The Mirage at the Top: Why Forecasters Seek Status in the Wrong Place

A dissertation by

Martin Schweinsberg

in partial fulfilment of the requirements

for a Doctor of Philosophy degree in Organisational Behaviour at

London Business School

April 2013

Dissertation Committee:

Gillian Ku

Simona Botti

Tim Wildschut

Declaration

I certify that the dissertation I have presented for examination for the PhD degree of London Business School is solely my own work. The copyright of this thesis rests with the author. Quotation from it is permitted, provided that full acknowledgement is made. This thesis may not be reproduced without the prior written consent of the author. I warrant that this authorization does not, to the best of my belief, infringe upon the rights of any third party.

Candidate: Martin Schweinsberg

_____   _____

Signature of candidate   Date

Abstract

People who attain high status positions often remark how little their rise through the ranks affects their happiness. Despite this insight from high status individuals, people generally envy high status others, forecasting that they would be happier if they had similarly high status. Thus, although the desire for status motivates much of human behaviour, it is unclear whether people accurately forecast their future happiness at achieving high status positions. In this dissertation I examine whether and why people overestimate their happiness after gaining high status.

I suggest, and provide evidence for the hypothesis, that people overestimate how happy they will be after achieving high status because they mispredict who they will compare themselves with. A series of field (Study 1) and experimental studies (Studies 2 and 3) demonstrate that forecasters overestimate their happiness at high status positions because they underestimate the number of threatening upward comparisons and overestimate the number of self-enhancing downward comparisons they will make. This forecasting error is caused by forecasters' underestimation of upward comparisons and not by their overestimation of downward comparisons (Study 4). I also explore this phenomenon in the domain of status loss (Study 5).

The current research contributes to numerous literatures. First, I show that forecasting errors exist in and impact individuals' status striving. Second, this dissertation introduces a temporal dimension to the study of social comparisons: people are not only affected by the social comparisons of the present, but are also influenced and misguided by the social comparisons of the future. Third, this work contributes to the affective forecasting literature by examining social relationships as a source of affective forecasting errors.

This research has important practical implications since most decisions are motivated by expected emotional rewards. Overestimating happiness from high status can cause people

to seek status at the expense of activities that demonstrably increase happiness, such as investments in social relationships. Findings from this dissertation can therefore help people make better choices by providing a more accurate understanding of future happiness from high status positions.

Acknowledgements

I am grateful for all the people that have helped me on this journey but nobody deserves more thanks than Gillian Ku. Gillian fortunately could not anticipate what she was getting herself into when she agreed to be my supervisor. This may have been foolish of her, but it was the best thing that could have happened to me during my Ph.D.

Gillian is that rare combination of an extremely competent and deeply caring scholar. She must have shed blood, sweat, and tears in pushing me to be the best I can be and was the best supervisor I could have asked for. Gillian has done her utmost to instill some of that competence in me by spending long hours listening to half-baked ideas, reading and correcting early drafts, and commenting on experimental materials. Throughout all of this, I reluctantly learnt one lesson early on: that Gillian is almost always right, whether I like it or not. Any remnants of sloppy thinking are the results of my rebellious mind, refusing to listen to her good advice.

Gillian is also incredibly caring. Early on I mistook her care for signs of increasing frustration, probably because I knew even then that Gillian had every reason to be upset by my stubbornness. So we went through a difficult time early on but going through this difficult time has only made us grow closer. I slowly began to understand what I should have seen from the beginning: that the feedback I sometimes so resisted was the result of Gillian spending hours and hours carefully reading my work, and giving me detailed feedback, finally resulting in my education as an independent scholar. Gillian has become a role model in many ways and I know I can never pay her back for the many hours she spent teaching me the craft of research but I hope I can someday pay it forward.

But raising a Ph.D. student takes a village. Madan Pillutla and Stefan Thau were essential for my education as a scholar and have guided my approach to research even after a messy second year paper process. Learning from Madan means to stay curious, to value theory, and to pursue the interesting questions. It also means taking research more, and yourself less seriously. Every time Madan dropped by for a chat, he left me a bit more encouraged and lighthearted. Stefan has been a mentor and friend from the beginning. Like so many other students, I have benefitted from Stefan devoting his time again and again to help me sharpen my thinking, question my assumptions, and clarify my arguments. Stefan's micro OB class has shaped my understanding of research more than any other class I ever took.

I would like to thank my committee members Niro Sivanathan and David Faro for their very helpful comments before, during and after my transfer exam. Niro encouraged me when my nerves got the better of me and David was very generous with his time and feedback.

The PhD is a very long and very humbling journey but the friends by my side made every step lighter. I already begin to miss these people that have so enriched my life over the last five years. In Ramon Lecuona Torras I have found a best man for life: whether stuck in the back of a van on a motorbike, saving cats from starvation, or sharing laughs and drinks in the streets of London, Hamburg, Boston, Sydney, or Amsterdam, I'm glad I could share these adventures with him. Apart from being an OB student at heart, Ramon is also a role model in many ways.

Philipp Philippen in Berlin has been a constant source of support and encouragement ever since we met in Amsterdam. Phil has pushed me to become better in all the right ways and I hope I am as good a friend to him as he is to me. I

know that Phil will always be there for me and I'm very grateful to have him by my side.

Lora Dimitrova has been a companion throughout this time and I hope that I have convinced her over many lunches that OB is "maybe not that bad". Yangjie Gu has been a great job market buddy and has made this particular part of the Ph.D. journey so much lighter. Matteo Visentin has challenged me to see the world differently and to seek beauty in it. Raphael Corbi reminded me that the world is full of life outside these ivory towers. I would also like to thank Kai Truempler, Eucman Lee, Umut Guler, Aylin Aydinli and Fabian Lipinsky for their companionship.

Sharing this journey with the OB doctoral students has been a privilege. I am particularly grateful for the three superstars I could look up to for the first four years of my doctoral studies. By the time Jennifer Carson Marr, Amanda Ferguson and Rellie Derfler-Rozin graduated they had taught me enough to stand on my own two feet and stumble through the job market and dissertation process without hurting myself too badly. Thank you ladies, I would never have learnt this much without you.

Sunyoung Lee and I shared much of this journey together and her goodhearted nature has uplifted me countless times. A chat with Sunny always cheered me up again whenever the Ph.D. blues hit me. Rivaling Sunny in this regard is Gang Zhang whose passion for life is infectious and I hope to share many more good meals with him in the future. I'm glad that Kawon Kim, Shruti Bhutada, Jungwoo Ha, Anna Steinhage, Johann Joh and Margaret Lee have joined the OB family and hope they will enjoy their time here as much as I have.

The OB department was both challenging and nurturing and was just the right academic home for me. Henry Moon shared his excitement for research with me and encouraged me to ask unusual questions. Drew Carton and Selin Kesebir have

generously supported me through the job market. I would also like to thank Ena Inesi, Xi Zou, Dan Cable, Celia Moore, Lisa Cohen, Randall Peterson, Gabe Adams, Nigel Nicholson, and Margaret Ormiston for their support. Although not in OB, I'm very grateful for Markus Reitzig's help.

In Amsterdam, Carsten de Dreu and Ute-Christine Klehe were gracious enough to believe in me when they had very little reason to do so. Carsten and Ute inspired me to pursue a Ph.D. and I will always be grateful for that. Carsten also supported my year in Australia where Bob Wood gave me an academic home at the AGSM in Sydney. Thank you.

Finally, I want to thank my family. The Tans have welcomed me – a stranger from a faraway continent - with open arms and hearts to their home in Sydney. They were understanding when I spent many days working on this dissertation and fed my body, mind, and soul. I also want to thank my sister Katja Hermanspann and her family for supporting me throughout these years. My parents gave me what only parents can give: the unconditional love and the happy childhood that were the foundation for everything else that came afterwards. My parents' trust allowed me to satisfy my curiosity and be responsible from an early age. The many visits to the book shop must have cost them a fortune but these books have opened my eyes to the world.

Nobody had to suffer more for this dissertation however than Jess. Jess encouraged me to apply to LBS when I was certain they would not accept me. More importantly, Jess accepted me as I am and loved and supported me through the dark valleys of the Ph.D. Jess is not only loving and caring, she is also much smarter than I am and solved many research problems I had been thinking about for days within a few minutes over a quick chat. If there are good ideas in this dissertation, they are probably hers. Jess' love for fun and people ensured that I didn't write this

dissertation locked up in my beloved world of books and theories, but in the midst of life.

Most importantly, Jess has shown me that no matter how much I love research there are many other things in life that I love so much more. Jess is the one person I want to share all these moments with and I can't wait to start this new chapter in our lives together.

Table of Contents

List of Figures

Chapter 1: Introduction

People have a need for status, they want to be respected and recognised. This hunger for status has been observed throughout time by philosophers (Seneca, 1932), economists (Frank, 1985; Harsanyi, 1966; A. R. Smith, 1759), political theorists (Hobbes, 1651), sociologists (Merton, 1968), anthropologists (Barkow, 1975; 1989), and psychologists (Buss, 2004; Cummins, 2007) as the need that motivates much of human behaviour. The need for status is so ubiquitous that it can be observed in virtually every area of life: its fulfilment motivates people at work (Loch, Yaziji, & Langen, 2001), extracts higher prices from consumers (Bagwell & Bernheim, 1996; Veblen, 1899), drives economic growth (Bakshi & Chen, 1996), and motivates leaders of companies (Podolny, 2005), universities (Daum, 2013), and countries (Bülow, 1897).

Although the need for status directs human behaviour, people pursue status for an ulterior motive, their desire for happiness. Psychologists (Freud, 1930; Gilbert, 2006) and others (Bentham, 1781) observed that human behaviour is ultimately motivated by the happiness people expect from it (Diener, Sapyta, & Suh, 1998; Mellers & McGraw, 2001; Mellers, Schwartz, & Ritov, 1999). People therefore continuously seek higher positions in status hierarchies (Anderson & Kilduff, 2009) because they think that high status will make them very happy.

But anecdotal evidence suggests that the rise through the ranks of a status hierarchy does not improve happiness as much as people may predict and may even lead to lower levels of happiness. For instance, Alana Petroff speaks of the day when she was accepted into Oxford as one of the happiest days of her life (Petroff, 2010). However, the joy over her high status quickly subsided when she compared herself with her new high status peers. "Comparison is the death of happiness.", she writes as she reports why her joy over her high status quickly turned sour. Based on Alana's anecdotal experience and that of others (Rivlin,

2007), high status positions that once seemed like an achievement can become sources of discontent because individuals who gain high status are plagued by comparisons much like everybody else.

In this dissertation, I empirically examine this phenomenon, asking whether and why people overestimate how happy they will be after attaining high status positions.

To answer this question I draw on literatures on our desire for status (Cummins, 2007), the social comparisons we make with others (Festinger, 1954), and how we predict future feelings (Wilson & Gilbert, 2003). I combine findings from these various literatures to develop theory which suggests that people overestimate their happiness after attaining high status because they mispredict who they will compare themselves with. Specifically, my theory predicts that people underestimate the number of upward comparisons they will make with higher status others, and overestimate the number of self-enhancing downward comparisons they will make with lower status others, resulting in higher forecasted than experienced happiness.

I find evidence for these predictions in both field and experimental studies. Study 1 explored this phenomenon with participants who care about their status in a real world setting. Studies 2 and 3 demonstrated that people overestimate their happiness after attaining high status positions because they mispredict who they will compare themselves with. Study 4 showed that this forecasting error is caused more by people's tendency to underestimate the number of upward comparisons they make, and not by their tendency to overestimate the number of downward comparisons they make after attaining high status positions. Study 5 explored this phenomenon in the domain of forecasting status losses rather than status gains.

Literature Review and Theory Development

Status

Adam Smith (1759) may have described how the desire for status motivates economic behaviour better than anyone:

"For to what purpose is all the toil and bustle of this world? What is the end of avarice and ambition, of the pursuit of wealth, of power, and preheminence? Is it to supply the necessities of nature? The wages of the meanest labourer can supply them (…). What are the advantages which we propose by that great purpose of human life which we call bettering our condition? To be observed, to be attended to, to be taken notice with sympathy, complacency, and approbation, are all the advantages which we can derive from it. It is the vanity, not the ease, or the pleasure, which interests us (…). The rich man glories in his riches, because he feels that they naturally draw upon him the attention of the world."

Status not only motivates much of human behaviour, it is also a fundamental dimension of social interactions (A. P. Fiske, 1992) and is commonly defined as the extent to which an individual is respected or admired by others (Ridgeway & Walker, 1995). Because people differ in the amount of respect they receive, status hierarchies emerge quickly in virtually any group (Bales, 1950; Fisek & Ofshe, 1970), whether groups are comprised of academics (Pinker, 1997)**,** street gang members (Whyte, 1943), or tribesmen (Henrich & Gil-White, 2001). All social groups are characterised by a differentiation of members according to the amount of respect they receive. Status hierarchies can therefore form along any valued social dimension (Magee & Galinsky, 2008) such as wealth (Frank, 1999; Turke & Betzig, 1985), but also general intelligence (Lord, Foti, & De Vader, 1984), or more specific areas of expertise (Henrich & Gil-White, 2001).

Psychologists have also observed the pervasive influence of the desire for status on cognition and behaviours (Cummins, 2007). Buss (2004) nominated the desire for status as the "need that would be at the, or near the top of a list for a universal human motive". Status is not only a means to achieve material ends (Van der Vegt, Bunderson, & Oosterhof, 2006), but it is also a desirable psychological objective in and of itself (Bakshi & Chen, 1996; Huberman, Loch, & Önçüler, 2004) because of the happiness it promises (Gilbert, 2006; Mellers et al., 1999; Mellers & McGraw, 2001).

Status-seeking behaviours can therefore be readily observed in various social domains: high status is a prominent motive at work (Loch et al., 2001), in economic (Heffetz & Frank, 2011; Robson, 2001) and consumption decisions (Veblen, 1899) and people pay directly for its attainment, even in laboratory studies (Huberman et al., 2004). The desire for status is so great that people commit ethical and even criminal transgressions to attain it: amateur marathon runners take the bus or taxi to the finish line just to gain status (Branigan, 2010), lay men pretend to be doctors or pilots (Creswell, 2007), and academics commit fraud (Wade, 2012), all motivated by their desire for high status (Stapel, 2012).

The next section reviews relevant literature that explains how people use social comparisons to determine how they feel about their position in a status hierarchy.

Social Comparison Theory

As social beings (S. T. Fiske, 2010), we are strongly influenced by other people. How others influence human judgment and behaviour has fascinated observers for a long time (Hyman, 1942; Marx, 1849; Sherif, 1936) and lies at the core of the definition of social psychology (Allport, 1954) and its early empirical investigations (Triplett, 1898).

Social comparisons are defined as thoughts about other people in relation to the self (Wood, 1996). Festinger's social comparison theory (1954) was the most explicit social psychological acknowledgment of other people's influence on how we think and feel about

ourselves. People engage in social comparisons to improve, enhance, or evaluate the self (Wood, 1989). Much of the early research on social comparison theory has tried to understand who people compare themselves with (Goethals & Darley, 1977; Suls, 1986; Taylor & Lobel, 1989; Tesser, 1988). Festinger's ambiguous statement (1954) that people compare with "similar" others, resulted in numerous studies (Schachter, 1959; Tabachnik, Crocker, & Alloy, 1982) that tested exactly how these comparison targets were "similar" to the self (Goethals & Darley, 1977; Wheeler & Zuckerman, 1977). These early studies convincingly demonstrated that people compare themselves with others who can deliver the most diagnostic information about themselves: typically these comparison targets are similar to the self in that they are proximate, accessible and similar on the dimension of comparison (Rofé, 1984; Wheeler & Koestner, 1984).

Scholars soon built on this rather narrow focus and broadened the theory's empirical scope by examining how social comparisons influence judgments in a variety of other domains (Damisch, Mussweiler, & Plessner, 2006; Wood, Taylor, & Lichtman, 1985), turning social comparison theory into a field of study (Buunk & Gibbons, 2007). One conclusion from this research is that comparisons with others have a particularly strong influence on how we feel about ourselves. People quickly adapt to absolute changes in life circumstances, and as a result, initial gains level off relatively quickly (Helson, 1948; 1964). However, people continue to perceive value in and are motivated by gains relative to their peers (Bazerman, Bount White, & Loewenstein, 1995; J Solnick & Hemenway, 1998). Happiness in important life domains therefore is largely relative (Brickman, Coates, & Janoff-Bulman, 1978; Hsee, Yang, Naihe, & Shen, 2009) and social comparisons determine happiness with the self (James, 1890; Mettee & Smith, 1977; Morse & Gergen, 1970), income (Hagerty, 2000), health, (Bogart & Helgeson, 2000; Wood et al., 1985), relationships

(Buunk & van Yperen, 1991), jobs (D. J. Brown, Ferris, Heller, & Keeping, 2007) and careers (M. C. Higgins, Dobrow, & Chandler, 2008).

Social comparisons can increase or decrease happiness, depending on whether individuals compare with others who are better than they are (i.e., upward social comparisons) or with targets who are worse than they are (i.e., downward social comparisons). By engaging in downward comparisons, individuals can compare themselves to those worse on the dimension of comparison, and as a result, feel better about themselves. Downward comparisons make people happy (Wills, 1981; 1987) and improve self esteem (Hakmiller, 1966; Morse & Gergen, 1970; Taylor & Lobel, 1989). For example, downward comparisons help people feel better about themselves after academic setbacks (Aspinwall & Taylor, 1993) and allow them to cope with fatal diseases: breast cancer patients make downward comparisons with others worse off than themselves, and compare with imaginary worse-off others when such targets are not available (Taylor, Falke, Shoptaw, & Lichtman, 1986; Wood et al., 1985).

But not all comparisons are self-enhancing, and comparisons with superior others can result in negative evaluations of the self. Upward comparisons with others better than the self can therefore be experienced as threatening (Mendes, Blascovich, Major, & Seery, 2001), make people feel worse about themselves and lower self-esteem (Morse & Gergen, 1970) and decrease job (D. J. Brown et al., 2007), pay (Harris, Anseel, & Lievens, 2008), and career satisfaction (M. C. Higgins et al., 2008). Upward comparisons with better off others can result in envy (R. H. Smith & Kim, 2007) and jealousy (Salovey & Rodin, 1984) when these comparisons highlight feelings of inferiority towards the upward comparison target.

People assess their status by making social comparison with others (B Schwartz, 2004), so the literature on social comparisons directly speaks to people's subjective experience of status: because status is inherently relative (Magee & Galinsky, 2008), how

people feel about their standing is largely determined by the kinds of comparisons they make with others (Huguet et al., 2009). Thus, people experience their subjective status as relatively low and feel unhappy about it when they engage in upward comparisons with higher status others. Alternatively, they experience their subjective status as relatively high and feel happy about it by making downward comparisons with others who are less respected than they are (Chanal, Marsh, Sarrazin, & Bois, 2005; B. Schwartz, 2004). Social comparisons are so pervasive that people intuitively know who they compare themselves with in the present (Goethals & Darley, 1977).

However, although people clearly expect much happiness from high status, it is unclear whether people accurately *forecast* how happy they will be after attaining high status positions. There is ample anecdotal evidence that the attainment of high status positions is not always accompanied by the great happiness that people might expect: individuals who rise through the ranks of a status hierarchy continue to be distressed by social comparisons like everybody else and report being less happy than they predicted (Rivlin, 2007). Others, as suggested by Alana Petroff's experience at being accepted into Oxford (Petroff, 2010), even report being less happy after attaining these coveted high status positions than they were before, as a direct result of their social comparisons with high status peers.

Forecasting how we will feel in the future is difficult (Wilson & Gilbert, 2005), but forecasting happiness from high status positions may be particularly challenging because our experience of status is not directly determined by our absolute position in a status hierarchy. Instead, because status is inherently relative (Magee & Galinsky, 2008), how happy we are with our status position is largely determined by the relative difference between our own position and that of others (Hsee et al., 2009). Forecasting our future happiness after attaining high status requires us to predict the kinds of social comparisons we will make with others.

However, although people understand who their comparison targets are in the present (Goethals & Darley, 1977), they often seem surprised by who they will compare themselves with in the future (Petroff, 2010; Rivlin, 2007). This inability to accurately forecast future comparison targets may be related to the broader phenomenon that people generally struggle to forecast how they will think and feel in the future (Wilson & Gilbert, 2005). In the next section I review relevant findings from the affective forecasting literature and then develop theory based on both the affective forecasting literature and the social comparison literature to explain why people may mispredict who they will compare themselves with after attaining high status.

Affective Forecasting

People find it notoriously difficult to focus on the here and now (Kabat-Zinn, 1994), although doing so increases subjective well being (K. W. Brown & Ryan, 2003), reduces stress (Jain et al., 2007), and even lowers the level of experienced physical pain (Kabat-Zinn, 1982). Instead people find that their minds wander and transcend the here and now by default (Killingsworth & Gilbert, 2010) most of the time.

This suggests there may be a functional reason for our mental time travel, and especially for the tendency to forecast the future (Markus & Nurius, 1986). Some scholars point out (E. T. Higgins & Pittman, 2008; Roberts, 2002) that this ability to transcend the here and now sets us apart from other animals by allowing us to anticipate both future challenges and opportunities. Without the ability to mentally travel in time, we would struggle to make sense of our past (Routledge et al., 2011) and plan ahead for the future. People therefore envision the future because these mental previews can motivate them to work hard and make an attractive future happen or to avoid a negative future from becoming reality (Markus & Nurius, 1986).

Forecasting the future is a deceptively simple, yet challenging psychological process: people predict how they will feel by creating a mental image of a future event and then simulate how they feel about that mental image of the future in the present (Gilbert & Wilson, 2007; Wilson & Gilbert, 2003). This mental process is remarkably fast and works well enough most of the time (Gilbert, 2006). As a guide to our daily decisions, affective forecasting helps us avoid situations that are likely going to be painful, and instead makes us seek out situations that are likely going to be pleasant. Affective forecasting therefore helps people accurately predict that a cold drink on a hot summer day will make them feel good and that going through a divorce is unlikely to do so.

