual, social, and parenting behaviors.

There are two main life history strategies, slow and fast. A slow life history strategy is usually adopted by organisms that mature at a slower rate, grow to a greater size, live longer, and invest more time in a smaller number of offspring (Oli, 2004). Animals that trade off

reproduction and efficiency for this greater expenditure of somatic effort can invest more in growth and health, like elephants, sharks, or primates (Dobson & Oli, 2007). On the other hand, a fast life history strategy is usually adopted by organisms that mature quickly, remain small in size, have shorter lives, and have many offspring (Oli, 2004). Animals like mice, rabbits, and fruit flies prioritize reproduction in the face of ecological threats to ensure they can procreate before an early death (Boggs, 2009; Dobson & Oli, 2007). Fast life history strategists often develop mating behaviors that help them reproduce and find multiple partners while they can, whereas slow life history strategists develop affiliative behaviors that allow them to form successful long-term relationships with partners or children in pursuit of longevity (Ellis & Del Giudice, 2019).

Humans are generally characterized by a slow life history strategy because of our greater size, late onset of puberty, long life span, and investment in offspring, however there is much within-species variation (Kavanagh & Kahl, 2016; Mace, 2000). People may choose to allocate their metabolic resources differently based on their unique environmental conditions, thus faster or slower strategies may emerge. Neither life history strategy is fundamentally better than the other, it is simply a matter of which behaviors will prove to be the most adaptive within an organism's specific environmental constraints, such as resource availability, exposure to danger or violence, consistency and stability of care, and predictability of the environment (Ellis et al., 2009; Hill et al., 2008; Kaplan & Gangestad 2005). In unpredictable environments, for example, a faster life history is generally more adaptive. Where there is greater risk of reduced life expectancy and decreased social or emotional functioning, the most appropriate response is one that prioritizes earlier maturation and reproduction and favors short-term rewards over long-term ones (Brumbach et al. 2009; Nettle et al., 2013). Conversely, a slower life history strategy is

generally more suited to safe, predictable, and resource abundant environments in which there is opportunity for slower development, delayed maturation, and future oriented thoughts and behavior (Del Giudice et al., 2015).

Individual differences in life history strategy are relevant to variations in personality (Figueredo et al., 2005). In other words, people may be more inclined to invest in mating versus somatic efforts if they have certain psychological characteristics. People with higher psychopathy, Machiavellianism, narcissism, risk tolerance, sociosexuality, cognitive flexibility, or lower perceived control of their environment often have atypical motivational priorities and mating styles that resemble a fast life history strategy rather than a slow one (Jonason et al., 2010; Mittal et al., 2015; Wolf et al., 2007).

Life history strategies also commonly differ by sex, as the optimal solution to certain adaptive problems may look different for men and women (Del Giudice, 2009). Evolutionarily, fast life strategies, like short-term mating and having more sexual partners, led to more reproductive fitness in men than it did women. Women pay costs for short term mating in ways that men do not. Along with unplanned pregnancy or termination of unplanned pregnancy, social judgement, lower perceived desirability, single parenthood, depression, anxiety, lower self-esteem, and physical distress or illness are just the start of potential consequences unique to women who engage in short-term mating (Koehn & Jonason 2021). In terms of biological capability, a man can have far more children in his lifetime than a woman can. So, having a portion of these offspring with a low-quality partner who is not going to invest in them is more costly for women and will lead to lower reproductive fitness for them, while it remains a viable strategy for men. Reproductive costs may influence behavior, like short-term mating, throughout

evolution, which is why women are instead more likely to engage in self-protective and familial bonding motivations than men (Mace, 2000; Neel et al., 2016).

We aim to study the differences in people's life history strategies and how they impact reactions to adaptive tasks that all humans likely face but may solve differently. While life history theory acts as the framework, it is far too complex to holistically operationalize in the current work. Life history strategies are the culmination of biological, motivational, and behavioral tradeoffs and responses to environmental constraints (Del Giudice et al. 2015). They are composite measures of many factors that are beyond the scope of our study (e.g., maturation, growth, life span, reproduction, child-rearing). We are specifically interested in how personality traits, particularly agency and communion, act as a person's psycho-behavioral strategy for navigating life and interacting with others. Looking through a life history theory lens, those with a fast life history strategy should be higher in agency, while those with a slow life history strategy should be higher in communion. In our study, we look at agency and communion as exploratory predictors to understand their impact on a person's response to adaptive tasks within their life history framework.

2.3 Agency and Communion

As used in this study, agency encompasses three main facets: individuality, self-assertion, and achievement (Abele et al., 2008). Agentic people strive to stand out from others and exercise dominance and autonomy as powerful leaders. People who are higher in agency will find fulfillment in their sense of independence and individual accomplishments (Abele & Wojciszke, 2018; Guisinger & Blatt, 1994; Mansfield & McAdams, 1996). In its most positive form, agentic people can be confident and driven high-achievers who enjoy a challenge and thrive under pressure (Abele et al., 2008; Bakan, 1996; Diehl et al., 2004). They are independent, goal-

oriented, ambitious, and determined to overcome obstacles by any means necessary. In its negative form, agentic people can be described as power-hungry, selfish, aggressive, and even ruthless (Abele et al., 2008; Bakan, 1996; Diehl et al., 2004). Agentic individuals share many characteristics, values, and motives with people who have a fast life history strategy and therefore represents our conceptualization of “fast” individuals in this study.

On the other hand, the three facets of communion are: social relationships and warmth, empathy, and morality (Abele et al., 2008). Communal people enjoy being part of a community and having close personal relationships. They are understanding of and enjoy social connections and cooperation. Those higher in communion will find fulfillment in their relationships with others and having a sense of belonging (Abele & Wojciszke, 2018; Guisinger & Blatt, 1994). In its most positive form, people high in communion value group harmony, empathy, morality, and compassion, often putting others before themselves (Abele et al., 2008; Bakan, 1996; Diehl et al., 2004). While in its negative form, communal people may forfeit their sense of individuality, become codependent, or lose themselves to people pleasing behaviors and a low sense of self-worth (Abele et al., 2008; Bakan, 1996; Diehl et al., 2004). The characteristics, values and motives of communal individuals align with a slower life history strategy and therefore represent “slow” individuals in the current work.

We chose agency and communion as our conceptualization of a person’s psycho-behavioral strategy because these dimensions are frequently used to describe personality, behavior, style of thinking, motivations, defense mechanisms, relationships, social perception, self-concept, attachment styles, and in some cases, even psychological well-being (Bakan, 1996; Bartholomew & Horowitz, 1991; Diehl et al., 1998; Diehl et al., 2004). When agency and communion are boiled down, they describe two basic avenues, the desire for an independent self,

a power motive, or “getting ahead” versus the desire to connect with others, an intimacy motive, or “getting along” (Hogan, 1982; McAdams, 1988). How a person behaves in response to this choice reveals what motivates them and how they relate to their environments. Most common personality scales and theories measure traits that are encompassed by agency (e.g., dominance, competence, independence, individualism) and communion (e.g., nurturance, warmth, interdependence, collectivism) in a number of relevant psychological fields including personality, social, motivational, and cross-cultural psychology (Abele & Wojciszke, 2018; Entringer et al., 2022). While agency and communion have frequently been fundamental constructs of personality, motivation, and self-concept; no other studies we are aware of use them to conceptualize life history strategy.

Interestingly, there is a notable sex difference in these dimensions, with men tending to be more agentic than women and women tending to be more communal than men (Diehl et al., 2004; Hsu et al., 2021). One explanation for this may be the effect of gendered social norms on self-concept formation. Men are mostly socialized to assume agentic traits like being independent, high-achieving, and risk-takers, while women are expected to endorse more communal characteristics like being interdependent with others, nurturing, and sensitive (Guisinger & Blatt, 1994). Having an “agentic view of self” means a person is encouraged to express themselves and develop their individual potential, a role generally taken by men, while a “communal view of self” emphasizes the interrelatedness of people and the needs or desires of the group, a role commonly assumed by women (Diehl et al., 2004). Because of the way men and women are socialized to think, behave, and motivate, it is common to conflate agency with masculinity and communion with femininity. These expectations can impact a person’s cognitive, emotional, and behavioral functioning as individuals and members of society.

Men and women may also differ in how they react to stressors relating to agency or communion. In a study on couples, the cardiovascular activity of women was raised only when they were having marital disagreements, a threat to the relationship and therefore a communal stressor, while the cardiovascular activity of men was raised only when they experienced achievement challenges, a threat to personal success and therefore an agentic stressor (Smith et al., 1998). These results are consistent with both the sociocultural view of sex differences described above, but also biological differences in behavior and motivation (Archer, 1996; Buss, 1995). This suggests that adaptive biases across evolution may differently impact men and women, and therefore they may be sensitive to different types of challenges and react differently when presented with failure of different fundamental social motives that threaten the constructs of agency or communion.

This study considers personality by how humans have adapted to their specific environmental and social niche. Differences in personality traits, like agency and communion, can affect the way people react in certain situations and respond to the world around them. Personality traits may partially be phenotypic expressions of underlying motivational systems, and thus a difference in personality may coincide with a difference in the prioritization of the fundamental social motives (Sih et al., 2004). To further understand the individual differences in response to such adaptive tasks, we are interested in how agency and communion modify or qualify patterns of men and women's happiness to achieving the fundamental social motives.

2.4 Happiness: An Adaptive Perspective

Happiness is commonly conceptualized in research as a stable and general trait, disposition, or predictor (e.g., Buss, 2000; Diener et al., 1999; Myers & Diener, 1995). In our study, however, we are interested in happiness as a response to the events in a person's life.

Specifically, from an evolutionary standpoint, happiness may be part of a larger system of feedback that tells you whether you have achieved evolutionary success, or tasks related to it (Jonason & Tome, 2019). In this way, happiness is an outcome rather than a predictor and applies to specific situations rather than being a stable trait. It is similar to how sociometer theory (Leary et al., 1995) describes self-esteem as a monitoring system for social value and acceptance and alerts a person to any threats that may arise related to belonging; or how hierometer theory (Mahadevan et al., 2016) tracks status through self-esteem and narcissism to regulate assertiveness and better navigate status hierarchies. We build on these ideas, proposing that happiness allows us to monitor our progress towards success by tracking manifestations of signals to evolutionary fitness (Buss, 2000). In other words, the things that make us happy may be those that improve our chances of survival or evolutionary success, such as solving problems related to the fundamental social motives.

