

Social Comparison Shapes Risky Decision Making: Mechanisms and Boundary Conditions

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Abstract

Risky decision making does not occur in a social vacuum. When evaluating risky options, individuals consider not only their own absolute gains and losses but also the outcomes, performance, and social positions of others. In recent years, research at the intersection of social comparison and risky decision making has moved beyond asking whether social comparison affects risk taking to examining how social reference points are formed, why different comparison outcomes produce divergent or even opposite effects on risk taking, and which psychological mechanisms underlie these effects. Drawing on social comparison theory, prospect theory, relative deprivation theory, and risk-sensitivity theory, this review synthesizes the relevant literature and proposes an integrative framework comprising social reference-point reconstruction, relative-state evaluation, motivational transformation, and risk adjustment. The framework posits that social comparison incorporates others' outcomes into the individual's value-representation process, thereby recoding absolute gains and losses as relative social gains or social losses. Individuals then evaluate their position in terms of comparison direction, relative distance, and the changeability of that distance, and adjust risky behavior through mechanisms such as relative deprivation, regret, competition, and status-restoration motives. Characteristics of the comparison target, the magnitude of the gap, attainability, socioeconomic status, and risk domain further constitute important boundary conditions. Future research should move from static, exogenously imposed laboratory comparisons toward dynamic, self-selected, and networked social comparisons, while integrating computational modeling, longitudinal designs, and real-world behavioral data to clarify the dynamic processes through which social comparison shapes risky decision making.

Keywords

Social comparison; risky decision making; social reference point; relative deprivation; risk taking.

1. Introduction

Traditional theories of risky decision making typically treat the decision maker as a relatively independent individual. Under expected utility theory, individuals choose among risky options by comparing their expected utilities; prospect theory further proposes that the subjective value of a risky option depends not only on outcomes and their probabilities but also on whether those outcomes are encoded as gains or losses relative to a reference point (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992) [8][20]. In real life, however, risky decisions rarely occur in complete isolation. Individuals frequently use others' outcomes, performance, and social positions to evaluate their own circumstances. Research has shown that investors and experimental participants adjust risky investments in response to peers' earnings and relative performance, and that subsequent risk taking may change when others earn more or

when the decision maker occupies a relatively disadvantaged position (Fafchamps et al., 2015; Dijk, 2017; Lindskog et al., 2022; Schwerter, 2023) [4][3][11][18]. Investors attend not only to their own returns but also to the performance of other investors; students care not only about their own grades but also about peer rankings; job seekers evaluate not only absolute pay but also the income and career progress of their peers; and consumers, entrepreneurs, and lottery players likewise adjust behavior in light of the wealth and social positions of others around them. This raises a question that traditional models of risky choice cannot fully answer: when an individual's objective gains, losses, and probability structure remain unchanged, can a mere change in social reference target or relative position alter risk preference?

Social comparison theory holds that, in the absence of clear objective standards, individuals have a basic tendency to evaluate their abilities, opinions, and social positions by referring to others (Festinger, 1954) [5]. Subsequent research has further shown that people not only actively select comparison targets but are also systematically affected by the outcomes of those comparisons in their self-evaluations and emotions. In a meta-analysis spanning more than six decades of social comparison research, Gerber et al. (2018) [6] found that individuals generally prefer upward comparisons and that contrast effects are the most common consequence: self-evaluations tend to decline when the comparison target is superior and to improve when the target is inferior. Social comparison therefore does more than provide information about others; it changes the subjective representation of one's own current state.

This is where research on risky decision making and social comparison fundamentally converges. If risky choice is reference dependent, and social comparison can alter how individuals evaluate their own state, then others' outcomes may serve as social reference points. For example, receiving RMB 500 may be experienced as a relative gain when another person receives RMB 200, but as a relative loss when that person receives RMB 1,000. Gains and losses in risky decision making are therefore not determined solely by one's own absolute outcomes; they may also acquire a relational, social meaning.