However, forming such mental images accurately is a complex mental process (Wilson & Gilbert, 2003) and people's cognitive resources are limited (Miller, 1956). People therefore simplify their mental representations of the future through simpler, summary-like descriptions of future events (Trope & Liberman, 2003).

For example, forecasters predict great happiness from moving to California or watching their favorite sports team win because they imagine themselves enjoying the warm Californian sun (Schkade & Kahneman, 1998) or celebrating their team's win (Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). The mental images forecasters create are appealing because they only contain essential features of such events and neglect the more peripheral details that can strongly influence the emotional experience of these events. Moving to a sunnier climate conjures overly positive images of time spent outside, but does not take sufficiently into account that daily life continues – even in sunny California, and even after a favorite sports team wins. Forecasters simplify the mental images of such future realities heuristically and do not take into account that much of their daily life in the sun would consist of mundane activities, such as going to work, doing the groceries, and dealing with relationship conflict.

Although mental heuristics are generally functional (Gigerenzer & Goldstein, 1996), they also give rise to systematic biases that trick us in the present (Tversky & Kahneman, 1974; 1983), colour our perceptions of the past (Fischhoff & Beyth, 1975; Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993), and lead to inaccurate predictions of the future. Forecasters simplify mental previews of the future in systematic ways. People therefore mispredict how they will feel in the future because their mental images of the future are typically unrepresentative (Morewedge, Gilbert, & Wilson, 2005), essentialized (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006; Schkade & Kahneman, 1998; Wilson et al., 2000), and truncated (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998).

Trope & Liberman (2003) review evidence that forecasters construe distant future situations as more high-level, less detailed, and more abstract. Although lacking in important incidental, low- level details, these abstract construals seem accurate and convincing because they are structured, simple, and internally-coherent. This tendency extends to numerous cognitive processes (Liberman & Trope, 2008; Liberman, Sagristano, & Trope, 2002), including number processing (Wakslak, Trope, Liberman, & Alony, 2006). Evidence that people process numerical information of future events more heuristically comes from studies which show that forecasters prefer aggregate, summary-like information about events that happen far into the future and only prefer more detailed, concrete information about events that are said to happen very close in time (Ledgerwood, Wakslak, & Wang, 2010). These divergent levels of construals also affect judgments of probability: events that are mentally represented in a high-level, abstract way are therefore deemed less likely than events that are represented through low-level and concrete construals (Wakslak & Trope, 2009).

But forecasters not only simplify the mental representations of future events, they also simplify the mental representation of their psychological reaction to these events. People therefore also commit affective forecasting errors because they underestimate how much their

emotional experience of future events will be influenced by their psychological reactions to them. For example, college students overestimate how unhappy they will be after ending a romantic relationship and assistant professors overestimate both how happy they would be after getting tenure and how unhappy they will be after being denied tenure (Gilbert et al., 1998). Similarly, forecasters erroneously prefer changeable to unchangeable choices (Gilbert & Ebert, 2002) because they do not consider the psychological processes that will improve their satisfaction with unchangeable choices, but not with changeable choices. This also explains why neither seemingly tragic events such as ending up in a wheelchair, nor seemingly fabulous events such as winning the lottery are as important for our own future happiness (Brickman et al., 1978) as we would predict.

Forecasters commit these forecasting errors and mispredict their psychological reactions to future events because their future thoughts and motives are unknown to them. Forecasters simplify their mental representation of their future self and therefore see themselves from an external, third person perspective (Pronin & Ross, 2006), as if they were observing someone else. People therefore also perceive their future self more in terms of observable behaviours and less in terms of internal states (Pronin, 2009), much like they perceive other people (Jones & Nisbett, 1972).

Because their future thoughts and intrapsychological motives are unknown to them, forecasters use their current thoughts and intrapsychological motives to predict how they will think in the future. Forecasters therefore often have a hard time imagining that the thoughts and motives that will guide their future behaviour will differ much from the thoughts and motives that guide their current behaviour. One study asked hungry and sated participants how much they would enjoy eating spaghetti for breakfast or dinner the next day. Participants drew on their current thoughts to predict their future thoughts, so hungry participants predicted they would enjoy spaghetti even for breakfast, whereas sated participants predicted

they would dislike spaghetti even for dinner (Gilbert, Gill, & Wilson, 2002). This tendency to predict future thoughts based on present thoughts is not limited to visceral experiences, and extends to situations when people predict future tastes (Read & van Leeuwen, 1998), purchase decisions (Gilbert et al., 2002), or their affective reactions in emotionally arousing situations (van Boven & Loewenstein, 2003).

Thus, people commit affective forecasting errors because their schematic previews of the future lack both the details that determine their emotional experience of future events (Schkade & Kahneman, 1998; Wilson et al., 2000), as well as their intrapsychological reactions to these events (Gilbert et al., 1998). In this dissertation I suggest a novel way in which we can apply an understanding of this affective forecasting process to explain why people overestimate happiness after gaining high status.

Theory Development

The literatures I've reviewed so far suggest that people desire status (Barkow, 1989; Huberman et al., 2004; Loch et al., 2001) because they expect great happiness from attaining it (Anderson & Kilduff, 2009; Mellers et al., 1999). Because status is inherently relative (Magee & Galinsky, 2008), how we feel about it is determined by the kinds of social comparisons we make with others (Hsee et al., 2009). Finally, although people know who they compare themselves with in the present (Goethals & Darley, 1977), they oftentimes seem surprised by the kinds of comparisons they will make in the future (Petroff, 2010; Rivlin, 2007). These findings can help explain why people may overestimate how happy they will be after attaining high status. Specifically, I suggest that people may overestimate their happiness after attaining high status because they mispredict who they will compare themselves with in the future.

Surprisingly, the notion that forecasted relationships with others can be a source of forecasting errors seems unexamined in the affective forecasting literature in which other

people are mostly treated as purely external actors. They can therefore lead to affective forecasting errors just like any other external object, because their role is over- or under-represented in forecasts of the future, depending on the ease or difficulty with which they populate forecaster's mental images of the future. But reducing people solely to external actors strips them of the essential feature that makes them meaningful to forecasters in the first place – the relationship forecasters have with these other people. Forecasters therefore might mispredict not only the extent to which others will be present in their future lives, but also *how* they will relate to them in the future.

I build on these three literatures on status, social comparisons, and affective forecasting, to develop theory that explains why forecasters might overestimate their happiness after attaining high status. I draw on the basic observation that forecasters simplify their mental images of the future and apply it to a novel area of investigation by suggesting that mispredicted relationships generally, and social comparisons in particular, might be a source of forecasting errors.

People in high status positions (I will refer to these individuals as "experiencers") often report unhappiness with their current status position because of the social comparisons they make (Petroff, 2010; Rivlin, 2007). These anecdotal reports are substantiated by research which shows that high status individuals such as elite university alumni (M. C. Higgins et al., 2008), high school students (Huguet et al., 2009), and gymnasts (Chanal et al., 2005) are oftentimes plagued by social comparisons with their high status peers

The overriding motive that guides the kinds of social comparisons people make is the desire to compare themselves with the most diagnostic and informative comparison targets. High status experiencers should therefore compare themselves mostly with other high status peers that are similar and close to them (Rofé, 1984; Wheeler & Koestner, 1984). In addition, some self-enhancing downward comparisons should only have a minimal effect on high

status individuals because very low status individuals are very distant from high status experiencers. On the other hand, upward comparisons with higher status others should have a strong effect because these others are close to high status experiencers (Alicke, LoSchiavo, Zerbst, & Zhang, 1997; Tesser, 1988).

High status experiencers' mental representations of this situation of high status should therefore differ markedly from how forecasters envision it: experiencers create more detailed and concrete mental representations of their high status position than the heuristic representation that forecasters base their predicted comparisons on (Ledgerwood et al., 2010; Trope & Liberman, 2003). In addition, experiencers' social comparisons are guided by the intrapsychological motives that were unforeseeable to them as forecasters (Pronin & Ross, 2006).

Forecasters' mental representations of future high status should differ from how high status individuals actually experience it, resulting in affective forecasting errors. Because forecasters base their forecasts on mental representations that are simplified, essentialized, and truncated (Gilbert et al., 1998; Morewedge et al., 2005; Schkade & Kahneman, 1998; Wilson et al., 2000), this heuristic processing should also influence the social comparisons forecasters predict after attaining a high status position. Attaining a high status position in a status hierarchy logically decreases the number of available upward comparison targets and increases the number of available downward comparison targets. This salient numerical difference may guide forecasters and cause them to predict making fewer upward and more downward comparisons than high status experiencers actually make.

Additionally, forecasters also simplify their mental representation of their psychological reactions to these future events. Because forecasters draw on the present to predict how they will think in the future (Read & van Leeuwen, 1998; van Boven & Loewenstein, 2003), forecasters should predict that their current relationships will also be

their future relationships. When forecasting their future happiness at high status positions, forecasters might therefore predict that they will compare themselves with those currently close and similar to them, not with those who will be close and similar to them in the future. And because those currently close to them are relatively low status, forecasters should predict making mostly downward, and relatively few upward comparisons from their future high status position.

In summary, forecasters simplify their mental representation of future events (Schkade & Kahneman, 1998; Wilson et al., 2000), as well as their psychological reactions to these events. Both these processes act together and cause forecasters to predict comparisons that result in high levels of forecasted happiness after attaining a high status position.

Forecasted happiness should therefore also be higher than actual happiness because forecasters predict making more of the self-enhancing downward comparisons and fewer upward comparisons than experiencers actually make. Based on this simple logic, I set up and test the following three hypotheses:

Hypothesis 1: Forecasters overestimate how happy they will be after gaining high status.

Hypothesis 2: Forecasters mispredict who they will compare themselves with after gaining high status. Specifically, forecasters underestimate the number of upward comparisons they will make after attaining high status, and overestimate the number of downward comparisons they will make after attaining high status.

Hypothesis 3: These mispredicted comparisons cause forecasters to overestimate their happiness after gaining high status.

To examine whether and why forecasters might overestimate their happiness after attaining high status positions I conducted a series of studies in both field and experimental settings. This question is important because people invest time in status-seeking activities, often at the expense of activities that are known to increase happiness, such as time with family and friends (Helliwell & Putnam; 2004, Ryan & Deci, 2001). Understanding why people might overestimate future happiness from attaining high status positions can therefore help people make better informed decisions by explaining exactly why people overestimate happiness after attaining high status.

Chapter 2: Empirical Examination

Overview of Empirical Studies

This chapter presents the empirical studies I conducted to examine whether and why forecasters overestimate their happiness after attaining high status positions. Study 1 addressed this question in a real world context with participants who cared strongly about their status in an online game. Study 1 asked whether forecasters indeed overestimate their happiness after attaining high status and whether forecasters systematically mispredict who they will compare themselves with as high status individuals, testing Hypotheses 1 and 2. Studies 2 and 3 were experimental studies conducted in a different empirical context and in a domain that is more broadly indicative of high status: general mental intelligence. Studies 2 and 3 provided empirical tests and support for Hypotheses 1, 2 and 3. Study 4 went beyond these three hypotheses and examined the underlying psychological mechanism in more detail by disentangling the effect of underestimating the number of upward comparisons from overestimating the number of downward comparisons. Finally, Study 5 explored this phenomenon in the domain of status loss and examined whether forecasters also overestimate how unhappy they will be after losing status because they mispredict who they will compare themselves with.

Study 1

I first sought to explore this phenomenon and obtain natural proof for its existence in a real world setting (Chatman & Flynn, 2005) to motivate subsequent studies that examine the underlying psychological process in more detail. My goal with this first study was to substantiate anecdotal evidence (Petroff, 2010; Rivlin, 2007) and other real world reports (Harsanyi, 1966; A. R. Smith, 1759) which suggest that people overestimate the importance of high status for happiness with a more systematic, empirical investigation of this

phenomenon. According to the theory developed earlier, forecasters overestimate their happiness because their tendency to simplify causes them to process the numerical information about their future high status position heuristically (Ledgerwood et al., 2010; Trope & Liberman, 2003) and because they are unable to foresee how intrapsychological motives will guide their future comparisons (Pronin & Ross, 2006). Forecasters therefore underestimate the number of upward comparisons and overestimate the number of downward comparisons, resulting in higher forecasted than actual happiness. Study 1 therefore asked whether forecasters who care about their status in a real world setting indeed overestimate their happiness (Hypothesis 1), and whether they systematically mispredict who they will compare themselves with as high status individuals (Hypothesis 2).

For this study I sought an empirical setting in which people are motivated to compete with others for status. Online video games have recently begun to attract interest from researchers because of their desirable features as empirical settings. Much of this pioneering work has been conducted by sociologists (Torfason, 2012) who use online video games to study higher level sociological constructs, such as network formation. But online video games may also promise a particularly rich empirical setting to study the psychological desire for status since players are chiefly motivated by their desire to attain the respect and recognition of their fellow players (Steinkuehler & Williams, 2006). Online video games therefore seemed a particularly suitable empirical setting for my first field study.

The specific empirical setting I chose for this study was an online video game called *Call of Duty: Black Ops.* The Call of Duty game series is the most successful entertainment release of all times, with a total revenue exceeding that of the Harry Potter and Star Wars movies series (Thier, 2012). Every month 40 million people spend millions of hours competing with others in this virtual online world (Activision, 2013). Players in Call of Duty

use various weapons and tactics to complete different missions in their quest to save the free world and compete with other players for higher positions in the Call of Duty ranking.

Call of Duty provides an exceptionally good empirical setting for this particular research question because it meets important criteria for this field study: first, players take their identity in this game very seriously (Reynolds, 2011), and satisfy much of their need for status from these games (Steinkuehler & Williams, 2006). Indeed, participants in Call of Duty (Activision, 2013) and other games oftentimes play for hours and days (BBC News, 2005; 2011). Second, the environment Call of Duty players operate in closely parallels the situational environment in status-seeking domains. Third, the sheer popularity makes the Call of Duty userbase large enough (Activision, 2013; Thier, 2012) to make recruitment of participants feasible.

Finally, Call of Duty features an exceptionally clear and transparent status hierarchy. Call of Duty players are rank-ordered according to their performance in a Call of Duty ranking. Players can attain 50 ranks from the lowest rank (1) of Private to the highest rank (50) of Commander in the Call of Duty: Black Ops ranking. Call of Duty players take this ranking seriously and create a personal profile and username that represents them in the game. A player's current rank is displayed on the player's profile both as a simple number and graphically by different badges, similar to those awarded to honoured military personnel (Figure A1). Just like status displays in the real world, high status players therefore get to display more ornate badges on their personal profile than low status players.

In sum, online video games in general, and Call of Duty in particular, seemed to provide a suitable empirical context because players are motivated to compete for high status positions in a clearly defined status hierarchy.

For these reasons, I recruited real Call of Duty players who occupied low (ranks 1 – 40) and high status positions that still allowed for upward comparisons (ranks 41 – 45). Low

status players forecasted how happy they would be and who they would compare themselves with after attaining high status and high status players reported their actual happiness and social comparisons as high status individuals. I predicted that forecasters would overestimate their happiness as high status individuals (Hypothesis 1), and that forecasters would underestimate the number of upward comparisons and overestimate the number of downward comparisons they would make as high status individuals (Hypothesis 2).

Method

Participants. 63 Call of Duty players (18 females; mean age = 25.70, *SD* = 8.50) were recruited from Amazon's Mechanical Turk participant pool and completed this study in return for $1 compensation.

Study design. This study employed a single factor between-participants design and participants were assigned to either the forecasting or experience condition based on their existing Call of Duty rank.

Procedure. This study was advertised on Amazon Mechanical Turk's online system as a study about the Call of Duty: Black Ops Game. Interested participants had to be current players of the Call of Duty: Black Ops game to qualify for the study, and were informed that they would be asked a few general questions about the game. Participants saw the Call of Duty ranking and indicated their current rank in the game (Figure A2). Participants who indicated that they occupied high status positions (ranks 41-45) were assigned to the experience condition, and participants who indicated that they occupied low status positions (ranks 1-40), were assigned to the forecasting condition[1].

---

[1] Call of Duty players can register on a website (http://www.callofduty.com/elite) to access social networking features. This website contains statistics (including ranks) about registered players. I could confirm the actual rank of those 15 participants that registered on this website, but not of the remaining participants. I have no reason to assume that they behaved differently from those who were registered. Participants had no incentives to inflate their self-reported rank.

Participants in the experiencer condition saw the same ranking again in which their current rank (ranks 41 – 45) was highlighted and reported on their actual happiness and social comparisons at their current high status position (Figure A3). Participants in the forecasting condition saw a modified version of the ranking in which both their current and future rank (ranks 41-45) were highlighted (Figure A4). Forecasters were instructed to imagine attaining this high status rank in the future and then answered questions about their forecasted happiness and social comparisons at this future high status position.

Finally, all participants answered questions about the Call of Duty: Black Ops game and their demographic background, were thanked for their participation, debriefed, and compensated.

Measures.

Happiness scale. Four items captured participant's forecasted or actual happiness after attaining high status. These items are in line with recent suggestions (Levine, Lench, Kaplan, & Safer, 2012) that dependent measures in forecasting studies should be specific to the forecasted event and not measure emotional states in general.

Forecasters indicated on seven-point scales (from *1 = not at all, to 7 = very much so*) how happy and satisfied they would be with their future rank, and how happy and satisfied they would feel as a future high status player. Experiencers answered equivalent questions to indicate how happy and satisfied they are with their current rank, and how happy and satisfied they feel as a highly ranked player (Table A1). Responses were averaged to form a measure of happiness (Cronbach's α = .88).

Social comparison scale. Four items (from *1 = not at all*, to *7 = very much so*) captured the extent to which participants would engage in social comparisons with other players. Forecasters indicated to what extent they would compare themselves with other players ranked better than their future position (ranks 46-50), slightly worse (ranks 31-40),

worse (ranks 11-30), or much worse ranked players than their future position (ranks 1-10).

Experiencers answered equivalent questions to report which other players they actually

compare themselves with (Table A2). The three items about comparisons with worse players

(ranked 1-40) were averaged to create a measure of downward comparisons (Cronbach's α

= .80) because I do not distinguish theoretically between different ranks[2].

     Questions about the Call of Duty game. Finally, participants answered demographic

questions as well as general questions about their engagement in the Call of Duty game.

Participants reported how long they had been playing the game for and how much time they

spent playing the game on a weekly basis. Next, participants indicated how much they cared

about their rank in the game and how motivated they were to improve their rank in the game.

Participants also indicated how stable they thought their rank was (all answered on scales

from *1 = not at all*, to *7 = very much so*) since both very stable and unstable perceptions of

rank are problematic. Very stable perceptions of rank suggest that forecasters see little

realistic opportunity of ever attaining a high status position and very unstable perceptions of

rank suggest that forecasters might expect to attain a high rank eventually, regardless of

performance. Participants also answered questions about their demographic background.

Results[3]

     The questions about the Call of Duty game revealed interesting descriptive

information. First, the Call of Duty game formed an important part of the participants' lives.

Participants had been playing the Call of Duty: Black Ops game for an average of 14.38

months (*SD* = 12.93) and they spent an average of 10.3 hours (*SD* = 20.76) per week playing

the game.

---

[2] The results hold directionally for each of the three individual items that make up this
measure.
[3] The results reported in this dissertation use two-tailed tests of significance levels.

Participants also indicated that they cared about the rank they had achieved (M = 5.34; SD = 1.31) at a level that was significantly above the midpoint of the seven-point scale, $t(61) = 8.07, p < .001$. Furthermore, participants were motivated to improve their rank in the game (M = 5.65; SD = 1.34), again significantly above the midpoint of the seven-point scale, $t(61) = 9.64, p < .001$.

Finally, participants' responses suggest that their rank was neither very stable nor unstable. They estimated it would take them on average 3.53 months (SD = 7.69) to attain the next higher rank and when asked how stable they thought their rank was, the participants' response (M = 4.31; SD = 1.42) was not different from the midpoint of the scale $t(61) = 1.70$, $p = .09$, suggesting their rank was neither very stable nor very instable. In sum, participants' responses suggest that the Call of Duty game formed an important part of their lives, and that they cared about their rank in it.

Happiness forecasting error. As predicted in Hypothesis 1, compared to experiencers' (M = 5.21, SD = 1.27) reported happiness, forecasters (M = 6.00, SD = .85) overestimated their happiness after attaining a future high status rank, $t(61) = 2.91, p = .005$, $\eta^2 = .12$ (see Figure 1).

Social comparison forecasting error. In support of Hypothesis 2, forecasters also systematically mispredicted who they would compare themselves with as high status players. First, forecasters (M = 4.09, SD = 2.02) underestimated the extent to which they would make upward comparisons relative to high status experiencers (M = 5.71, SD = 1.24), $t(61) = - 3.81$, $p < .001, \eta^2 = .19$. Second, forecasters (M = 3.95, SD = 1.40) also overestimated the extent to which they would make downward comparisons relative to high status experiencers (M = 3.16, SD = 1.59), $t(61) = 2.08, p = .04, \eta^2 = .07$ (see Figure 2)[4].

