



UNIVERSITÀ DI PADOVA

Dipartimento di Filosofia, Sociologia, Pedagogia e Psicologia Applicata

Corso di laurea magistrale in Psicologia sociale, del lavoro e della comunicazione

TESI DI LAUREA MAGISTRALE

Social Comparison Seeking: Differentiating Gain and Loss Domains

Ricerca di Informazioni per il Confronto Sociale: Come si Distingue il Dominio
di Guadagno da Quello di Perdita?

Relatore

Prof. Andrea Bobbio

Laureando

Michele Garbelotto

Correlatore esterno

Prof. Marc-Lluís Vives Moya

Matricola

2153072

Anno Accademico

2025/2026

Riassunto

Il confronto sociale consiste nel considerare informazioni relative ad altre persone in rapporto a sé stessi, sia quando tali informazioni vengono incontrate incidentalmente sia quando vengono ricercate attivamente. Questa tesi si concentra sulla ricerca attiva di informazioni in grado di fornire uno standard di confronto sociale, qui definita *ricerca di informazioni per il confronto sociale (social comparison seeking)*. Il quadro teorico integra la teoria del confronto sociale, gli studi sulla ricerca di informazioni e la letteratura sul framing di guadagni e perdite, con l'obiettivo di rispondere alla seguente domanda: **i domini di guadagno e di perdita influenzano la ricerca di informazioni per il confronto sociale?**

Per rispondere a questa domanda è stato condotto uno studio sperimentale online, con un disegno a misure ripetute, che ha coinvolto 140 partecipanti. Il compito sperimentale consisteva in un gioco della roulette. Ciascun partecipante completava sia prove in cui gli esiti erano presentati come guadagni a partire da un ammontare iniziale di 0 dollari, sia prove in cui erano presentati come perdite a partire da 60 dollari, mantenendo invariati i guadagni finali nei due domini. Dopo aver osservato il proprio esito in ciascuna prova, i partecipanti potevano decidere se proseguire oppure richiedere di visualizzare gli esiti attribuiti a partecipanti precedenti. Il task permetteva quindi di distinguere tra l'avvio della ricerca, definito come la richiesta di almeno un esito, e la sua prosecuzione una volta avviata, misurata attraverso il numero di esiti richiesti. Si prevedeva una minore ricerca nel dominio di perdita; si ipotizzava inoltre che l'identificazione con gli altri partecipanti mediasse tale effetto e che la ricerca fosse maggiore quando era possibile effettuare un confronto verso l'alto piuttosto che verso il basso.

Nelle condizioni esaminate, le analisi confermatrice non hanno mostrato una differenza significativa tra i due domini né nell'avvio né nella prosecuzione della ricerca. Anche il livello di identificazione non differiva tra i domini e l'effetto indiretto ipotizzato non è stato supportato dai dati. Una maggiore identificazione risultava invece associata a una più elevata probabilità di avviare la ricerca, in direzione opposta rispetto a quanto previsto. Inoltre, la ricerca veniva avviata più frequentemente quando era possibile un confronto verso l'alto, fornendo un sostegno parziale alla terza ipotesi; non è emersa, tuttavia, un'associazione analoga rispetto alla componente di continuazione della ricerca.

Adattando precedenti approcci allo studio della selezione degli standard di confronto e della ricerca di informazioni a un task sequenziale, questo studio ha sviluppato un disegno sperimentale volto ad affrontare una domanda di ricerca finora non esaminata direttamente. Infine, i risultati evidenziano l'utilità di distinguere tra l'avvio della ricerca e la sua prosecuzione, senza tuttavia consentire di concludere che le due fasi riflettano meccanismi psicologici distinti.

Contents

1. Introduction	9
2. Theoretical Background	11
2.1 Social Comparison Theory	11
2.1.1 Foundations and Evolution	11
2.1.2 Motivations (Why?)	12
2.1.3 Comparison as a Process (How?)	13
2.1.3.1 Standard and Target Selection	14
2.1.3.2 Comparison and Evaluation	16
2.1.4 Consequences of Social Comparison	19
2.1.4.1 Immediate Emotional and Motivational Responses	19
2.1.4.2 Well-Being and Clinical Consequences	21
2.1.5 Social Comparison Seeking: How Has It Been Studied?	25
2.2 Information Seeking	28
2.2.1 What Information Seeking Is	28
2.2.2 Why Information Has Value	29
2.2.3 From Non-Seeking to Information Avoidance	31
2.3 Prospect Theory and Gain-Loss Framing	33
2.3.1 Foundations and Development	33
2.3.1.1 From Expected Utility Theory to Prospect Theory	33
2.3.1.2 The Value Function and Probability Weighting	35
2.3.1.3 Cumulative Prospect Theory	37
2.3.2 Gain-Loss Framing: Concepts and Evidence	38
2.3.2.1 What Gain-Loss Framing Is	38
2.3.2.2 What the Evidence Supports	39
2.4 Research Gap: Gain-Loss Domain and Social Comparison	40
2.4.1 Prospect Theory and Social Comparison: What Has Been Studied So Far?	40
2.4.2 How Do Gain and Loss Domains Shape Information Seeking?	42
3. Empirical Study	44
3.1 Study Rationale and Hypotheses	44
3.1.1 Hypotheses	47

3.2 Method	48
3.2.1 Participants	48
3.2.2 Design	48
3.2.3 Materials and Measures	49
3.2.4 Procedure	51
3.3 Statistical Analyses	52
3.3.1 Preliminary Analyses	52
3.3.2 Confirmatory Analyses	52
3.3.3 Exploratory Analyses	54
3.4 Results	55
3.4.1 Descriptive Statistics of the Three Main Measurements	55
3.4.2 Preliminary Analyses	57
3.4.2.1 Order Effect and Counterbalancing	57
3.4.2.2 Manipulation Check	57
3.4.3 Hypothesis Tests	58
3.4.3.1 H1: Domain Effect on Social Comparison Seeking	58
3.4.3.2 H2: Mediating Role of Identification	58
H2a: Domain Effect on Identification	58
H2b: Identification Effect on Social Comparison Seeking	58
Mediation Analysis	59
3.4.3.3 H3: Upward Comparison Effect on Social Comparison Seeking	59
3.4.4 Exploratory Analyses	60
3.4.4.1 Comparison Direction by Inequality	60
3.4.4.2 What Drives the Hedonic Effect?	61
3.5 Discussion	62
3.6 Limitations and Future Research	63
4. Conclusion	65
Appendix A: Model Specifications	67
Appendix B: Additional Figures	69
Preliminary Analysis Figures	69
Exploratory Figures	71
Bibliography	75
Acknowledgments	87

List of Figures

Figure 2.1	The prospect theory value function (Barberis, 2013).	36
Figure 2.2	The probability weighting function in cumulative prospect theory (Barberis, 2013).	37
Figure 3.1	H1: Domain Effect on Social Comparison Seeking	47
Figure 3.2	H2: Mediating Role of Identification	48
Figure 3.3	H3: Upward Comparison Effect	48
Figure 3.4	Distribution of the number of social-comparison outcomes requested per trial. The red bar represents trials with no sampling; blue bars represent positive sample counts.	56
Figure 3.5	Overall distribution of happiness across block observations.	56
Figure 3.6	Distribution of identification responses among block observations with at least one sample.	57
Figure 3.7	Observed probability of requesting at least one social-comparison outcome by identification score. Points are participant-level means and error bars are 95% confidence intervals, restricted to blocks in which at least one outcome was sampled.	58
Figure 3.8	Observed probability of requesting at least one social-comparison outcome by participant outcome. The worst outcome permitted lateral or upward comparison, whereas the best outcome permitted lateral or downward comparison. Points are participant-level means and error bars are 95% confidence intervals.	59
Figure 4.1	Observed social comparison seeking initiation by block position and domain. Points are cell means and error bars are 95% confidence intervals.	69
Figure 4.2	Observed social comparison seeking extent by block position and domain. Points are cell means and error bars are 95% confidence intervals.	70
Figure 4.3	Observed distributions of post-block happiness in the gain and loss domains. Bars show percentages of block observations within each domain in five-point bins; dashed lines mark the domain means.	71

Figure 4.4	Observed sampling by outcome pair and participant outcome. Points show participant-level cell means with 95% confidence intervals. Both vertical axes are truncated.	72
Figure 4.4a	Probability of any sampling.	72
Figure 4.4b	Mean sampling extent (zeros excluded).	72
Figure 4.5	Observed mean happiness by block total earnings and domain among 211 participant-domain blocks with at least one sampled outcome. Error bars show 95% confidence intervals.	73
Figure 4.6	Observed mean happiness by the proportion of sampled outcomes corresponding to the best outcome available in each roulette, pooling gain and loss blocks. Points are participant-level bin means with t-based 95% confidence intervals. Values are unadjusted.	74

Introduction

Imagine you have just completed an important exam. You know that you did not study as carefully as you intended and therefore do not expect a particularly good result. A few days later, you receive a score of 9 out of 10. You do not yet know what your classmates received. Would you approach them and ask about their scores, or would you be content with knowing only your own result? Now consider a different situation. You studied carefully and expected to perform very well, but you receive 3 out of 10, a result considerably worse than you anticipated. Once again, you do not know how the other students performed, but you have the opportunity to find out. Would you now be interested in knowing their scores? The contrast between these scenarios does not simply depend on the two marks, but on how each outcome relates to the expectation against which it is evaluated.