Research over the past decade has largely established that social comparison can systematically alter risky choice. The income of a social referent, relative rank, income gaps, and competitive contexts can all shape risk taking; upward comparisons induced by economic inequality can also increase risky behavior (Payne et al., 2017) [16]. Yet the empirical pattern is not fully consistent. Some studies find that relative disadvantage promotes risk taking as individuals attempt to catch up with those ahead of them, whereas others find that social losses do not produce the loss-domain risk seeking predicted by classical prospect theory and may even increase risk aversion (Linde & Sonnemans, 2012) [10]. This inconsistency points to a central question: under what conditions is a social comparison encoded as a state discrepancy that needs to be corrected, and through what psychological mechanisms is that discrepancy translated into risky behavior?

A 2026 systematic review of social comparison in applied decision contexts included 307 peer-reviewed articles and showed that social comparison has become widely embedded in research on economics, management, consumption, and decision making. At the same time, the field remains characterized by theoretical fragmentation, methodological heterogeneity, and an overreliance on laboratory studies (Aggarwal, 2026) [1]. A further integration of the relationship between social comparison and risky decision making is therefore needed.

The present review argues that existing findings can be reorganized around a common process. Social comparison first reconstructs the reference point in risky decision making, transforming absolute outcomes into relative social gains or social losses. Individuals then evaluate their relative state and develop motives either to preserve an advantage or to repair a disadvantage. These motives are translated into risk adjustment through processes such as relative deprivation, regret, competition, and reward learning. Finally, the direction and strength of this transformation depend on the comparison target, social distance, attainability, and the

individual's available resources. On this basis, the review examines how social comparison enters the representation of risky value, how it gives rise to risky behavior, why existing studies sometimes yield opposite findings, and how a more unified theory of risky decision making in social contexts may be developed.

2. From Personal to Social Reference Points: The Socialization of Risk-Value Representation

2.1. Reference Dependence in Traditional Risky Decision Making

One of the central contributions of prospect theory is the proposition that individuals do not evaluate outcomes solely in terms of final wealth. Instead, outcomes are encoded as gains or losses relative to a reference point (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992) [8][19]. The reference point therefore determines whether the same objective outcome falls in the gain or loss domain. In classical research on risky decision making, reference points are typically derived from the status quo, prior wealth, expectations, or goals. Yet goals in real-world decision making are not generated solely from within the individual. Once the social environment provides information about others' performance, how much others have may also become an important standard for judging whether one has gained or lost. Social comparison thus extends the scope of reference dependence: reference points exist not only along a temporal dimension—present versus past—but also along a social dimension—self versus others.

Linde and Sonnemans (2012) [10] provided an early direct test of this proposition. Participants chose between two lotteries while also being shown a fixed payoff for another person who served as a reference target. The structure of the participant's own lotteries remained unchanged; only the other person's payoff varied. Risky choice nevertheless changed as a function of the social reference point. This finding indicates that others' outcomes are not irrelevant background information but can enter the valuation of risky options.

Individuals facing risk therefore appear to operate with at least two evaluative coordinates. The first is a personal reference coordinate: whether an outcome represents a gain or loss relative to one's own prior state. The second is a social reference coordinate: whether the outcome leaves one ahead of or behind others. These coordinates may coincide, but they may also conflict. For example, a 10% investment return is an absolute gain, yet if a peer earns 20%, the investor simultaneously experiences a loss in social terms. Risky behavior in real settings therefore cannot be inferred from the personal gain-loss domain alone; the social gain-loss domain must also be considered.

2.2. Social Comparison Reconstructs the Subjective Value of Outcomes

The significance of a social reference point lies not simply in adding an 'other's outcome' variable to the decision context, but in changing the psychological meaning of one's own outcome. The same monetary payoff may carry greater subjective value when it exceeds another person's payoff and lower subjective value when it falls behind.

Neuroscientific evidence provides direct support for this view. Bault et al. (2011) [2] found that, under social comparison, reward responses in the ventral striatum were enhanced when participants' outcomes exceeded those of others and attenuated when their outcomes were inferior. The medial prefrontal cortex also played an important role in decisions involving social comparison, and current comparison outcomes predicted subsequent risky and competitive behavior. These findings suggest that the brain does not process 'my outcome' and 'the other person's outcome' as two fully independent quantities; instead, relative outcomes are encoded as socially meaningful gains or losses with reward value.