The type of adaptive tasks that will make a person the happiest to succeed at depends on what motivates them. In this study, we are primarily interested in investigating which motives will make people the happiest. Their goals may be based on differences in personality and environmental constraints, and therefore as a secondary exploration we are interested in how a person's levels of agency or communion affect these happiness responses. People define evolutionary success differently based on their motives and thus, their happiness may vary between which adaptive tasks they accomplish. For some, earning status or power may make them the happiest, while others may be uniquely motivated by making their current partner happy.

A person's happiness is based on more than external factors, such as what they have, where they live, or who they know. We also must understand internal factors, including

individual values, goals, thoughts, and traits. Personality, for instance, can impact a person's happiness. Specifically, extraversion, stability, and conscientiousness have been found to correlate with greater happiness while neuroticism or emotionality correlate with lower happiness (Argyle & Lu, 1990; Cheng & Furnham, 2003; Costa & McCrae, 1980; DeNeve & Cooper, 1998). Possessing certain personality traits does not automatically make a person happy, but it may facilitate greater happiness in that personality drives behavior and may lead people towards actions that solve adaptive goals. For example, extraverted people are likely more motivated to participate in social activities, seek connections, and build relationships than introverts. Having social connections and spending time with others is evolutionarily beneficial, especially for people who put a high priority on the motive of making friends or making their partner happy (Argyle & Lu, 1990). These same actions, however, may not make an introvert as happy, because their personality likely corresponds with prioritizing different social motives. If this is the case, then an introvert would likely be happiest when behaving in ways that achieve different goals, perhaps self-protection or avoiding diseases, by staying home versus going out. In this way, personality may be related to differences in fundamental social motives and uniquely drives people to behave in ways that help them achieve their version of evolutionary success, and therefore happiness. Thus, we expect a similar pattern in our study; agentic people should feel happier when achieving agentic goals and communal people should feel happier when achieving communal goals.

If succeeding at fundamental social motives makes people happy, then failing at these same goals should make them unhappy. Psychologists posit that humans have evolved psychological mechanisms that cause distress in certain circumstances for the purpose of motivating action that optimizes one's chance of survival or reproduction (Buss, 2000; Seligman,

1971). When a person is in a position that could be adaptively detrimental, they may feel unhappiness as a signal to remove themselves or change their situation. You may feel sad if you lack control of your life, jealous if your partner cheats on you, or angry if you lose your job, but these feelings are not meaningless. Much like how physical pain may result after an injury to signal to your body not to do further damage and to promote healing, psychological pain may have similar implications (Hagen, 2011). Negative emotions may function as signs of evolutionary failure or danger and indicate a need to make changes and solve adaptive problems. Therefore, in contrast to how succeeding at fundamental social motives may make someone happy, failing at an adaptive task may produce feelings of unhappiness as a response, indicating failure to improve evolutionary fitness.

2.5 Success vs Failure: Negativity Bias

When it comes to fundamental social motives, succeeding at them may make people happy and failing at them may make people unhappy. The question is, will people care more about success or failure? Humans experience asymmetry in affective experience when it comes to success and failure, often biased towards negativity. For example, the pain of losing \$50, receiving criticism, or a friend behaving hurtfully turns out to be more meaningful than the pleasure of winning \$50, receiving praise, or a friend behaving nicely (Buss, 2000; Kahneman & Tversky, 1984). People tend to feel losses more heavily than they do wins, and therefore are more averse to failure than they are drawn to success. In short, negativity impacts people more than positivity.

This psychological phenomenon where people dislike losing more than they like winning is called negativity bias and it seems to begin in infancy, as early as three years old, and continues into adulthood (Hamlin et al., 2010). Negativity bias is thought to have evolved as an

adaptive mechanism for survival in an environment where threats were ever present (Rozin & Royzman 2001). Organisms more attuned to negative stimuli are more prepared for danger and can better respond to or avoid harm, increasing their probability of survival and reproduction (Baumeister et al., 2001). It is often safer to pay more attention to negatives than positives, as ignoring a positive outcome may result in regret or disappointment but ignoring a negative one could result in injury or death. Beyond survival, negativity bias is still prevalent when it comes to bad events outweighing the impact of good ones both within a lifespan and on a daily basis (David et al., 1997; Nezlek & Plesko, 2007). A bad event produces greater emotion, has a greater impact on adjustment, and longer lasting effects than good ones (Baumeister et al., 2001). Negatives may be more durable, memorable, and destructive, with the power to undo previous positive experiences more so than positives can impact people.

While everyone may be susceptible to negativity bias, different people may be calibrated to be more sensitive to negative feedback than others. Specifically, there may be sex differences in how the negativity bias affects men and women. In many studies, women report greater levels of negative thinking and more frequent and intense experiences of negative emotions such as anger, fear, and sadness than men (Brebner, 2003; Lily et al., 2023). Sometimes women even rate the same stimuli as more negative than a male counterpart (Lang & Ewoldsen, 2010; Norris, 2021; Yuan et al., 2009). Not to mention that women are more risk averse and have a stronger negativity bias when it comes to impression formation than men do, which from an evolutionary standpoint, may have to do with the importance of the mother's survival to that of her offspring (Ito & Cacioppo, 2005; Soroka et al., 2016). Women may attend more to negative information and feel more strongly about it than men do because they must live more cautiously and intentionally to survive and feel safe (Daly & Wilson, 1988; Logan & Walker, 2021). Thus,

assessing people's reactions to failure as well as success will provide insight into the phenomenon of negativity bias in men and women's affective forecasts.

2.6 Summary and Hypotheses

In this study, we primarily attempt to understand the amount of happiness and unhappiness men and women expect to feel when asked to imagine success or failure at adaptive tasks based on fundamental social motives. As a secondary aim, we are also interested in the relationship between expected happiness and levels of agency and communion. We expect that people will have different affective forecasts to each motive depending on what goals they deem most important to achieve their version of evolutionary success. We hypothesize that people will be more sensitive to imagining failure than success at adaptive tasks, and therefore, the valence of unhappiness at failures will be stronger than happiness at successes. Because of the human tendency to feel more strongly about losses than wins, we think this will be true of all participants, but specifically for women, as previous research indicates they have a higher negativity bias than men. Additionally, we expect this negativity bias to affect agentic individuals more than communal ones, because they experience fulfillment through personal achievement rather than social connection.

Next, we predict that men will be more agentic than communal, and more agentic than women are. This comes from the evolutionary and societal precedents of men being more inclined to have fast life history strategies because of adaptive biases and sociocultural pressures. We predict that women on the other hand, will be more communal than agentic, and more communal than men are because of their expected sociocultural roles and evolutionary alignment with slow life history strategies. Therefore, there should be sex differences in personality that may translate to expected happiness when solving adaptive tasks.

Although there are eight motives, they boil down to two things: motives that will benefit the individual and motives that will benefit others. Agentic social motives would be affiliation (independence), status, self-protection, disease avoidance, and mate-seeking. These would correspond to the tasks of having autonomy, earning status or power, ensuring personal safety, avoiding diseases, and finding new mates. Whereas communal social motives would be affiliation (group), mate retention, and kin care. These would correspond to tasks like making new friends, making sure your partner is happy, and taking care of family. Therefore, we expect that more agentic individuals will be more sensitive to adaptive tasks based on agentic social motives (both more happiness at success and more unhappiness at failure) than communal motives, and similarly, more communal individuals will be more sensitive to adaptive tasks based on communal social motives than agentic ones. The results of this study will help us understand what motives makes people happy as well as how personality may impact these patterns.

Chapter 3: Method

3.1 Participants and Procedure

Data was collected anonymously from 351 participants, but 50 were removed for failing to provide complete data. We removed an additional four participants who identified as non-binary because the lack of representation posed a challenge for meaningful statistical categorization when comparing sex differences in the scope of our study. Therefore, the final sample comprised of 297 participants (91 men, 206 women) who were aged 18 to 82 years old ($M = 34.70$, $SD = 16.00$), the majority of whom were of European descent (72%), heterosexual (80%), in a relationship (62%), and residing in the United States of America (54%). This study was approved by the University of Padua ethics committee (137-b) and participants were mainly recruited via word of mouth and social media posts (e.g., Instagram, Facebook, Survey Swap) to take the anonymous and voluntary online Qualtrics survey, with no incentives offered.

All participants provided their informed consent before completing a self-report questionnaire. If they were at least 18 years of age, agreed to participate, and passed a ReCAPTCHA data integrity procedure, they continued to the survey. Participants were randomly assigned to one of two conditions in which they rated their projected happiness in the case of either succeeding ($n = 145$) or failing ($n = 152$) a series of adaptive tasks in a between-subjects design. All participants then rated themselves in terms of characteristics related to agency and communion in a randomized order. They then answered demographic questions (i.e., sex, age, sexual orientation, current relationship status, race/ethnicity, what country they live in, and how they heard about the survey). Participants were debriefed and thanked after completing all questions.

3.2 Measures

To measure happiness in response to success or failure at achieving adaptive goals, we used Neel and colleagues' (2016) fundamental social motives (affiliation [group vs independence], status, self-protection, mate seeking, mate retention, disease avoidance, and kin care) and developed eight tasks as per the reduction of the scale into single items (Jonason & Tome, 2019). In one condition, participants were told "In this section we would like to know what makes you happy or unhappy. Imagine you **SUCCEED** at the following tasks and rate how happy you would feel, using the scale provided (1 = *Very unhappy*; 5 = *Very happy*).” In the other condition, participants were given the same question, but asked to imagine they “**FAIL**”. All participants then rated their projected happiness in response to the following tasks in a randomized order: (1) Making new friends (2) Having autonomy (3) Earning status/power (4) Making sure you are safe (5) Finding new mates for sexual/romantic relationships (when you need one) (6) Making sure your present mate is faithful/happy (when you have one) (7) Avoiding diseases, viruses, and colds (8) Caring for family members.

To assess individual differences in agency and communion we used Abele and colleagues' (2008) standardized measure of the two dimensions. Participants were asked to “Rate each trait based on how much it sounds like you, using the scale provided (1 = *Very much unlike me*; 5 = *Very much like me*).” Participants were given 24 traits, 12 items to assess agency (e.g., able, active, assertive) four of which were reverse scored (i.e., insecure, lazy, shy, vulnerable) and 12 items to assess communion (e.g., caring, helpful, loyal) four of which were also reverse scored (i.e., conceited, dominant, egoistic, hard-hearted). The items for each trait were averaged into separate agency (Cronbach's $\alpha = .72$) and communion ($\alpha = .78$) scores in which a higher number meant a higher affiliation with that trait.