---

[4] This result holds directionally for the individual items: forecasters significantly overestimated the extent of downward comparisons with much worse others, $p = .04$, and
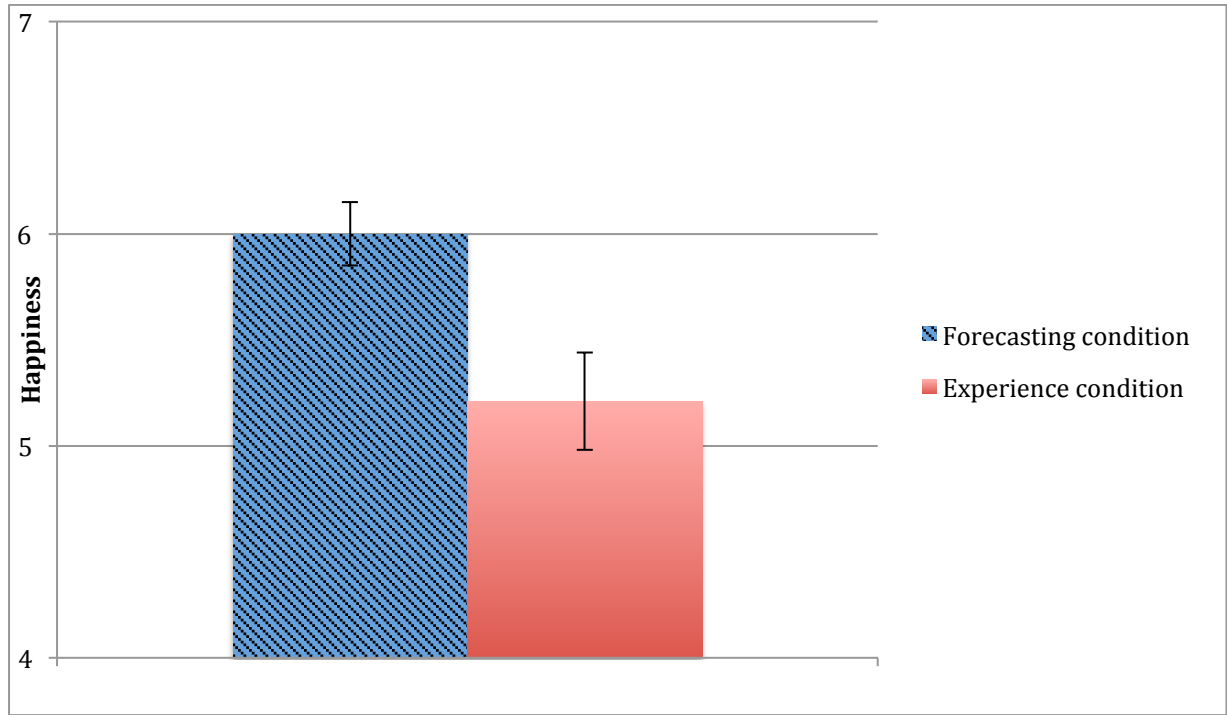
Figure 1. Forecasted and experienced happiness in Study 1.

---

worse others, *p* = .05. Forecasters also overestimated the extent of downward comparisons with slightly worse others, although this difference was not significant, *p* = .22.
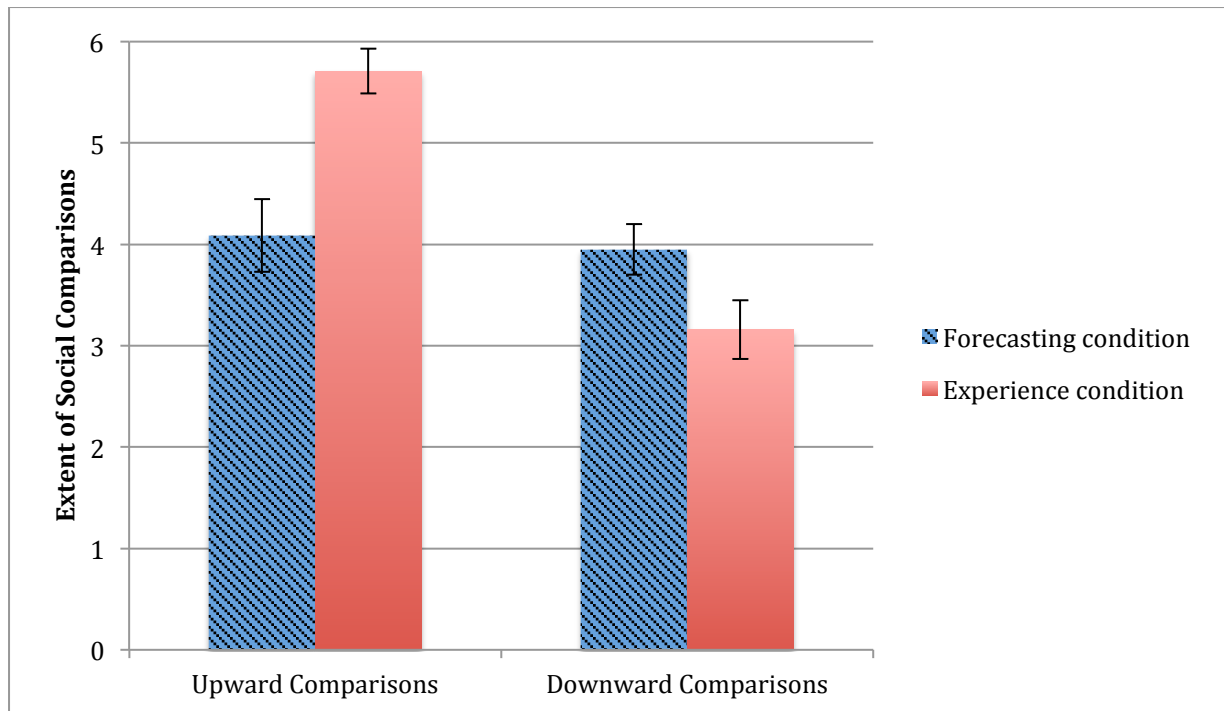
Figure 2. Forecasted and actual social comparisons in Study 1.

Discussion

This first study provided some initial evidence for my hypotheses using participants who cared about their status in a real world setting with an exceptionally clear status hierarchy: forecasters overestimated their future happiness after attaining high status positions. Forecasters also systematically mispredicted who they would compare themselves with after attaining high status positions: forecasters in this study both underestimated how much they would compare themselves upwards with higher status players and overestimated how much they would compare themselves downwards with lower status players after gaining a high status rank.

However, these results also need to be considered with some caution since this study lacks the random assignment of an experimental study. I address this concern in two ways.

First, it was nearly impossible to exercise experimental control in this field study setting (J. S. Zechmeister, Zechmeister, & Shaughnessy, 2001) and longitudinal data collection was problematic because of the lack of participants since I inadvertently used an outdated (2010) version of the game (Call of Duty: Black Ops). Future research can employ such a longitudinal design by recruiting participants from the most recent version of the Call of Duty series, Call of Duty: Black Ops II, released in late 2012.

Second, I address this concern in subsequent experimental studies with random assignment of participants to forecasting and experience conditions. The following studies also examine this phenomenon of forecasting happiness from high status in a more general status domain: intelligence. Although not everybody seeks status in online video games, the desire to seek status and recognition in the broader social world we live in is universal (Buss, 2004). One of the most desirable indicators of status is wealth (Frank, 1999; Turke & Betzig, 1985) and another is general mental intelligence (Lord et al., 1984). The following experimental studies therefore examine the psychological mechanism underlying this forecasting error both in a broader social domain and in more detail.

Study 2

Study 1 demonstrated that forecasters overestimate how happy they would be and who they would compare themselves with after attaining high status with participants who care about their status in a real world context. Study 2 built on these findings in three ways: first, participants in Study 2 were randomly assigned to forecasting and experience conditions to complement Study 1's external validity with a stronger focus on internal validity. Second, participants in Study 2 were more broadly representative demographically (Gosling, Vazire, Srivastava, & John, 2004) and they competed for status in a domain that is more widely regarded as affording someone high status: general mental intelligence (Lord et al., 1984). People are afforded status depending on the social values embraced by their groups (Magee & Galinsky, 2008), so status-markers can be situation-specific (Rueden, Gurven, & Kaplan, 2008). Intelligence, like wealth, is a universally accepted indicator that grants an individual high status in most situations and circumstances (Lord et al., 1984), probably because it is almost universally valued (Anderson & Kilduff, 2009). Third, I designed an experimental setting that allowed me to isolate peoples' desire for status from their desire for related constructs such as power (Magee & Galinsky, 2008). In Study 2 I employed a new measure that directly demonstrates which other players from the ranking participants compare themselves with.

Participants in Study 2 therefore completed several rounds of a mental puzzle game (Tetris) that was purported to be indicative of general intelligence and participants competed for high status positions in a Tetris performance ranking. Experiencers received false feedback after every round, attained a pre-determined high status rank after round eight, and then reported their actual happiness and social comparisons as high status players. Forecasters also received false feedback but only played three rounds of Tetris and then

forecasted their happiness and social comparisons after attaining the same high status rank that experiencers actually attained after eight rounds.

According to my theory, forecasters' inability to foresee how intrapsychological motives will guide their future comparisons (Pronin & Ross, 2006) and their tendency to process the numerical information about their future high status position heuristically (Ledgerwood et al., 2010; Trope & Liberman, 2003) should cause them to mispredict their future comparisons, and overestimate their happiness. Specifically, forecasters should underestimate the number of upward comparisons and overestimate the number of downward comparisons they will make after attaining high status positions, resulting in higher forecasted than actual happiness.

Thus, Study 2 tested three hypotheses in a controlled study with random assignment: first, Study 2 examined whether forecasters overestimate their happiness after attaining high status (Hypothesis 1). Second, Study 2 asked whether forecasters systematically mispredict who they will compare themselves with after attaining high status. Specifically, Study 2 asked whether forecasters underestimate the number of upward comparisons and overestimate the number of downward comparisons they will make after attaining high status positions (Hypothesis 2). Finally, Study 2 sought to provide some support for the notion that these mispredicted social comparisons cause forecasters to overestimate how happy they will be after gaining high status (Hypothesis 3).

Pretest Tetris Task

To determine whether high positions in the Tetris performance ranking are indeed afforded high status, 19 participants (8 females; mean age = 35.74, $SD = 15.23$) were recruited from Amazon's Mechanical Turk and completed a pretest for $.40 compensation. Pretest participants received similar information about the Tetris game as participants in Study 2. Participants then indicated how much status they would accord to someone who

either achieved a high rank (rank 5 out of 30) or a low rank (rank 25 out of 30) in the Tetris

performance ranking (from 1 = *not at all* to 7 = *very much so*). The results showed that

participants afford more status to a player who attained rank 5 (*M* = 4.84; *SD* = 1.26) than to

a player who attained rank 25 (*M* = 3.47; *SD* = 1.39), $t(18)$ = 5.90, p < .001. High-ranked

players were also afforded more status (*M* = 4.84; *SD* = 1.26) than the midpoint (4) of the

scale, $t(18)$ = 2.92, p = .009. In sum, this pretest showed that participants who attained high

positions in the Tetris performance ranking were afforded high status.

Method

  Participants. Eighty-three participants were recruited from Amazon's Mechanical

Turk participant pool and completed this study in return for $1 compensation. At the end of

this study, participants answered an open-ended question to describe how they chose their

comparison targets. Nine participants wrote that they selected their comparison targets purely

at random (i.e. "*I randomly selected them*", "*I really had no method to selection. More*

random.") and were not included in the analysis. Table B2 lists the responses of these nine

participants in full. 74 participants (38 females; mean age = 31.88, *SD* = 9.12) were included

in the analyses.

  Study design. This study employed a single factor between-participants design.

Participants were randomly assigned to either the experience or forecasting condition.

  Tetris task. The Tetris game was based on a publically available Java-version of the

Tetris game (Tomczak, 2010). I adjusted the Javascript code to hide certain graphical

elements such as the participant's current score from the game to allow for false feedback on

their performance ranking (see Figure B1 for a screenshot of the modified version of the

Tetris game I used in this study).

  In Tetris, differently-shaped blocks fall down from the top of the screen and the

player needs to arrange these blocks so they form complete horizontal lines on the bottom of

the screen. Participants can achieve this goal by moving blocks to the left and right and by rotating them around their own axis. A timer indicated the number of seconds remaining in every round. After three minutes, participants were automatically forwarded to a waiting screen and were then presented with that round's Tetris performance ranking. The Tetris performance ranking consisted of 30 ranks and the participant's current rank was indicated by an arrow next to the ranking (Figure B2).

Procedure. Participants first received general instructions about the Tetris game. Tetris was purported to be indicative of general mental intelligence through references to academic articles that supposedly demonstrate this relationship. Participants then received instructions on the rules of the Tetris game and could view a detailed example that further explained the rules.

Participants were next informed that they would compete with similar others for higher positions in the Tetris performance ranking. To strengthen involvement in the task, participants were informed that these others were past participants with a similar demographic and educational background to them. Participants then indicated the highest academic degree they had achieved, the academic discipline they had achieved it in, and their age. After a short waiting screen during which the system supposedly selected participants with a similar profile, the usernames of those participants with a similar profile were presented. To maximise the authenticity of this experimental paradigm, these usernames were compiled from actual Tetris highscore rankings.

Finally, participants were reminded of the rules and objectives of the game and that they would compete with similar others in the ensuing eight three-minute rounds of Tetris.

Experience/forecasting manipulation. Experiencers played eight three-minute rounds of Tetris and received false feedback about their position in the Tetris performance ranking after every round. Their position in the ranking developed according to a pre-

determined schedule (Table B1) and they attained rank 5 (a high status rank as determined in the pretest) after round eight. Experiencers then reported how happy they were and who they compared themselves with after attaining this high status position.

Forecasters received the same treatment until after round three of Tetris. After the third round, forecasters did not play subsequent rounds but were instead asked to imagine attaining exactly the same ranks that experiencers actually attained in each of the remaining five rounds (Table B1). Forecasting errors are reduced if forecasters create more detailed representations of future events (Wilson et al., 2000). Instructing forecasters to predict how their rank will develop from round to round therefore was a conservative operationalisation of this forecasting situation because it reduces the contrast between the current and the forecasted future situation. Forecasters then completed the dependent measures about their forecasted happiness and social comparisons.

After completing the dependent measures, all participants completed demographic measures, were debriefed, compensated, and thanked for their participation in the study.

Measures.

Happiness scale. The happiness measure were the same four items as in Study 1. Responses were again averaged to form a measure of happiness (Cronbach's $\alpha = .91$).

Social comparisons. Participants indicated their actual or forecasted social comparisons through an extended version of the rank-order paradigm (Hakmiller, 1966; Wheeler et al., 1969). After round eight, experiencers saw the Tetris performance ranking in which their current high status position (rank 5) was highlighted (Figure B3). Forecasters saw the same ranking after round eight in which both their future high status position (rank 5) and their current position (rank 25) were highlighted (Figure B4). All participants then clicked on the five to ten other players from the ranking they wanted to compare themselves with.

Results

Happiness forecasting error. As predicted by Hypothesis 1, forecasters (M = 5.66, SD = 1.06) again overestimated their happiness after attaining high status in the future compared to experiencers' (M = 5.05, SD = 1.32) actual happiness after attaining that very high status, $t(72)$ = - 2.17, p = .03, η^2 = .06. This replicates the finding from Study 1 and confirms Hypothesis 1 (see Figure 3).

Social comparison forecasting error. Also as predicted by Hypothesis 2, forecasters again systematically mispredicted who they would compare themselves with after attaining high status. First, forecasters (M = 2.60, SD = 1.66) underestimated the number of upward comparisons they would make compared to the number of upward comparisons experiencers (M = 3.46, SD = .96) actually made, $t(72)$ = 2.75, p = .008, η^2 = .09. Conversely, forecasters (M = 4.95, SD = 2.84) also overestimated the number of downward comparisons they would make in the future relative to the downward comparisons experiencers (M = 3.24, SD = 2.33) actually made, $t(72)$ = -2.82, p = .006, η^2 = .10. Forecasters (M = 7.54, SD = 2.56) made the same number of comparisons as experiencers (M = 6.70, SD = 2.58), $t(72)$ = -1.40, p = .17. This replicates the finding from Study 1 and confirms Hypothesis 2 (see Figure 4).
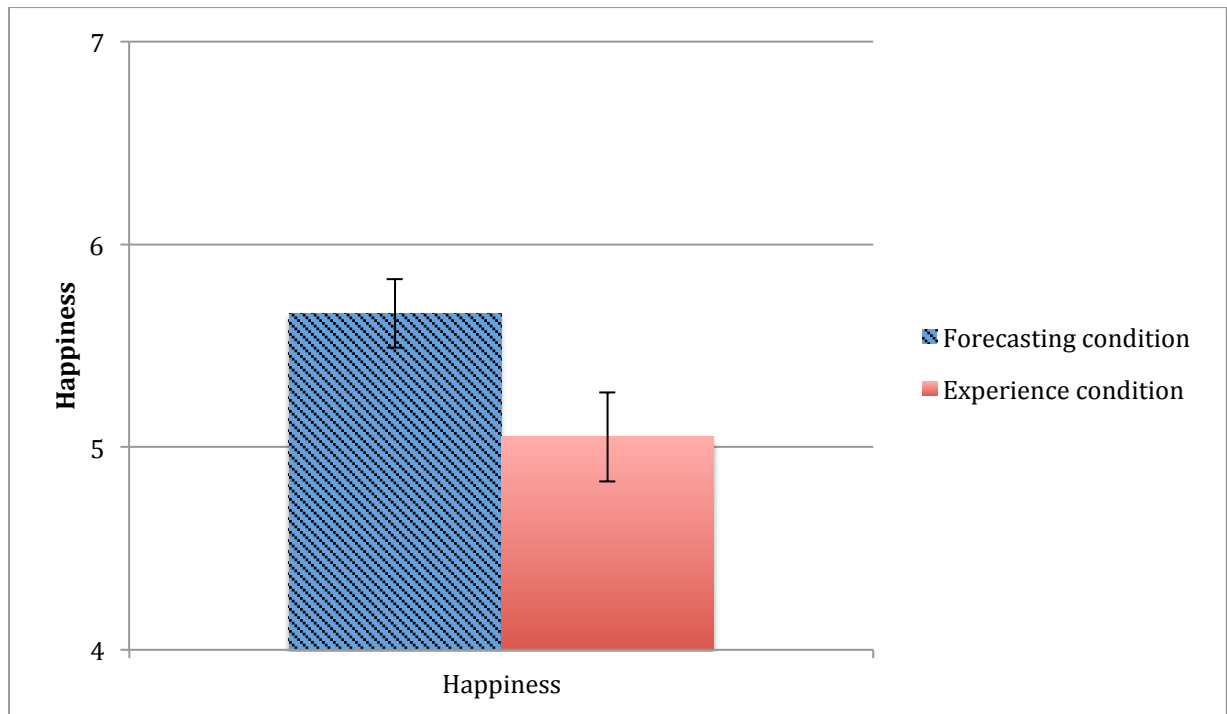
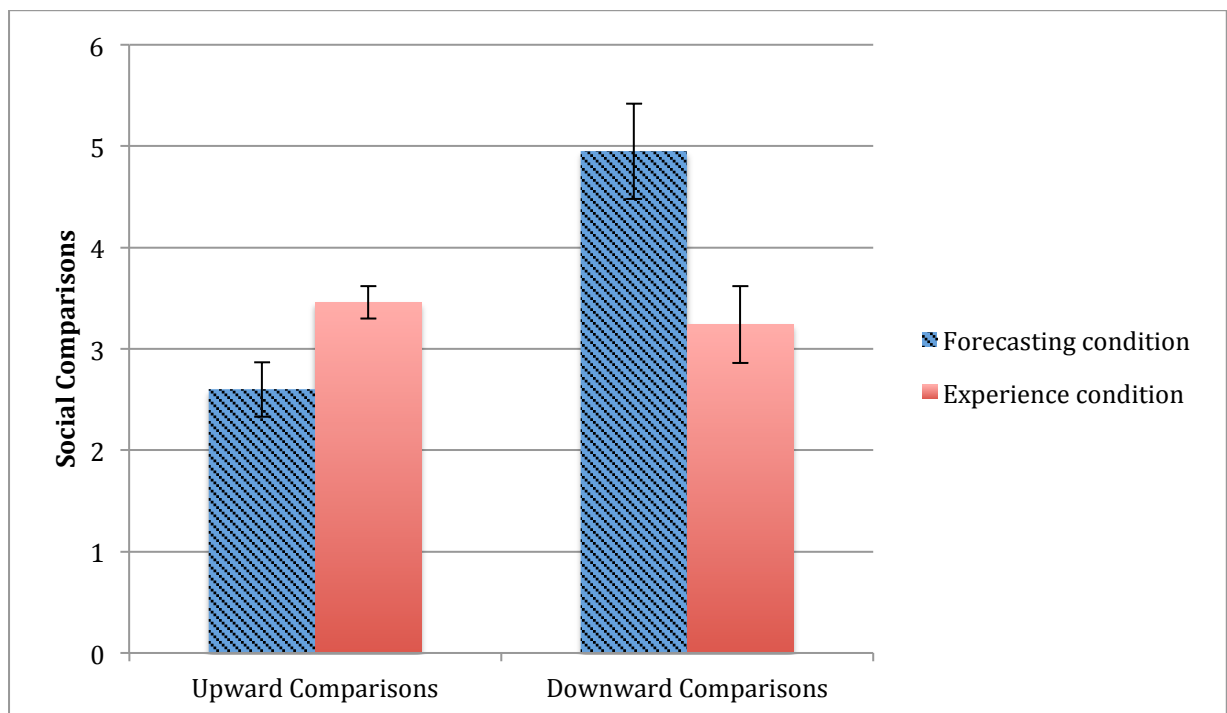*Figure 3* . Forecasted and experienced happiness in Study 2.

Figure 4 . Forecasted and actual social comparisons in Study 2.

Mediation. Finally, I conducted two mediation analyses to test the hypothesis that these mispredicted social comparisons caused forecasters to overestimate how happy they would be after attaining high status.

Following Baron & Kenny (R. M. Baron & Kenny, 1986), the first two analyses showed that forecasters overestimated their future happiness β = .25, p = .03, and that they underestimated the number of upward comparisons, β = -.31, p = .008 and overestimated the number of downward comparisons β = .32, p = .006 they would make in the future. In the third step I regressed both the independent variable and the mediator on the dependent variable. For upward comparisons, experience remained a significant predictor of happiness, β = .31, p = .01 and upward comparisons did not significantly predict happiness, β = .20, p = .11. Estimates of the indirect effect based on 5000 samples (Shrout & Bolger, 2002; Hayes, 2012) did not suggest successful mediation (CI95 = -.48, .02), and neither did the Sobel test, Z = -1.34, p = .18. For downward comparisons, experience was no longer a significant predictor of happiness, β = .19, p = .12, but neither did downward comparisons predict happiness, β = .19, p = .11. Estimates of the indirect effect based on 5000 samples (Shrout & Bolger, 2002; Hayes, 2012) did not suggest successful mediation (CI95 = -.01, .41), and neither did the Sobel test, Z = 1.34, p = .18.