A neuroimaging meta-analysis by Luo et al. (2018) [13] further showed that downward comparison consistently engaged reward-valuation regions such as the ventral striatum and ventromedial prefrontal cortex, whereas upward comparison more strongly recruited regions associated with negative outcomes, conflict, and salience processing, including the anterior insula and dorsal anterior cingulate cortex. This pattern supports a common-currency account, according to which social gains and social losses partly draw on neural systems also involved in processing nonsocial rewards and losses.

The first step by which social comparison enters risky decision making can therefore be characterized as value recoding. Individuals initially evaluate their absolute outcomes and then recode those outcomes within a social coordinate system. Changes in risky behavior follow from this recoding process rather than from a simple, direct effect of social information on behavior.

3. Why Relative Disadvantage Can Promote Risk Taking: From Value Recoding to State Repair

If social comparison merely changed how a completed outcome feels, it would not necessarily affect the next choice. For social comparison to alter risky behavior, relative states must be translated into behavioral goals. Existing evidence suggests that this transformation centers primarily on gap reduction and the regulation of social status.

3.1. Upward Comparison and Gap Reduction

Upward comparison occurs when a comparison target is superior on a relevant dimension. Traditional social comparison research shows that upward comparison can produce either assimilation or contrast. In risky decision contexts, however, one of its most consequential effects is often to highlight the gap between one's current and desired states.

Across three experiments, Payne et al. (2017) [16] found that greater inequality in the distribution of economic outcomes increased participants' preference for risky options, an effect driven primarily by upward comparison with higher-income others. The implication is not that poverty itself necessarily produces risk seeking. Rather, exposure to those who are ahead makes the discrepancy between one's current resources and desired state more salient. When a low-risk strategy cannot effectively close that gap, a high-variance strategy with the possibility of a large payoff becomes more attractive.

This process is highly consistent with risk-sensitivity theory. When current resources are insufficient to meet a goal, a safe but low-yield option may fail to satisfy the underlying need, making a higher-variance strategy more attractive. Applied to social comparison, the theory yields an important implication: one function of comparison is to redefine how much one lacks. Upward comparison enlarges perceived need and can thereby turn risk taking into a potential strategy for repairing a social gap.

Lindskog et al. (2022) [11] further distinguished social rank from social distance. They found that risky behavior depends not only on whether an individual is behind another person but also on how far away that person is. Even when a single risky choice could not realistically overtake the reference target, the social reference point still influenced risky choice. Social comparison effects on risk taking therefore cannot be reduced to a simple attempt to 'come first'; they also reflect motives to reduce social distance.

From a functional perspective, risk taking under relative disadvantage can thus be understood as a position-repair strategy. Risky options increase uncertainty in absolute outcomes, but they may also offer a chance to reduce a social gap quickly.

3.2. Relative Deprivation: From Perceived Discrepancy to Motivational Pressure

Not every upward comparison leads to greater risk taking. The crucial issue is whether the perceived discrepancy is transformed into a psychologically meaningful motivational state. Relative deprivation is a key candidate mechanism linking these stages.

Personal relative deprivation refers to the experience of comparing oneself with relevant others, judging that one has received less than one deserves, and consequently feeling dissatisfaction, anger, or resentment. Unlike objective low income, relative deprivation concerns the subjective experience of an unfair discrepancy. Individuals at the same economic level may therefore display very different risky behaviors depending on whom they use as a comparison target.

Mishra and Novakowski (2016) [14] found that personal relative deprivation was significantly associated with impulsivity, sensation seeking, gambling, delay discounting, and other risk-related outcomes. Subsequent household survey evidence likewise showed that people reporting greater relative deprivation were less risk averse, although this subjective preference did not always translate into actual holdings of risky assets (Pak, 2023) [15]. This preference-behavior discrepancy suggests that relative disadvantage can strengthen the motivation to take risks, while real-world resources and opportunities constrain whether that motivation can be expressed behaviorally.