Chapter 4: Results

First, we conducted a 2 (sex) \times 2 (condition) \times 8 (fundamental social motive) mixed model ANOVA (Table 1). The results showed that participants' forecasted happiness differed between motives ($F[7, 2051] = 4.41, p < .001, \eta_p^2 = .02$). People were happier at the prospect of finding a new mate than they were about making friends ($t[293] = 3.69, p < .01, d = 0.43$), having autonomy ($t[293] = 3.54, p < .05, d = 0.41$), and avoiding disease ($t[293] = 3.07, p < .05, d = 0.36$). Additionally, expected happiness differed by condition ($F[1, 293] = 126.87, p < .001, \eta_p^2 = .30$), in which people predictably expected to be happier when they succeeded at fundamental social motives than when they failed ($t[293] = 11.30, p < .01, d = 1.32$). Lastly, expected happiness about a certain motive differed between success and failure ($F[7, 2051] = 13.48, p < .001, \eta_p^2 = .04$). Comparing average projected happiness scores between men and women within each motive revealed that women expected to be unhappier than men did when they failed at making sure they were safe and avoiding diseases.

Second, we conducted an auxiliary 2 (sex) \times 2 (personality trait) mixed model ANOVA (Figure 1). The results showed that men and women differed in personality, regardless of trait ($F[1, 295] = 10.20, p = .002, \eta_p^2 = .03$), with women scoring higher than men ($t[295] = 3.19, p < .01, d = 0.37$). Additionally, people differed in personality ($F[1, 295] = 62.60, p < .001, \eta_p^2 = .18$) and specifically, were more communal than agentic overall ($t[295] = 7.91, p < .001, d = 0.92$). Lastly, there was an interaction between personality trait and sex ($F[1, 295] = 17.30, p < .001, \eta_p^2 = .06$) where women were higher on communion than men ($t[295] = -5.40, p < .001, d = -0.68$), women were higher on communion than they were on agency ($t[295] = -10.90, p <$

.001, $d = -1.27$), and women were higher on communion than men were on agency ($t[295] = -7.68, p < .001, d = -0.89$).

Third, we examined the correlations of projected happiness between agency overall and as a function of sex and condition (Table 2). The more agentic a person was, the happier they expected to be when succeeding at making friends, earning status, and finding a new mate for sexual/romantic relationships. More agentic women were also expected to be happier than less agentic women when imagining succeeding at making friends, earning status, and finding a new mate, as well as when making sure they were safe. On the other hand, the more agentic a man, the unhappier he expected to be when imagining failing to make sure he was safe. We found that correlations of expected happiness and agency were greater for women than men when they imagined succeeding at making friends and making sure they were safe. However, the correlation with unhappiness was greater for men than women when they imagined failing at making sure they were safe. We also found that the correlations of expected happiness and agency were stronger when participants imagined succeeding, rather than failing, at making friends, earning status, making sure they were safe, and finding new mates. The correlations were also stronger specifically for women who imagined succeeding, rather than failing, at making friends and earning status. For men, the correlations were stronger when they imagined succeeding, rather than failing, at avoiding disease, but stronger for unhappiness when failing, rather than succeeding, at making sure they were safe.

We also examined the correlations of projected happiness between communion overall and as a function of sex and condition (Table 3). The more communal a person was, the unhappier they expected to be when failing at making sure they were safe and making sure their present mate was faithful/happy. More communal women also expected to be unhappier when

considering earning status than less communal women, while more communal men expected to be happier when they succeeded at avoiding disease than less communal men. We determined that the correlations of expected unhappiness and communion were stronger when participants imagined failing, rather than succeeding, at making friends, having autonomy, making sure they were safe, finding new mates, keeping their present mate faithful/happy, and caring for their family. Correlations were stronger for imagining succeeding than failing only in the case of avoiding diseases. Unhappiness and communion correlations were stronger specifically for men when they imagined failing, over succeeding, at making friends and making sure they were safe, but stronger for happiness in success over failure when it came to avoiding disease. For women, happiness correlations were stronger for imagining succeeding, rather than failing, at making sure their present mate was faithful/happy and avoiding disease.

Lastly, we ran comparisons of correlations to examine the differences between agency and communion within failure and success (Table 4). We found that correlations for expected happiness and fundamental social motive were stronger for agentic, rather than communal people, when it came to finding new mates but stronger for communal over agentic people when it came to earning status. Correlations between expected happiness and succeeding at fundamental social motives were stronger for agentic over communal participants when it came to earning status. Happiness and success at fundamental social motive correlations were stronger specifically for agentic over communal women when making friends and having status, but stronger for communal men over agentic men when it comes to avoiding disease.

Chapter 5: Discussion

5.1 Primary Results and Implications

Motivation drives a person to think, feel, and act in response to their environment in ways that facilitate achievement of their priorities. Not everyone wants the same things, so how does prioritization of the fundamental social motives (affiliation [group vs independence], status, self-protection, mate seeking, mate retention, disease avoidance, and kin care) affect men and women's happiness when achieving adaptive tasks? If happiness is an indicator of evolutionary success, then achieving adaptive tasks based on such motives should make participants happier and failing at them should make them unhappier. In this study we aimed to explore this by asking participants to rate how happy they would feel in affective forecasting in response to imagining they failed or succeeded at different fundamental social motives. While people may face similar adaptive challenges, not everyone will have the same response to them. To further explore individual differences in happiness to the fundamental motives, we also aimed to understand the role of participants' sex and personality traits, specifically agency and communion. We used agency as a conceptualization of a fast life history strategy and someone whose focus was on "getting ahead" while we used communion as a conceptualization of a slow life history strategy and someone whose focus was on "getting along" (Hogan, 1982). Although there are eight fundamental social motives, they can be classified into whether they benefit the individual (agentic) or others (communal). Adaptive tasks based on agentic motives would be having autonomy, earning status or power, ensuring personal safety, avoiding diseases, and finding new mates. Whereas adaptive tasks based on communal motives would be making new friends, making sure your partner is happy, and taking care of family. However, these are different than classifying the motives purely by life history strategy, in which fast motives would revolve

around reproductive effort: mate seeking, earning status, and having autonomy while slow motives would be focus on somatic effort: making friends, mate retention, kin care, personal safety, and avoiding disease. This adaptive perspective on happiness and the fundamental social motives has provided insight into how people's psychology may have been differently shaped in a social landscape, and the nuances at the individual difference level revealed by personality traits.

Fundamental Social Motives

People did not prioritize all social motives the same way, and some elicited greater affective forecasts of happiness than others. In general, people expected to be happier at the prospect of finding a new mate than they were about making friends, having autonomy, and avoiding disease. It is possible that the importance of finding a new mate lies within the evolutionary importance of passing along one's genes to the next generation (Ellis & Del Giudice, 2019). This is a basic motive for all people, as a successful evolutionary agenda usually depends on reproductive success. However, the reasoning behind the importance of finding a new mate is likely more complicated than that and rooted in social as well as evolutionary psychology. Mating fulfills various psychological needs like intimacy, belongingness, and improved self-esteem as well as providing opportunities for personal growth and development (Baumeister & Leary, 1995; Feeney & Collins, 2015). Therefore, it makes sense that people would be motivated to seek out mates and feel happy when imagining accomplishing such a task. The benefits of finding a new mate may supersede those of having autonomy and outweigh the benefits that can be reaped from platonic friendship. In fact, in some cases, when mating goals are salient there is a decrease in risk aversion and an increase in willingness to participate in

potentially harmful behaviors, further suggesting that mate seeking is a higher priority motivation than even things like self-protection or disease avoidance (Hill & Durante, 2011).

While all participants understandably expected to be happier when they succeeded at fundamental social motives than failed, women expected to be unhappier than men when they failed at making sure they were safe and avoiding diseases, as per our hypothesis that women would be more sensitive to failures than successes than men would. If happiness indicates evolutionary success, then it makes sense for it to be higher at the prospect of succeeding at an adaptive task and lower when failing. For personal safety and disease avoidance in particular, these may be more of a concern for women than men because of how adaptive biases have shaped attitude. Women worry more about their safety and the possibility of being attacked, perhaps because they are less physically dominant than men and have learned to be cautious, while disease avoidance may be more important to women because of their higher perceived infectability, germ aversion, and pathogen disgust (Daly & Wilson, 1988; Diaz et al., 2020; Lee & Zietsch, 2015; Logan & Walker, 2021). These attitudes may be a part of a slower life history strategy and a generalized risk aversion. Women often show traits of a slower life strategy when compared to men, in the domains of development, behavior, and physiology (Tarka et al., 2018). Thus, they are more focused on investing in somatic effort and keeping themselves healthy in the long-term so they can reap the benefits of their social connections and parental investments. This is also reflected in the idea that women are generally less risk averse than men and may feel more nervous and fearful in anticipation of negative outcomes (Croson & Gneezy, 2009; Fujita et al., 1991). Therefore, women may prioritize motives like safety and disease avoidance higher, since they are more averse to the risks associated with failing them.

5.2 Secondary Results and Implications

Personality Traits

In our secondary exploration of personality, we found support for our hypothesis that women were more communal than agentic, and more communal than men. Women were also more communal than men were agentic. This was an expected finding and likely has to do with the different ways men and women are socialized. There is often an influence on women that encourages them to find their role in society based on their interdependence with others and how nurturing or selfless they can be, while men are encouraged to be assertive, independent, and high achieving (Guisinger & Blatt, 1994). An unexpected finding, however, was that overall, participants were more communal than they were agentic. It has been shown that people identify more with communal traits the older they get (Diehl et al., 2004; Hsu et al., 2021), so perhaps our findings reflect this trend in which people become more communal as they age. Additionally, in our study we used communion to conceptualize a slow life history strategy, and this would suggest that humans tend toward a slower life history in general, in line with previous research (Kavanagh & Kahl, 2016; Mace, 2000). While there is considerable room for within-species variation and one life history strategy does not suit everyone, the human lifespan is generally characterized by a slower speed in which we prioritize somatic goals outside of reproductive effort (Jones, 2011).