Discussion

Study 2 built on Study 1 in numerous ways: first, Study 2 employed an experimental design with random assignment and directly measured participant's social comparisons through a modified version of the rank-order paradigm (Hakmiller, 1966; Wheeler et al., 1969). Second, it examined the hypotheses in a more general status-seeking domain and with

a broadly representative online sample (Gosling et al., 2004). Third, the newly developed experimental paradigm helped isolate the desirable aspects of high status from potential confounds such as power (Magee & Galinsky, 2008).

Study 2 replicated key findings from the field study in this novel empirical setting with random assignment: first, this study confirmed Hypothesis 1 and found that forecasters again overestimated their happiness after attaining high status even under a conservative operationalisation of this forecasting situation. Second, forecasters also again systematically mispredicted who they would compare themselves with after attaining high status, confirming Hypothesis 2: forecasters both underestimated the number of upward comparisons they would make and overestimated the number of downward comparisons they would make after attaining a high status position. Study 2 found no support for Hypothesis 3, although this might be expected given that upward and downward comparisons are not independent but depend on each other, which can make mediation analysis unreliable and notoriously difficult to establish (MacKinnon, 2008; West & Aiken, 1997).

Given these and other challenges with establishing causality through statistical mediation analysis alone, a growing number of scholars (Spencer, Zanna, & Fong, 2005) recommend that specifically designed experimental studies may be a preferred way to establish causality with psychological constructs. Study 3 therefore employs a mediation-by-process design to provide a strong test of the third hypothesis that mispredicted comparisons cause forecasters to overestimate their happiness after attaining high status.

Study 3

Study 2 replicated the results from the field study in a controlled environment with random assignment and demonstrated that forecasters not only overestimated their happiness after attaining high status (Hypothesis 1), but also systematically mispredicted who their comparison targets were (Hypothesis 2). However, Study 2 did not find support for Hypothesis 3.

Study 3 therefore sought to replicate these findings and also provide a rigorous test of the hypothesis that forecasters overestimate their happiness after attaining high status because they mispredict who they will compare themselves with (Hypothesis 3). Rather than measuring the proposed mediator - social comparisons - as in Study 2, I manipulated the kinds of comparisons that forecasters predicted to test whether mispredicted comparisons caused this forecasting error (Spencer et al., 2005).

According to my theory, forecasters mispredict their future comparison targets, and therefore overestimate their happiness after attaining high status for two reasons: first, forecasters process numerical information about their future high status position heuristically (Ledgerwood et al., 2010; Trope & Liberman, 2003) and second, forecasters are unable to foresee how intrapsychological motives will guide their future comparisons (Pronin & Ross, 2006). Forecasters therefore underestimate the number of upward comparisons and overestimate the number of downward comparisons they will make after attaining high status, resulting in higher forecasted than actual happiness.

If this theory is correct, forecasters should only overestimate their future happiness if they mispredict who they will compare themselves with, but they should predict their future happiness more accurately if they predict making the social comparisons that high status experiencers actually make.

Hypothesis 3 states that mispredicted comparisons cause forecasters to overestimate their happiness after gaining high status. Study 3 used a mediation-by-process design to provide a strong test of this hypothesis according to a simple logic: forecasters who freely mispredict their future comparisons targets should overestimate their happiness after attaining high status, but forecasters who correctly predict their future social comparison targets should improve their forecasting accuracy and thus lower their forecasted happiness.

Two conditions replicated the design from Study 2: participants in the first forecasting condition again freely predicted who they will compare themselves with after attaining high status, replicating the forecasting condition from Study 2. Participants in the experience condition again freely reported who they actually compare themselves with after attaining high status, replicating the experience condition from Study 2. Participants in the forecasting corrected comparisons condition were forecasters who predicted making the kinds of comparisons that high status experiencers actually make.

Method

Participants. 113 participants were recruited from Amazon's Mechanical Turk participant pool and completed this study in return for $1 compensation. As in Study 2, participants again answered an open-ended question to describe how they chose their comparison targets. Five participants wrote that they selected their comparison targets purely at random (i.e. "*randomly*", "*I just selected them at random.*") and were not included in the analysis. Table C1 lists the responses of these five participants in full. 108 participants (53 females; mean age = 30.35, $SD = 10.18$) were therefore included in the analyses.

Study design. This study used a single factor between-participants design and participants were randomly assigned to one of the three experimental conditions: the forecasting and experience conditions exactly replicated the conditions in Study 2.

Participants in the forecasting corrected comparisons condition correctly predicted making the kinds of comparisons that high status experiencers in Study 2 actually made.

Procedure. The procedure for the forecasting and experience conditions were identical to the procedure in Study 2. Participants in the forecasting corrected comparisons condition followed the same procedure as the other forecasters but did not freely predict which other players they would compare themselves with after attaining a high status position. Participants in the forecasting corrected comparisons condition instead predicted comparing themselves with those other participants that high status experiencers in Study 2 actually compared themselves with. Specifically, participants were shown a short video in which the seven ranks most commonly chosen by high status experiencers in Study 2 were highlighted (see Figure C1 for a screenshot of the video). Participants in the forecasting corrected comparisons condition then imagined that they would compare themselves with these other players after attaining a high status position in round 8 and completed the items in the happiness measure.

Finally, all participants answered questions about their demographic background, were thanked for their participation, debriefed, and compensated.

Measures. Participants completed the same happiness measure as in Study 2, Cronbach's $\alpha = .93$.

Participants in the forecasting and experience condition completed the same social comparison measure as in Study 2. Participants in the forecasting corrected comparisons condition did not complete social comparison measures because their forecasted comparisons were manipulated.

Results

Happiness forecasting error. I conducted a univariate analysis of variance (ANOVA) to test whether the three conditions differed on the happiness measure. The overall

ANOVA suggested that the reported levels of happiness differed across the three conditions, $F(2, 105) = 4.13$, $p = .02$, $\eta^2 = .07$. Next I conducted two contrast analyses. The first contrast tested whether the happiness forecasting error found in Studies 1 and 2 replicated in Study 3. This contrast demonstrated that forecasters ($M = 6.00$, $SD = .92$) who systematically mispredicted their future comparison targets again overestimated their future happiness after attaining high status, compared to experiencers' ($M = 5.28$, $SD = 1.22$) actual happiness after attaining high status, $F(1,105) = 6.61$, $p = .01$, $\eta^2 = .06$. This finding replicates the results from Studies 1 and 2 and provides further support for Hypothesis 1.

The second contrast analysis provided a direct test of Hypothesis 3 and therefore examined whether correctly forecasting the comparisons that high status experiencers actually make results in more accurate forecasted happiness. Forecasters who predicted making the kinds of comparisons that high status experiencers actually make ($M = 5.35$, $SD = 1.31$) lowered their forecasted happiness substantially from forecasters who mispredicted who they would compare themselves with ($M = 6.00$, $SD = .92$), $F(1,105) = 5.74$, $p = .02$, $\eta^2 = .05$, providing strong support for Hypothesis 3. Incidentally, forecasters who correctly predicted making the comparisons that high status experiencers actually make ($M = 5.35$, $SD = 1.31$) forecasted their happiness at a level that was almost identical to experiencer's ($M = 5.28$, $SD = 1.22$) reported happiness (see Figure 5).

Social comparison forecasting error. These analyses only apply to the forecasting and experience conditions in which forecasters completed the social comparison measure. In support of Hypothesis 2, forecasters again systematically mispredicted who they would compare themselves with after attaining high status positions. First, forecasters ($M = 2.61$, $SD = 1.63$) underestimated the number of upward comparisons they would make relative to high status experiencers ($M = 3.32$, $SD = 1.25$), $t(68) = 2.05$ $p = .04$, $\eta^2 = .06$. Second, forecasters ($M = 4.75$, $SD = 2.75$) also overestimated the number of downward comparisons

they would make compared to high status experiencers ($M = 3.41, SD = 1.79$), $t(68) = -2.39$

$p = .02, \eta^2 = .08$. Forecasters ($M = 7.36, SD = 2.2$) made the same number of comparisons as

experiencers ($M = 6.74, SD = 1.76$), $t(68) = -1.31, p = .20$. This replicates findings from

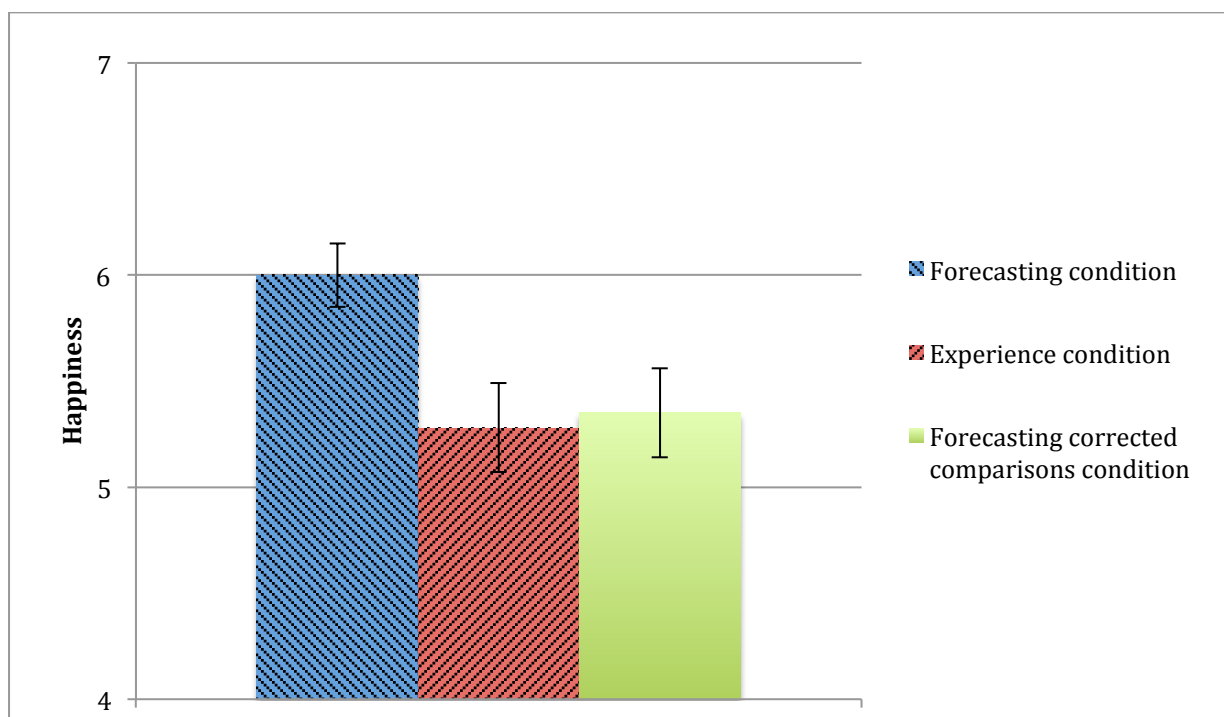Studies 1 and 2 and provides further support for Hypothesis 2 (see Figure 6).

Figure 5. Forecasted and actual happiness in Study 3.
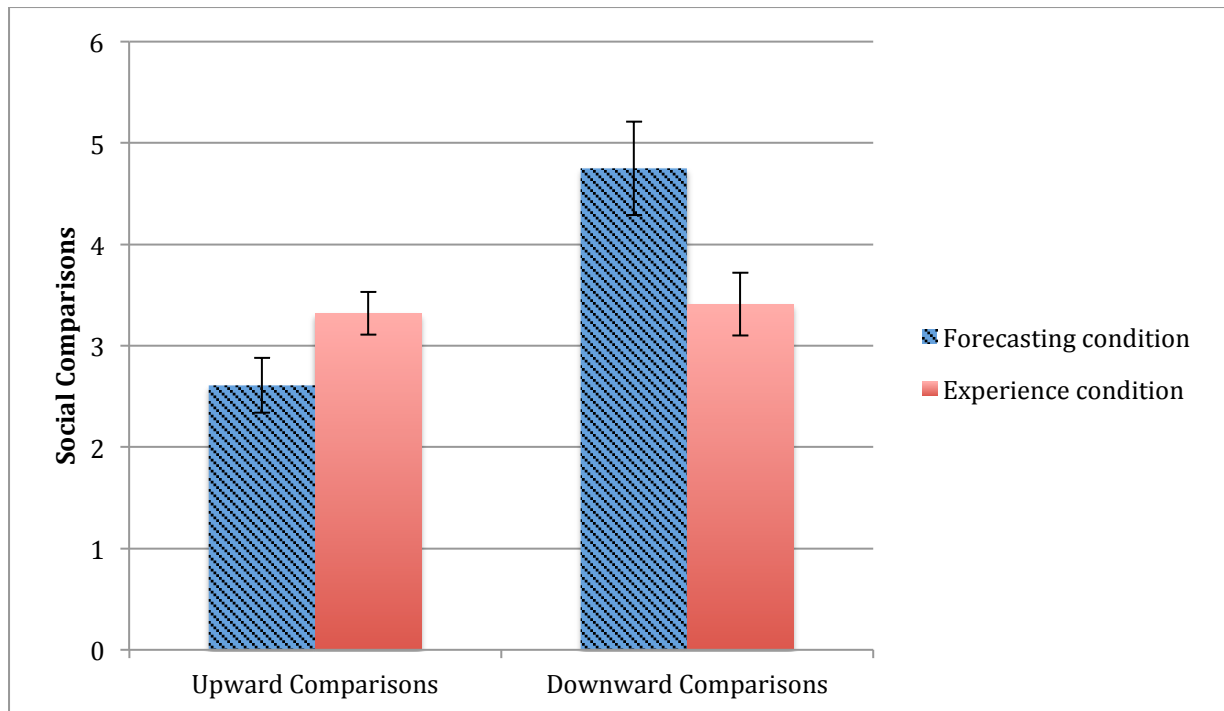
Figure 6. Forecasted and actual social comparisons in Study 3.

Discussion

Study 3 replicated the results of the two previous studies, and provided further support for Hypotheses 1 and 2: forecasters again overestimated their happiness after attaining high status and also systematically mispredicted who they would compare themselves with after attaining high status positions: they again underestimated the number of upward comparisons and overestimated the number of downward comparisons they would make after attaining high status positions.

Study 3 employed a mediation-by-process design as a preferred method to test Hypothesis 3. This allowed me to isolate the hypothesized underlying psychological mechanism by directly manipulating the kinds of comparisons that forecasters in one condition make. Study 3 therefore provides clear evidence that mispredicted comparisons

cause forecasters to overestimate their happiness after attaining high status: forecasters only overestimated their happiness after attaining high status if they underestimated the number of upward comparisons they made and overestimated the number of downward comparisons they made. This forecasting error was reduced, or disappeared, when forecasters correctly predicted the kinds of comparisons that high status experiencers actually made.

In summary, three studies, using different samples and paradigms, demonstrated that forecasters overestimate their happiness after gaining high status (Hypothesis 1), that they systematically mispredict who they will compare themselves with (Hypothesis 2), and that these mispredicted comparisons cause this affective forecasting error (Hypothesis 3).

Although Study 3 demonstrated that mispredicted comparisons cause forecasters to overestimate their happiness after attaining high status, the two processes of forecasted upward and downward comparisons have been examined simultaneously. It is therefore unclear to what extent these two mispredictions differentially cause forecasters to overestimate happiness after attaining high status. Study 4 attempted to disentangle the differential impact of underestimating the number of upward comparisons from overestimating the number of downward comparisons on this affective forecasting error.

Study 4

Study 3 demonstrated that forecasters overestimate their happiness after attaining high status because of two simultaneously occurring processes: forecasters both underestimate the number of upward comparisons and overestimate the number of downward comparisons they will make after attaining high status positions. This masks the relative importance of forecasted upward and downward social comparisons for causing overestimations of happiness after attaining high status. Study 4 sought to isolate these two processes and asked whether correcting either process improves forecasting accuracy and lowers forecasted happiness.

These two comparison processes should impact experiencers differently after they attain high status: social identity theory suggests that people who rise through the ranks and attain high status positions quickly identify themselves as high status individuals and cease to identify themselves as low status individuals (Ellemers, van Knippenberg, de Vries, & Wilke, 1988). Underestimating upward comparisons therefore suggests that forecasters fail to predict negative comparisons with others they identify strongly with. Overestimating downward comparisons on the other hand suggests that forecasters overestimate happiness from comparisons with others they do not identify strongly with anymore. Although downward comparisons with low status others might still be possible from a high status position, they are unlikely to have a strong effect on high status (Alicke et al., 1997; Tesser, 1988). These observations suggest that forecasters' underestimation of upward comparisons causes this forecasting error.

In this study I tested the hypothesis that underestimating upward comparisons, but not overestimating downward comparisons, causes forecasters to overestimate happiness after attaining high status (Hypothesis 4). I tested this hypothesis in Study 4 by examining whether isolating and correcting either process lowers forecasted happiness and improves forecasting

accuracy. I corrected each comparison process in two conditions and compared these corrected forecasts with forecasted happiness in a control condition in which participants did not receive any correcting information.

Method

      Participants. 99 participants (41 females; mean age = 31.46, *SD* = 10.63) were recruited from Amazon's Mechanical Turk and completed this study in return for $1.20 compensation.

      Study design and procedure. Study 4 used a single factor between-participants design and participants were randomly assigned to one of the three experimental conditions: participants in the control condition received no corrective information before predicting their happiness after attaining high status. Forecasters in the corrected upward comparisons condition were advised that forecasters generally underestimate how much they will compare upwards with higher status individuals. Forecasters in the corrected downward comparisons condition were advised that forecasters generally tend to overestimate how much they will compare downwards with lower status individuals.

      Forecasters in the control condition received the same treatment as forecasters in Studies 2 & 3. To isolate the effect of each comparison process, forecasters in the treatment conditions received one corrective piece of information just before they forecasted their future happiness. Participants in the forecasting corrected upward comparisons condition read about recent research which showed that people underestimate how much they will compare themselves upwards with better players (Figure D1). Participants in the forecasting corrected downward comparisons condition read about recent research which showed that people overestimate how much they will compare themselves downwards with worse players, (Figure D2).

All participants then answered questions about their demographic background, were thanked for their participation, debriefed, and compensated.

Measures. Participants filled in the same happiness measure as in Studies 1 – 3, Cronbach's α = .93.

Results

I conducted an ANOVA to test whether the three conditions differed on the forecasted happiness measure. The overall ANOVA showed that the forecasted levels of happiness differed marginally across the three conditions, $F(2,96) = 2.82$, $p = .06$, $\eta^2 = .06$. Next I conducted two contrast analyses to examine the question whether correcting either process lowers forecasted happiness relative to forecasted happiness when participants did not receive any correcting information.

The first contrast showed that forecasters who were advised about their tendency to underestimate the number of upward comparisons ($M = 5.34$, $SD = 1.32$) lowered their forecasted happiness relative to forecasters in the control condition ($M = 5.97$, $SD = .96$) who did not receive any additional information, $F(1,96) = 5.17$, $p = .03$, $\eta^2 = .05$. Thus, forecasters adjust and correct their forecasted happiness after attaining high status when their tendency to underestimate the number of upward comparisons is corrected.

The second contrast showed that forecasters who were advised about their tendency to overestimate the number of downward comparisons ($M = 5.81$, $SD = 1.11$) did not significantly lower their forecasted happiness relative to forecasters in the control condition ($M = 5.97$, $SD = .96$) who did not receive any additional information, $F(1,96) = .29$, $p = .59$, $\eta^2 = .003$. Thus, forecasters did not adjust and correct their forecasted happiness sufficiently after attaining high status when their tendency to overestimate the number of downward comparisons is corrected (see Figure 7).
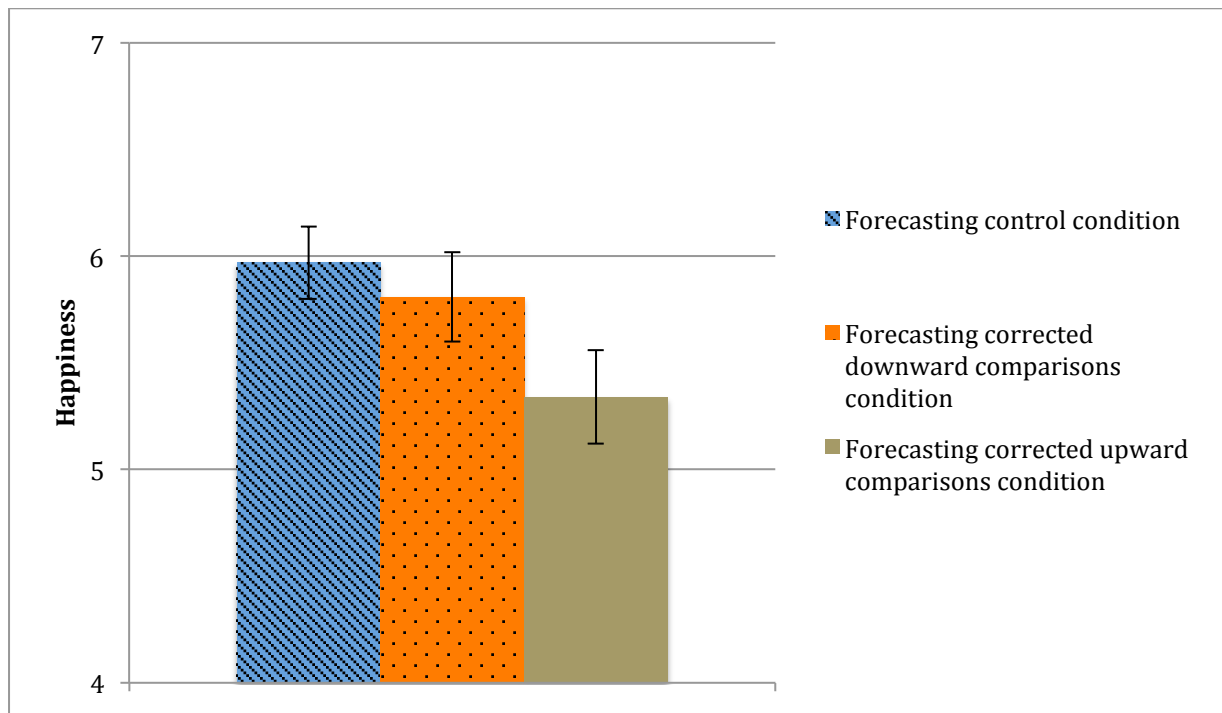
Figure 7. Forecasted and experienced happiness in Study 4.