Together, these scenarios raise a broad question: does social comparison differ between gain and loss domains? The present thesis narrows this question by focusing on the deliberate acquisition of information that may serve as a basis for comparison. Social comparison can occur when information about other people is encountered incidentally, but it can also involve actively seeking such information (Crusius et al., 2022). The thesis examines the latter and therefore asks a more specific question: do gain and loss domains differ in the extent to which they elicit *social comparison seeking*?

To situate this question, the *Theoretical Background* develops three relevant bodies of literature. It first reviews social comparison theory, moving from its foundations and motives to the processes and consequences of comparison, before considering how social comparison seeking has been studied. It then examines information seeking, focusing on what seeking involves, why information may have value even when it cannot alter an outcome, and the distinction between not seeking information and actively avoiding it. The third part introduces prospect theory and reviews the conceptual foundations and empirical evidence concerning gain-loss framing. The final section connects these strands

by examining existing links between prospect theory and social comparison, alongside evidence on information seeking across gain and loss domains, to define the research gap addressed by the present thesis. The *Empirical Study* then presents the study rationale and hypotheses, method, statistical analyses, and results, before discussing the findings, the study's limitations, and directions for future research. Finally, the *Conclusion* revisits the research questions that guided the thesis, summarizes how the study addressed them and the main findings that emerged, and draws together the overall contribution of the work.

Theoretical Background

2.1 - Social Comparison Theory

2.1.1 - Foundations and Evolution

People rarely evaluate themselves in isolation. Information about how others think, perform, or fare can provide a reference for understanding one's own characteristics. Another person's performance may cast one's own ability in a different light, while agreement or disagreement may help clarify one's opinions and place among others. Wood defined *social comparison* broadly as "the process of thinking about information about one or more other people in relation to the self" (Wood, 1996, pp. 520-521). Here, the word "thinking" doesn't necessarily involve careful or deliberate reflection: a comparison may occur spontaneously and unintentionally. What matters is that this information is considered in relation to the self, even briefly.

Festinger's 1954 article provided the first formal theory of this process. A useful way of reconstructing its central argument is offered by Crusius et al. (2022), who organize Festinger's propositions around three connected questions: why people compare, with whom they compare, and what follows from comparison. The theory begins with a need to evaluate one's opinions and abilities. Objective evidence may sometimes provide an adequate basis for this evaluation, but when such criteria are unavailable or insufficient, information about other people can supply a social standard (Crusius et al., 2022; Festinger, 1954). Not every other person is equally informative: the diagnostic value of a comparison generally decreases as the discrepancy between self and other increases, making similar or otherwise relevant others especially useful. For abilities, Festinger also proposed a qualified upward tendency, because a person performing slightly better could provide both an informative and a valued standard. This tendency was not extended to opinions and was explicitly connected to the cultural valuation of better performance (Festinger, 1954). Festinger's theory also extended beyond individual self-evaluation.

Discrepancies within a relevant group could create pressures to revise one's own position, influence others, improve one's performance, or cease comparing. Social comparison was therefore conceived both as a means of understanding the self and as a process embedded in communication and relations within groups (Crusius et al., 2022; Festinger, 1954).¹

Over the following decades, social-comparison research developed through several partly distinct theoretical traditions. Buunk & Gibbons (2007) trace this development from Festinger's original theory through research on affiliation under threat, downward comparison, social comparison as a social-cognitive process, and individual differences in social comparison orientation. These traditions extended the field in different directions. Research on affiliation examined how uncertainty and emotional threat make information from others relevant; downward-comparison theory addressed the significance of worse-off standards under conditions of threat; social-cognitive approaches shifted attention toward the mechanisms through which comparison information is processed; and work on social comparison orientation examined stable differences in people's propensity to compare. At the same time, researchers adopted a wider range of methods and investigated social comparison across an expanding set of social and applied contexts. Buunk and Gibbons consequently describe this development as the transition from a focused theory to a varied field of research. Festinger's theory remained foundational, but it no longer constituted a unified account of all the questions studied under the heading of social comparison. The following sections reflect this plurality by considering motives, standard selection and evaluation, and responses to comparison as related but analytically distinct areas of inquiry.

2.1.2 - Motivations (Why?)

Social comparison may serve several motives. Wood (1989) grouped the motives most commonly examined in social-comparison research into *three broad classes* (self-evaluation, self-improvement, and self-enhancement), and this tripartite taxonomy continues to organize contemporary reviews and motivational models (Crusius et al., 2022; Diel et al., 2021). Self-evaluation concerns obtaining sufficiently accurate information about one's current standing, capacities, or beliefs, particularly when objective criteria are unavailable or ambiguous. It therefore makes similar or otherwise diagnostic others informative, because their position can help locate the self on the relevant dimension (Festinger, 1954). Self-improvement concerns learning how to perform better or move toward a valued state.

¹For a historical reconstruction of the origins and early development of the theory, see Wheeler & Suls (2020).

It can direct attention toward superior others who demonstrate a desirable level of performance or provide information about how progress might be achieved. Self-enhancement instead concerns maintaining or restoring a favorable view of the self and can influence which standards are attended to and how their implications are interpreted. These motives are analytically distinct but can operate together: the same comparison may provide an accurate evaluation, useful guidance, and implications for self-esteem. Conversely, no motive maps mechanically onto one comparison direction. An upward comparison can inform, inspire, or threaten, while a *downward* comparison can reassure the self without necessarily providing useful guidance. A fourth motive, *self-verification*, concerns the desire to seek or interpret information in ways that confirm an existing self-concept, including when that self-concept is unfavorable (Swann & Read, 1981). Later integrative accounts grouped self-verification with self-assessment, self-improvement, and self-enhancement as four major motives of self-evaluation (Sedikides & Strube, 1995), and Morina (2021) incorporates the same four motives into his theoretical framework.

Motives, however, do not fully explain why some people engage with comparison information more frequently than others. Gibbons & Buunk (1999) developed the Iowa-Netherlands Comparison Orientation Measure to assess a relatively stable tendency to use others as a reference for evaluating one's abilities, accomplishments, opinions, and experiences. Subsequent research reviewed by Buunk et al. (2020) indicates that people higher in social comparison orientation engage in more comparisons, devote greater attention to comparison information, and are often more strongly affected by it. This orientation is best understood as a distal disposition that increases the likelihood or salience of comparative processing, rather than as the motive underlying a particular comparison episode. It also does not imply a fixed preference for upward or downward standards: higher orientation has been associated with more frequent comparisons in both directions, and its consequences vary with the target, domain, context, and interpretation. Social comparison orientation thus complements episode-level motives by helping to explain why some individuals more readily seek or use comparison-relevant information.

2.1.3 - Comparison as a Process (How?)

Wood's definition tells us what makes a comparison social: information about others is understood in relation to the self. To describe how this relation takes shape, it is useful to distinguish four conceptual components: a *target* of evaluation comes into focus, a *standard* is selected, the two are *compared*, and the target is *evaluated* in light of their relation (Möller, 2016). In social comparison, the target is usually a self-relevant attribute,

such as one's ability, opinion, or appearance, whereas information about other people provides the standard. These components help organize the discussion that follows, but they are not fixed steps. They may overlap, repeat, or unfold without deliberate attention as motives and context shape the course of comparison (Morina, 2021; Mussweiler, 2003).

2.1.3.1 - Standard and Target Selection

Having distinguished the target of evaluation from the standard against which it is judged, we can now consider how these two components come together in a social comparison. The target establishes which aspect of the self is being evaluated, while the evaluative question shapes what would constitute a useful benchmark. Standard selection then concerns which person, group, or aggregate can provide that benchmark. People do not always choose social standards deliberately: they may be actively sought, encountered through interaction, observation, or conversation, or effectively imposed by institutional feedback and the immediate environment (Wood, 1989). As discussed earlier in relation to Festinger's theory, similar others can be especially informative for self-evaluation. However, similarity is not valuable in itself. Someone who broadly resembles the comparer may be uninformative on the dimension at issue, whereas a person who differs in many respects may still provide a diagnostic standard when the relevant characteristics are shared. The usefulness of a standard therefore depends on what is being evaluated, the question guiding the comparison, the comparer's motive, and the social information available.