Agency

As for our hypothesis that agentic people would be happier about succeeding and unhappier about failing at agentic motives than communal motives, we found partial support. More agentic people expected to be happier than less agentic people when they imagined succeeding at earning status and finding new mates. The same was found for agentic women,

with the addition of greater happiness than less agentic women when imagining succeeding at making sure they were safe. These motives are all ones that would benefit the individual and thus we classified them as agentic motives. It makes sense that an agentic person would be happier at the prospect of anything that would further their individuality, self-assertion, and achievement (Abele et al., 2008). Unexpectedly, however, people who were more agentic, and women specifically, also expected greater happiness when succeeding at making friends than less agentic people and women, a communal fundamental social motive. This could perhaps be explained by the benefits that women find from social networks and the idea that women are thought to benefit more from close friendships than men. Friendships between women are characterized by higher self-disclosure and more effective social support, with women more frequently relying upon them in general and in the face of stressors which is associated with physical and psychological benefits (Bedrov & Gable, 2023). Although making friends is a communal motive, women also reap individual cognitive, emotional, and physical benefits from having strong, supportive friendship networks and therefore it makes sense that a more agentic or self-interested woman would feel happier when succeeding at this motive. More agentic men on the other hand expected to be unhappier when imagining failing to make sure they were safe than less agentic men. As personal safety is an agentic motive, this is consistent with our expectations that agentic individuals will be unhappier when imagining failing at motives that benefit the individual.

We also found moderation by sex, in that the relationship between agency and projected happiness was stronger for women than men when succeeding at making friends and making sure they were safe. As previously discussed, the individual benefits of close friendships may be more prominent among women than men, and therefore it makes sense that the relationship between expected happiness and making friends would be stronger among women, even agentic

women (Bedrove & Gable, 2023). As for personal safety, women worry more than men about their safety and feel more vulnerable to most crimes or threatening situations, so it is logical that they would prioritize this motive over men, especially agentic women who are independent thinkers and worried about themselves (Logan & Walker, 2021; Riggs & Cook, 2014). On the other hand, the relationship between agency and projected unhappiness was stronger for men than women when failing at personal safety. This is an unexpected finding, because we predicted that women would be more susceptible to the negativity bias than men, and therefore should feel more strongly about failure than success. Especially in the case of personal safety, which is something that has been well documented to worry women more than men (Daly & Wilson, 1988; Logan & Walker, 2021). This could perhaps have to do with the societal expectation that men should be protectors. Masculinity is often closely tied to a man's ability to take care of others, often women and children, providing support and security (Wojknicka, 2021). If men aren't able to keep themselves safe, then what does that say about their capability of protecting others? Failing at ensuring personal safety could be seen as a direct threat to masculinity and therefore may make a man more upset to fail at than a woman, especially an agentic man who values independence.

We also found moderation in that the relationship between agency and projected happiness was stronger when participants imagined succeeding, rather than failing, at the agentic motives of earning status, making sure they were safe, and finding new mates, supporting our hypothesis, but also at the communal motive of making friends. Although making friends is a communal motive, we have discussed why it could be beneficial for individuals to expand their social networks. What is interesting about this finding is that the relationship between agency and happiness forecasts were stronger for success of these motives, rather than failure, because

we predicted that agentic people would care more about failure than success. It is possible that this has to do with the achievement-oriented nature of agentic people. People high in agency find fulfillment through accomplishments and are especially driven, sometimes to the point of wanting to overcome obstacles by any means necessary (Abele et al., 2008; Bakan, 1996; Diehl et al., 2004). While we originally assumed that this would make people more sensitive to loss, perhaps it has the opposite effect. Having a one-track mind towards achievement and thriving under pressure can perhaps make agentic people less sensitive to failure in a way, as failures may be seen as a mere setback on the way to achievement, rather than an endpoint. Additionally, for women the relationship between agency and projected happiness was stronger when succeeding rather than failing at making friends and earning status. Again, this partially supports our hypothesis for agentic women valuing the agentic motive of earning status, and although making friends is a communal motive it certainly may provide benefits for the individual. While for men the relationship between agency and forecasted happiness was stronger for succeeding than it was for failing at making sure they were safe and avoiding disease, in support of our hypothesis, as both of these are agentic motives.

Communion

Turning now from agency, we also found partial support for our prediction that communal people would be more sensitive to communal motives. More communal people expected to be unhappier than less communal people when imagining failing at the communal motives of making sure their present mate was faithful/happy. This makes sense because communal people value social relationships and harmony, often even putting others before themselves (Abele et al., 2008; Bakan, 1996; Diehl et al., 2004). Therefore, failing to make a partner happy would logically make communal people unhappier than someone who did not

value close relationships as highly, consistent with our hypothesis. However, more communal people forecasted more unhappiness than less communal people in response to imagining failing at making sure they were safe. While personal safety is an agentic goal, it is also a slow life history motive, thus further suggesting that more communal people align with a slow life history strategy. Additionally, communal people may be unhappy at failing to keep themselves safe, because they feel compelled to nurture and protect those around them, sharing resources and ultimately building functional and safe communities (Locke, 2018). When communal people fail to keep themselves safe it may reflect an unsafe community and therefore signal that others are in danger too, making them especially unhappy.

We also found that communal men expected to be happier when they succeeded at the agentic motive of avoiding disease. While this may be an agentic motive because it focuses on the individual, being sick could involve infecting others or going into social isolation. These risks interfere with the communal priorities of being around others and feeling social warmth and closeness (Abele et al., 2008). Additionally, avoiding diseases is also a slow life history motive. Disease avoidance involves limiting risk-taking in favor of acknowledging and weighing future costs and benefits; in other words, investing energy in health and safety over reproductive effort, reflective of a slower life history strategy (Figueredo et al., 2005). As we conceptualize communion as a personality trait associated with a slow life history strategy, it makes sense that more communal people would be especially sensitive to a slower motive, such as disease avoidance. Additionally, we found that the more communal a woman was, the unhappier she expected to be when it came to the agentic motive of earning status overall. Communal women are group-oriented, value their social connections and group harmony, and often put the needs or desires of others above their own (Abele et al., 2008). This effect suggests that they are unhappy

at the thought of earning status—a motive that may distance them from others or upset the peace of the group.

For the relationships between communion and expected happiness in response to the motives, we found moderation only by condition. The correlations between forecasted happiness and communion were expectedly stronger when participants imagined succeeding, rather than failing, at avoiding diseases. As discussed, this is a slow life history motive, so it makes sense that communal people who are more aligned with a slower life history strategy would be happy to succeed at disease avoidance. Correlations were stronger between unhappiness and communion, however, for failing rather than succeeding at the communal motives of making friends, keeping their present mate faithful/happy, and caring for their family, in support of our hypothesis, but surprisingly also for having autonomy, making sure they were safe, and finding new mates. As discussed, personal safety is a slow life history motive, which aligns with the values of a more communal person, as well as the notion that failing to ensure safety may reveal vulnerabilities within the community and lead to endangering others as well. As for communal people being unhappier when they fail at having autonomy, it may come back to the idea that people high on communion value their social ties and close relationships, and therefore need to have a say in building their communities. Autonomy allows us to make our own decisions about where and in whom we invest our time. It is important to have a say in this so that the social networks we build are stronger and more trustworthy. Autonomous motivation over coerced motivation leads to more persistence, better social relationships, more effective performance, greater well-being, more creativity, and deeper processing (Deci & Ryan, 2000; Wijsman et al., 2014). Autonomous and controlled motivation have different qualities, if a communal person cooperates with others out of force it may lead to less meaningful results than if they

autonomously trust and believe in the people they are working with and for (Deci & Ryan, 2002). Additionally, autonomy does not have to be the antagonist to dependence, one can autonomously feel or act in a way that mirrors or collaborates with others, what matters is if the individual actually personally endorses those decisions (Deci & Ryan, 2000). Creating a functional community of sharing and reciprocation involves communal people having the autonomy to build their network of people they care about and want to invest in, rather than feeling like they have to, and therefore may be unhappy if they fail to have or exercise autonomy. In terms of finding new mates, communal people may be unhappy when they fail at this motive, not for the fast life history reasons of reproduction, but for the slower and more communal needs that mating can fulfill, like providing a sense of intimacy, belonging, and social warmth (Baumeister & Leary, 1995; Feeney & Collins, 2015).

For women specifically, correlations between communion and happiness were stronger for imagining succeeding at keeping their present mate faithful/happy and avoiding disease. These are both slow life history motives and involve a person to invest in somatic effort and relationships for future benefit, further supporting our conceptualization of slower life history strategies as communal. For men on the other hand, correlations between happiness and communion were expectedly stronger when they imagined failing at the communal motive of making friends. Unexpectedly, correlations between unhappiness and communion were stronger when imagining failing at the agentic motives of making sure they were safe and succeeding at avoiding disease. Although these were classified as agentic motives, we also recognize their importance to a slow life history strategy, which we posit that communal people are aligned with, therefore making this a logical relationship.

Agency versus Communion

Lastly, when comparing agency and communion to correlations of expected happiness and unhappiness at certain social motives, we found that the relationship between expected happiness and finding new mates overall were stronger in agentic people than communal people, consistent with our hypothesis that agentic people should be happier about agentic motives, and additionally that agentic people would be associated with a faster life history strategy, of which finding mates is an important priority. We also found that correlations for expected unhappiness and earning status overall were stronger in communal people than agentic people, as well as specifically in communal women over agentic women. This may be, as discussed, due to a discomfort with the idea of status putting social distance between a communal person and their peers. People, and women in particular, who are calibrated to a slower life history strategy are built for “getting along” rather than “getting ahead” and may be unhappy at the idea of wielding status or power over their peers (Hogan, 1982).

On the other hand, as per our hypothesis, when it comes to succeeding at earning status, agentic participants were happier than communal ones, and specifically agentic women were happier than communal women. Additionally, happiness and success at fundamental social motive correlations were stronger specifically for agentic women than communal women when making friends. This was an unexpected finding, as making friends is both a communal and slow motive. Agentic women may care about making friends in particular for the value they can serve as a buffer in situations where agentic women find themselves more often than communal women. Women’s friendships may provide especially important benefits for navigating the workplace or traditionally male-dominated environments. These connections allow women who may be in environments that value independence or achievement to fulfill their core

psychological needs as well as find identity affirmation, self-disclosure, empowerment, and improved self-esteem (Kaepfel, 2020). This is not to say that friendships do not help men or communal women, but that agentic women may especially benefit from them due to their particular life strategies and the spaces they find themselves occupying. Living or working in a high-stress environment leaves a vulnerability to psychological pressure or marginalization that can be buffered or improved by women's friendships, ultimately spurring both personal and professional growth, something of particular importance to agentic women (Kaepfel, 2020). On the other hand, the relationship between happiness and success at avoiding diseases was stronger for communal men than agentic men. As a slower life history motive, it makes sense that avoiding diseases would make communal men happier than agentic ones. Men in particular however may be inclined to prioritize this motive because they are expected to be tough. Societal views of masculinity often involve appearing strong, independent, and not needing to ask for help. Failing to avoid disease may threaten that image of masculinity and put men in a position to feel vulnerable or weak, thus making them unhappy (Addis & Mahalik, 2003; O'Brien et al., 2005; Wojnicka, 2021).