Discussion

Studies 1 – 3 showed that forecasters overestimate their happiness after attaining high status because they underestimate the number of upward comparisons and overestimate the number of downward comparisons they will make after attaining high status positions.

Study 4 disentangled the impact of these two processes and showed that this forecasting error is caused by forecasters' underestimation of upward comparisons: confirming Hypothesis 4, forecasters whose tendency to underestimate upward comparison was corrected subsequently corrected their forecasted happiness, but forecasters whose

tendency to overestimate downward comparisons was corrected did not significantly lower their forecasted happiness after attaining high status positions.

High status experiencers compare with close and similar others (Festinger, 1954) and identify strongly with their high status peers (Ellemers et al., 1988; Petroff, 2010; Rivlin, 2007). Their forecasts of happiness after attaining high status are therefore particularly impacted by the unforeseen upward comparisons they make after attaining high status positions. Some downward comparison targets (very low status individuals) are distant for high status individuals and such downward comparisons should only have a minimal psychological effect on high status individuals (Tesser, 1988). In contrast, all upward comparisons targets are very close and should therefore have a strong psychological effect on high status individuals. In addition, a vast number of studies show that negative information outweighs the impact of positive information (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001) across various psychological domains. The current study suggests that this principle also applies to information used by high status experiencers.

This is particularly noteworthy given the relatively few opportunities participants in this study had to underestimate the number of upward comparisons. This forecasting error should be magnified in most real world forecasting situations that provide a much wider range of real and imaginary upward comparison opportunities.

Studies 1- 4 have examined the psychological process underlying this forecasting error in quite some detail. Study 5 seeks to understand this phenomenon in a related domain: people not only desire high status (Harsanyi, 1966; A. R. Smith, 1759), but also fear the prospects of status loss (Carson Marr & Thau, 2013) and are even more motivated by prospective status losses than by prospective status gains (Pettit, Yong, & Spataro, 2010). Study 5 therefore asks whether forecasters also overestimate how unhappy they will be after

losing status because they mispredict who they will compare themselves with after losing

status.

Study 5

Although people are motivated by their desire for high status (Frank, 1985; Loch et al., 2001), they also lose status when they receive less respect and recognition than they previously did. Status loss affects employees who are moved to less prestigious offices, but also Goldman Sachs partners who get demoted from their coveted high status positions (Craig, 2010), and whole professions such as lawyers and doctors who have lost much of the prestige they once had (A. Williams, 2008).

People exhibit strong negative reactions to status loss. When status loss occurs in organizations, these reactions include heightened distrust, performance anxiety and resentment (Neeley, 2013) or even organizational exit (Hambrick & Cannella, 1993). Status loss is also threatening to individual social identity and results in averse reactions that are physiologically detectable (Scheepers, Ellemers, & Sintemaartensdijk, 2009). These negative consequences suggest that the fear of losing status may be at least as strong a motivator as the desire for high status is. Recent research supports this intuition and demonstrates that the prospect of losing status has a stronger impact on people than the equivalent prospect of gaining status (Pettit et al., 2010).

Study 5 therefore explored whether mispredicted comparisons also cause forecasters to overestimate how unhappy they will be after losing status. According to the theory developed earlier, forecasters should continue to mispredict who they will compare themselves with. However, this social comparison forecasting error should occur in the opposite direction when forecasting status loss. Specifically, forecasters who predict status loss should now overestimate the number of upward comparisons they will make and underestimate the number of downward comparisons they will make, resulting in lower forecasted than experienced happiness.

Study 5 tested these predictions by adapting the existing experimental paradigm to the phenomenon of status loss.

Method

Participants. One hundred and seventeen participants were recruited from Amazon's Mechanical Turk participant pool and completed this study in return for $5 compensation. As in Studies 2 and 3, participants answered an open-ended question to describe how they chose their comparison targets. Ten participants wrote that they selected their comparison targets purely at random (i.e. "*It was selected at random.*", "*I picked them randomly*") and were not included in the analysis. Table E2 lists the responses of these 10 participants in full. One hundred and seven participants (58 females; mean age = 32.76, SD = 10.01) were therefore included in the analyses.

Study design. The design of Study 5 replicated that of Study 2 and employed a single factor design. Participants were randomly assigned to either the experience or forecasting condition.

Procedure. The procedure for both conditions closely mirrored that of Study 2 with only a few differences: most importantly, participants in both conditions now lost rather than gained status over the eight rounds of Tetris. Experiencers attained a high status rank in the Tetris performance ranking initially, received false feedback after every round, and attained a pre-determined low status rank after round eight (rank 26). Experiencers then reported their happiness and social comparisons at this low status rank.

Forecasters attained the same high status ranks as experiencers in the first three rounds and then forecasted attaining the same ranks that experiencers actually attained in each subsequent round. Forecasters then predicted their future happiness and social comparisons after attaining the same low status rank in round eight that experiencers actually attained.

Table E1 provides a detailed overview of how participants' ranks developed in this study. These ranks were predetermined according to a schedule that corresponded to the ranks attained by participants in Study 2. Participants in this study were instructed to make between six and eight social comparisons to decrease the range of comparisons participants made (from between five and ten in Study 2).

Measures. Participants filled in the same measures as in Study 2. The happiness measure again demonstrated high reliability (Cronbach's alpha = .95).

Results

Happiness forecasting error. I first examined the happiness measure to see whether forecasters indeed overestimated how unhappy they would be after attaining a low status position. The difference was not significant, suggesting that forecasters ($M = 2.37$; $SD = 1.56$) did not predict being unhappier than experiencers ($M = 2.35$; $SD = 1.27$) actually were, $t(105) = -.06, p = .95, \eta^2 < .001$ (see Figure 8).

Social comparison forecasting error. Replicating the characteristic pattern of mispredicted comparisons observed in Studies 1 - 3, forecasters again systematically mispredicted who they would compare themselves with after losing status, but in the opposite direction. Forecasters ($M = 7.19, SD = 1.31$) who forecasted losing status now overestimated the number of upward comparisons they would make relative to experiencers ($M = 5.72, SD = 1.65$), $t(105) = -5.14 \, p < .001, \eta^2 = .20$. Conversely, forecasters ($M = .60, SD = 1.12$) who forecasted losing status now underestimated the number of downward comparisons they would make relative to experiencers ($M = 1.26, SD = 1.55$), $t(105) = 2.56 \, p = .01, \eta^2 = .06$ (see Figure 9). Forecasters ($M = 7.00, SD = .37$) made slightly more comparisons, than experiencers ($M = 6.68, SD = .62$), $t(105) = -3.29, p = .001$.
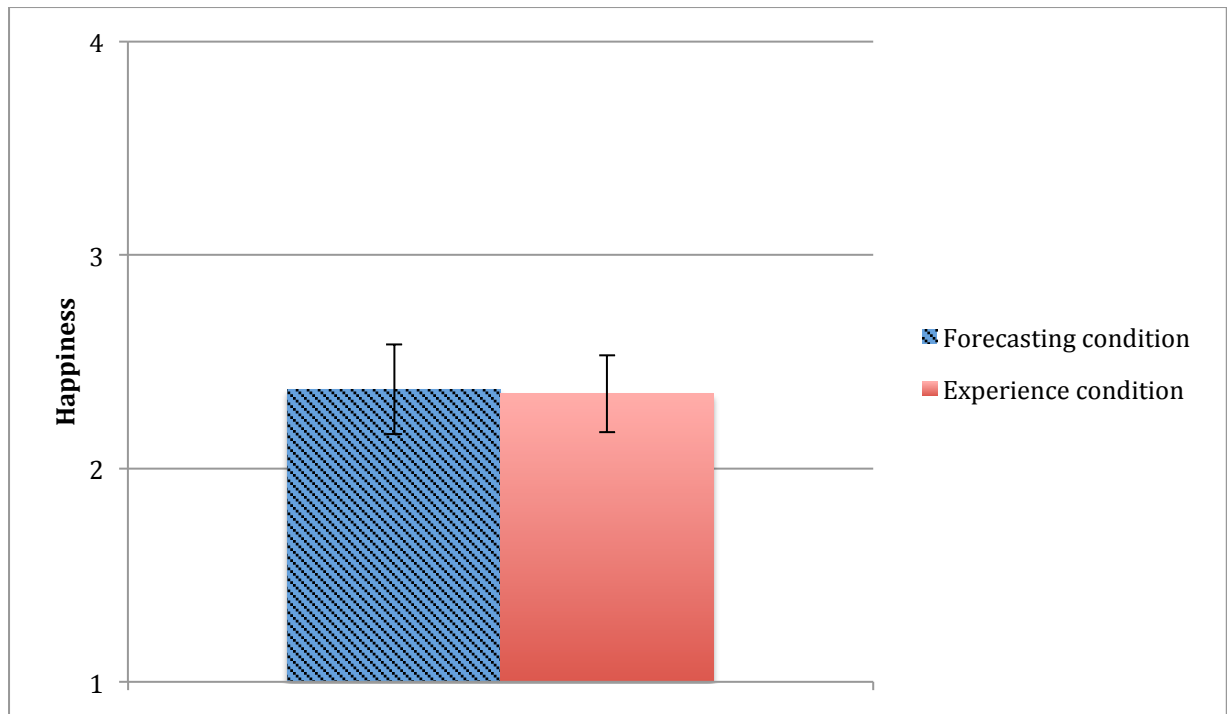
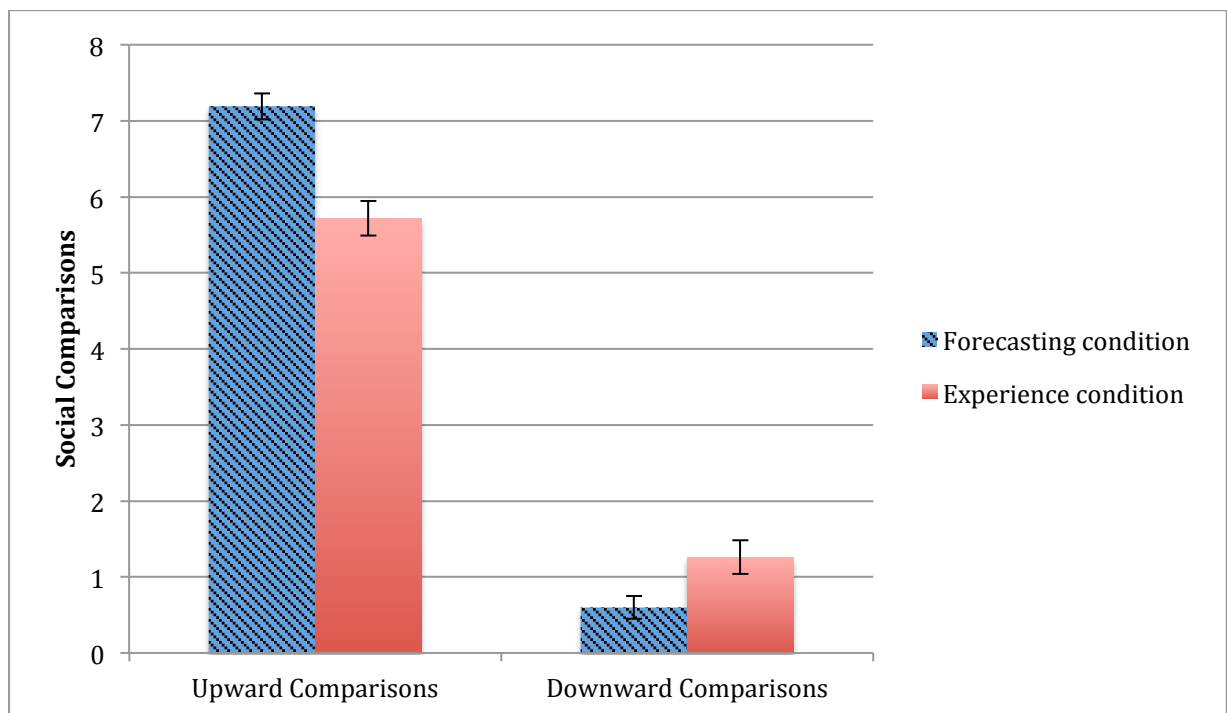*Figure 8.* Forecasted and experienced happiness in Study 5.

Figure 9 . Forecasted and actual social comparisons in Study 5.

Discussion

Study 5 examined this phenomenon in the domain of status loss by asking whether forecasters also overestimate unhappiness because they mispredict who they will compare themselves with. Contrary to expectations, forecasters did not overestimate their unhappiness after losing status.

One explanation why forecasters in this study did not overestimate their unhappiness would be if forecasters did not mispredict their comparison targets when forecasting status loss. In contrast to this explanation, and as predicted by the theory developed earlier, forecasters still committed the social comparison forecasting error, and in the opposite direction: when predicting status loss, forecasters now overestimated the number of upward comparisons and underestimated the number of downward comparisons they would make relative to low status experiencers. Thus, forecasters continued to mispredict their comparison targets after losing status and forecasted comparisons therefore do not explain why I did not observe the happiness forecasting error in this study.

These mispredicted comparisons should therefore lower forecasted happiness relative to experienced happiness, resulting in a happiness forecasting error. However, I may not observe a happiness forecasting error if another unforeseen psychological process lowers experiencers' happiness. Recent research by Carson Marr and Thau (2013) shows that self-threat has a strong effect on people's aversive experience of status loss. According to Carson Marr and Thau (2013), self-threat is especially impairing for those who fall from high to low status positions, such as the experiencers in this study. Unforeseen self-threat could therefore

explain why forecasters mispredict their future comparison targets, yet not overestimate their

unhappiness after status loss.

This forecasting error could also be expected for another reason, making the results of

this study quite surprising: forecasters often do not consider that intensely negative events

trigger positive psychological reactions which increase experienced happiness, resulting in

lower forecasted than experienced happiness (Gilbert et al., 1998). However, these coping

mechanisms are only triggered by intensely negative events which may have not been

induced by the experimental paradigm used in the current study. Finally, this lack of a

forecasting error could also be caused by a floor-effect since experiencers' ($M = 2.35$; $SD =$

1.27) reported happiness was already very low.

In sum, Study 5 provided robust support for the theoretical predictions of the social

comparison forecasting error but found no support for the happiness forecasting error.

Chapter 3. General Discussion

The current research was motivated by the observation that people tend to overestimate their happiness from attaining high status positions (Petroff, 2010; Rivlin, 2007). The desire for status motivates much of human behaviour (Frank, 1985; Harsanyi, 1966; A. R. Smith, 1759) and its pursuit can be particularly detrimental to other human needs (Baumeister & Leary, 1995) because of the high opportunity costs associated with it. The current research therefore sought to answer two questions that are particularly relevant given these implications of status-seeking behaviours: Do people overestimate their future happiness from attaining high status positions? And if they do, what explains this persistent happiness forecasting error?

Summary of Research Findings

Three studies, conducted both in the field and in experimental settings, and across different status domains, consistently demonstrated the same pattern of results: first, people overestimated how happy they will be after attaining high status positions, whether they forecasted high status positions in a real world domain they care about (Study 1) or whether they forecasted high status position, in the broadly applicable status domain of general intelligence (Studies 2 & 3). Second, forecasters also systematically mispredicted who they would compare themselves with: specifically, forecasters underestimated the number of upward comparisons, and overestimated the number of downward comparisons they would make after attaining high status positions (Studies 1 - 3). Third, Study 3 supported the hypothesis that forecasters overestimate their happiness after attaining high status because they mispredict who they will compare themselves with. Forecasters that accurately predicted making the kinds of comparisons that high status experiencers actually make significantly improved the accuracy of their forecasted happiness after attaining high status (Study 3). Furthermore, Study 4 disentangled the effects of underestimating the number of upward

comparisons from overestimating the number of downward comparisons. The results showed that forecasters overestimated their happiness after attaining high status because they underestimated the number of upward comparisons, but not because they overestimated the number of downward comparisons (Hypothesis 4). Study 5 finally demonstrated this phenomenon in the domain of status loss: when forecasting status loss, forecasters continue to mispredict who their future comparison targets will be, but in the reverse direction such that forecasters overestimate the number of upward comparisons and underestimate the number of downward comparisons they will make after losing status. However, forecasters did not overestimate how unhappy they will be after losing high status.

Theoretical Contributions

This research draws on, and contributes to, literatures on status (Magee & Galinsky, 2008), social comparisons (Buunk & Gibbons, 2007; Festinger, 1954), and affective forecasting (Wilson & Gilbert, 2005) to explain why forecasters overestimate their happiness after attaining high status. I believe the most important theoretical contribution from this research lies at the intersection of the social comparison and affective forecasting literature. I first briefly describe the contribution at the intersection of these two literatures below, and then discuss individual contributions to these literatures separately.

The affective forecasting and social comparison literature seek to explain two fundamental human concerns: first, the affective forecasting literature examines how and why people constantly think about the future (Markus & Nurius, 1986) and create detailed mental previews of it in anticipation of future happiness (Gilbert, 2006). The literature on social comparisons on the other hand examines a similarly fundamental aspect of social life and asks how other people influence our current thoughts, feelings, and behaviour (Buunk & Gibbons, 2007; Buunk & Mussweiler, 2001). To the best of my knowledge, this is the first research to examine how mispredicted future comparisons can result in affective forecasting

errors.

This research integrates the concerns that lie at the intersection of these two fields: First, the current research integrated social comparisons into the affective forecasting literature. Although comparisons clearly matter for our happiness in the present (Hakmiller, 1966; Morse & Gergen, 1970; Wills, 1981), the affective forecasting literature seemingly has not yet considered how they may bias forecasts of the future. The studies described in the current research therefore complement classic affective forecasting studies (Gilbert et al., 1998; Schkade & Kahneman, 1998) by explicitly isolating the effects of mispredicted social comparisons on forecasted happiness. Second, the social comparison literature spans decades (Buunk & Gibbons, 2007; Buunk, Oldersma, & de Dreu, 2001) and has demonstrated the extensive effects of comparisons with others in the present, but has overseen the fact that we are not only influenced by the comparisons of the present, but that we are also strongly motivated by the comparisons we hope to make in the future.

I suggest that we can advance our understanding of affective forecasting errors by complementing the current, cognitive focus of the affective forecasting literature with a stronger focus on the social dimension of life. In the current research I specifically suggest that forecasters also simplify and mispredict the nature of their future relationships with others. In the empirical context studied here this changing nature of forecasted relationships is instantiated by the kinds of social comparisons people predict making with others. This provided an appropriate initial empirical setting because social comparisons can be easily measured, even if social comparisons only provide limited possibilities for exploring social relationships as a source of affective forecasting errors. Future studies with richer relational constructs are needed to examine relationships as a source of forecasting errors beyond simple social comparisons.

The current research lies at the intersection of these two literatures. By considering

future relationships as a source of affective forecasting errors, this research can motivate new research in answer to the following, broadly formulated question: "How will I feel about my future self in relation to others?". This broad question applies people's fundamental concerns about their social relationships to a wide range of forecasting situations and can result in future research with both practical and theoretical value.

Affective forecasting literature.

Early affective forecasting studies were first conducted by scholars steeped in the field of cognitive decision-making (J. Baron, 1992; Kahneman & Snell, 1992; Wilson & Gilbert, 2003) who were only tangentially interested in social decision-making and therefore ignored future relationships as a source of affective forecasting errors. This research therefore first contributes to the affective forecasting literature by highlighting social relationships as a novel source of affective forecasting errors.

Theoretically, the affective forecasting literature therefore does not distinguish between the mental representation of other people and the mental representation of any other external object. People supposedly influence affective forecasts just like any other external object, depending on the ease with which they feature in the mental representations of the future. But reducing other people to separate entities ignores the fundamental feature that grants others so much influence on our happiness in the first place (Helliwell & Putnam, 2004): the kind of social relationships people have with them.

Integrating these two literatures can shed light on currently understudied factors that shape future relationship quality and happiness. For example, relationships suffer if forecasters take the wrong decisions today to satisfy their mispredicted relationship desires of the future. Future research could ask when and why such forecasting errors cause people to stay in the wrong relationship, or fail to end a deteriorating relationship. Outside their very close and intimate relationships, people also have a general need to belong to larger social

groups (Baumeister & Leary, 1995). Research in this area can inform our understanding of social exclusion in such larger groups by asking when mispredicting the nature of future relationships biases investments in these groups, and increases the risk of social exclusion.

Research in this area is important because mispredicted future relationships can lower future happiness. Forecasting errors about the nature of forecasters' future relationships may bias forecasters' investments in current relationships, resulting in worsened future relationships, and lower levels of happiness.

Social comparison literature.

Second, I believe this research also has important implications for the literature on social comparisons by introducing a temporal dimension to the field of social comparisons. An extensive body of literature documents that people care about the social comparisons in the present (Buunk & Gibbons, 2007; Festinger, 1954). However, people are oftentimes not fully aware of the present moment (Killingsworth & Gilbert, 2010) and instead think about the past, and even more so about the future (Markus & Nurius, 1986). People should therefore not only be influenced by the comparisons they make in the present, but should also be guided by the social comparisons they predict to make in the future. This occupation with favorable future comparisons is evident even in simple statements when people say they need to work hard to keep up with, and get ahead of, the proverbial Joneses (Boss, 2006; Frank, 1999) that surround them on a daily basis.

However, introducing a temporal dimension to the field of social comparisons has broader implications than just this forecasting error in the domain of future high status, and should extend to happiness in any other domain in which social comparisons are relevant, such as income (Hagerty, 2000) health, (Bogart & Helgeson, 2000; Wood et al., 1985), relationships (Buunk & van Yperen, 1991), jobs (D. J. Brown et al., 2007) and careers (M. C. Higgins et al., 2008). Mispredicting future social comparisons should therefore lead to

affective forecasting errors in any domain in which people make social comparisons with others.