The Proxy Model is a model of social comparison that focuses on ability judgments, particularly situations in which people want to estimate whether they could perform a novel task. To make this estimate, they use information from someone who has already attempted it. A useful proxy is connected to the comparer through performance on a familiar task that depends on abilities also relevant to the novel task. Similar performance on that earlier task provides a basis for using the proxy's subsequent outcome to estimate one's own prospects. When the proxy's earlier performance may not reflect their maximum capacity, similarity on additional attributes that are causally related to performance becomes informative as well. Because different tasks depend on different abilities and enabling conditions, the same person need not be an equally useful proxy across situations (Suls & Wheeler, 2020; Wheeler et al., 1997). The model therefore does not prescribe similarity as a general preference; it specifies which similarities make another person's performance diagnostic for a particular ability judgment.

The Triadic Model applies the same principle to opinions: the most informative social standard depends on the question the comparison is meant to answer. It distinguishes three such questions: assessing a current preference, assessing a belief, and predicting a future preference. When assessing a current preference, corroboration from people who share attributes relevant to that preference can help validate the reaction. When assessing the truth of a belief, a relatively expert other is generally more informative; where factual judgment is intertwined with values or basic premises, an expert who shares those premises may be especially useful. Predicting a future preference instead calls for an experienced proxy whose previous preferences bear a sufficiently stable and informative relation to those of the comparer (Suls et al., 2000; Suls & Wheeler, 2020). Agreement thus has different evidential meanings depending on whether it corroborates a taste, supports a belief, or helps forecast a future reaction. Together, the Proxy and Triadic Models formulate functional predictions about which social standard would be diagnostic for a given question. They do not, however, establish which standard people will encounter or actually select. Evidence from comparison-selection studies shows that upward standards are generally attractive, but this tendency depends on the alternatives available and becomes less distinct when a *lateral* standard is also offered (Gerber et al., 2018). Direction, similarity, expertise, and prior experience should therefore be treated as distinct properties of a standard: an upward standard is not necessarily the most diagnostic one, and selecting it does not by itself reveal the motive underlying the comparison.

Downward-comparison theory provides a motivational account of standard selection. Wills (1981) proposed that reductions in subjective well-being (particularly those involving threats to self-esteem) make worse-off standards psychologically relevant because comparison with them offers an opportunity for self-enhancement. This account yields two empirically distinct predictions at different stages of the comparison process. The selection-under-threat hypothesis predicts that reduced subjective well-being increases the likelihood of selecting or seeking out downward standards. The reaction hypothesis predicts that, once a downward comparison occurs, it can improve subjective well-being by making one's own position appear more favorable. Evidence for the reaction hypothesis does not, by itself, establish the selection hypothesis.²

A further property of the standard is its scope and psychological proximity. The benchmark in a *local comparison* is a particular person or small group in one's immediate

²In contrast to the second hypothesis, the selection-under-threat hypothesis was not supported in the meta-analysis by Gerber et al. (2018). In two-choice laboratory studies, experimentally induced threat reduced the proportion of upward selections, but upward targets remained significantly preferred; field studies likewise provided no evidence that threat shifted preferences toward downward targets.

surroundings; a *general comparison* instead uses an aggregate representing a wider class, cohort, organization, or population (Zell & Alicke, 2020). These are not different comparison processes: both employ social information, but summarize it at different levels. When local and general standards are simultaneously available, they need not receive equal weight. The local dominance effect describes the tendency for information about nearby others to exert a stronger influence on self-evaluation and, in some circumstances, to attenuate the influence of broader distributional information (Zell & Alicke, 2020). Local dominance therefore concerns not only which standards are available, but which of them ultimately organizes the evaluation. More generally, the standard that would be normatively most diagnostic, the standard made accessible by the environment, and the standard that exerts the greatest psychological influence may not coincide.

Demarcation from related comparison processes. At a higher level, comparison processes can be distinguished by the source of their standards. In social comparison, the standard consists of information about other people. Temporal comparison instead evaluates the target against a representation of the self at another point in time, such as a past state or an anticipated future one (Albert, 1977; Wilson & Shanahan, 2020). Dimensional comparison uses another attribute or domain of the same person as its standard, allowing performance or standing in one domain to shape evaluation in another (Helm et al., 2020; Marsh et al., 2020; Möller, 2016). Other comparisons may draw on criteria such as rules, principles, expectations, or cut-off values, or on counterfactual representations of how an attribute might have differed under an unrealized course of events (Morina, 2021). These distinctions are empirically consequential rather than merely terminological. Appearance research, for example, differentiates social standards from personal ideals and internalized criteria because they represent distinct sources of comparison information (McCarthy et al., 2023). Likewise, experiments in which social, temporal, and dimensional standards competed directly found that social information exerted the strongest influence in those settings (Zell & Strickhouser, 2020). Defining social comparison through the interpersonal source of its standard therefore preserves a clear boundary around the phenomenon while allowing the selection, availability, and weighting of different social standards to be examined within it.

2.1.3.2 - Comparison and Evaluation

After a target and a standard have been selected, comparison should not be reduced to determining who ranks higher. Locke's original account distinguished a vertical, status-related axis from a horizontal, solidarity-related axis (Locke, 2003). His later synthesis

situates these intersecting axes within the broader concerns of *agency* and *communion* (Locke, 2020). Agentic motives direct efforts to “get ahead” (to develop or demonstrate skills, achievement, status, influence, or power) and make vertical comparisons especially informative. These comparisons locate the self above or below another person on a rankable dimension and are therefore described as upward or downward. Communal motives instead direct efforts to “get along” (to establish mutual understanding, belonging, trust, and solidarity) and make horizontal comparisons especially informative. Connective horizontal comparisons emphasize perceived similarity or closeness to another person, for example through shared interests, values, preferences, experiences, or orientations. Such perceived likeness can indicate compatibility, validate a shared perspective, and support expectations of mutual understanding or solidarity. Contrastive horizontal comparisons instead emphasize differences or interpersonal distance on these attributes, without implying a ranking of the two people. They can therefore indicate incompatibility or interpersonal distance. The two axes answer distinct relational questions and can coexist within the same encounter. A colleague may outperform the self while sharing the same values and goals; another person may occupy a similar position while appearing distant in interests or orientations.

Competitive situations and concerns with achievement or status are consequently more likely to foreground vertical comparison, whereas cooperative, affiliative, or relationship-forming contexts make horizontal comparison more salient. Similarity is therefore not merely a criterion for selecting a diagnostically useful standard or a moderator of reactions to upward and downward comparison. Similarity and difference can themselves constitute the content of comparison, informing judgments of interpersonal compatibility, mutual understanding, and distance. Conversely, relative standing may matter not only for evaluating competence but also because it shapes respect, rivalry, and the person’s relationship with the comparison target. Treating social comparison as synonymous with rank ordering would therefore exclude an important part of interpersonal comparative judgment. These connective and contrastive comparisons describe perceived horizontal closeness and distance; they should not be confused with assimilation and contrast, which concern how a comparison standard changes the evaluation of the target and are described in the following paragraph.

The comparison operation further depends on how the relation between target and standard is processed. In the selective-accessibility account, a rapid initial assessment of broad similarity or dissimilarity directs the hypothesis-testing process that follows (Mussweiler, 2003, 2020). Similarity testing selectively activates target knowledge consistent with the

standard, making the target appear more like it and typically producing *assimilation* (that is, shifting the evaluation of the target toward the standard). Dissimilarity testing activates standard-inconsistent knowledge, making the target appear less like the standard and typically producing *contrast* (that is, shifting the evaluation of the target away from the standard). Multiple sources of information can shape this process. For example, category membership, standard extremity, psychological closeness, and cues from the broader physical and social context can influence whether similarity or dissimilarity is tested and thus which knowledge becomes accessible (Mussweiler, 2003, 2020). Unkelbach et al. (2023) place this mechanism within a broader principle of psychological relativity: judgments do not derive their meaning from target information alone, but from the target's relation to a contextually relevant standard. From this perspective, assimilation and contrast are not alternative outcomes selected by a fixed rule. Theoretical accounts predict greater assimilation when standards are relatively moderate and an increasing tendency toward contrast as standards become more extreme, but the transition is gradual rather than occurring at a universal threshold, and its observed location depends partly on how the judgment is operationalized. Standard extremity therefore changes the likelihood of assimilation or contrast without mechanically determining the outcome.

Despite these conditional processes, contrast is the dominant outcome in the experimental social-comparison literature: upward standards generally lower self-evaluation and affect, whereas downward standards raise them, particularly when standards are local and the comparison dimension is relatively unfamiliar (Gerber et al., 2018). This finding creates an apparent tension with Mussweiler's proposal that similarity testing may be the more efficient and often default comparison mechanism. Mussweiler (2020) suggests that the experimental predominance of contrast may partly reflect the frequent use of extreme standards and subjective judgment measures, both of which favor contrast; whether the same predominance characterizes naturally occurring comparisons with unconstrained standard selection remains uncertain.