A 2026 study of Chinese lottery players further found that upward social comparison was associated with stronger financial gambling motives, with relative deprivation mediating this relationship; the association was stronger among individuals of lower socioeconomic status (Lin et al., 2026) [9]. Social comparison may therefore first create a psychological state of 'having less than others,' after which risky behavior becomes a potential compensatory means of changing that state rapidly.

The pathway from upward comparison to risk taking can thus be divided into two stages. The first is discrepancy formation—recognizing that one occupies a relatively disadvantaged position. The second is discrepancy motivationalization—experiencing that discrepancy as a state that needs to be changed. Social comparison is more likely to translate into risky behavior only when the second stage is sufficiently activated.

3.3. Regret and Behavioral Updating

Social comparison can also influence future risky choices by changing the emotional evaluation of past outcomes. Using a sequential risk-taking task, Liu et al. (2018) [12] found that participants experienced more regret when their outcomes were worse than those of others, and stronger regret predicted greater risk taking on the following trial. At the neural level, the ventral striatum and its functional connectivity with the dorsal anterior cingulate cortex were involved in evaluating social-comparison outcomes and were associated with subsequent risky behavior.

The importance of this finding is that it reframes social comparison from a static personality or situational variable into a dynamic learning signal. Each comparison can provide feedback about whether the current strategy was successful. When one's outcome is better than another person's, the current strategy may be reinforced; when it is worse, negative prediction errors and regret may encourage behavioral adjustment on the next trial. Social comparison in risky decision making therefore unfolds over time: current choice → own outcome → other's outcome → social comparison → emotion/prediction error → subsequent risk adjustment. In this sense, social comparison affects not only how individuals feel at a given moment but may also contribute to the dynamic updating of risk preference.

4. Why Relative Advantage Can Also Promote Risk Taking: Status Maintenance and the Pursuit of Social Gains

It is equally inadequate to summarize social comparison effects as 'falling behind causes risk taking.' Some studies indicate that outperforming others can itself reinforce risky behavior. Bault et al. (2011) [2] found that after experiencing a social gain—that is, an outcome better than another person's—participants subsequently showed greater risky and competitive behavior. An advantageous position therefore does not invariably induce conservatism. Relative advantage can function as a social reward and reinforce the risky strategy that produced it.

Dijk (2017) [3] further distinguished the pursuit of social gains from aversion to social losses. Individuals may dislike falling behind, but they may also derive additional utility from being ahead. For people with a strong preference for social gains, extending an existing lead produces substantial utility and social comparison may therefore increase risky investment. By contrast, when individuals are primarily concerned with avoiding disadvantage, social comparison need not produce greater risk taking.

This distinction offers an important account of individual differences. Social comparison is not driven only by a desire to avoid losing; it can also reflect a desire to win by more. These motives correspond, respectively, to a position-restoration motive aimed at escaping disadvantage and a position-enhancement motive aimed at extending advantage.

The same risky behavior can thus serve different social goals. A person who is behind may take risks to catch up, whereas a person who is ahead may take risks to widen the gap. Analyses based only on average levels of risk taking can easily obscure these distinct psychological processes.

5. Why Findings Diverge: Social Comparison Is Not Simply a “Social Loss”

The central theoretical challenge in research on social comparison and risky decision making is that the literature does not reveal a simple, stable directional effect.

A straightforward application of prospect theory would predict that being disadvantaged relative to others constitutes a social loss and should therefore produce risk seeking analogous to that observed in the personal loss domain, whereas being advantaged constitutes a social gain and should promote risk aversion. Yet Linde and Sonnemans (2012) [10] found that social reference points did not simply reproduce the reflection effect associated with personal reference points. Dijk (2017) [3] likewise showed that, for a substantial proportion of participants, social gains could carry greater psychological weight than social losses. These findings indicate that although social reference points can classify outcomes as social gains or losses, the social value function is not a simple copy of the personal value function. Explaining this pattern requires distinguishing three levels. The first is outcome encoding. An upward comparison means 'I am worse off than the other person,' but this does not automatically imply 'I must take risks to change the situation.' A social loss is likely to matter only when the comparison dimension is self-relevant and the comparison target is psychologically meaningful. The second level concerns goal interpretation. Relative disadvantage may be construed as a gap that can still be closed or as an unchangeable disparity. The former interpretation elicits approach and repair motives, whereas the latter may produce withdrawal. Thus, two studies may both manipulate upward comparison yet obtain opposite effects on risk taking if attainability differs across contexts.