For example, people may be misguided if they mispredict the kinds of dimensions they will compare themselves on in the future. A young MBA graduate might be attracted to investment banking by the very favorable salary comparisons this career offers, only to find that she actually compares herself on dimensions that the investment banking job does not fare favorably on, such as number of working hours per week. Forecasters might also mispredict the overall importance they attach to favorable social comparisons: a graduate from a competitive MBA program might therefore overestimate how much social comparisons with peers will matter at all and therefore attach too much importance to job opportunities that result in generally favorable relative comparisons.

Status and happiness literature.

The current research was motivated by the observation that people seemingly overestimate happiness from high status (Petroff, 2010; Rivlin, 2007) and therefore also speaks to both the status and happiness literature.

First, this research also contributes to the status and happiness literatures by demonstrating that our status strivings can be misguided in terms of expected happiness. The desire for status is so central and motivates so much of human behaviour (A. R. Smith, 1759) that it is important to ask whether people's status strivings result in the happiness gains they expect to materialize. Convergent evidence across the several studies presented here suggests that forecasters overestimate their happiness after attaining high status. This overestimation of happiness helps explain why status is such a strong motivator of human behaviour, both at work (Loch et al., 2001) and in other areas of life (Frank, 1985; Veblen, 1899).

The pervasive need for status is evident and well-documented (Loch et al., 2001). More recent status studies seek to understand how the attainment of high status can influence

psychological and behavioural responses (Akinola & Mendes, in press), and perceptions and judgment (Pettit & Sivanathan, 2012). Although important, it could be argued that changes in status are rare and that their effects may level off over time. The current research on the other hand attempted to shed some light on what may be seen as a psychological constant, yet underresearched topic: the mental representation underlying people's desire for status. Currently we know relatively little about how exactly people mentally represent status (Chiao, Bordeaux, & Ambady, 2004; Zink et al., 2008), and the current research documents how this mental representation of status can misguide people's desire for status.

This research also speaks to the literature on happiness. Psychologists often note that people seek happiness in all the wrong places (Gilbert, 2006; Haidt, 2006) and so positive psychologists (Lyubomirsky, 2007; Seligman, 2002) and scholars of subjective well-being (Diener & Biswas-Diener, 2008) have identified several factors and activities that consistently increase personal happiness. These interventions are effective (Lyubomirsky, Sheldon, & Schkade, 2005), but people are unlikely to try them if they overestimate their happiness from other activities, such as seeking high status. The current research contributes to the literature on happiness and subjective well-being therefore by identifying one specific wrong place, at the top of a status hierarchy. Making people aware of their biased predictions through findings from the current research may help forecasters seek happiness in those interventions that reliably do increase happiness (Lyubomirsky et al., 2005).

Practical Implications

Implications for individuals. This research asked whether people overestimate happiness from future high status positions. According to Mellers (Mellers et al., 1999; Mellers & McGraw, 2001), this also implies that people overinvest time spent on status-seeking activities. A key to happiness is to spend not only one's money (Dunn, Gilbert, & Wilson, 2011), but also one's time wisely (Aaker, Rudd, & Mogilner, 2011). Since status

seeking is costly in terms of time and money, it has high opportunity costs for other activities that reliably increase personal happiness (Lyubomirsky et al., 2005), such as investments in social relationships with others (Diener & Seligman, 2002). In terms of interventions, forecasters should primarily be advised of their tendency to underestimate the number of upward comparisons they will make after attaining high status rather than their tendency to overestimate the number of downward comparisons they will make after attaining high status.

Future applications from this research may allow people develop better relationships by identifying ways to more accurately predict the future nature of their relationships, and therefore make better decisions about their current relationships.

This research therefore has important practical implications for individuals because it can help them adjust their status-seeking behaviour in light of more accurate forecasted happiness (Freud, 1930; Gilbert, 2006; Mellers et al., 1999; Mellers & McGraw, 2001). It is hoped that lessons from this research can help people make better choices (Loewenstein, 2007) by providing a more accurate understanding of how much happiness they will derive from future high status positions, and helping them prioritize their daily activities accordingly (Aaker et al., 2011).

Implications for organisations. This research also has important implications for organisations which increasingly seek to increase employee motivation by providing non-monetary, status incentives at very low financial costs (Besley & Ghatak, 2008; Loch et al., 2001; Loch, Huberman, & Stout, 2000). The main conclusion from this research is that forecasters overestimate their happiness from attaining high status positions. Forecasters should therefore adjust their behaviour according to the lower forecasted emotional payoff (Mellers et al., 1999; Mellers & McGraw, 2001; Mellers, Schwartz, Ho, & Ritov, 1997) that high status brings them.

This conclusion does not necessarily need to lower employee motivation however if

organisations use it to their advantage: Knowing that individuals overestimate their happiness from attaining high status positions, organisations may want to foster status competitions among their employees, who make their work and behaviour contingent on forecasted happiness (Mellers et al., 1997; 1999; Mellers & McGraw, 2001).

Further research in this applied domain could seek to specify the exact features of status hierarchies that maximise employee motivation, for example by increasing the number of positions in a status hierarchy.

Limitations and Boundary Conditions

The current research explains why people overestimate happiness after attaining high status through field and experimental studies, but these findings need to be interpreted with caution. Some limitations of the current research are discussed in this section. I first discuss two apparent weaknesses of this research, before addressing its actual limitations and boundary conditions in more detail below.

Individuals in this research only forecast their happiness after attaining high status within a single status hierarchy. A hallmark of modern societies is that people spend much of their lives as members of various organisations and institutions (Scott & Davis, 2007). One could therefore call for empirical contexts that more closely resemble the real world's multiple groups and organisations and allow for forecasts across several status hierarchies. This would certainly enhance the face validity of this research. And because status is afforded based on the values of the group (Magee & Galinsky, 2008), people can occupy very different status positions in their companies, sports clubs, religious institutions, and universities (but see Berger, Fisek, Norman, & Zelditch, 1977).

To complicate this reality of several group memberships even further, these organisations are oftentimes themselves rank-ordered according to their group or institutional status. Membership in most organisations therefore also constitutes membership in at least

two types of status hierarchies: first, one's position within the organisation's status hierarchy, and second that organisation's position in a hierarchy of organisations that themselves compete for status. A tradeoff usually exists since higher status organisations typically attract more competent members and a person's intragroup status should therefore be lower in the high versus low status organisation. These two apparent concerns invite the question whether the findings of the current research are limited by the focus on just one single status hierarchy.

The empirical setting I employ in the current research ignores these apparent complications of group status to clearly isolate why people overestimate their happiness from gaining high status within a single status hierarchy. I argue that these concerns are not valid because the mechanism described in this research should explain forecasting errors even when taking group status hierarchies into account: forecasters underestimate upward and overestimate the downward comparisons they will make, resulting in higher forecaster than actual happiness.

When taking group status into account, forecasters should again predict making mostly downward comparisons with those currently close and similar to them (the other members of the current low status organisation), and underestimate the number of upward comparisons they will make with future high status others (the other members of the future high status organisation). Zell and Alicke's (2009) research on context neglect suggests that the forecasting error would be even bigger because forecasters who attain membership in high status groups subsequently fail to consider the high status of their group and only compare with other members of the high status group. And because higher status groups attract more competent members, their status within the group should be relatively low, resulting in more of the self-threatening upward comparison targets and fewer self-enhancing downward comparison targets than they would have made within a lower status group.

The mechanism described in the current research should therefore also apply when forecasters predict comparisons across various groups that are themselves rank-ordered on a hierarchy of group status. Future research should examine whether the tradeoff between group and individual status indeed magnifies the happiness forecasting error as my theory would predict.

However, important concerns about some aspects of the current research need to be discussed. This study is first limited in the relatively narrow scope to which these findings can be applied with confidence. Most psychological effects are multiply determined (Stanovich, 2004) and it is therefore likely that the mechanism described here is not the only mechanism that causes forecasters to overestimate happiness after attaining high status. Although Study 3 specifically demonstrated that mispredicted comparisons alone suffice to cause this forecasting error, other psychological mechanisms may occur simultaneously in most real world settings. For example, high status in many real world settings is highly correlated with other constructs that are also desirable such as power (Magee & Galinsky, 2008), or money (Frank, 1999; Turke & Betzig, 1985). In the current research I created a very clearly defined empirical context that isolated the effects of only forecasted status on forecasted happiness in these situations. This research neither allows conclusions on the extent to which these other factors influence forecasts of high status, nor on forecasts of people who attain high status positions as a result of high levels of intrinsic motivation.

Second, findings from this research apply to happiness derived from high status specifically, as opposed to general life satisfaction. The dependent measures in this research ask experiencers specifically about their current happiness with their high status position and forecasters about their future happiness with their future high status positions (Table A1). This allowed me to isolate the happiness derived from high status positions from general happiness that is influenced by a wide range of other factors. The dependent measures in this

study are therefore robust to recent criticism of broad and general measures of in some affective forecasting studies (Levine et al., 2012), but are also limited in external validity and scope.

Third, people may overestimate happiness from high status because they may never consider certain aspects related to high status positions, that are unknown to them. High status positions are oftentimes not only correlated with power (Magee & Galinsky, 2008), or money (Frank, 1999; Turke & Betzig, 1985), they also require more responsibility in many organisational settings. For example, a young Ph.D. graduate may overestimate her happiness after attaining the high status position of a tenured professor not only because of the status mechanism explained in this research, but also because she does not clearly envision the additional tasks and responsibilities associated with such a position. In the studies presented here, I therefore isolated the effects of only forecasted status on happiness with high status positions.

Finally, the current research focussed on establishing this phenomenon and explaining the underlying psychological mechanism when low status individuals forecast attaining high status positions. It could be argued that such status gains from low to high status positions are rare and unlikely, and that it would be more relevant to demonstrate this forecasting error for those in moderately high status positions. Some research (Phillips & Zuckerman, 2001) and anecdotal evidence (Packard, 1959) suggests that status is most motivating to those who are just about to attain it: the upward strivers of the middle and semi-upper class. According to the results of Study 4, the magnitude of the forecasting error should be relatively independent of initial rank and the number of ranks that are surpassed on the way to the top, since the forecasting error is caused by underestimation of upward comparisons.

Finally, people also seek status in groups that differ in size and the group size in the empirical context examined here may not be perfectly representative: real world groups are

oftentimes both bigger when people seek status on a country-wide or even global level, or smaller when people seek status in small, intimate work groups. According to my theory, the same mechanism should hold when forecasting happiness from high status in much larger groups, but may apply differently to small groups. Forecasters should be able to predict more accurately who they will compare themselves with in small groups, simply because there are fewer comparison targets when groups are small. On the other hand, comparisons with friends and close acquaintances have a much stronger influence than comparisons with strangers (Tesser, 1988), so fewer mispredicted comparisons in such small groups may be offset by the bigger impact every mispredicted comparison has. These are important questions and concerns that should be addressed in future research.

Future Directions

These current studies provide potentially interesting avenues for future research. In this section I only focus on research ideas which build on the basic observation that forecasters mispredict who they will compare themselves with in the future. I discuss three selected research ideas below.

Mispredicted temporal comparisons. Mispredicted comparisons may lead to affective forecasting errors in yet another way than the mechanism described in the current research. People can either make social comparisons with others (Festinger, 1954) or temporal comparisons with their past (Albert, 1977) and future selves. People oftentimes seem to forecast their feelings by envisioning the difference between their future and their current self, even if social comparisons outweigh temporal comparisons most of the time in the present (Suls, 1986). Comparisons may therefore also be misguiding when forecasters predict their future through temporal comparisons between future and current self, yet experience this future through social comparisons with future others.

People may commit this forecasting error because it should be easier to forecast the

future based on temporal comparisons, yet easier to experience the present based on social comparisons. Future temporal comparisons may be easier to construct than future social comparisons because social comparisons require the additional mental representation of future comparison targets. Forecasters may therefore not only mispredict who they will compare themselves with as shown in the current research, they may not predict social comparisons at all because doing so is cognitively difficult. This should be especially the case in situations in which social comparisons and status competitions are less salient. For example, imagine a young doctoral student predicting his future life after graduation, and expecting a new life with a first salary. His mental representations of his future living situation may seem very positive based on the temporal comparisons between his current and his future apartment, even if his assessment of the current living situation is negative largely based on upward social comparisons with others.

Forecasters may therefore predict making temporal comparisons when simple changes from the current situation (a current room now versus a room tomorrow) can be easily imagined. Experiencers however are likely to draw more on social than on temporal comparisons when they actually experience this situation (Suls, 1986), because social comparisons happen effortlessly (Gilbert, Giesler, & Morris, 1995), whereas temporal comparisons require additional cognitive effort through memory retrieval. The student therefore finds it easy to foresee the future through temporal comparisons, but difficult to experience it through these temporal comparisons. His experience of the room is likely again based on social comparisons with other rooms, and not on a contrast between the reality of the new room and the memory of the old room.

Mispredicted comparisons may therefore also misguide people's forecasts when they predict the future based on temporal comparisons, yet experience the present through social comparisons.

Mispredicted social comparisons cause unethical behaviour. The forecasting error examined in the current research can be costly for individual happiness if status-seeking behaviour prevents individuals from other activities that are known to reliably increase happiness (Aaker et al., 2011; Helliwell & Putnam, 2004; Lyubomirsky et al., 2005). However, status-seeking may also be costly for others when people engage in unethical behaviour and cheat on their way to the top. In a future study I plan to examine whether providing participants with the correct kinds of comparisons reduces unethical behaviour.

Examples of unethical behaviour abound, for example in sports, where amateur marathon runners employ various modes of transport to help them make it to the finish line, from taxis to bikes and motorcycles (Branigan, 2010; Singer, 2012). Similarly, both leaders in business and academia (Wade, 2012) sometimes behave unethically, oftentimes directly motivated by their desire for higher status (Stapel, 2012).

Organisations use status strategically to increase employee motivation (Loch et al., 2001) because the desire for status is a strong motivator at work (Loch et al., 2001; 2000). However, status competitions may be particularly conducive to unethical behaviour because status competitions are zero sum games where one person's gain, is another person's loss. These examples of unethical behaviour on the way to the top suggest that fostering even more competitions for status can be dangerous and have undesirable consequences.

Based on these observations I intend to examine the following question in future research: How can organisations maximise employee motivation yet keep their employees from engaging in unethical behaviours? Study 3 demonstrated that providing forecasters with an accurate preview of the kinds of comparisons they will make lowers their forecasted happiness, and presumably their motivation to engage in unethical behaviour to attain high status (Mellers et al., 1999; Mellers & McGraw, 2001). Importantly, lowering status-induced motivation to engage in unethical behaviours does not necessarily lower motivation to

perform: an employee's motivation to perform for high status may instead be compensated for by the desire to satisfy intrinsically motivating needs (Deci & Ryan, 1985; 2000), or intrinsically motivating goals such as mastery (Dweck, 1986).

I therefore seek to test whether correcting participants' forecasted comparisons reduces their unethical behaviour, whilst also keeping their motivation to perform at a high level. This would help organisations increase job performance and minimize unethical behaviour and contribute theoretically to the literatures on behavioral ethics, affective forecasting, and work motivation.

Mispredicted social comparisons and learning. Do forecasters who overestimate their happiness from high status positions learn from their experience, or do they continue to overestimate happiness from attaining even higher status positions afterwards? The mechanism I proposed in the current research is ambivalent about this question as long as forecasters have higher status positions to aspire to. Forecasters may therefore continue to overestimate happiness from even higher status positions because they mispredict who they will compare themselves with after attaining higher status.

People may find it difficult to learn from these experiences because forecasters' need to simplify information may cause them to mentally split up continuous rankings into smaller, more meaningful subgroups on their way to the top. People simplify information by chunking it into more manageable pieces (Miller, 1956) and by detecting patterns even when none exist (Gilovich, Vallone, & Tversky, 1985). Applying this to the situation of rankings, we see that forecasters might therefore mentally divide such rankings into chunks of meaningful subgroups, such as the Top 10 or Top 20. This tendency is confirmed by studies which show that social comparisons induce competition among those ranked close to salient subgroups. For example, social comparisons induce competitions among those ranked 10 and 11, but not among those ranked 210 and 211 (Garcia, Tor, & Gonzalez, 2006).

Forecasters may also have such groups in mind when envisioning the attainment of even higher status positions. However, there may be an important difference between people's mental representations of these groups and their actual experience of them. Forecasters may construe these groups as unified entities because they envision future situations in essentialized and abstract ways (Trope & Liberman, 2003). A student may therefore construe high status as attaining a top 20 rank because he construes the top 20 as a unified group from his current, lower status position.

However, people construe more detailed representations of events as they experience them (Gilbert & Wilson, 2007; Trope & Liberman, 2010). After attaining a high status position among the Top 20, a student may therefore begin to perceive the Top 20 as consisting of several subgroups, for example a top and a bottom half. This distinction of linear rankings into subgroups may have a strong influence on the student's experience of this high status position, but may not be clear to the student when forecasting this future situation of high status. This shifting perspective from perceiving subgroups as unified entities towards meaningful subgroups can make happiness a moving target because the top ten may again be perceived as one group initially and as a top and a bottom half subsequently.

A natural extension of the current research is therefore to ask why people seemingly continue to overestimate their future happiness after attaining high status positions. I suggest that people may not learn from such experiences because they forecast high status positions as membership in uniform groups, and only perceive smaller subgroups, and react to these additional status distinctions when they experience high status.

Conclusion

This research sought to answer the question of whether and why people overestimate their happiness after attaining high status positions. Three studies show that forecasters

overestimate their happiness after attaining high status because they systematically

mispredict who they will compare themselves with: forecasters underestimate the number of

upward, and overestimate the number of downward comparisons they will make after

attaining high status positions. Furthermore, Study 4 demonstrated that this happiness

forecasting error is caused by forecasters' underestimation of upward comparisons. Study 5

explored this phenomenon in the domain of status loss.

This research sought to incorporate a social dimension into the affective forecasting

literature and broaden its scope by explaining how mispredicting the nature of future

relationships can be a source of affective forecasting errors. The current research also

introduces a temporal dimension to the study of social comparisons by showing that people

are not only influenced by the social comparisons of the present, but that they are also guided

by the social comparisons they hope to make in the future. Importantly, forecasters

mispredict these future social comparisons according to systematic patterns. One contribution

of this research therefore lies at the intersection of the affective forecasting and social

comparison literature. It is hoped that the current research can open up new avenues for

future research.

The ability to accurately predict future comparisons is important to lead happy, self-

directed lives because comparisons can affect people in surprising ways: they help people

through times of tragedy, for example when diagnosed with cancer (Wills, 1987; Wood et al.,

1985), and sadden them when their rise to the top of a status hierarchy should give them

every reason to be joyous (Petroff, 2010; Rivlin, 2007). This research can help forecasters

make better informed decisions by providing a more accurate understanding of how

mispredicted comparisons bias their affective forecasts of future high status positions.

References

Aaker, J. L., Rudd, M., & Mogilner, C. (2011). If money does not make you happy, consider time. *Journal of Consumer Psychology*, *21*(2), 126–130.

Activision. (2013, February 7). Activision Blizzard Fourth Quarter 2012 results. Santa Monica, CA: Activision Blizzard.

Akinola, M., & Mendes, W. B. (in press). It's good to be the king: Neurobiological benefits of higher social standing. *Social Psychological and Personality Science*.

Albert, S. (1977). Temporal comparison theory. *Psychological Review*, *84*(6), 485–503.

Alicke, M. D., LoSchiavo, F. M., Zerbst, J., & Zhang, S. (1997). The person who outperforms me is a genius: Maintaining perceived competence in upward social comparison. *Journal of Personality and Social Psychology*, *73*(4), 781–789.

Allport, G. W. (1954). The historical background of social psychology. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (Vol. 1, pp. 1–46). New York: Random House.

Anderson, C., & Kilduff, G. J. (2009). The pursuit of status in social groups. *Current Directions in Psychological Science*, *18*(5), 295–298.

Aspinwall, L. G., & Taylor, S. E. (1993). Effects of social comparison direction, threat, and self-esteem on affect, self-evaluation, and expected success. *Journal of Personality and Social Psychology*, *64*(5), 708–722.

Bagwell, L. S., & Bernheim, B. D. (1996). Veblen effects in a theory of conspicuous consumption. *The American Economic Review*, *86*(3), 349–373.

Bakshi, G. S., & Chen, Z. (1996). The spirit of capitalism and stock-market prices. *The American Economic Review*, *86*(1), 133–157.

Bales, R. F. (1950). *Interaction process analysis: A method for the study of small groups*.

Cambridge, MA: Addison-Wesley.

Barkow, J. (1975). Prestige and culture: A biosocial interpretation. *Current Anthropology*, *16*(4), 553–572.

Barkow, J. (1989). *Darwin, sex, and status: Biological approaches to mind and culture*. Toronto: University of Toronto Press.

Baron, J. (1992). The effect of normative beliefs on anticipated emotions. *Journal of Personality and Social Psychology*, *63*(2), 320–330.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529.

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, *5*(4), 323–370.

Bazerman, M. H., Bount White, S., & Loewenstein, G. F. (1995). Perceptions of fairness in interpersonal and individual choice situations. *Current Directions in Psychological Science, 4*, 39–43.

BBC News. (2005, August 10). South Korean dies after games session. *BBC*. Retrieved March 13, 2013, from http://news.bbc.co.uk/go/pr/fr/-/1/hi/technology/4137782.stm

BBC News. (2011, November 22). Chinese online gamer dies after three-day session. *www.bbc.co.uk*, pp. 1–1. Retrieved from http://www.bbc.co.uk/news/world-asia-pacific-12541769

Bentham, J. (1781). *An introduction to the principles of morals and legislation*. Mineola, NY: Dover Publications.

Berger, J., Fisek, M. H., Norman, R., & Zelditch, M. (1977). *Status characteristics and social interaction*. New York: Elsevier.

Besley, T., & Ghatak, M. (2008). Status incentives. *The American Economic Review*, *98*(2), 206–211.

Bogart, L. M., & Helgeson, V. S. (2000). Social comparisons among women with breast cancer: A longitudinal investigation. *Journal of Applied Social Psychology*, *30*(3), 547–575.

Boss, S. (2006). *Green with envy: Why keeping up with the Joneses is keeping us in debt*. New York: Warner Business Books.