5.3 Limitations and Future Directions

This study provided a novel insight into the different ways that people respond to the prospect of succeeding or failing at the fundamental social motives. Affective forecasts of happiness may act as an indicator of how a person defines evolutionary success and how they feel in response to such adaptive tasks. Further, using agency and communion to conceptualize behavioral approaches aligned with a person's life history strategy allowed us to explore the individual differences in a person's motivations. Despite the strengths of our study, it was still limited in terms of sampling, statistical error, and design.

In terms of sampling, we recruited participants through social media and word of mouth. This created a phenomenon called snowball sampling, in which the social network of a small initial group of participants was used to reach a larger audience. While convenient, this recruitment method can be problematic and create a sample that is not truly random. Snowball sampling may lead to issues with representativeness, external validity, and generalizing results to a larger population (Parker et al., 2019). As the recruitment process begins from a small initial group and then relies on the contacts and resources of those people, there is the possibility for selection bias to distort data from the beginning. A common phenomenon in this kind of sampling is the overrepresentation of women, perhaps because of their higher willingness to help or likelihood to cooperate with such requests for participation (Noy, 2008). As such was the case in our study, we had a disproportionate sample of women ($n = 206$) to men ($n = 91$). Additionally, while our sample consisted of a variety of participants, it was disproportionately W.E.I.R.D. (i.e., Western, educated, industrialized, rich, and democratic; Henrich et al., 2010) with the majority being European descent (72%), heterosexual (80%), and residing in the United States of America (54%). Often people coming from these societies, and especially students of behavioral sciences (which was a starting point for our sampling) are among the least representative populations for making general claims about people in several ways, psychology, motivation, and behavior included (Henrich et al., 2010). This raises concerns about the generalizability of our findings, as they are not representative of a global population. Future studies should use different recruitment techniques that do not contribute to the oversampling of W.E.I.R.D. populations and intentionally focus on ensuring a random sample that can be meaningfully externalized to a larger group of people.

Next, our study may have been underpowered. We recruited 297 participants based on a power analysis conducted in G*Power (Faul et al., 2009; $1-\beta = 0.95$; $\alpha = 0.05$) indicating that with a sample of 266 participants we could detect an effect size of .20, the average effect size in the field of social and personality psychology (Richard et al., 2003). However, it would have been better to double this number to give us proper power within sex, as we compared men and women as separate groups. Having a sample with such a disproportionate number of men and women was not favorable for examining moderation by sex as we aimed to do. Additionally, we may have incurred some Type 1 error. We used the standard alpha ($p < .05$) as the threshold for significance, but given the number of comparisons we ran, this may have led us to erroneously determine that some results were significant when this may not have been true. To increase the power and reduce the possibility for error, future studies would do well to use a more conservative alpha ($p < .01$), increase the sample size, and balance the numbers of men and women.

Another limitation may have come from the method we used to measure happiness. We asked participants how they would feel when they imagined succeeding or failing at certain tasks, which may not be the most meaningful manipulation for participant responses. Affective forecasting of happiness can be problematic in terms of people misinterpreting their feelings and the inability to accurately predict their reactions to hypothetical events (Gilbert & Wilson, 2000). Expected happiness is not the same as happiness, and a person's predictions about themselves may not accurately reflect how they would feel in the given situations. Often in affective forecasts, people demonstrate impact bias, overestimating the intensity of their emotional responses or underestimating the extent to which their feelings will be affected (Wilson & Gilbert, 2005). In our study, participants may have reported inflated happiness for success or

suppressed unhappiness to failures. Because the amount of over or underestimating is uncontrolled and varies between people, the results may be biased in different ways and therefore our correlations may not be stable. Future studies should use experimental or quasi-experimental treatments, perhaps through an exercise or social game, to put people into situations that more closely resemble failing or succeeding at the fundamental motives. Measuring happiness, rather than *predicted* happiness may lead to more accurate and meaningful results.

Lastly, asking people to self-report their traits, especially potentially undesirable ones is not the most accurate way to rate personality. In the agency and communion scale there were reverse-coded items that represented more negative traits (e.g., insecure, lazy, conceited, egoistic) that participants may not recognize or want to report about themselves. Participants may have a self-image that does not truly reflect their traits or behavior and may respond in a way that paints them in a more desirable light (Galić, 2016). A future study should consider having others rate the participant or putting the participants in scenarios to test out their behavioral responses to get a more fair and less biased report of traits.

5.4 Conclusion

In conclusion, we found that people differed in how they prioritized the fundamental social motives. While people all face adaptive challenges, how we choose to solve them and how much we care about failure and success of them varies. Based on the constraints of one's environment, a slow life history strategy and investing in somatic effort may be better than a fast life history strategy and investing in reproductive effort, or vice versa. The decision of which of these strategies to enact and how people prioritize where to focus their limited energy may be driven by their definition of evolutionary success, and their level of happiness may be an

indicator of such success in response to the event in one's life. People were happier at the prospect of finding a new mate than they were about making friends, having autonomy, and avoiding disease. Some of the differences were because of sex; women expected to be unhappier than men when they failed at making sure they were safe and avoiding diseases. Some differences, however, were related to personality. To further explore individual differences in affective forecasting we also investigated how a person's level of agency and communion calibrate which motives they respond to the most. Participants in general were more communal than agentic and women were more communal than men. In some cases, agentic participants were happier than communal participants when achieving agentic motives, like finding new mates or earning status, and communal people, women especially, were happier when succeeding at keeping their mate happy. However, for some communal motives like making friends, agentic people, especially women, were happier when imagining success than non-agentic women. Similarly, for some agentic motives like earning status, communal women were unhappier when they failed than agentic women. In some cases, life history strategy was a better indicator of which motives would make a person happy. For example: more communal men expected to be happier than non-communal men when avoiding disease, an agentic but slow life history motive, to which communal people are more aligned.

Overall, knowing what motivates us and what goals we care most about can help people understand how to maximize their happiness and what tasks they should aim to achieve for a fulfilled life. Evolutionary psychology provides an understanding of some of the obstacles to achieving happiness and a high quality of life, and with this information comes the opportunity for interference and ultimately improvement. People may behave in different ways when it comes to attention, memory, perception, social interactions, decision making, and goal pursuit

based on their definition of evolutionary success. Understanding the conditions and personality traits that may calibrate people to be more sensitive to certain fundamental motives over others will clarify means of achieving such success and maximizing happiness. No personality or life history strategy is better than another, but simply more suited to helping a person achieve their own adaptive goals. While we found some support for our hypotheses, that agentic people would align with agentic motives or fast motives, and that communal people would align with communal motives or slow motives, this was not always the case. We found mixed results, indicating that people are differently provoked by the fundamental social motives for a host of different reasons, including sex, personality, or life history strategy. This study has important implications for understanding happiness from an evolutionary standpoint and how to achieve it in terms of one's psycho-behavioral strategies.

References

- Abele, A.E., Uchronski, M., Suitner, C., & Wojciszke, B. (2008). Towards an operationalization of the fundamental dimensions of agency and communion: Trait content ratings in five countries considering valence and frequency of word occurrence. *European Journal of Social Psychology, 38*(7), 1202-1217. <https://doi.org/10.1002/ejsp.575>
- Abele, A., & Wojciszke, B. (Eds.). (2018). *Agency and communion in social psychology*. Routledge. <https://doi.org/10.4324/9780203703663>
- Addis, M.E., & Mahalik, J.R. (2003). Men, masculinity, and the contexts of help seeking. *American psychologist, 58*(1), 5. <https://doi.org/10.1037/0003-066X.58.1.5>
- Alonzo, S.H., & Kindsvater, H.K. (2008). Life-history patterns. In B.D. Fath & S.E. Jorgensen (Eds.), *Encyclopedia of ecology* (pp. 2175-2180). Elsevier Inc. <https://doi.org/10.1016/B978-008045405-4.00856-9>
- Archer, J. (1996). Sex differences in social behavior: Are the social role and evolutionary explanations compatible? *American Psychologist, 51*(9), 909-917. <https://doi.org/10.1037/0003-066X.51.9.909>
- Argyle, M., & Lu, L. (1990). The happiness of extraverts. *Personality and Individual Differences, 11*, 1011-1017. [https://doi.org/10.1016/0191-8869\(90\)90128-E](https://doi.org/10.1016/0191-8869(90)90128-E)
- Bakan, D. (1966). *The duality of human existence: An essay on psychology and religion*. Rand McNally.
- Bartholomew, K., & Horowitz, L.M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*(2), 226. <https://doi.org/10.1037/0022-3514.61.2.226>
- Baumeister, R.F., Bratslavsky, E., Finkenauer, C., & Vohs, K.D. (2001). Bad is stronger than

- good. *Review of General Psychology*, 5(4), 323-370. <https://doi.org/10.1037/1089-2680.5.4.323>
- Baumeister, R.F., & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497-592. <https://doi.org/10.1037/0033-2909.117.3.497>
- Bedrov, A., & Gable, S.L. (2023). Thriving together: The benefits of women's social ties for physical, psychological and relationship health. *Philosophical Transactions of the Royal Society of London. Series B, Biological sciences*, 378(1868), 20210441. <https://doi.org/10.1098/rstb.2021.0441>
- Boggs, C.L. (2009). Understanding insect life histories and senescence through a resource allocation lens. *Functional Ecology*, 23(1), 27-37. <https://doi.org/10.1111/j.1365-2435.2009.01527.x>
- Brebner, J. (2003). Gender and emotions. *Personality and Individual Differences*, 34(3), 387-394. [https://doi.org/10.1016/S0191-8869\(02\)00059-4](https://doi.org/10.1016/S0191-8869(02)00059-4)
- Brumbach, B.H., Figueredo, A.J., & Ellis, B.J. (2009). Effects of harsh and unpredictable environments in adolescence on development of life history strategies: A longitudinal test of an evolutionary model. *Human Nature*, 20, 25-51. <https://doi.org/10.1007/s12110-009-9059-3>
- Buss, D. M. (1995). Psychological sex differences: Origins through sexual selection. *American Psychologist*, 50(3), 164-168. <https://doi.org/10.1037/0003-066X.50.3.164>
- Buss, D.M. (2000). The evolution of happiness. *American Psychologist*, 55(1), 15. <https://doi.org/10.1037/0003-066X.55.1.15>
- Buss, D.M., & Schmitt, D.P. (1993). Sexual strategies theory: An evolutionary perspective on