The four components introduced earlier distinguish comparison from evaluation without detailing the processes that connect them. This link can be examined through the general comparative-processing model (gCOMP) proposed by Morina (2021), which separates the resulting view of the self from the motivational significance assigned to it. Within the model, *basic comparison* can revise how a person views the attribute being evaluated by relating their initial self-perception to their representation of the selected standard. The resulting view is termed the *posterior construal*. Assimilation and contrast describe whether this view shifts toward or away from the standard, respectively, relative

to the person's initial view. The motivational appraisal occurs during *valuation*, when the person considers the outcome's relevance, valence, controllability, likelihood, and implications for coping. The same outcome may therefore be consonant with the comparer's motives, constitute a manageable challenge, be treated as irrelevant, or acquire threatening significance. Valuation thus links the comparison outcome to the emotional, cognitive, and behavioral responses considered in the following section.

2.1.4 - Consequences of Social Comparison

The consequences of social comparison unfold at different temporal scales. A single comparison can alter emotion, motivation, and behavior toward the standard, whereas repeated episodes may accumulate into more persistent patterns of self-evaluation and well-being. These levels cannot be inferred from one another automatically. An experimentally induced change in momentary mood does not establish a durable decline in life satisfaction, and a between-person association with symptoms does not show that comparison caused within-person change. Conversely, the absence of a lasting daily effect does not make an immediate motivational response unreal. The relevant unit of analysis must therefore remain explicit: an episode, a day, a stable individual difference, and a clinical condition support different inferences even when they share the same directional label. Rather than offering an exhaustive taxonomy, the following subsections move from immediate emotional and motivational responses to broader patterns of well-being and clinical relevance, while preserving the evidential distinction among immediate experimental effects, within-person associations, cumulative processes, and longer-term causal claims.

2.1.4.1 - Immediate Emotional and Motivational Responses

A social comparison event does not carry a fixed emotional meaning merely because its standard is upward or downward. Direction identifies the comparer's relative position, but, as we just saw, the response also depends on whether the discrepancy is interpreted contrastively (as evidence of separation from the standard) or assimilatively (as evidence of possible similarity or shared fate). Smith (2000) organizes his framework by crossing direction with assimilation and contrast: upward contrast can foreground inferiority and evoke depression, shame, resentment, or envy, whereas upward assimilation can make a superior standard seem relevant and attainable, supporting admiration, optimism, or inspiration. Downward contrast can affirm superiority and elicit pride, contempt, or *schadenfreude*; downward assimilation can instead make another person's disadvantage

diagnostic of one's own vulnerability, eliciting worry, pity, or sympathy. These responses also differ in whether attention falls mainly on the self, on the other person, or alternates between both. Depression and shame, for example, foreground what the upward comparison implies about the self; resentment focuses more strongly on the other's apparently undeserved advantage; envy combines painful self-inferiority with attention to what the other possesses. Emotional reactions are consequently relational twice over: the other person provides a standard for evaluating the self, but the other's fortune is also an outcome toward which the comparer can feel goodwill or ill will. Perceived control is central to this appraisal. A discrepancy that seems stable and unchangeable favors contrast, whereas a superior standard that appears reachable can be assimilated into a possible future self. Direction thus constrains the range of plausible responses, but self-relevance, deservingness, attentional focus, perceived similarity, and the possibility of changing or maintaining the discrepancy determine what that relative position comes to mean.

Envy illustrates why this greater emotional specificity is necessary. It begins with an upward comparison in a valued domain, but the pain of inferiority does not prescribe a single behavioral response. In the distinction developed by Ven & Zeelenberg (2020), *benign envy* directs attention toward improving one's own position, whereas *malicious envy* directs it toward pulling the advantaged person down; both seek to reduce the discrepancy, but by different routes. The distinction is debated, and it is best treated as a theoretically and empirically useful differentiation within envy rather than as an uncontested taxonomy. Boecker et al. (2022) provide controlled experimental evidence that extends the broader appraisal framework beyond envy alone. Their paradigm examined envy, happy-for-ness, sympathy, and schadenfreude together, manipulating both participants' prior relative position and whether another person subsequently experienced a fortune or misfortune. Emotional responses reflected how that event changed the distance between self and other: fortunes occurring to an upward standard heightened the conditions for envy, whereas misfortunes occurring to an upward standard heightened the conditions for schadenfreude; corresponding changes involving downward standards favored happy-for-ness or sympathy. Crucially, these patterns weakened when comparison was made less relevant or participants lacked a meaningful personal reference point, indicating that the emotions were responses to relational change rather than to another person's outcome in isolation. The experiments also connected emotion to interpersonal action. Assimilative emotions predicted more prosocial allocation, whereas contrastive emotions predicted less prosocial or antisocial allocation in both monetary and achievement settings. This does not make comparison direction a sufficient explanation (liking, group membership,

cooperation, and deservingness also matter), but it shows that comparison-based appraisal can organize behavior toward the other person as well as subjective feeling.

The same need to move beyond direction applies to motivation toward personal goals. Diel et al. (2021) embed the classic motives of self-evaluation, self-improvement, and self-enhancement within a self-regulatory feedback loop. Comparison first helps assess the discrepancy between present standing and a socially instantiated standard. A moderately superior but attainable standard can then increase effort, or “pushing”, because it signals both a discrepancy and a plausible route for reducing it. As the upward discrepancy becomes extreme or uncontrollable, however, the same comparison can prompt disengagement or “giving up”: further effort no longer appears likely to close the gap. Conversely, a downward comparison may confirm sufficient progress and permit “coasting”, reducing effort even while increasing positive affect, self-esteem, or pride. This account clarifies why affect and motivation need not move together. In daily life, negative affect continued to intensify as upward standards became more extreme, even when motivational engagement had already begun to decline; favorable feelings following downward comparison likewise accompanied lower effort rather than further striving. Domain importance and perceived control qualified these patterns, because important, controllable discrepancies sustained pushing for longer, whereas low control made withdrawal from extreme standards more likely. An ecological intervention offers a bounded example of the distinction between immediate motivation and successful regulation over time. Deliberately attending to upward or downward comparisons could alter effort at the comparison moment without producing a matching improvement in end-of-day goal progress, so increased immediate effort cannot be equated with effective goal pursuit (Diel et al., 2025). Experience-sampling evidence likewise indicates that the intensity of envy, happy-for-ness, sympathy, and schadenfreude varies non-linearly with comparison extremity and that these emotions are associated with different motivational tendencies (Diel et al., 2026). Together, these findings treat emotions as functional signals within regulation, while preserving the distinction among feeling, effort, disengagement, and eventual progress.

2.1.4.2 - Well-Being and Clinical Consequences

Moving from single episodes to recurring patterns, Morina et al. (2026) reviewed 72 studies examining social comparison in people with mental disorders. Rather than identifying one uniformly harmful type of comparison, the review found convergence across several parts of the process. Some findings require some caution because many studies measured

broad comparison orientation or perceived rank, rather than comparisons with identifiable standards on specific dimensions. Specifically, compared with non-clinical groups, clinical groups reported a stronger general tendency to compare themselves with others and evaluated their relative standing less favorably. Lower perceived social rank was also associated with greater psychopathology, and less favorable relative self-evaluations appeared across anxiety disorders, depression, eating disorders, and psychotic disorders, suggesting that perceived inferiority may have transdiagnostic relevance even though its particular meaning is likely to differ between conditions. Experimental studies provided complementary evidence: when researchers created an upward or downward comparison by presenting participants with someone who appeared better or worse off than them, clinical groups tended to show stronger negative reactions or weaker positive reactions, including differences in affect, envy, perceived attractiveness, emotional arousal, and performance expectations. These studies examined responses to supplied standards, however, and therefore do not show which standards people would select or whether a particular direction is inherently pathological. The review consequently supports the clinical relevance of several comparison components, while also showing that the literature remains heterogeneous in its populations, measures, standards, and outcomes. Eating disorders formed a particularly prominent part of this evidence base, making it useful to examine that domain more closely.