The third level concerns behavioral feasibility. Even when status-restoration motives are strong, risk taking is a sensible instrument only if it is perceived as capable of narrowing the gap. If risky behavior is unrelated to social position, or if failure would impose an intolerable

additional loss, individuals may still choose conservatively. Rather than searching for an average main effect of upward comparison, it is therefore more informative to ask: under what conditions is a relative state produced by social comparison transformed into a goal that the individual attempts to solve through risky behavior? This question offers a common framework for integrating previously fragmented work on social reference points, relative deprivation, competition, ranking, and risk sensitivity.

6. An Integrative Process Model of Social Comparison and Risky Decision Making

Drawing on the existing evidence, this review proposes a four-stage model—social reference-point reconstruction, relative-state evaluation, motivational transformation, and risk adjustment—to explain the basic process through which social comparison shapes risky decision making.

6.1. Stage 1: Social Reference-Point Reconstruction

Decision makers first observe their own outcomes while receiving information about a comparison target's income, rank, performance, or choices. Once a target is psychologically relevant, that person's outcome is no longer mere background information; it becomes part of the value representation of one's own outcome.

Accordingly, objective gain is not equivalent to subjective gain. Subjective value can depend simultaneously on where one's outcome lies relative to a personal reference point and where it lies relative to a social reference point. This explains why an individual can experience a psychological loss despite obtaining an absolute gain.

6.2. Stage 2: Relative-State Evaluation

Individuals then evaluate their own social position along three related but non-equivalent dimensions: whether they are ahead or behind, that is, direction; how far they are from others, that is, distance; and whether that gap can be changed, that is, attainability. Existing studies have focused primarily on the first dimension, but the latter two may be more important for explaining risky behavior. The same upward comparison may elicit approach when the gap is small and attainable but avoidance when the gap is very large and perceived as unchangeable.

6.3. Stage 3: Motivational Transformation

Social position does not directly determine risky behavior. A relative state must first be transformed into a behavioral motive. Under disadvantage, a typical pathway may be: upward comparison → relative deprivation/regret/status threat → gap-repair motive. Under advantage, a different pathway may emerge: downward comparison → social reward/pride → motive to maintain or extend the advantage.

Competitive contexts intensify this stage. When the task explicitly defines outperforming others as the goal, social comparison is no longer merely a basis for self-evaluation; it becomes a direct performance objective. Research on financial risk taking suggests that without competitive incentives, individuals may prefer to reduce outcome differences, whereas explicit competition can lead them to seek a larger relative advantage. Competition thus transforms social position from an evaluative standard into an action goal.

6.4. Stage 4: Risk Adjustment

Whether risky choice becomes the final behavioral response depends on its instrumental value. When a high-risk, high-upside strategy increases the chance of catching up or preserving status, social motives are more likely to translate into greater risk taking. Conversely, if risk taking

cannot change rank, if the cost of failure is too high, or if the individual has more stable alternative routes to upward mobility, social comparison may not increase risk. The proposed sequence is therefore: social comparison → relative state → motive to change that state → assessment of the instrumental value of risk taking → risk adjustment. This distinction helps explain why social comparison effects are highly context dependent.

7. Boundary Conditions of Social Comparison Effects

7.1. Comparison Targets and Social Distance

Festinger emphasized that the relevance and similarity of a comparison target determine whether a comparison is psychologically meaningful. The same principle applies to risky decision making. Relative to the advantage of a distant stranger, a gap involving a peer, colleague, or direct competitor may be more likely to function as an effective social reference point. Rank and distance should also be distinguished. Two individuals may both rank second, but being one point behind the leader is psychologically different from being one hundred points behind. Future research should therefore move beyond simple superior/equal/inferior manipulations and systematically characterize functions of social distance.