- human mating. *Psychological Review*, *100*, 204-232. <http://dx.doi.org/10.1037/0033-295X.100.2.204>
- Cheng, H., & Furnham, A. (2003). Personality, self-esteem, and demographic predictions of happiness and depression. *Personality and Individual Differences*, *34*, 921-942.
- Costa, P.T., & McCrae, R.R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology*, *38*(4), 668. <https://doi.org/10.1037/0022-3514.38.4.668>
- Crosen, R., & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature*, *47*(2), 448-474. <http://doi.org/10.1257/jel.47.2.448>
- Daly, M., & Wilson, M. (1988). Evolutionary social psychology and family homicide. *Science*, *242*(4878), 519-524. <https://doi.org/10.1126/science.3175672>
- David, J.P., Green, P.J., Martin, R., & Suls, J. (1997). Differential roles of neuroticism, extraversion, and event desirability for mood in daily life: An integrative model of top-down and bottom-up influences. *Journal of Personality and Social Psychology*, *73*, 149-159. <https://doi.org/10.1037/0022-3514.73.1.149>
- Del Giudice, M. (2009). Sex, attachment, and the development of reproductive strategies. *Behavioral and Brain Sciences*, *32*(1), 1-21. <https://doi.org/10.1017/S0140525X09000016>
- Del Giudice, M., Gangestad, S.W., and Kaplan, H.S. (2015). Life history theory and evolutionary psychology. In D.M. Buss (Ed.), *The handbook of evolutionary psychology* (2nd ed., Vol. 1, pp. 88-114). Wiley. <https://doi.org/10.1002/9781119125563.evpsych102>
- DeNeve, K.M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality

- traits and subjective well-being. *Psychological Bulletin*, 124(2), 197-229.
<https://doi.org/10.1037/0033-2909.124.2.197>
- Díaz A., Beleña Á., & Zueco J. (2020) The role of age and gender in perceived vulnerability to infectious diseases. *International Journal of Environmental Research and Public Health*, 17(2) 485. <https://doi.org/10.3390/ijerph17020485>
- Diehl, M., Elnick, A.B., Bourbeau, L.S., & Labouvie-Vief, G. (1998). Adult attachment styles: their relations to family context and personality. *Journal of Personality and Social Psychology*, 74(6), 1656. <https://doi.org/10.1037//0022-3514.74.6.1656>
- Diehl, M., Owen, S.K., & Youngblade, L.M. (2004). Agency and communion attributes in adults' spontaneous self-representations. *International Journal of Behavioral Development*, 28, 1-15. <https://doi.org/10.1080/01650250344000226>
- Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276 -302. <https://doi.org/10.1037/0003-066X.55.1.34>
- Dobson, F.S., & Oli, M.K. (2007). Fast and slow life histories of mammals. *Ecoscience*, 14(3), 292-299. [https://doi.org/10.2980/1195-6860\(2007\)14\[292:FASLHO\]2.0.CO;2](https://doi.org/10.2980/1195-6860(2007)14[292:FASLHO]2.0.CO;2)
- Ellis, B.J., Figueredo, A.J., Brumbach, B.H., & Schlomer, G.L. (2009). Fundamental dimensions of environmental risk: The impact of harsh versus unpredictable environments on the evolution and development of life history strategies. *Human Nature*, 20, 204-268. <https://doi.org/10.1007/s12110-009-9063-7>
- Ellis, B.J., & Del Giudice, M. (2019). Developmental adaptation to stress: An evolutionary perspective. *Annual Review of Psychology*, 70, 111-139. <https://doi.org/10.1146/annurev-psych-122216-011732>

- Entringer, T.M., Gebauer, J.E., & Paulhus, D.L. (2022). Extracting agency and communion from the Big Five: A four-way competition. *Assessment*, 29(6), 1216-1235.
<https://doi.org/10.1177/10731911211003978>
- Faul, F., Erdfelder, E., Buchner, A & Lang A.G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods* 41, 1149-1160 (2009). <https://doi.org/10.3758/BRM.41.4.1149>
- Feeney, B.C., & Collins, N.L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review*, 19(2), 113-147. <https://doi.org/10.1177/1088868314544222>
- Figueredo, A.J., Vásquez, G., Brumbach, B.H., Sefcek, J.A., Kirsner, B.R., & Jacobs, W.J. (2005). The K-factor: Individual differences in life history strategy. *Personality and Individual Differences*, 39(8), 1349-1360. <https://doi.org/10.1016/j.paid.2005.06.009>
- Fujita, F., Diener, E., & Sandvik, E. (1991). Gender differences in negative affect and well-being: The case for emotional intensity. *Journal of Personality and Social Psychology*, 61(3), 427-434. <https://doi.org/10.1037/0022-3514.61.3.427>
- Galić, Z., Bubić, A., & Kovačić, M.P. (2016). Alternatives to self-reports: Conditional reasoning problems and implicit association test (IAT) based tasks. *The Wiley Handbook of Personality Assessment*, 215-227. <https://doi.org/10.1002/9781119173489.ch16>
- Gilbert, D.T., & Wilson, T.D. (2000). Miswanting: Some problems in the forecasting of future affective states. In J. P. Forgas (Ed.), *Studies in emotion and social interaction, second series. Feeling and thinking: The role of affect in social cognition* (pp. 178-197). Cambridge University Press.
- Guisinger, S., & Blatt, S.J. (1994). Individuality and relatedness: Evolution of a fundamental

- dialectic. *American Psychologist*, 49(2), 104-111. <https://doi.org/10.1037/0003-066X.49.2.104>
- Hagen E.H. (2011). Evolutionary theories of depression: A critical review. *The Canadian Journal of Psychiatry*, 56(12), 716-726. <https://doi.org/10.1177/070674371105601203>
- Hamlin, J.K., Wynn, K., & Bloom, P. (2010). Three-month-olds show a negativity bias in their social evaluations. *Developmental Science*, 13(6), 923-929. <https://doi.org/10.1111/j.1467-7687.2010.00951.x>
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, 33, 61-83. <https://doi.org/10.1017/S0140525X0999152X>
- Hill, S.E., & Durante, K.M. (2011). Courtship, competition, and the pursuit of attractiveness: Mating goals facilitate health-related risk taking and strategic risk suppression in women. *Personality and Social Psychology Bulletin*, 37(3), 383-394. <https://doi.org/10.1177/0146167210395603>
- Hill, E.M., Jenkins, J., & Farmer, L. (2008). Family unpredictability, future discounting, and risk taking. *The Journal of Socio-Economics*, 37(4), 1381-1396. <https://doi.org/10.1016/j.socec.2006.12.081>
- Hogan, R. (1982). A socioanalytic theory of personality. In M. M. Page (Ed.), *Nebraska Symposium on Motivation* (pp. 55-89). University of Nebraska Press.
- Hsu, N., Badura, K.L., Newman, D.A., & Speech, M.E.P. (2021). Gender, “masculinity,” and “femininity”: A meta-analytic review of gender differences in agency and communion. *Psychological Bulletin*, 147(10), 987-1011. <https://doi.org/10.1037/bul0000343>

- Ito, T., & Cacioppo, J. (2005). Variations on a human universal: Individual differences in positivity offset and negativity bias. *Cognition & Emotion, 19*(1), 1-26.
<https://doi.org/10.1080/02699930441000120>
- John O.P., Srivastava S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In Pervin L. A., John O. P. (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102-138). Guilford Press.
- Jonason, P.K., Koenig, B.L., & Tost, J. (2010). Living a fast life: The Dark Triad and life history theory. *Human Nature, 21*, 428-442. <https://doi.org/10.1007/s12110-010-9102-4>
- Jonason, P.K., & Tome, J. (2019). How happiness expectations relate to the Dark Triad traits. *The Journal of Social Psychology, 159*(4), 371-382.
<https://doi.org/10.1080/00224545.2018.1529652>
- Jonason, P.K., & Zeigler-Hill, V. (2018). The fundamental social motives that characterize dark personality traits. *Personality and Individual Differences 132*, 98-107.
<https://doi.org/10.1016/j.paid.2018.05.031>
- Jones, J.H. (2011). Primates and the evolution of long, slow life histories. *Current Biology, 21*(18), R708-R717. <https://doi.org/10.1016/j.cub.2011.08.025>
- Kaoppel, K., Grenier, R.S., & Björngard-Basayne, E. (2020). The F word: The role of women's friendships in navigating the gendered workplace of academia. *Human Resource Development Review, 19*(4), 362-383. <https://doi.org/10.1177/1534484320962256>
- Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist, 39*(4), 341. <https://doi.org/10.1037/0003-066X.39.4.341>
- Kaplan, H.S., & Gangestad, S.W. (2005). Life history theory and evolutionary psychology. In D.M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 68–95). John Wiley &

Sons, Inc..