Turk et al. (2026) provided this more focused account in a systematic review and meta-analysis of more than 300 studies on social comparison and disordered-eating symptoms. Across the literature, both comparing more frequently and evaluating oneself less favorably relative to others were associated with greater symptom severity. The overall association between comparison frequency and symptoms was moderate, but its strength depended on what and how people compared. As one would expect, upward comparisons were more strongly associated with symptoms than downward comparisons, and comparisons concerning eating, exercise, and the body were more informative than comparisons in general domains. This specificity is clinically meaningful. Evaluating one's portion sizes, food choices, dietary restrictions, exercise habits, or body shape against those of other people bears more directly on eating-related beliefs and behavior than a general tendency to compare opinions or abilities. The association was also stronger for broad eating-pathology measures and body-image concerns than for some specific behaviors, such as purging. By contrast, whether comparisons occurred through social media or in other contexts did not reliably explain differences between studies, suggesting that these differences were not specific to digital settings. The evidential limits remain substantial:

the literature relied heavily on young, female, university or community samples, and only a very small minority of studies examined people with diagnosed eating disorders. Most studies were also cross-sectional. They therefore cannot establish whether comparison contributes to later symptoms, whether existing body and eating concerns increase comparison, or whether the two processes reinforce each other. The limited longitudinal findings reviewed by Turk et al. (2026) are compatible with such reciprocal relations, but are not yet sufficient to establish a clear causal relation.

Intensive longitudinal studies are a very useful method to show how clinically relevant comparison patterns appear and change in everyday life. Antony et al. (2005) used event-contingent diaries, asking participants to record a comparison whenever they recognized that one had occurred. People with social phobia and non-clinical participants reported a similar total number of comparisons over two weeks. The clinically relevant difference therefore did not lie simply in how often they compared. Participants with social phobia reported more upward and fewer downward comparisons, and their comparisons involved a greater number of dimensions. These dimensions were selectively related to their central concerns, including visible signs of anxiety, social skills, personality, and sense of humor, whereas clearer group differences did not emerge for less disorder-relevant attributes. Their comparison episodes thus tended to organize social information around attributes on which they already feared appearing deficient. Upward comparisons were associated with increased anxiety and depressive affect in both groups, without clear evidence of stronger reactions in participants with social phobia. Downward and same-level comparisons showed no reliable overall affective change. Goodman et al. (2021) studied a related phenomenon through signal-contingent prompts. Participants repeatedly evaluated their standing relative to others at scheduled moments, so the study captured fluctuations in relative self-evaluation rather than the spontaneous frequency of comparison episodes. People with social anxiety disorder evaluated themselves less favorably and showed greater instability, more often shifting between feeling better and worse off than others within and across days. Unfavorable relative evaluations were more closely tied to momentary affect and social anxiety in the clinical group, consistent with the possibility that perceived inferiority confirms the fear of being judged deficient and rejected. On days when relative self-evaluations were more unstable, participants also experienced more social anxiety and negative affect. An exploratory analysis also linked being in company, rather than alone, to somewhat more favorable relative self-evaluations, including among participants with social anxiety disorder. Being with others therefore did not uniformly coincide with less favorable relative self-evaluations. The associations were stronger in

the contemporaneous analyses, which related relative self-evaluation to affect and social anxiety measured at the same prompt. In the lagged analyses, which used values at one prompt to predict values at the next prompt later that day, more favorable relative self-evaluations predicted only a small subsequent reduction in negative affect, while greater negative affect predicted slightly less favorable subsequent evaluations. No reliable lagged relations emerged for positive affect or social anxiety. Together, the two studies show that clinical relevance may lie in the direction, content, stability, and emotional meaning of comparison rather than in its sheer frequency.

These findings shift the clinical question from whether people should compare themselves to which part of a comparison process becomes problematic for a given person and situation. Arigo et al. (2024) argue that comparison direction alone is too coarse to answer this question. An upward standard may produce contrast and reinforce perceived inferiority, but it may also support identification, hope, or a sense that improvement is attainable. Even the same person can respond differently to similar standards across occasions. A clinically useful account must therefore consider the selected standard and domain, the perceived discrepancy, the interpretation of similarity or difference, the attainability and controllability of the outcome, and the emotional and behavioral responses that follow. Rumination, avoidance, withdrawal, or repeated attention to threatening standards may be more consequential than the occurrence of an upward comparison itself. Intensive longitudinal assessment can distinguish stable vulnerabilities from momentary changes and examine whether affect precedes comparison or follows it. Behavioral measures can reveal which standards people select or avoid, while controlled experiments can test the consequences of changing one component without treating the entire comparison process as harmful. These methods could eventually inform interventions that examine the evidence supporting an unfavorable comparison, modify its interpretation, or change how a person responds to it. At present, however, cognitive restructuring, acceptance-based strategies, and adaptive momentary support remain candidate approaches rather than established comparison-specific treatments. The same limitation appears in the evidence synthesized by Morina et al. (2026): clinical research has predominantly studied comparison information that participants encountered, recalled, rated, or received from an experimenter, and has rarely observed the selection of standards or its prospective behavioral consequences.

2.1.5 - Social Comparison Seeking: How Has It Been Studied?

The preceding sections have considered social comparison as a broader psychological process. The present section examines in greater detail how social comparison seeking, understood here as information seeking directed at comparison-relevant information, has been studied. When a potentially informative standard can be accessed, questions related to information seeking may arise: whether people decide to gather information about it, how much they obtain, and which comparison direction they choose. Studies addressing these questions share an interest in investigating the information-seeking component of social comparison, but they do not all observe the same kind of behavior. Some record a discrete selection from options supplied by an experimenter; others record a graded quantity, such as the number of items requested, the number of profiles opened, or the time spent viewing them. Their opportunity structures differ: a discrete design fixes the alternatives and asks which source is selected at one decision point, whereas a graded design leaves room for continued acquisition and makes stopping part of the observed behavior.

The label social comparison seeking has been used explicitly by White & Lehman (2005) and Buckingham et al. (2012), although their studies did not establish a single standardized paradigm. Across three laboratory studies, White & Lehman (2005) operationalized seeking through a single advance selection of up to seven performance records that participants expected to view. Depending on the study, participants selected either specific rankings, making comparison direction observable, or only the number of records they wished to see. Buckingham et al. (2012) combined two different approaches: a naturalistic retrospective report of whether and how many classmates' grades students had found out, and a laboratory procedure in which participants decided whether and how many peer scores they wanted the experimenter to retrieve. The retrospective measure could not distinguish active seeking from incidental exposure, whereas the laboratory request more clearly isolated the information-seeking phenomenon.

The clearest discrete design is the rank-order paradigm. Wheeler (1966) gave participants their own score and position within a small group and allowed them to select the score of one other group member; the chosen rank simultaneously indicated direction and distance from the self. The procedure was intentionally simple, fixing the option set, the moment of selection, and the number of choices (Wheeler & Suls, 2020). Those constraints make the response interpretable as a preference ordering among the supplied alternatives, but they also make that ordering conditional on what the experimenter made

available. A participant cannot reveal interest in an omitted lateral target, consult several sources, or continue until uncertainty is reduced. Across later uses of this paradigm, selection cannot be reduced to an unconditional preference for upward targets: the pattern depends on which alternatives are available, whether a lateral option is present, the threat attached to the attribute, and the information participants already possess (Gerber et al., 2018). A contemporary adaptation illustrates both the durability and the limits of the format. Schlechter et al. (2024) presented people with elevated depressive symptoms with a set of vignettes that crossed depression severity with coping quality, asked them to select one vignette, and then delivered it for reading. Most chose a vignette portraying milder depression and effective coping, whereas the option combining severe depression with poor coping was least often selected; higher symptom severity was associated with choosing alternatives to the former option. This is a behavioral selection followed by exposure, but its primary datum is still one choice among a fixed set. It identifies which standard a participant elects to encounter, not how far the search would have continued if additional standards had remained available.

The second family of designs measures how much comparison information is acquired. Pyszczynski et al. (1985) first supplied a set of scored answer sheets, then told participants that many more were available and allowed them to request as many or as few as they wished; the requested sheets were delivered, so the dependent variable was an enacted quantity of search rather than a declared direction. A parallel tradition in communication research makes acquisition observable through selective exposure. Participants browse mixed comparison content while software unobtrusively records which items they open and how long they remain with upward or downward targets. Perceived attainability altered exposure to idealized body images in a computerized magazine; mood and group identification shaped browsing of social-network profiles; and self-awareness interacted with state self-esteem in the allocation of reading time to upward and downward blog posts (Johnson & Knobloch-Westerwick, 2017; Knobloch-Westerwick & Romero, 2011; Li & Knobloch-Westerwick, 2025). These studies are best read as a convergence group: their antecedents and media differ, but each treats selective consumption as a graded behavioral trace rather than inferring acquisition from a questionnaire response. Van der Zee et al. (1998) used the same logic in a clinical context. A computer program allowed cancer patients to choose interviews with fellow patients and recorded both the interviews selected and the time spent reading them; patients generally selected and attended more to accounts from better-off others. Together, these designs represent comparison seeking through source choice, requested quantity, and time allocated to comparison material.

Reading time within a fixed browsing period measures selective exposure; designs that allow participants to end acquisition at their discretion additionally make self-determined stopping observable. Time pressure, interface design, fatigue, and the number and sequence of available items can therefore influence the recorded quantity and should be treated as components of the measurement situation rather than as incidental procedural details.