Branigan, T. (2010, January 22). Thirty runners disqualified from Chinese marathon for cheating. *The Guardian*, p. 1.

Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative? *Journal of Personality and Social Psychology*, *36*(8), 917–927.

Brown, D. J., Ferris, D. L., Heller, D., & Keeping, L. M. (2007). Antecedents and consequences of the frequency of upward and downward social comparisons at work. *Organizational Behavior and Human Decision Processes*, *102*(1), 59–75.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822–848.

Buss, D. M. (2004). *Evolutionary psychology: The new science of the mind* (2nd ed.). Boston, MA: Pearson.

Buunk, A. P., & Gibbons, F. X. (2007). Social comparison: The end of a theory and the emergence of a field. *Organizational Behavior and Human Decision Processes*, *102*(1), 3–21.

Buunk, A. P., & Mussweiler, T. (2001). New directions in social comparison research.

European Journal of Social Psychology, *31*(5), 467–475.

Buunk, A. P., & van Yperen, N. W. (1991). Referential comparisons, relational comparisons, and exchange orientation: Their relation to marital satisfaction. *Personality and Social Psychology Bulletin*, *17*(6), 709–717.

Buunk, A. P., Oldersma, F., & de Dreu, C. K. W. (2001). Enhancing satisfaction through downward comparison: The role of relational discontent and individual differences in social comparison orientation. *Journal of Experimental Social Psychology*, *37*(6), 452–467.

Bülow, Von, B. (1897). Deutschlands Platz an der Sonne. In J. Penzler (Ed.), *Fürst Bülows Reden nebst urkundlichen Beiträgen zu seiner Politik.* (pp. 6–8). Berlin, Germany: Verlag Georg Reimer.

Carson Marr, J., & Thau, S. (in press). Falling from great (and not so great) heights: How initial status position influences performance after status loss. *Academy of Management Journal*.

Chanal, J. P., Marsh, H. W., Sarrazin, P. G., & Bois, J. E. (2005). Big-fish-little-pond effects on gymnastics self-concept: Social comparison processes in a physical setting. *Journal of Sport and Exercise Psychology*, *27*(1), 53–70.

Chatman, J. A., & Flynn, F. J. (2005). Full-Cycle Micro-Organizational Behavior Research. *Organization Science*, *16*(4), 434–447.

Chiao, J. Y., Bordeaux, A. R., & Ambady, N. (2004). Mental representations of social status. *Cognition*, *93*(2), B49–B57.

Craig, S. (2010, September 12). At Goldman, partners are made, and unmade. *The New York Times*, p. A1.

Creswell, A. (2007, August 4). Medical imposters. *The Australian*, pp. 1–3.

Cummins, D. (2007). Dominance, status, and social hierarchies. In D. M. Buss (Ed.), *The

handbook of evolutionary psychology (pp. 676–697). Hoboken, NJ: Wiley.

Damisch, L., Mussweiler, T., & Plessner, H. (2006). Olympic medals as fruits of comparison? Assimilation and contrast in sequential performance judgments. *Journal of Experimental Psychology: Applied*, *12*(3), 166–178.

Daum, M. (2013, February 28). Wir wollen Ruhm (We want fame). *Die Zeit*.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (2000). The "what' and 'why of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268.

Diener, E., & Biswas-Diener, R. (2008). *Happiness: Unlocking the mysteries of personal wealth*. Oxford, UK: Blackwell Publishing.

Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science*, *13*(1), 81–84.

Diener, E., Sapyta, J. J., & Suh, E. (1998). Subjective well-being is essential to well-being. *Psychological Inquiry*, *9*(1), 33–37.

Dunn, E. W., Gilbert, D. T., & Wilson, T. D. (2011). If money doesn"t make you happy, then you probably aren"t spending it right. *Journal of Consumer Psychology*, *21*(2), 115–125.

Dweck, C. S. (1986). Motivational processes affect learning. *American Psychologist*, *41*(10), 1040–1048.

Ellemers, N., van Knippenberg, A., de Vries, N., & Wilke, H. (1988). Social identification and permeability of group boundaries. *European Journal of Social Psychology*, *18*(6).

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*(2), 117–140.

Fischhoff, B., & Beyth, R. (1975). "I knew it would happen": Remembered probabilities of once-future things. *Organizational Behavior and Human Performance*, *13*(1-6).

Fisek, M. H., & Ofshe, R. (1970). The process of status evolution. *Sociometry*, *33*(3), 327–346.

Fiske, A. P. (1992). The four elementary forms of sociality: Framework for a unified theory of social relations. *Psychological Review*, *99*(4), 689–723.

Fiske, S. T. (2010). *Social beings: Core motives in social psychology*. Hoboken, NJ: Wiley.

Frank, R. H. (1985). *Choosing the right pond: Human behavior and the quest for status*. New York: Oxford University Press.

Frank, R. H. (1999). *Luxury fever: Weighing the cost of excess*. Princeton, NJ: Princeton University Press.

Freud, S. (1930). *Das Unbehagen in der Kultur*. Ditzingen, Germany: Reclam.

Garcia, S. M., Tor, A., & Gonzalez, R. (2006). Ranks and rivals: A theory of competition. *Personality and Social Psychology Bulletin*, *32*(7), 970–982.

Gigerenzer, G., & Goldstein, D. A. (1996). Reasoning the fast and frugal way: Models of bounded rationality. *Psychological Review*, *103*(4), 650–669.

Gilbert, D. T. (2006). *Stumbling on happiness*. NY: Random House.

Gilbert, D. T., & Ebert, J. E. J. (2002). Decisions and revisions: The affective forecasting of changeable outcomes. *Journal of Personality and Social Psychology*, *82*(4), 503–514.

Gilbert, D. T., & Wilson, T. D. (2007). Prospection: Experiencing the future. *Science*, *317*(5843), 1351–1354.

Gilbert, D. T., Giesler, R. B., & Morris, K. A. (1995). When comparisons arise. *Journal of Personality and Social Psychology*, *69*(2), 227–236.

Gilbert, D. T., Gill, M. J., & Wilson, T. D. (2002). The future is now: Temporal correction in affective forecasting. *Organizational Behavior and Human Decision Processes*, *88*(1), 430–444.

Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (1998).

Immune neglect: a source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, *75*(3), 617–638.

Gilovich, T., Vallone, R., & Tversky, A. (1985). The hot hand in basketball: On the misperception of random sequences. *Cognitive Psychology*, *17*(3), 295–314.

Goethals, G. R., & Darley, J. M. (1977). Social comparison theory: An attributional approach. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 259–278). Washington, DC: Hempisphere.

Gosling, S. D., Vazire, S., Srivastava, S., & John, O. P. (2004). Should we trust web-based studies? A comparative analysis of six preconceptions about internet questionnaires. *American Psychologist*, *59*(2), 93–104.

Hagerty, M. R. (2000). Social comparisons of income in one's community: Evidence from national surveys of income and happiness. *Journal of Personality and Social Psychology*, *78*(4), 764–771.

Haidt, J. (2006). *The happiness hypothesis*. London: Arrow Books.

Hakmiller, K. L. (1966). Threat as a determinant of downward comparison. *Journal of Experimental Social Psychology*, *1*(1), 32–39.

Hambrick, D. C., & Cannella, A. A. (1993). Relative standing: a framework for understanding departures of acquired executives. *Academy of Management Journal*, *36*(4), 733–762.

Harris, M. M., Anseel, F., & Lievens, F. (2008). Keeping up with the Joneses: A field study of the relationships among upward, lateral, and downward comparisons and pay level satisfaction. *Journal of Applied Psychology*, *93*(3), 665–673.

Harsanyi, J. C. (1966). A bargaining model for social status in informal groups and formal organizations. *Behavioral Science*, *11*(5), 357–369.

Heffetz, O., & Frank, R. H. (2011). Preferences for status: Evidence and economic

implications. In J. Benhabib, A. Bisin, & M. Jackson (Eds.), *Handbook of Social Economics* (Vol. 1, pp. 69–91). Amsterdam.

Helliwell, J. F., & Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *359*(1449), 1435–1446.

Helson, H. (1948). Adaptation-level as a basis for a quantitative theory of frames of reference. *Psychological Review*, *55*(6), 297–313.

Helson, H. (1964). Current trends and issues in adaptation-level theory. *American Psychologist*, *19*(1), 26–38.

Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: Freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and Human Behavior*, *22*(3), 165–196.

Higgins, E. T., & Pittman, T. S. (2008). Motives of the human animal: Comprehending, managing, and sharing inner states. *Annual Review of Psychology*, *59*(1), 361–385.

Higgins, M. C., Dobrow, S. R., & Chandler, D. (2008). Never quite good enough: The paradox of sticky developmental relationships for elite university graduates. *Journal of Vocational Behavior*, *72*(2), 207–224.

Hobbes, T. (1651). *Leviathan*. Oxford, UK: Oxford Paperbacks.

Hsee, C. K., Yang, Y., Naihe, L., & Shen, L. (2009). Wealth, warmth, and well-being: Whether happiness Is relative or absolute depends on whether it is about money, acquisition, or consumption. *Journal of Marketing Research*, *XLVI*, 396–409.

Huberman, B. A., Loch, C. H., & Önçüler, A. (2004). Status as a valued resource. *Social Psychology Quarterly*, *67*(1), 103–114.

Huguet, P., Dumas, F., Marsh, H., Régner, I., Wheeler, L., Suls, J., et al. (2009). Clarifying the role of social comparison in the big-fish–little-pond effect (BFLPE): An integrative study. *Journal of Personality and Social Psychology*, *97*(1), 156–170.

Hyman, H. H. (1942). The psychology of status. *Archives of Psychology*, *269*, 5–94.

J Solnick, S., & Hemenway, D. (1998). Is more always better?: A survey on positional concerns. *Journal of Economic Behavior and Organization*, *37*(3), 373–383.

Jain, S., Shapiro, S. L., Swanick, S., Roesch, S. C., Mills, P. J., Bell, I., & Schwartz, G. E. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioral Medicine*, *33*(1), 11–21.

James, W. (1890). *The principles of psychology*. New York: Dover Publications.

Jones, E. E., & Nisbett, R. E. (1972). The actor and the observer: Divergent perceptions of the cause of behavior. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior.* Morristown, NJ: General Learning Press.

Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, *4*, 33–47.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation for everyday life*. New York: Hyperion.

Kahneman, D., & Snell, J. (1992). Predicting a changing taste: Do people know what they will like? *Journal of Behavioral Decision Making*, *5*, 187–200.

Kahneman, D., Fredrickson, B. L., Schreiber, C. A., & Redelmeier, D. A. (1993). When more pain is preferred to less. *Psychological Science*, *4*(6), 401–405.

Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., & Stone, A. A. (2006). Would you be happier if you were richer? A focusing illusion. *Science*, *312*(5782), 1908–1910.

Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science*, *330*(6006), 932.

Ledgerwood, A., Wakslak, C. J., & Wang, M. A. (2010). Differential information use for near and distant decisions. *Journal of Experimental Social Psychology*, *46*(4), 638–642.

Levine, L. J., Lench, H. C., Kaplan, R. L., & Safer, M. A. (2012). Accuracy and artifact: Reexamining the intensity bias in affective forecasting. *Journal of Personality and Social Psychology*, *103*(4), 584–605.

Liberman, N., & Trope, Y. (2008). The psychology of transcending the here and now. *Science*, *322*(5905), 1201–1205.

Liberman, N., Sagristano, M. D., & Trope, Y. (2002). The effect of temporal distance on level of mental construal. *Journal of Experimental Social Psychology*, *38*(6), 523–534.

Loch, C. H., Huberman, B. A., & Stout, S. (2000). Status competition and performance in work groups. *Journal of Economic Behavior and Organization*, *43*(1), 35–55.

Loch, C., Yaziji, M., & Langen, C. (2001). The fight for the alpha position: Channeling status competition in organizations. *European Management Journal*, *19*(1), 16–25.

Loewenstein, G. (2007). Affect regulation and affective forecasting. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 180–203). New York: Guilford Press.

Lord, R. G., Foti, R. J., & De Vader, C. L. (1984). A test of leadership categorization theory: Internal structure, information processing, and leadership perceptions. *Organizational Behavior and Human Decision Processes*, *34*, 343–378.

Lyubomirsky, S. (2007). *The how of happiness*. London: Sphere.

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, *9*(2), 111–131.

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. New York: Lawrence Erlbaum Associates.

Magee, J. C., & Galinsky, A. D. (2008). Chapter 8: Social hierarchy: The self-reinforcing nature of power and status. *The Academy of Management Annals*, *2*(1), 351–398.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*(9), 954–969.

Marx, K. (1849, April 8). Lohnarbeit und Kapital. *Neue Rheinische Zeitung*.

Mellers, B. A., & McGraw, A. P. (2001). Anticipated emotions as guides to choice. *Current Directions in Psychological Science*, *10*(6), 210–214.

Mellers, B. A., Schwartz, A., & Ritov, I. (1999). Emotion-based choice. *Journal of Experimental Psychology: General*, *128*(3), 332–345.

Mellers, B. A., Schwartz, A., Ho, K., & Ritov, I. (1997). Decision affect theory: Emotional reactions to outcomes of risky options. *Psychological Science*, *8*(6), 423–429.

Mendes, W. B., Blascovich, J., Major, B., & Seery, M. (2001). Challenge and threat responses during downward and upward social comparisons. *European Journal of Social Psychology*, *31*(5), 477–497.

Merton, R. (1968). The matthew effect in science. *Science*, *159*(3810), 56–63.

Mettee, D. R., & Smith, G. (1977). Social comparison and interpersonal attraction: The case for dissimilarity. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 69–101). Washington, DC: Hemisphere.

Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, *63*(2), 81–97.

Morewedge, C. K., Gilbert, D. T., & Wilson, T. D. (2005). The least likely of times. *Psychological Science*, *16*(8), 626–630.

Morse, S., & Gergen, K. J. (1970). Social comparison, self-consistency, and the concept of self. *Journal of Personality and Social Psychology*, *16*(1), 148–156.

Neeley, T. B. (2013). Language matters: Status loss and achieved status distinctions in global organizations. *Organization Science*, *24*(2), 467–497.

Packard, V. (1959). *The status seekers*. Philadelphia, PA: David McKay.

Petroff, A. (2010, December 6). Comparison is the death of happiness. *Financial Times*, p.

46.

Pettit, N. C., & Sivanathan, N. (2012). The eyes and ears of status: How status colors perceptual judgment. *Personality and Social Psychology Bulletin*, *38*(5), 570–582.

Pettit, N. C., Yong, K., & Spataro, S. E. (2010). Holding your place: Reactions to the prospect of status gains and losses. *Journal of Experimental Social Psychology*, *46*(2), 396–401.

Phillips, D. J., & Zuckerman, E. W. (2001). Middle-status conformity: Theoretical restatement and empirical demonstration in two markets. *American Journal of Sociology*, *107*(2), 379–429.

Pinker, S. (1997). *How the mind works*. New York: Norton.

Podolny, J. M. (2005). *Status Signals*. Princeton, NJ: Princeton University Press.

Pronin, E. (2009). The introspection illusion. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 41, pp. 1–67). Burlington, MA: Academic Press.

Pronin, E., & Ross, L. (2006). Temporal differences in trait self-ascription: When the self is seen as an other. *Journal of Personality and Social Psychology*, *90*(2), 197–209.

Read, D., & van Leeuwen, B. (1998). Predicting hunger: The effects of appetite and delay on choice. *Organizational Behavior and Human Decision Processes*, *76*(2), 189–205.

Reynolds, E. (2011, October 24). Man who "tracked down and throttled" 13-year old over Call of Duty game avoids prison. *Daily Mail*.

Ridgeway, C. L., & Walker, H. A. (1995). Status structures. In K. S. Cook, G. Fine, & J. House (Eds.), *Sociological perspectives on social psychology* (pp. 281–310). Boston, MA: Allyn & Bacon.

Rivlin, G. (2007). In Silicon Valley, millionaires who don't feel rich. *New York Times*, 1–6.

Roberts, W. A. (2002). Are animals stuck in time? *Psychological Bulletin*, *128*(3), 473–489.

Robson, A. J. (2001). The biological basis of economic behavior. *Journal of Economic*

Literature, *39*(1), 11–33.

Rofé, Y. (1984). Stress and affiliation: A utility theory. *Psychological Review*, *91*(2), 235–250.

Routledge, C., Arndt, J., Wildschut, T., Sedikides, C., Hart, C. M., Juhl, J., et al. (2011). The past makes the present meaningful: Nostalgia as an existential resource. *Journal of Personality and Social Psychology*, *101*(3), 638–652. doi:10.1037/a0024292

Rueden, Von, C., Gurven, M., & Kaplan, H. (2008). The multiple dimensions of male social status in an Amazonian society. *Evolution and Human Behavior*, *29*(6), 402–415.

Ryan, R. M., & Deci, E. L. (2001). A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*, 141–166.

Salovey, P., & Rodin, J. (1984). Some antecedents and consequences of social-comparison jealousy. *Journal of Personality and Social Psychology*, *47*(4), 780–792.

Schachter, S. (1959). *The psychology of affiliation: Experimental studies of the sources of gregariousness*. Palo Alto, CA: Stanford University Press.

Scheepers, D., Ellemers, N., & Sintemaartensdijk, N. (2009). Suffering from the possibility of status loss: Physiological responses to social identity threat in high status groups. *European Journal of Social Psychology*, *39*(6), 1075–1092.

Schkade, D. A., & Kahneman, D. (1998). Does living in California make people happy? A focusing illusion in judgments of life satisfaction. *Psychological Science*, *9*(5), 340–346.

Schwartz, B. (2004). Why everything suffers from comparisons. In *The paradox of choice: Why less is more*. New York: Harper Perennial.

Scott, W. R., & Davis, G. F. (2007). The subject is organizations; the verb is organizing. In *Organizations and organizing*. Upper Saddle River, NJ: Pearson Education.

Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realise your potential for lasting fulfillment*. Boston: Nicholas Brealy Publishing.

Seneca. (1932). *On the shortness of life*. (C. D. N. Costa, Trans.). London: Penguin.

Sherif, M. (1936). *The psychology of social norms*. Oxford, England: Harper.

Singer, M. (2012, August 6). Marathon man - A Michigan dentist's improbable transformation. *The New Yorker*.

Smith, A. R. (1759). Of the origin of ambition, and of the distinction of ranks. In *Theory of Moral Sentiments*. Penguin Books.

Smith, R. H., & Kim, S. H. (2007). Comprehending envy. *Psychological Bulletin*, *133*(1), 46–64.

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, *89*(6), 845–851.

Stanovich, K. E. (2004). The misguided search for the "magic bullet": The issue of multiple causation. In *How to think straight about psychology* (pp. 147–157). Boston, MA: Allyn & Bacon.

Stapel, D. A. (2012). *Ontsporing*. Amsterdam: Prometeus.

Steinkuehler, C. A., & Williams, D. (2006). Where everybody knows your (screen) name: Online games as "third places." *Journal of Computer-Mediated Communication*, *11*(4), 885–909.

Suls, J. (1986). Notes on the occasion of social comparison theory's thirtieth birthday. *Personality and Social Psychology Bulletin*, *12*(3), 289–296.

Tabachnik, N., Crocker, J., & Alloy, L. B. (1982). Depression, social comparison, and the false-consensus effect. *Journal of Personality and Social Psychology*, *45*(3), 688–699.

Taylor, S. E., & Lobel, M. (1989). Social comparison activity under threat: Downward evaluation and upward contacts. *Psychological Review*, *96*(4), 569–575.

Taylor, S. E., Falke, R. L., Shoptaw, S. J., & Lichtman, R. R. (1986). Social support, support

groups, and the cancer patient. *Journal of Consulting and Clinical Psychology*, *54*(5), 608–615.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. *Advances in Experimental Social Psychology*, *21*, 181–227.

Thier, D. (2012, May 12). Call of Duty: Black Ops 2 makes $1 billion in sales. *Forbes*.

Tomczak, C. (2010, March 25). JS Tetris. Retrieved from https://code.google.com/p/js-tetris/

Torfason, M. T. (2012, June 5). With us or against us? Networks, identity and order in a virtual world.

Triplett, N. (1898). The dynamogenic factors in pacemaking and competition. *American Journal of Psychology*, *9*(4), 507–533.

Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, *110*(3), 403–421.

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, *117*(2), 440–463.

Turke, P. W., & Betzig, L. L. (1985). Those who can do: Wealth, status, and reproductive success on Ifaluk. *Ethology and Sociobiology*, *6*, 79–87.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, *185*(4157), 1124–1131.

Tversky, A., & Kahneman, D. (1983). Extensional versus intuitive reasoning: The conjunction fallacy in probability judgment. *Psychological Review*, *90*(4), 293–315.

van Boven, L., & Loewenstein, G. (2003). Social projection of transient drive states. *Personality and Social Psychology Bulletin*, *29*(9), 1159–1168.

Van der Vegt, G. S., Bunderson, J. S., & Oosterhof, A. (2006). Expertness diversity and interpersonal helping in teams: Why those who need the most help end up getting the least. *Academy of Management Journal*, *49*(5), 877–893.

Veblen, T. (1899). *The theory of the leisure class: An economic study of institutions*. London, UK: Unwin Books.

Wade, N. (2012, October 20). Harvard finds scientist guilty of misconduct. *The New York Times*, p. A1.

Wakslak, C. J., Trope, Y., Liberman, N., & Alony, R. (2006). Seeing the forest when entry is unlikely: Probability and the mental representation of events. *Journal of Experimental Psychology General*, *135*(4), 641–653.

Wakslak, C., & Trope, Y. (2009). The effect of construal level on subjective probability estimates. *Psychological Science*, *20*(1), 52–58.

West, S. G., & Aiken, L. S. (1997). Toward understanding individual effects in multicomponent prevention programs: Design and analysis strategies. In K. J. Bryant, M. Windle, & S. G. West (Eds.), *The science of prevention: Methodological advances from alcohol and substance abuse research* (pp. 167–209). Washington, DC: American Psychological Association.

Wheeler, L., & Koestner, R. (1984). Performance evaluation: On choosing to know the related attributes of others when we know their performance. *Journal of Experimental Social Psychology*, *20*(3), 263–271.