7.2. Attainability and Perceived Control

Whether a relative gap can be changed through action may be a core determinant of the direction of risk taking. If a risky option provides a meaningful chance to alter rank, being behind may increase risk taking. If the leader is clearly unattainable, however, upward comparison may evoke helplessness and reduce willingness to act. The interaction between gap size and attainability may therefore explain conflicting findings better than comparison direction alone.

7.3. Competitive Context

Although social comparison and competition are related, they are not equivalent. Comparison provides information about relative position, whereas competition determines whether outperforming others is itself a goal. When decision outcomes are directly tied to rank-based bonuses, promotion opportunities, or social prestige, the behavioral significance of comparison is amplified. This is especially relevant in financial markets and performance-evaluation settings. Rank-based incentives can transform a decision that would otherwise be based on absolute returns into one based on relative performance, prompting even risk-averse individuals to choose higher-variance strategies.

7.4. Socioeconomic Status and Available Resources

Socioeconomic status determines not only how many resources individuals possess but also how they can respond to upward social comparison.

Lin et al. (2026) [9] found that the associations among upward social comparison, relative deprivation, and financial gambling motives were substantially stronger among individuals with lower socioeconomic status (SES). One possible explanation is that high-SES individuals have more low-risk pathways for improving status, such as education, career development, or diversified asset allocation, whereas lower-SES individuals have fewer routes for rapidly changing their relative economic position. High-risk, high-return options may therefore become more psychologically attractive. The effects of social comparison on risky behavior must thus be understood within real opportunity structures: the same status threat can produce very different decisions when available resources differ.

7.5. Gender and Sensitivity to Social Comparison

Social comparison can also alter conventional gender differences in risk taking. Some studies of financial decision making suggest that men and women differ in their sensitivity to social rank and the relevance of risk, and that manipulating the social environment can make gender differences in risk taking either emerge or disappear. This pattern further indicates that risk preference is not a fully stable personality characteristic. Average findings such as 'men take more risks' depend at least partly on whether the social environment activates competitive and rank-related motives. Future work should therefore move beyond treating gender as a simple control variable and examine its interactions with social goals, comparison targets, and competitive structures.

7.6. Risk Domains

The most developed research on social comparison and risk has focused on monetary lotteries, investment, and gambling. Yet risk taking is strongly domain specific. The relationships between social comparison orientation and financial, gambling, ethical, health, and social risks are not identical. For example, an orientation toward comparing abilities appears to predict risk taking across multiple domains more consistently than an orientation toward comparing opinions. Thus, taking financial risks to catch up in status does not imply that the same individual will show a parallel pattern in health-related risk. Future research should therefore ask not simply whether social comparison increases risk preference, but rather: which forms of social comparison increase which forms of risk taking?

8. From Behavior to the Brain: How Social Comparison Enters Risk-Learning Systems

Neuroscience offers a potentially unifying account of these phenomena by treating social comparison as a form of social reward-prediction error. When actual social position is better than expected, individuals experience a positive social prediction error; when it is worse than expected, they experience a negative social prediction error. These signals are processed by systems including the striatum, ventromedial prefrontal cortex, anterior insula, and anterior cingulate cortex and can be used to adjust subsequent choices.

Bault et al. (2011) [2] found that striatal activity associated with social gains predicted medial prefrontal activity during later decision phases and, in turn, subsequent risky behavior. Liu et al. (2018) [12] showed that social comparison altered regret and ventral striatum-dorsal anterior cingulate connectivity, which were related to later risk adjustment. Luo et al.'s (2018) [13] neuroimaging meta-analysis further supported the view that social and nonsocial gains and losses partly share neural coding mechanisms.

A 2025 ERP study further showed that upward, lateral, and downward comparisons not only altered behavioral risk taking but also modulated neural activity during outcome-feedback processing (Peng et al., 2025) [17]. This suggests that social comparison effects can arise at relatively early stages of feedback evaluation rather than only after explicit deliberation. Neural evidence therefore supports a different way of conceptualizing the social comparison-risk relationship: social comparison may not be an external social-psychological factor appended to risky decision making, but a component of the value-learning system itself. Future work integrating computational models could estimate separate learning rates for 'absolute prediction error' and 'social prediction error.' Some individuals may update behavior mainly on the basis of whether they themselves gained or lost, whereas others may update primarily according to whether they outperformed others. Such parameterization may provide a powerful account of individual differences in social-comparison sensitivity.