Repeated digital designs extend that logic beyond a single laboratory session. Across a series of daily studies, Arigo et al. (2023) allowed participants to choose physical-activity profiles on successive days and tracked three aspects of engagement: which target they selected, how long they viewed the selected profile, and how many elements they viewed. Participants often returned to their first selection, but their engagement varied across days, demonstrating why target choice and depth of acquisition should remain separate variables. The design also illustrates that self-selection does not guarantee a beneficial response: chosen profiles were not consistently associated with greater motivation or activity. Bennenbroek et al. (2002) occupy the reported-preference cell of the same broader problem. Cancer patients indicated whether they wanted information about, or contact with, others who differed in illness severity and coping; they expressed a particularly upward preference for information about people coping better, but no comparison material was selected or delivered through the questionnaire itself. Placed side by side, these designs distinguish an ecologically repeated record of actual engagement from a direct statement of what information would be wanted. Repetition also separates stable selection tendencies from day-specific choices and permits target direction to be analyzed independently of time or content viewed. It does not, however, make the setting fully naturalistic when profiles and alternatives remain researcher supplied. Both approaches are informative, but they answer different questions about the acquisition process.

Within the corpus reviewed here, *social comparison seeking* is used as a focal label in only a small number of papers and does not appear to designate a consolidated research program (Buckingham et al., 2012; White & Lehman, 2005). Related work uses terms such as comparison selection, comparison preferences, biased search for information, or selective exposure, reflecting different research questions and methodological traditions. Nevertheless, the seeking label is useful here because it directs attention to whether comparison-relevant information is voluntarily accessed rather than merely supplied. In this thesis, *social comparison seeking is an information-seeking phenomenon within a broader social comparison process: the active pursuit of information about other people that could provide a social comparison standard against which to evaluate oneself.*

2.2 - Information Seeking

2.2.1 - What Information Seeking Is

Information seeking is the active pursuit of knowledge, for example by asking a question, consulting a source, running a test, or searching online (Sharot & Sunstein, 2020). This definition places the person's action at the center of the construct. It therefore distinguishes seeking from passive exposure, in which information becomes available without a choice to obtain it. The distinction is important because attention can be guided toward informative cues even when the person does not decide whether to receive them, whereas active sampling involves selecting an action in order to change one's state of knowledge (Gottlieb et al., 2013). Evidence that someone noticed, expected, or was presented with information is consequently not sufficient evidence that they sought it. The same boundary separates the behavior from its possible motives: curiosity may prompt acquisition, but a person can be curious and still avoid the information, or seek useful information without feeling curious (Sharot & Sunstein, 2020).

The information people seek may be instrumental or non-instrumental. Instrumental information can guide future actions and potentially affect future outcomes, whereas non-instrumental information cannot materially affect those outcomes (Kobayashi & Kable, 2024). This challenges accounts in which information matters only as a means to another goal. Loewenstein (1994) reviews cases in which people demand more information than standard value-of-information analyses predict, as if the information were valued for its own sake, and presents attraction to information without extrinsic benefit as a central theoretical puzzle of curiosity. This close association helps explain why non-instrumental seeking is often discussed under the heading of curiosity. The terms are not treated as equivalent here, however: non-instrumentality concerns what information can do within a particular situation, whereas curiosity concerns the desire or drive to know (Kidd & Hayden, 2015; Kobayashi & Kable, 2024; Sharot & Sunstein, 2020). Because these concepts refer respectively to the structure of the task and the participant's motivation, observing non-instrumental seeking does not, by itself, identify curiosity as its motive. More broadly, the distinction raises the question of why information can acquire value even when it cannot improve action.

Information seeking has been examined through several experimental traditions that differ in what information is acquired and how acquisition unfolds. Reviewing research on its neurocognitive mechanisms, Kobayashi & Kable (2024) organize these approaches into four broad categories, grouped under a distinction between one-shot information

seeking and information seeking over time. One-shot research includes paradigms in which participants can obtain a single piece of advance information about a probabilistic outcome, sometimes by accepting a monetary or temporal cost, and curiosity paradigms in which stimuli such as trivia questions or magic tricks create an opportunity to obtain an answer or explanation. Research on information seeking over time instead examines repeated acquisition. Exploration-exploitation paradigms require participants to sample uncertain options while also pursuing reward, whereas evidence-accumulation paradigms allow them to request successive observations until they decide that the available evidence is sufficient. This organization provides a useful map of how information seeking has been studied.

2.2.2 - Why Information Has Value

Sharot & Sunstein (2020) propose that people estimate how information is expected to affect their action, affect, and cognition, and then integrate these estimates into a subjective value of information. *Instrumental value* concerns whether knowledge will improve action. *Hedonic value* concerns whether knowing will feel better or worse than remaining ignorant. *Cognitive value* concerns whether information will improve a person's understanding of the world by changing their mental models. Each estimate can favor seeking, favor avoidance, or contribute little to the decision, and the estimates can receive different weights. Sufficiently positive integrated value is expected to promote seeking, sufficiently negative value to promote active avoidance, and value near zero to produce indifference.

Instrumental value arises when information is expected to improve later action, for example by supporting a choice, preparation, or an effective response to an outcome. Its benefit therefore depends on what a person expects to be able to do with the knowledge, rather than on acquisition alone (Sharot & Sunstein, 2020). Consistent with this proposal, Kelly & Sharot (2021) found that participants reported wanting information more when they rated it as more useful across self-related, financial, and health domains. These ratings capture expected usefulness, however, rather than demonstrating that the information was objectively beneficial. Moreover, even information expected to improve a decision may not be worth acquiring. Seeking can require money and time, entail opportunity costs, and, in sequential tasks, delay commitment to a decision (Kobayashi & Kable, 2024). These seeking costs reduce the net value of further seeking and are weighed against its expected instrumental benefit. Finally, information need not be instrumentally beneficial. If knowing is expected to make no difference to action, its instrumental value is zero, even though it may still have hedonic or cognitive value. Sharot & Sunstein (2020)

further propose that information can have negative instrumental value when knowledge is expected to influence action in a way that worsens outcomes and that influence cannot simply be ignored or reversed once the information has been acquired. Negative instrumental value therefore refers to the potentially harmful consequences of knowledge for action, not to the costs of obtaining it.

Hedonic value depends on the feelings expected from knowing relative to those expected from remaining ignorant. Information can therefore be attractive even when it has no practical effect if obtaining it is expected to be rewarding (Sharot & Sunstein, 2020). A recent review concludes that the neural systems involved in valuing information overlap with systems that represent other rewards, although the strength and form of this evidence differ across tasks (Kobayashi & Kable, 2024). Kang et al. (2009) provide a bounded human example. In their fMRI study of 19 students answering trivia questions, greater reported curiosity was associated with greater activity in a caudate region previously linked to reward anticipation. Because this association could also reflect attention or incentive salience, the authors tested behavior separately and found that participants were more willing to spend limited tokens or waiting time on answers that elicited greater curiosity. Together, the review and this human instance support the narrower claim that non-instrumental information can acquire reward-like motivational value, not that information and primary rewards are identical.

Cognitive value concerns the expected improvement in understanding and prediction. In the information-gap account, curiosity arises when attention is directed to a discrepancy between current knowledge and a desired state of knowledge, creating motivation to obtain what is missing (Loewenstein, 1994). Such a gap becomes motivational when it is salient and when available information is expected to reduce it. Prior domain knowledge can make a specific absence visible, whereas complete ignorance may leave no particular gap to recognize (Loewenstein, 1994). Yet a gap is not the only possible guide to useful learning. Searches can also be directed toward expected information gain or toward activities in which understanding is improving, while well-learned or unlearnable activities offer little learning progress (Gottlieb et al., 2013). The amount of uncertainty alone therefore does not determine the value of another observation. Value also depends on how much of that uncertainty the information can reduce, whether the reduction improves understanding or a later choice, and how much acquiring it costs (Kobayashi & Kable, 2024). Reducing uncertainty may have cognitive value because it improves a mental model and instrumental value when the improved model supports action. Sharot & Sunstein (2020) also allow negative cognitive value when disconfirming information

is expected to weaken connections within an established mental model and temporarily reduce subjective comprehension. Within this proposal, preserving coherence may leave the model less accurate. Consistent with a conditional rather than monotonic relation, Kang et al. (2009) found that curiosity about trivia answers peaked at intermediate confidence rather than increasing steadily from certainty to complete ignorance.