Wheeler, L., & Zuckerman, M. (1977). Commentary. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes:Theoretical and empirical perspectives* (pp. 335–357). Washington, DC: Hemisphere.

Wheeler, L., Shaver, K. G., Jones, R. A., Goethals, G. R., Cooper, J., Robinson, J. E., et al. (1969). Factors determining choice of a comparison other. *Journal of Experimental Social Psychology*, *5*, 219–232.

Whyte, W. F. (1943). *Street corner society: The social structure of an Italian slum*. University of Chicago Press.

Williams, A. (2008, January 6). The falling-down professions. *The New York Times*.

Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological Bulletin*, *90*(2), 245–271.

Wills, T. A. (1987). Downward comparison as a coping mechanism. In C. R. Snyder & C. Ford (Eds.), *Coping with negative life events: Clinical and social psychological perspectives*. New York: Plenum.

Wilson, T. D., & Gilbert, D. T. (2003). Affective forecasting. *Advances in Experimental Social Psychology*, *35*, 346–411.

Wilson, T. D., & Gilbert, D. T. (2005). Affective forecasting: Knowing what to want. *Current Directions in Psychological Science*, *14*(3), 131–134.

Wilson, T. D., Wheatley, T., Meyers, J. M., Gilbert, D. T., & Axsom, D. (2000). Focalism: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, *78*(5), 821–836.

Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, *106*(2), 231–248.

Wood, J. V. (1996). What is social comparison and how should we study it? *Personality and Social Psychology Bulletin*, *22*(5), 520–537.

Wood, J. V., Taylor, S. E., & Lichtman, R. R. (1985). Social comparison in adjustment to breast cancer. *Journal of Personality and Social Psychology*, *49*(5), 1169–1183.

Zechmeister, J. S., Zechmeister, E. B., & Shaughnessy, J. J. (2001). *Essentials of research methods in psychology*. New York: McGraw-Hill.

Zell, E., & Alicke, M. D. (2009). Contextual neglect, self-evaluation, and the frog-pond effect. *Journal of Personality and Social Psychology*, *97*(3), 467–482.

Zink, C. F., Tong, Y., Chen, Q., Bassett, D. S., Stein, J. L., & Meyer-Lindenberg, A. (2008). Know your place: Neural processing of social hierarchy in humans. *Neuron*, *58*(2), 273–

283.

Appendix A

Table A1

Happiness items used in all studies. Items were averaged to form a measure of happiness

(Cronbach's α =.88 - .95)

Item	Forecasters	Experiencers
How happy…	…will you be with your future level?	…are you with your current level?
How satisfied…	…will you be with your future level?	…are you with your current level?
To what extent…	…will you feel happy as a future Top 10 level player?	…do you feel happy as a current Top 10 level player?
To what extent…	…will you feel satisfied as a future Top 10 level player?	…do you feel satisfied as a current Top 10 level player?

Table A2

Social comparison items used in Study 1. The last three items were averaged to form a

measure of downward comparisons (Cronbach's α = .80)

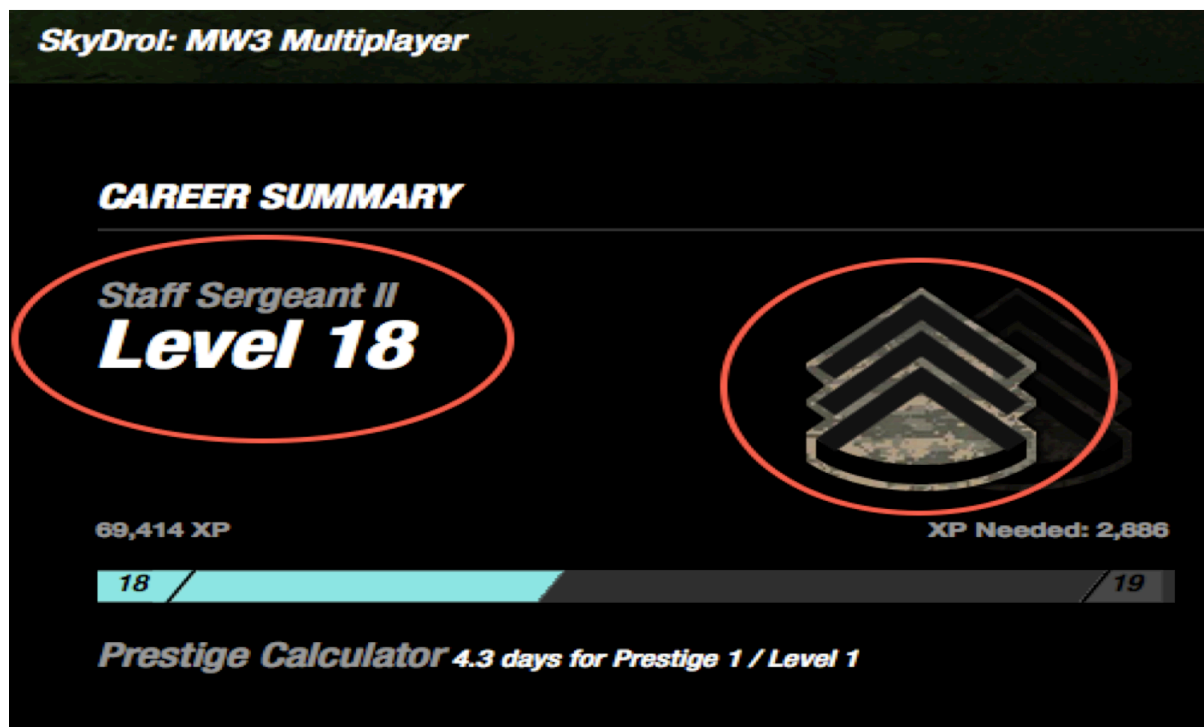| Forecasters	Experiencers
To what extent will you compare yourself with the levels listed below?	To what extent do you compare yourself with the levels listed below?
…better players from the top 10 [levels 46-50]	
…slightly worse players [levels 31-40]	
…worse players [levels 11-30]	
…much worse players [levels 01-10]	

Figure A1. A sample profile from the Call of Duty social networking website. Level and

badge are highlighted.

Level	Title	EP
50	Commander	1202800
49	General	1144800
48	Lieutenant General III	1088500
47	Lieutenant General II	1033900
46	Lieutenant General I	981000
45	Major General III	929800
44	Major General II	880200
43	Major General I	832200
42	Brigadier General III	785800
41	Brigadier General II	741000
40	Brigadier General I	697800
39	Colonel II	656100
38	Colonel I	615900
37	Colonel I	577200
36	Lieutenant Colonel II	540000
35	Lieutenant Colonel II	504300
34	Lieutenant Colonel I	470000
33	Colonel III	437100
32	Colonel II	405600
31	Colonel I	375500
30	Lieutenant Colonel III	346800
29	Lieutenant Colonel II	319400
28	Lieutenant Colonel I	293300
27	Major III	268500
26	Major II	245000
25	Major I	222800
24	Sergeant Major III	201800
23	Sergeant Major II	182000
22	Sergeant Major I	163400
21	Sergeant First Class III	146000
20	Sergeant First Class II	129800
19	Sergeant First Class I	114700
18	Staff Sergeant III	100700
17	Staff Sergeant II	87800
16	Staff Sergeant I	76000
15	Sergeant III	65300
14	Sergeant II	55500
13	Sergeant I	46600
12	Corporal III	38600
11	Corporal II	31500
10	Corporal I	25300
9	Specialist III	19800
8	Specialist II	15000
7	Specialist I	10900
6	Private First Class III	7500
5	Private First Class II	4800
4	Private First Class I	2700
3	Private III	1200
2	Private II	300
1	Private I	0

Figure A2. Ranking participants in Study 1 used to indicate their current rank in the Call of Duty game.

Level	Title	EP
50	Commander	1202800
49	General	1144800
48	Lieutenant General III	1088500
47	Lieutenant General II	1033900
46	Lieutenant General I	981000
45	Major General III	929800
44	Major General II	880200
43	**Major General I**	**832200**
42	Brigadier General III	785800
41	Brigadier General II	741000
40	Brigadier General I	697800
39	Colonel II	656100
38	Colonel I	615900
37	Colonel I	577200
36	Lieutenant Colonel II	540000
35	Lieutenant Colonel II	504300
34	Lieutenant Colonel I	470000
33	Major III	437100
32	Major II	405600
31	Major I	375500
30	Captain III	346800
29	Captain II	319400
28	Captain I	293300
27	Lieutenant III	268500
26	Lieutenant II	245000
25	Lieutenant I	222800
24	Sergeant Major III	201800
23	Sergeant Major II	182000
22	Sergeant Major I	163400
21	Sergeant First Class III	146000
20	Sergeant First Class II	129800
19	Sergeant First Class I	114700
18	Staff Sergeant III	100700
17	Staff Sergeant II	87800
16	Staff Sergeant I	76000
15	Sergeant III	65300
14	Sergeant II	55500
13	Sergeant I	46600
12	Corporal III	38600
11	Corporal II	31500
10	Corporal I	25300
9	Specialist III	19800
8	Specialist II	15000
7	Specialist I	10900
6	Private First Class III	7500
5	Private First Class II	4800
4	Private First Class I	2700
3	Private III	1200
2	Private II	300
1	Private I	0

Figure A3. Ranking shown to experiencers in Study 1.

109

Level	Title	EP
50	Commander	1202800
49	General	1144800
48	Lieutenant General III	1088500
47	Lieutenant General II	1033900
46	Lieutenant General I	981000
45	Major General III	929800
44	Major General II	880200
43	Major General I	832200
42	Brigadier General III	785800
41	Brigadier General II	741000
40	Brigadier General I	697800
39	Colonel II	656100
38	Colonel I	615900
37	Colonel I	577200
36	Lieutenant Colonel II	540000
35	Lieutenant Colonel II	504300
34	Lieutenant Colonel I	470000
33	Major III	437100
32	Major II	405600
31	Major I	375500
30	Captain III	346800
29	Captain II	319400
28	Captain I	293300
27	Lieutenant III	268500
26	Lieutenant II	245000
25	Lieutenant I	222800
24	Sergeant Major III	201800
23	Sergeant Major II	182000
22	Sergeant Major I	163400
21	Sergeant First Class III	146000
20	Sergeant First Class II	129800
19	Sergeant First Class I	114700
18	Staff Sergeant III	100700
17	Staff Sergeant II	87800
16	Staff Sergeant I	76000
15	Sergeant III	65300
14	Sergeant II	55500
13	Sergeant I	46600
12	Corporal III	38600
11	Corporal II	31500
10	Corporal I	25300
9	Specialist III	19800
8	Specialist II	15000
7	Specialist I	10900
6	Private First Class III	7500
5	Private First Class II	4800
4	Private First Class I	2700
3	Private III	1200
2	Private II	300
1	Private I	0

Your future rank

Your current rank

Figure A4. Ranking shown to forecasters in Study 1. The arrow labeled "Your current rank" moved depending on the participant's current rank.

Appendix B

Table B1

Ranks that participants attained or predicted attaining in the Tetris performance ranking in

Studies 2 - 4.

Round	Forecasters	Experiencers
1	Attained rank 26	
2	Attained rank 23	
3	Attained rank 25	
4	Predicted attaining rank 18	Attained rank 18
5	Predicted attaining rank 14	Attained rank 14
6	Predicted attaining rank 12	Attained rank 12
7	Predicted attaining rank 8	Attained rank 8
8	Predicted attaining rank 5	Attained rank 5

Table B2

Responses indicating that nine participants randomly chose their comparison targets in Study 2

Participant	Response
1	*I randomly selected them.*
2	*I really had no method to selection. More random.*
3	*i selected randomly.*
4	*how nice their name sounded*
5	*I selected them randomly*
6	*I just selected them kinda based on their username. and I also just selected randomly*
7	*I selected them at random. I did not feel compelled to let specific people know their standing.*
8	*I liked their usernames.*
9	*I randomly picked various other players with no rhyme or reason*
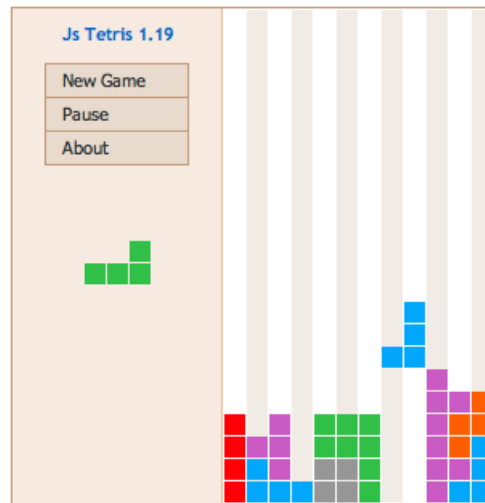
Figure B1. Sample screenshot of the modified version of the Tetris game.

113

Rank	Name	Score
1	kitty26	?
2	scarlet6806	?
3	robo99	?
4	tiffy55	?
5	liam121123	?
6	cody222	?
7	cindy66	?
8	jakemax	?
9	dawn304	?
10	julienguyen	?
11	daisy2t8	?
12	annastewart	?
13	christiana033	?
14	carla123	?
15	zinx496	?
16	fries549	?
17	prcscotty	?
18	konstag	?
19	puppycfalv	?
20	chrysalis125	?
21	carlitos_784	?
22	mdonaldson	?
23	hedgey71	?
24	matt411	?
25	***Your current rank***	?
26	ehauber	?
27	xiane	?
28	aduarte034	?
29	slippy	?
30	majka111	?

Your current rank

Figure B2. Sample Tetris performance ranking after round 3.

We now have a few more questions about how you think about your position in this Tetris performance ranking after round 8.

We are particularly interested in the other participants you want to compare yourself with. Which other players from this ranking do you want to compare yourself with?

Please click on those other players you want to compare yourself with.
Select between 5 and 10 other players.
You can continue to the next page in a few moments.

Figure B3. Social comparison measure for experiencers in Study 2.

We now have a few more questions about how you will think about your future position in this Tetris performance ranking after round 8.

We are particularly interested in the other participants you will compare yourself with. Which other players from this ranking will you want to compare yourself with?

| Please click on those other players you will want to compare yourself with. |
| Select between 5 and 10 other players. |
| You can continue to the next page in a few moments. |

Rank	Name	Score
1	robo99	?
2	scarlet6806	?
3	kitty26	?
4	cody222	?
5	***Your future rank***	?
6	tiffy55	?
7	liam121123	?
8	dawn304	?
9	cindy66	?
10	jakemax	?
11	daisy2t8	?
12	julienguyen	?
13	carla123	?
14	prescotty	?
15	annastewart	?
16	fries549	?
17	christiana033	?
18	zinx496	?
19	konstag	?
20	chrysalis125	?
21	puppyofalv	?
22	hedgey71	?
23	mdonaldson	?
24	matt411	?
25	***Your current rank***	?
26	carlitos_784	?
27	ehauber	?
28	majka111	?
29	aduarte034	?
30	slippy	?

Figure B4. Social comparison measure for forecasters in Study 2.

Appendix C

Table C1

Responses indicating that five participants randomly chose their comparison targets in Study

3

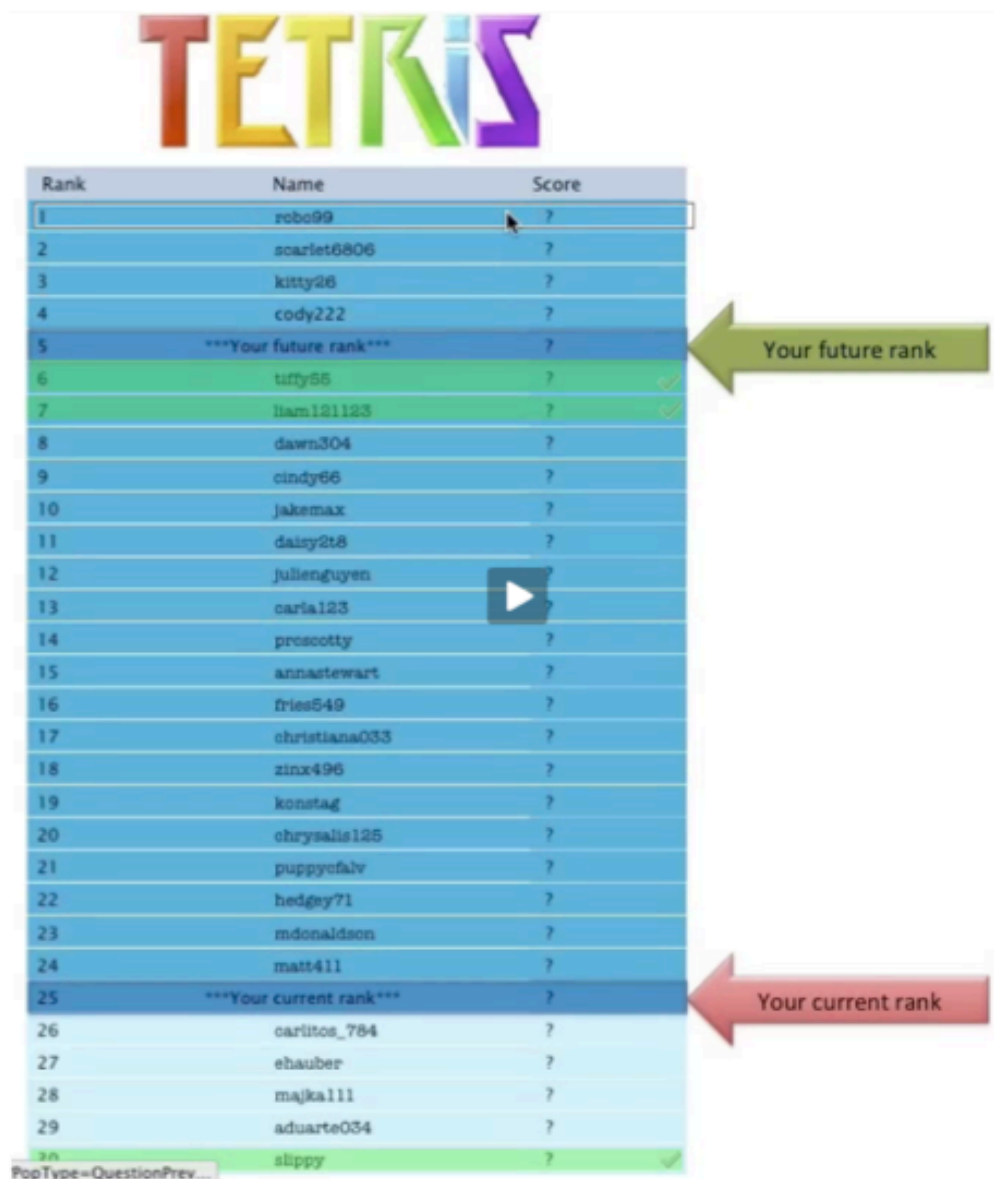| Participant	Response
1	*randomly*
2	*I just selected them at random.*
3	*actually I selected names that I liked and choose a few positions higher than me and a few lower*
4	*I just chose some random people.*
5	*Random*

Below you can see your future position after round 8.

Please imagine that after attaining this rank you will compare yourself with **these specific other players highlighted in the video below.**

Please start the video by clicking on it.

Happiness with a position in a ranking is often influenced by the people you compare yourself with.	
We want to know how comparing yourself with these specific other players will make you feel about your future position.	
You can continue to the next page in a few moments.	

Rank	Name	Score
1	robo99	?
2	scarlet6806	?
3	kitty26	?
4	cody222	?
5	***Your future rank***	?
6	tiffy55	?
7	liam121123	?
8	dawn304	?
9	cindy66	?
10	jakemax	?
11	daisy2t8	?
12	julienguyen	?
13	carla123	?
14	prescotty	?
15	annastewart	?
16	fries549	?
17	christiana033	?
18	zinx496	?
19	konstag	?
20	chrysalis125	?
21	puppycfalv	?
22	hedgey71	?
23	mdonaldson	?
24	matt411	?
25	***Your current rank***	?
26	carlitos_784	?
27	ehauber	?
28	majka111	?
29	aduarte034	?
30	slippy	?

Your future rank

Your current rank

PopType=QuestionPrev...

Figure C1. A screenshot from the video that participants in the forecasting corrected comparisons condition saw.

Appendix D

Below you can see your future position after round 8.

Please think about who you will compare yourself with and how these future comparisons will make you feel.

Remember that you will **compare more with better players (ranks 1-4) than you think.**

Happiness with a position in the ranking is often influenced by the people you compare yourself with.
People compare more upwards with better players (ranks 1-4) than they think.
You can continue to the next page in a few moments.

Figure D1. A screenshot of the advice that participants in the forecasting corrected upward comparisons condition received.

Below you can see your future position after round 8.

Please think about who you will compare yourself with and how these future comparisons will make you feel.

Remember that you will **compare less with worse players (ranks 6-30) than you think.**

Figure D2. A screenshot of the advice that forecasters in the forecasting corrected downward comparisons condition received

Appendix E

Table E1.

Ranks that participants attained or predicted attaining in the Tetris performance ranking in

Studies 2 - 4.

Round	Forecasters	Experiencers
1	Attained rank 5	
2	Attained rank 8	
3	Attained rank 6	
4	Predicted attaining rank 13	Attained rank 13
5	Predicted attaining rank 17	Attained rank 17
6	Predicted attaining rank 19	Attained rank 19
7	Predicted attaining rank 23	Attained rank 23
8	Predicted attaining rank 26	Attained rank 26

Table E2

Responses indicating that 10 participants randomly chose their comparison targets in Study

5

Participant	Response
1	*It was selected at random.*
2	*I picked them randomly*
3	*randomly*
4	*Honestly, I chose people that had a more fun than generic username. I play a lot of FPS games online and the ones with fun user names are more fun to play/communicate with.*
5	*I selected these randomly. I actually do not really care to compare myself to other players, so I selected 7 other players on a whim.*
6	*I selected random people to compare myself with. There was no logic used behind the selections.*
7	*i selected at random*
8	*I piicked them rndomly. I didn't have an idea of who I wnnteed to pick so I randomly chose*
9	*I selected them at random.*
10	*i thought that it would be best to randomly select players. I dont feel that i should compare against just the higher scores.*