9. From the Laboratory to the Real World: Limits to External Validity

A prominent feature of the current literature is its heavy reliance on laboratory lottery tasks. Aggarwal's (2026) [1] systematic review likewise noted an overall overdependence on laboratory methods in research on social comparison and decision making. Laboratory paradigms have the advantage of precisely manipulating others' outcomes and isolating the causal effect of social comparison. Their cost, however, is that they artificially simplify at least three important features of real-world comparison. First, social comparison in everyday life is often self-selected. Experiments may tell participants how much 'another person' earned, whereas in real life people actively decide whom to observe, follow, or ignore. The selection of comparison targets may itself already reflect risk preference, self-esteem, and social status.

Second, real-world social comparison is repeated and dynamic. Investors check rankings day after day, adolescents are continuously exposed to peers and social-media content, and employees receive ongoing performance feedback. A one-shot upward comparison may therefore have different effects from chronic, repeated upward comparison. Third, real-world comparison is embedded in social networks rather than simple dyads. Individuals may simultaneously observe people who are far better off, roughly similar, and worse off than themselves. It remains unclear whether the effective social reference point is determined by the group mean, the best-performing target, the most similar target, or one's local network position. Laboratory studies have therefore provided relatively strong causal evidence, but evidence remains limited regarding target selection, cumulative effects, and network structure in natural social environments.

10. Social Media: An Unavoidable Comparison Environment for the Next Stage of Research

Digital media have structurally transformed social comparison. Traditional comparison was constrained by physical environments, so people typically compared themselves with family members, colleagues, classmates, and neighbors. Social media dramatically expands the pool of available comparison targets, while the information displayed is highly selective: favorable outcomes involving success, wealth, appearance, and consumption are disproportionately visible. Digital environments may therefore change at least three parameters of social comparison at once: comparison frequency, opportunities for upward comparison, and the upper bound of the reference group. A large literature already links social media with social comparison, mental health, and self-evaluation, yet research on how digital social comparison is translated into risky decision making remains far less developed than the experimental literature on financial risk. This gap raises several questions. When individuals are repeatedly exposed to peers' high consumption, investment returns, or career success, do they become more willing to use leverage, start a business, engage in speculative consumption, or gamble? Are such effects driven by relative deprivation, social norms, or distorted estimates of success probabilities? Does algorithmic exposure to unusually successful cases artificially raise social reference points? Addressing these questions would move research on social comparison and risk from traditional dyadic experiments toward the realities of digitally networked social environments.

11. Future Directions: From Comparison-Direction Effects to Socially Embedded Risk Processes

The literature has largely resolved the field's first-order question by demonstrating that social comparison can alter risky choice. The marginal value of repeatedly asking whether upward-comparison groups take more risks than downward-comparison groups is therefore declining.

A more important task is to develop process theories that predict when comparison effects emerge and why their direction changes across contexts.

11.1. Building a Social Reference Space of Direction, Distance, and Attainability

Future research should move beyond classifying comparisons as merely upward or downward and simultaneously manipulate comparison direction, social distance, and attainability. This would allow a critical prediction to be tested: risk taking may not rise linearly with social distance but instead follow an inverted-U function. When the gap is very small, there is little reason to take risks; when the gap is moderate and attainable, risk taking may be greatest; when the gap becomes very large and nearly impossible to close, perceived control may decline and risk taking may fall again. If supported, this account could directly explain why social losses have increased risk taking in some studies but reduced it in others.

11.2. Distinguishing Status Repair, Resource Need, and Emotional Compensation

Relative deprivation, competition, regret, and status pursuit are often studied separately, yet it remains unclear whether they are different manifestations of a common process or distinct parallel mechanisms. Future research should directly compare at least three pathways: social comparison → perceived resource insufficiency → risk taking; social comparison → relative deprivation/regret → risk taking; and social comparison → status threat → status-restoration motive → risk taking. Competitive model testing is needed to determine whether the so-called upward-comparison effect is driven primarily by economic need, emotion regulation, or status motivation.