The value anticipated before seeking may differ from what information actually provides. Sharot & Sunstein (2020) locate one source of this discrepancy in biased predictions about content and consequences. For cognitive value, the illusion of knowledge can obscure the scope for improving understanding, while overconfidence can make the potential reduction in uncertainty seem too small. Instrumental value can be inflated by an illusion of control, as information appears useful for changing an outcome that is beyond the person's influence. Hedonic estimates depend on both the news anticipated and the feelings expected to follow it. Unrealistic optimism can encourage seeking by favoring the expectation of good news; impact bias can exaggerate the anticipated intensity or duration of pleasure from good news or distress from bad news. The latter may promote avoidance even when feedback could guide useful action. These biases can therefore affect both whether information is sought and how much time or money is devoted to it, so observed willingness to seek does not establish that the information will benefit the seeker.

Kelly and Sharot tested the three-value framework in five studies with a total of 543 participants (Kelly & Sharot, 2021). The studies asked whether participants wanted pieces of information about personal traits, finance, or health and measured ratings intended to represent the expected effects on action, affect, and cognition. Across these domains, the three ratings were associated with information-seeking choices, and models containing all three generally fit better than models containing only a subset. The estimated weights also differed between individuals: some participants placed greater relative weight on usefulness, some on anticipated feelings, and some on how often they thought about the relevant concept. Longitudinal comparisons found that these relative profiles were more stable than mismatched profiles from different participants, although stability varied by value dimension and domain. The findings therefore provide a direct, bounded test of the framework and evidence of some within-person stability.

2.2.3 - From Non-Seeking to Information Avoidance

The relation between information seeking and information avoidance remains theoretically contested (Foust & Taber, 2025). Some theoretical perspectives consider the two constructs as belonging to the same continuum, and thus as being explained by the same

mechanisms. The preceding framework by Sharot & Sunstein (2020) is an example of this approach. Other perspectives consider them separate constructs, not reducible to the same explanation.³

Regardless of minutiae, what is information avoidance? *Information avoidance* concerns unwanted information that is personally relevant and obtainable. A person may take action or deliberately refrain from acting with the aim of postponing or preventing its acquisition or use (Link, 2026). It is therefore not equivalent to indifference, lack of interest, failure to seek inaccessible information, or any other case in which acquisition simply does not occur (Foust & Taber, 2025; Golman et al., 2017; Sweeny et al., 2010). It also differs from selective exposure, in which people choose among sources whose positions or content are already known, because avoidance concerns preventing or delaying contact with information that remains at least partly unknown (Foust & Taber, 2025; Sweeny et al., 2010). Within the value-based account, avoidance becomes plausible when acquiring information is expected to have negative subjective value. Observing that a person did not acquire information cannot, however, establish that this was their goal. Self-report can address intention more directly, but it is also limited by what people can and will report about their motives. Behavioral and self-report measures are therefore complementary rather than interchangeable (Foust & Taber, 2025; Link, 2026).

The antecedents of avoidance can be organized into three non-exclusive and potentially interacting groups (Foust & Taber, 2025). First, beliefs and expectations about the information include anticipated distress, threats to existing beliefs, and the expectation that knowing will require an unwanted action. Anticipated affect applies the hedonic component of information value to the choice not to know, while expected behavioral obligations concern what the information may require the person to do (Sharot & Sunstein, 2020; Sweeny et al., 2010). Second, beliefs about oneself and one's capacities include perceived coping resources, self-efficacy, and the ability to interpret the information. Third, social and situational factors include norms, stigma, and trust in institutions or sources (Foust & Taber, 2025). For example, Foust & Taber (2025) propose that information perceived as severe or threatening may feel harder to receive when coping resources or control are judged insufficient, and they call for tests of such interactions. Across these groups, avoidance may serve subjective functions such as limiting distress, protecting valued

³As Foust & Taber (2025) suggest, if you want to know more about the first approach, you can read the following: Charpentier et al. (2018), Germeni & Schulz (2014), Hertwig & Engel (2016), Miller (1987), Narayan et al. (2011) and Sharot & Sunstein (2020). For the second approach, see Afifi et al. (2004), Barbour et al. (2012), Brinker et al. (2020), Chae (2016), Emanuel et al. (2015) and Lipsey & Shepperd (2019)

beliefs, or postponing an unwanted response (Golman et al., 2017; Sweeny et al., 2010). These possible short-term functions do not show that avoidance is objectively beneficial or adaptive over time.

Meta-analytic evidence portrays information avoidance as more than an occasional refusal to know. In medical contexts, it appears widespread but varies substantially across conditions and operational definitions, so its prevalence cannot be generalized beyond this domain. Avoidance is associated with information overload and perceived stigma, whereas self-efficacy and trust in the medical system accompany less avoidance (Offer et al., 2025). This pattern directs attention beyond individual beliefs toward the social and informational environment in which medical information is encountered. Research on risk information reveals a related pattern: overload, fatalistic beliefs, anxiety, and norms that support avoidance accompany greater avoidance, while efficacy, perceived information insufficiency, and worry accompany less (K. Liu & Chen, 2024). The contrast between anxiety and worry is particularly informative. Although both are negatively valenced, K. Liu & Chen (2024) propose that they involve different motivational orientations: anxiety may be more closely connected with withdrawal from uncertainty, whereas worry may sustain engagement with the problem. Together, these findings relate avoidance to how manageable information feels and to the social context in which it is encountered, rather than to negative emotion alone. Because the underlying evidence is heterogeneous and largely observational, these patterns should be understood as recurring associations rather than causal mechanisms.

2.3 - Prospect Theory and Gain-Loss Framing

2.3.1 - Foundations and Development

2.3.1.1 - From Expected Utility Theory to Prospect Theory

Thaler places the emergence of behavioral economics within a longer history of economic thought. In his account, economics from Adam Smith through Irving Fisher and John Maynard Keynes in the 1930s gave substantial space to psychologically realistic observations about human behavior. This orientation became less prominent after World War II, when the pursuit of greater mathematical rigor favored idealized models of rational agents, although scholars such as Herbert Simon and George Katona continued to raise behavioral questions. During the 1970s, Kahneman and Tversky showed that departures from rational models were often systematic and predictable rather than random. Their formulation of prospect theory in 1979 extended this empirical approach to decision making under

risk and was followed closely by Thaler's early work in 1980. Thaler therefore presents modern behavioral economics not as a sudden break with the past, but as a return to an earlier concern with how people actually think and choose. Within this development, prospect theory became the first and most successful example of the descriptive economic theories needed to explain actual choice (Thaler, 2016).

Prospect theory emerged from a specific tension within expected utility theory. Kahneman & Tversky (1979) described expected utility theory as the dominant model for decisions under risk at the time. Economists used it both to define how a rational person should choose and to describe how people actually choose. In this literature, a *prospect* is simply a risky option defined by its possible outcomes and the probabilities attached to them. Expected utility theory evaluates a prospect by weighting the utility of each possible final outcome by its probability and then adding these values. Its role as a standard of rational choice, however, did not ensure that it accurately described observed behavior. As Thaler later emphasized, the two purposes can be separated: expected utility theory can remain a normative benchmark, while prospect theory provides a complementary description of actual choice (Thaler, 2016).

Kahneman and Tversky's experiments made this descriptive limitation visible. Across a series of hypothetical monetary choices, they found that preferences changed between closely related problems even when expected utility theory predicted that they should remain consistent. These discrepancies did not appear as isolated or entirely random mistakes, but followed recurring patterns. Kahneman & Tversky (1979) therefore proposed prospect theory to describe how people represent risky options and how this representation influences their evaluation.

Prospect theory describes this process in two phases: *editing* and *evaluation*. During editing, the decision maker conducts a preliminary analysis of the available prospects and may reorganize them into a simpler form. One editing operation is coding, whereby outcomes are represented as gains or losses relative to a *reference point*. This reference point usually corresponds to the decision maker's current asset position, but it can also be influenced by expectations or by how the problem is presented. Editing can also involve segregation, whereby a riskless component is separated from a risky component. For example, a prospect that offers 300 with an 80% probability and 200 with a 20% probability can be represented as a sure gain of 200 plus an 80% chance of an additional gain of 100. During evaluation, the decision maker assesses the edited prospects and selects the one with the highest overall value. This value reflects both the subjective value assigned

to outcome changes relative to the reference point and the decision weights attached to their stated probabilities (Kahneman & Tversky, 1979).

2.3.1.2 - The Value Function and Probability Weighting

Once editing has established the reference point, the *value function* represents the subjective value of the resulting gains and losses. The fact that outcomes are evaluated as changes from a reference point, rather than as final states of wealth, is known as *reference dependence*. Kahneman and Tversky compare this process with ordinary perception: the same temperature can feel hot or cold depending on the temperature to which a person has adapted. In a similar way, the same monetary outcome can be experienced differently depending on the position from which it is evaluated (Kahneman & Tversky, 1979).