- Kavanagh, P.S., & Kahl, B.L. (2016). Life history theory. In V. Weekes-Shackelford, T.K. Shackelford, & V.A. Weekes-Shackelford (Eds.), *Encyclopedia of evolutionary psychological science* (pp. 1-12). Springer International. https://doi.org/10.1007/978-3-319-16999-6_1914-1
- Kenrick, D.T., Neuberg, S.L., Griskevicius, V., Becker, D.V., & Schaller, M. (2010). Goal-driven cognition and functional behavior: The fundamental-motives framework. *Current Directions in Psychological Science, 19*(1), 63-67. <https://doi.org/10.1177/0963721409359281>
- Koehn, M.A., Jonason, P.K. (2021). Costs of short-term mating for women. In: T.K. Shackelford, & V.A. Weekes-Shackelford (Eds.), *Encyclopedia of evolutionary psychological science* (pp. 1546-1551). Springer International. https://doi.org/10.1007/978-3-319-19650-3_3662
- Lang, A., & Ewoldsen, D. R. (2010). The measurement of positive and negative affect in media research. In *The Routledge handbook of emotions and mass media* (pp. 93-112). Routledge.
- Lee, A.J., & Zietsch, B.P. (2015). Women's pathogen disgust predicting preference for facial masculinity may be specific to age and study design. *Evolution and Human Behavior, 36*(4), 249-255. <https://doi.org/10.1016/j.evolhumbehav.2014.12.001>
- Leary, M.R., & Baumeister, R.F. (1995). The need to belong. *Psychological Bulletin, 117*(3), 497-529. <https://doi.org/10.4324/9780367198459-REPRW57-1>
- Leary, M.R., Tambor, E.S., Terdal, S.K., & Downs, D.L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social*

- Psychology*, 68(3), 518-530. <https://doi.org/10.1037/0022-3514.68.3.518>
- Lilly, K.J., Howard, C., Zubielevitch, E., & Sibley, C.G. (2023). Thinking twice: Examining gender differences in repetitive negative thinking across the adult lifespan. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1239112>
- Locke, K.D. (2018). Agentic and communal social motives. In: A.E. Abele & B. Wojciszke (Eds.), *Agency and communion in social psychology* (pp. 65-78). Routledge.
- Logan, T., & Walker, R. (2021). The gender safety gap: Examining the impact of victimization history, perceived risk, and personal control. *Journal of Interpersonal Violence*, 36(1-2), 603-631. <https://doi.org/10.1177/0886260517729405>
- Mace, R. (2000). Evolutionary ecology of human life history. *Animal Behaviour*, 59(1), 1-10. <https://doi.org/10.1006/anbe.1999.1287>
- Mahadevan, N., Gregg, A.P., Sedikides, C., & de Waal-Andrews, W.G. (2016). Winners, losers, insiders, and outsiders: Comparing hierometer and sociometer theories of self-regard. *Frontiers in psychology*, 7, 172351. <https://doi.org/10.3389/fpsyg.2016.00334>
- Maner J.K., Miller S.L., Moss J.H., Leo J.L., Plant E.A. (2012). Motivated social categorization: Fundamental motives enhance people's sensitivity to basic social categories. *Journal of Personality and Social Psychology*, 103(1), 70-83. <https://doi.org/10.1037/a0028172>
- Mansfield, E.D., & McAdams, D.P. (1996). Generativity and themes of agency and communion in adult autobiography. *Personality and Social Psychology Bulletin*, 22(7), 721-731. <https://doi.org/10.1177/0146167296227006>
- McAdams, D.P. (1988). *Power, intimacy, and the life story: Personological inquiries into identity*. Guilford press.
- Myers, D.G., & Diener, E. (1995). Who is happy? *Psychological Science*, 6, 10-19.

<https://doi.org/10.1111/j.1467-9280.1995.tb0029>

- Mittal, S., & Sundie, J. (2017). Not worth the risk? Applying life history theory to understand rejection of the experiential recommendation. *Journal of Marketing Management*, 33(11-12), 1003-1034. <https://doi.org/10.1080/0267257X.2017.1301534>
- Neel, R., Kenrick, D.T., White, A.E., & Neuberg, S.L. (2016). Individual differences in fundamental social motives. *Journal of Personality and Social Psychology*, 110(6), 887. <https://doi.org/10.1037/pspp0000068>
- Nettle, D., Frankenhuis, W.E., & Rickard, I.J. (2013). The evolution of predictive adaptive responses in human life history. *Proceedings of the Royal Society B: Biological Sciences*, 280(1766), 20131343. <https://doi.org/10.1098/rspb.2013.1343>
- Nezlek, J.B., & Plesko, R.M. (2001). Day-to-day relationships among self-concept clarity, self-esteem, daily events, and mood. *Personality and Social Psychology Bulletin*, 27(2), 201-211. <https://doi.org/10.1177/0146167201272006>
- Norris, C.J. (2021). The negativity bias, revisited: Evidence from neuroscience measures and an individual differences approach. *Social Neuroscience*, 16(1), 68-82. <https://doi.org/10.1080/17470919.2019.1696225>
- Noy, C. (2008). Sampling knowledge: The hermeneutics of snowball sampling in qualitative research. *International Journal of Social Research Methodology*, 11, 327-344. <https://doi.org/10.1080/13645570701401305>
- O'Brien, R., Hunt, K., & Hart, G. (2005). 'It's caveman stuff, but that is to a certain extent how guys still operate': Men's accounts of masculinity and help seeking. *Social Science & Medicine*, 61(3), 503-516. <https://doi.org/10.1016/j.socscimed.2004.12.008>

- Oli, M.K. (2004). The fast-slow continuum and mammalian life-history patterns: An empirical evaluation. *Basic and Applied Ecology* 5(5), 449-463.
<https://doi.org/10.1016/j.baae.2004.06.002>
- Parker, C., Scott, S., & Geddes, A., (2019). Snowball Sampling, In P. Atkinson, S. Delamont, A. Cernat, J.W. Sakshaug, & R.A. Williams (Eds.), *SAGE Research Methods Foundations*.
<https://doi.org/10.4135/9781526421036831710>
- Richard, F.D., Bond, C.F., Jr., & Stokes-Zoota, J.J. (2003). One hundred years of social psychology quantitatively described. *Review of General Psychology*, 7, 331-363.
<https://doi.org/10.1037/1089-2680.7.4.331>
- Riggs, S., & Cook, C.L. (2015). The shadow of physical harm? Examining the unique and gendered relationship between fear of murder versus fear of sexual assault on fear of violent crime. *Journal of Interpersonal Violence*, 30(14), 2383-2409.
<https://doi.org/10.1177/0886260514553117>
- Rozin, P., & Royzman, E.B. (2001). Negativity bias, negativity dominance, and contagion. *Personality and Social Psychology Review*, 5(4), 296-320.
https://doi.org/10.1207/S15327957PSPR0504_2
- Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.
<https://doi.org/10.1037/0003-066X.55.1.68>
- Ryan, R.M., & Deci, E.L. (2002). Overview of self-determination theory: An organismic dialectical perspective. *Handbook of self-determination research*, 2(3-33), 36.
- Ryff, C.D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9(1), 1-28. https://doi.org/10.1207/s15327965pli0901_1

- Schaller, M., Kenrick, D.T., Neel, R., & Neuberg, S.L. (2017). Evolution and human motivation: A fundamental motives framework. *Social and Personality Psychology Compass*, *11*(6), e12319. <https://doi.org/10.1111/spc3.12319>
- Seligman, M.E. (1971). Phobias and preparedness. *Behavior Therapy*, *2*(3), 307-320. [https://doi.org/10.1016/S0005-7894\(71\)80064-3](https://doi.org/10.1016/S0005-7894(71)80064-3)
- Sih, A., Bell, A.M., Johnson, J.C., & Ziemba, R.E. (2004). Behavioral syndromes: An integrative overview. *The Quarterly Review of Biology*, *79*(3), 241-277. <https://doi.org/10.1086/422893>
- Smith, T.W., Gallo, L.C., Goble, L., Ngu, L.Q., & Stark, K.A. (1998). Agency, communion, and cardiovascular reactivity during marital interaction. *Health Psychology*, *17*(6), 537-545. <https://doi.org/10.1037/0278-6133.17.6.537>
- Soroka, S., Gidengil, E., Fournier, P., & Nir, L. (2016). Do women and men respond differently to negative news?. *Politics & Gender*, *12*(2), 344-368. <https://doi.org/10.1017/S1743923X16000131>
- Stearns, S. Life history evolution: Successes, limitations, and prospects. *Naturwissenschaften*, *87*, 476-486 (2000). <https://doi.org/10.1007/s001140050763>
- Tarka, M., Guenther, A., Niemelä, P.T., Nakagawa, S., & Noble, D.W. (2018). Sex differences in life history, behavior, and physiology along a slow-fast continuum: A meta-analysis. *Behavioral Ecology and Sociobiology*, *72*, 1-13. <https://doi.org/10.1007/s00265-018-2534-2>
- Wilson, T.D., & Gilbert, D.T. (2005). Affective forecasting: Knowing what to want. *Current Directions in Psychological Science*, *14*, 131-134. <https://doi.org/10.1111/j.0963-7214.2005.00355.x>

Wojnicka, K. (2021). Men and masculinities in times of crisis: Between care and protection.

Norma: International Journal for Masculinity Studies, 16(1), 1-5.

<https://doi.org/10.1080/18902138.2021.1885860>

Wolf, M., Van Doorn, G.S., Leimar, O., & Weissing, F.J. (2007). Life-history trade-offs favour the evolution of animal personalities. *Nature*, 447(7144), 581-584.

<https://doi.org/10.1038/nature05835>

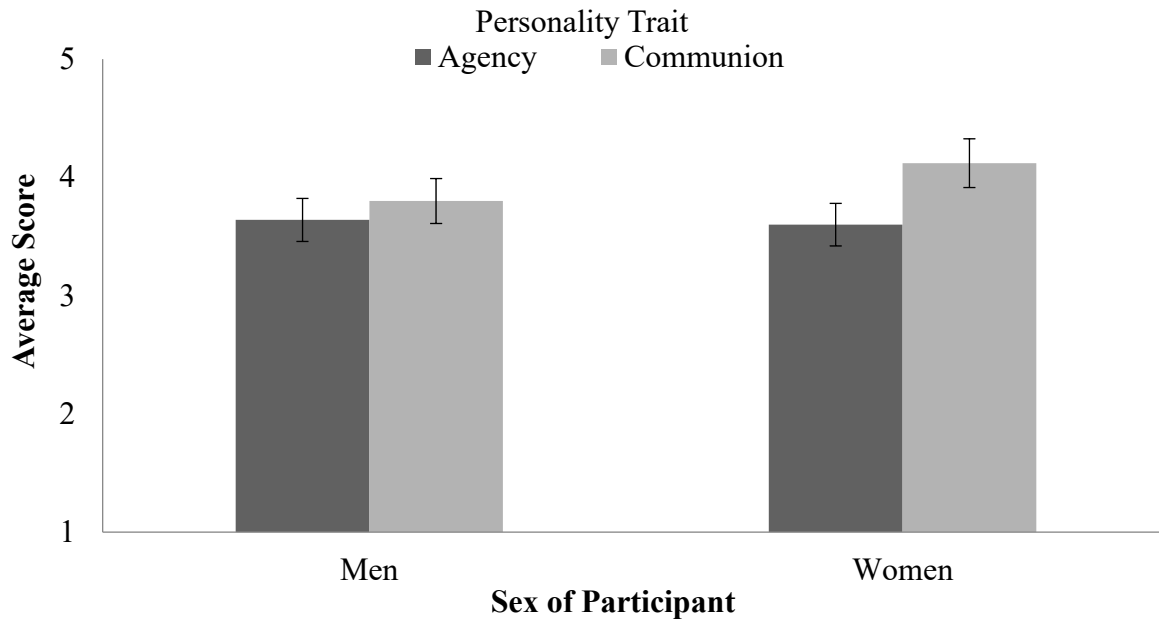
Wijsman, L., Mainhard, T., & Brekelmans, M. (2014). Stimulating autonomous motivation in the classroom: The role of interpersonal teacher agency and communion. In *Interpersonal relationships in education* (pp. 231-249). Brill.