11.3. From Exogenously Imposed to Self-Selected Social Comparison

Most existing experiments assign the reference target, whereas in real life people actively choose whom to compare themselves with. Future studies could allow participants to select a reference person from several alternatives before measuring risky behavior. This design would distinguish the effect of being forced to observe a superior other from the effect of actively seeking an upward comparison. The psychological meaning of these processes may differ substantially, and studying them separately would also help address selection bias in social-comparison research.

11.4. From One-Shot Comparison to Dynamic Learning

Research on risky decision making should make greater use of repeated-interaction tasks and reinforcement-learning models. Computational models could include at least two prediction-error terms: $PE_{\text{absolute}} = \text{actual personal outcome} - \text{expected personal outcome}$; and $PE_{\text{social}} = \text{actual relative position} - \text{expected relative position}$. Estimating separate learning rates for these signals would make it possible to quantify whether an individual learns primarily in a self-centered manner or in relation to social rank. This approach would move social-comparison research beyond descriptive effects toward computational models that predict sequential decisions.

11.5. Extending Beyond Monetary Risk to Multiple Risk Domains

Future work should explicitly compare financial, health, occupational, educational, social, and ethical risks. Social comparison is likely to have its strongest effects on risky behaviors that can directly alter social position. High-risk investment, for example, can change one's wealth rank and may therefore be especially sensitive to comparison, whereas physical-safety risks that are weakly tied to social position may show a different pattern. Social comparison effects should thus depend on the instrumental link between a risky behavior and a social goal. This principle may offer a unified explanation for cross-domain heterogeneity.

11.6. Strengthening Research in the Chinese Sociocultural Context

The Chinese context offers distinctive theoretical value for research on social comparison and risk. Rapid social mobility and economic inequality make relative economic position highly salient, while relational ties, conceptions of self, face, social status, and group norms may reshape comparison processes. Existing research involving Chinese lottery players and economic inequality has already highlighted the importance of SES and relative deprivation, but systematic evidence is still lacking on whether culture primarily changes target selection, sensitivity to status threat, or the expression of risky behavior. Future studies could examine comparisons with familiar versus unfamiliar others, comparisons within versus outside relational networks, and personal versus family ranking, rather than merely replicating Western experimental paradigms.

12. Conclusion

Risky decision making is not an isolated cognitive process concerned only with probabilities and payoffs. Individuals live simultaneously within social relationships and status hierarchies, and the performance of others continually provides new coordinates for evaluating their own outcomes. Research over the past decade has consistently shown that others' earnings, rank, competitive position, and economic distance can alter risk taking; neuroscientific work further demonstrates that social comparison enters reward evaluation and feedback-learning systems. The central question is therefore no longer whether social comparison affects risky decision making, but how it transforms an objective outcome into a behaviorally meaningful relative social state and under what conditions individuals attempt to change that state through risky behavior. To address this question, the present review proposes a process framework of social reference-point reconstruction, relative-state evaluation, motivational transformation, and risk adjustment. Social comparison first makes others' outcomes social reference points for risky decision making and recodes personal outcomes as social gains or losses. Individuals then evaluate their position in terms of comparison direction, social distance, and attainability. Relative deprivation, regret, competition, status-restoration motives, and social reward subsequently transform positional discrepancies into action motives. Risk taking increases only when risky behavior is perceived as an effective means of changing social position. Upward social comparison is therefore neither a sufficient condition for risk seeking nor a sufficient condition for risk aversion. What ultimately matters is whether individuals perceive a social discrepancy as a state that needs to be changed, can be changed, and can specifically be changed through risky behavior. This account offers a possible unified explanation for previously conflicting findings. By integrating comparison direction, social distance, attainability, resource conditions, and the instrumentality of risky behavior, and by moving from one-shot laboratory experiments toward dynamic social networks, real-world behavior, and computational models, future research may progress from documenting scattered 'social comparison effects' toward a genuine theory of risky decision making in social contexts.

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