Yuan, J., Luo, Y., Yan, J.H., Meng, X., Yu, F., & Li, H. (2009). Neural correlates of the females' susceptibility to negative emotions: An insight into gender-related prevalence of affective disturbances. *Human Brain Mapping*, 30(11), 3676-3686.

<https://doi.org/10.1002/hbm.20796>

Figures

Figure 1. Interaction between sex and agency or communion on average personality score



Note. Error bars are 5%.

Tables

Table 1. Descriptive statistics and sex differences for happiness and fundamental social motives

	<i>M (SD)</i>			<i>t</i>	<i>d</i>
	Overall	Fail	Succeed		
Making Friends	3.54 (1.53)	2.74 (1.57)	4.39 (0.92)	-10.98**	-1.28
Men	3.64 (1.41)	2.96 (1.41)	4.40 (0.96)	-8.05**	-1.19
Women	3.50 (1.59)	2.63 (1.63)	4.38 (0.91)	-13.45**	-1.33
<i>t</i>	0.72	1.18	0.08		
<i>d</i>	0.09	0.21	0.01		
Autonomy	3.54 (1.52)	2.71 (1.56)	4.40 (0.86)	-11.48**	-1.33
Men	3.68 (1.49)	3.02 (1.56)	4.42 (0.98)	-7.25**	-1.07
Women	3.47 (1.54)	2.57 (1.54)	4.39 (0.81)	-15.01**	-1.48
<i>t</i>	1.10	1.68	0.17		
<i>d</i>	0.14	0.29	0.03		
Status	3.37 (1.14)	2.89 (1.15)	3.88 (0.88)	-8.33**	-0.97
Men	3.41 (1.14)	2.96 (1.24)	3.91 (0.75)	-6.25**	-0.93
Women	3.36 (1.15)	2.86 (1.12)	3.87 (0.93)	-9.96**	-0.98
<i>t</i>	0.33	0.51	0.22		
<i>d</i>	0.04	0.09	0.04		
Personal Safety	3.46 (1.62)	2.55 (1.62)	4.42 (0.92)	-12.13**	-1.41
Men	3.64 (1.50)	2.96 (1.64)	4.40 (0.85)	-7.44**	-1.10
Women	3.39 (1.67)	2.37 (1.59)	4.43 (0.95)	-15.96**	-1.57
<i>t</i>	1.22	2.12*	-0.22		
<i>d</i>	0.15	0.37	-0.04		
New Mates	3.33 (1.29)	2.83 (1.22)	3.85 (1.14)	-7.43**	-0.86
Men	3.42 (1.37)	2.96 (1.37)	3.93 (1.20)	-5.08**	-0.75
Women	3.29 (1.25)	2.77 (1.15)	3.81 (1.12)	-9.30**	-0.92
<i>t</i>	0.81	0.89	0.56		
<i>d</i>	0.10	0.15	0.10		
Mate Happiness	3.52 (1.72)	2.59 (1.78)	4.50 (0.94)	-11.48**	-1.33
Men	3.65 (1.65)	2.96 (1.76)	4.42 (1.10)	-6.71**	-0.99
Women	3.46 (1.75)	2.41 (1.77)	4.53 (0.88)	-15.39**	-1.52
<i>t</i>	0.86	1.77	-0.64		
<i>d</i>	0.11	0.31	-0.12		
Avoiding Disease	3.51 (1.39)	2.74 (1.34)	4.31 (0.90)	-11.74**	-1.36
Men	3.71 (1.28)	3.06 (1.33)	4.44 (0.73)	-8.68**	-1.29
Women	3.42 (1.43)	2.60 (1.33)	4.25 (0.96)	-14.44**	-1.42
<i>t</i>	1.70	2.01*	1.14		
<i>d</i>	0.21	0.35	0.21		
Family Care	3.38 (1.67)	2.46 (1.70)	4.34 (0.94)	-11.69**	-1.36
Men	3.51 (1.64)	2.71 (1.73)	4.40 (0.96)	-8.15**	-1.21
Women	3.32 (1.68)	2.35 (1.68)	4.31 (0.94)	-14.61**	-1.44
<i>t</i>	0.88	1.22	0.47		
<i>d</i>	0.11	0.21	0.09		

Note. *d* = Cohen's *d*

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

Table 2. Correlations between agency and happiness for fundamental social motives in men and women

	Agency			
	Overall	Fail	Succeed	Steiger's <i>z</i>
Making Friends	.02	-.03	.19*	-2.71**
Men	.01	-.09	-.04	-0.35
Women	.02	<.01	.29**	-3.01**
Fisher's <i>z</i>	-0.05	-0.51	-1.79*	
Autonomy	-.02	-.02	.04	-0.75
Men	-.01	-.06	-.12	0.38
Women	-.03	.02	.13	-1.08
Fisher's <i>z</i>	0.17	-0.45	-1.33	
Status	.07	<-.01	.22**	-2.86**
Men	.11	-.05	.08	-0.88
Women	.05	-.02	.27**	-3.12**
Fisher's <i>z</i>	0.51	-0.16	-1.07	
Personal Safety	-.04	-.09	.12	-2.50**
Men	-.18	-.38**	-.13	-1.76*
Women	.01	.05	.21*	-1.59
Fisher's <i>z</i>	-1.52	-2.53**	-1.82*	
New Mates	.10	.05	.21*	-2.03*
Men	.08	-.05	.13	-1.22
Women	.11	.11	.24*	-1.36
Fisher's <i>z</i>	-0.25	-0.91	-0.63	
Mate Happiness	<-.01	-.01	.10	-1.32
Men	-.03	-.13	-.05	-0.55
Women	.01	.06	.19	-1.36
Fisher's <i>z</i>	-0.25	-1.07	-1.29	
Avoiding Disease	-.01	-.01	.05	-0.63
Men	.02	.02	-.25	1.83*
Women	-.03	<.01	.12	-1.22
Fisher's <i>z</i>	0.33	0.10	0.71	
Family Care	.01	<.01	.10	-1.20
Men	.04	-.07	.02	-0.57
Women	-.01	.05	.13	-0.85
Fisher's <i>z</i>	0.39	-0.63	-0.59	

Note. Fisher's *z* compares independent correlations (<http://quantpsy.org/corrtest/corrtest.htm>) and Steiger's *z* compares dependent correlations (<http://quantpsy.org/corrtest/corrtest2.htm>)

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

Table 3. Correlations between communion and happiness for fundamental social motives in men and women

	Communion			
	Overall	Fail	Succeed	Steiger's <i>z</i>
Making Friends	-.09	-.14	.03	-2.05*
Men	-.08	-.16	.12	-1.77*
Women	-.08	-.11	<-.01	-1.04
Fisher's <i>z</i>	0.07	-0.27	0.65	
Autonomy	-.08	-.12	.03	-1.75*
Men	-.02	-.03	.10	-0.87
Women	-.08	-.10	<.01	-1.03
Fisher's <i>z</i>	0.50	0.39	0.54	
Status	-.10	-.09	-.09	0.01
Men	.01	-.01	.13	-0.89
Women	-.14*	-.11	-.17	0.57
Fisher's <i>z</i>	1.15	0.56	1.60	
Personal Safety	-.11	-.19*	.06	-2.90**
Men	-.09	-.18	.17	-2.29*
Women	-.10	-.14	.01	-1.41
Fisher's <i>z</i>	0.10	-0.25	0.91	
New Mates	-.06	-.12	.03	-1.76*
Men	-.03	-.11	.11	-1.39
Women	-.06	-.10	.02	-1.20
Fisher's <i>z</i>	0.19	-0.06	0.45	
Mate Happiness	-.10	-.16*	.06	-2.62**
Men	-.17	-.21	-.08	-0.85
Women	-.05	-.10	.12	-2.08*
Fisher's <i>z</i>	-0.92	-0.64	-1.04	
Avoiding Disease	-.04	-.12	.14	-3.05**
Men	.02	-.08	.35*	-2.92**
Women	-.03	-.07	.12	-1.93*
Fisher's <i>z</i>	0.31	-0.06	1.28	
Family Care	-.07	-.11	.04	-1.83*
Men	-.04	-.09	.13	-1.38
Women	-.07	-.09	.03	-1.14
Fisher's <i>z</i>	0.18	0.03	0.55	

Note. Fisher's *z* compares independent correlations (<http://quantpsy.org/corrtest/corrtest.htm>) and Steiger's *z* compares dependent correlations (<http://quantpsy.org/corrtest/corrtest2.htm>)

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

Table 4. Steiger's z scores comparing correlations of agency and communion with happiness for fundamental social motives in men and women

	Agency vs Communion		
	Overall	Fail	Succeed
Making Friends	1.30	0.97	1.33
Men	0.58	0.32	-0.71
Women	1.03	0.79	2.11*
Autonomy	0.71	0.87	0.11
Men	0.06	-0.15	-1.01
Women	0.53	0.86	0.86
Status	2.00*	0.77	2.69**
Men	0.69	-0.17	-0.22
Women	1.89*	0.66	3.21**
Personal Safety	0.88	0.88	0.51
Men	-0.63	-0.99	-1.36
Women	1.11	1.40	1.48
New Mates	1.96*	1.47	1.51
Men	0.73	0.29	0.09
Women	1.68	1.52	1.55
Mate Happiness	1.12	1.31	0.30
Men	0.94	0.36	0.12
Women	0.57	1.10	0.52
Avoiding Disease	0.38	0.98	-0.76
Men	0.01	0.49	-2.83**
Women	-0.01	0.54	0.02
Family Care	0.97	1.01	0.50
Men	0.56	0.10	-0.49
Women	0.59	0.98	0.73

Note. Steiger's z compares dependent correlations
(<http://quantpsy.org/corrtest/corrtest2.htm>)

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