A second property of the value function is *diminishing sensitivity*: the psychological effect of an additional change decreases as an outcome moves farther from the reference point. For example, Figure 2.1 shows that the increase in subjective value between a gain of 0 and a gain of 20 is greater than the increase between a gain of 80 and a gain of 100, even though both involve the same monetary change. Graphically, diminishing sensitivity is represented by a function that is normally concave for gains and often convex for losses. The value function also represents *loss aversion*. It is generally steeper for losses than for gains, meaning that a loss has a stronger psychological effect than an equivalent gain. Reference dependence, diminishing sensitivity, and loss aversion therefore produce the characteristic S-shaped value function, centered on the reference point and steeper on the loss side (Barberis, 2013; Kahneman & Tversky, 1979).

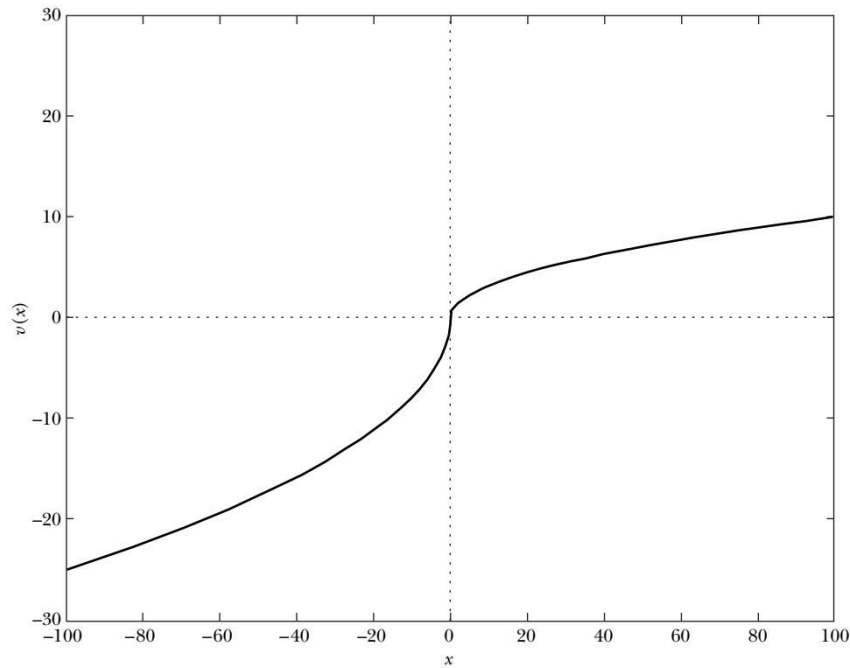


Figure 2.1: The prospect theory value function (Barberis, 2013).

The other central element of evaluation is the *probability weighting function*. Rather than allowing objective probabilities to influence a prospect in direct proportion to their numerical values, prospect theory transforms them into *decision weights*. These weights represent how strongly a stated probability affects the desirability of a prospect. They are not probabilities themselves and do not describe what a person believes about the likelihood of an event (Kahneman & Tversky, 1979). In cumulative prospect theory, the probability weighting function typically has an *inverse-S shape*. Low probabilities tend to be *overweighted*, while moderate and high probabilities tend to be *underweighted*. Extremely small probabilities are less predictable and may instead be overweighted or neglected (Tversky & Kahneman, 1992). Risky choice therefore depends on the combined effects of the value function and probability weighting. Neither loss aversion nor the curvature of the value function can determine risk aversion or risk seeking on its own (Levy, 1992).

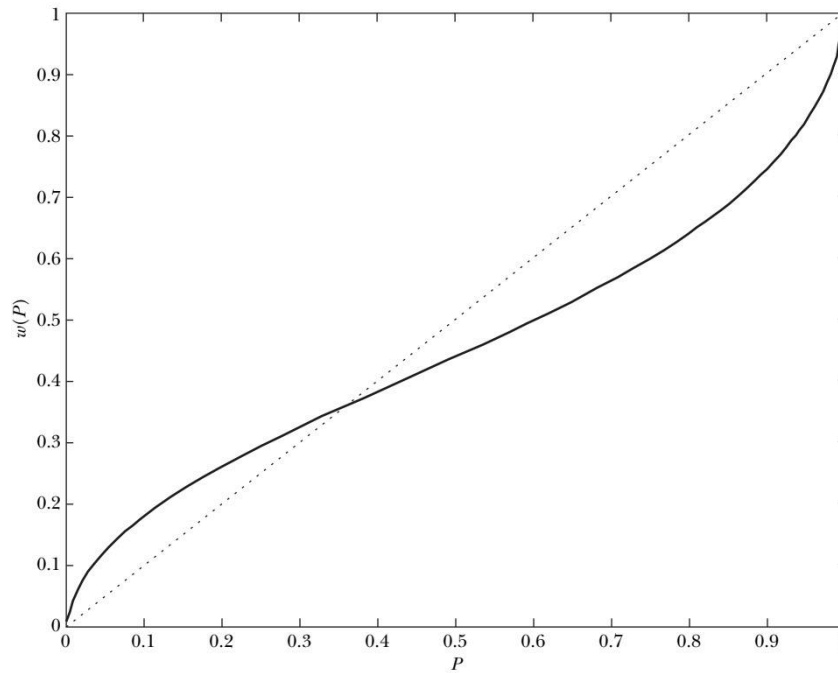


Figure 2.2: The probability weighting function in cumulative prospect theory (Barberis, 2013).

2.3.1.3 - Cumulative Prospect Theory

In 1992, Tversky and Kahneman extended the original model into cumulative prospect theory. The new formulation allowed the theory to describe more complex prospects, including choices with many possible outcomes and situations in which probabilities are not explicitly known. Instead of transforming each probability separately, it derives decision weights from the cumulative probabilities of ordered outcomes, treating gains and losses separately. This changed the formal treatment of probability while preserving the central idea that outcomes are valued as gains or losses relative to a reference point (Tversky & Kahneman, 1992).

Cumulative prospect theory therefore retains the two central parts of the original account: reference-dependent valuation and non-linear probability weighting. The present thesis does not apply prospect theory as a formal model of choice. It draws more narrowly on one of its central ideas: outcomes can be represented as gains or losses relative to a reference point (Tversky & Kahneman, 1992). This idea provides a theoretical basis for understanding gain-loss framing, in which different representations can place outcomes on opposite sides of a reference point and thereby influence how they are evaluated. For this reason, the following subsection moves from prospect theory to the broader framing

literature. It first defines gain-loss framing and distinguishes it from other forms of framing, before examining the evidence for its effects on judgment and choice.

2.3.2 - Gain-Loss Framing: Concepts and Evidence

2.3.2.1 - What Gain-Loss Framing Is

Prospect theory helps explain why the way a decision is represented can influence choice. Tversky & Kahneman (1981) use the term *decision frame* to describe how a person understands the available options, their possible consequences, and the relations between them. The person's norms, habits, and other characteristics contribute to this representation alongside the way the decision problem is presented. *Gain-loss framing* is used broadly to refer to valence-based manipulations that present options, attributes, or behavioral consequences in positive or negative terms (Levin et al., 1998; Steiger & Kühberger, 2018). In risky-choice tasks, the form most directly connected to prospect theory, these representations place outcomes in the gain or loss domain relative to a reference point.

Gain-loss framing is nevertheless used in several kinds of tasks. Levin et al. (1998) distinguish three main forms. *Risky-choice framing* presents choices between certain and probabilistic outcomes as gains or losses. *Attribute framing* describes the same characteristic in positive or negative terms, whereas *goal framing* emphasizes either the benefits of performing an action or the costs of not performing it. These tasks frame different objects and measure different responses, so their effects should not be treated as expressions of a single mechanism. Moreover, descriptions that are formally equivalent can still convey different implications in ordinary communication (Kühberger, 2023).

The Asian Disease Problem provides the best-known example of risky-choice framing. Tversky and Kahneman presented separate groups with public-health programs described either in terms of lives saved or lives lost. The two versions implied the same final numbers of people living and dying. Most participants nevertheless preferred the certain program when the outcomes were framed as gains, but the probabilistic program when they were framed as losses (Tversky & Kahneman, 1981). Within prospect theory, saved lives are represented as gains and lives lost as losses. The value function and probability weighting can then make the certain option more attractive in the gain frame and the risky option more attractive in the loss frame. Tversky and Kahneman described prospect theory itself as an approximate and incomplete account, however. Later reviews have considered cognitive, emotional, motivational, and communicative explanations alongside it (Kühberger, 2023).

The distinction between attribute and goal framing becomes clearer through concrete examples. Levin et al. (1998) describe an attribute-framing study in which the same ground beef was labeled as either 75% lean or 25% fat. The positive label improved taste evaluations and reduced how greasy the meat seemed. The frame therefore changed the evaluation of a single characteristic rather than a choice between alternatives that differed in risk. As an example of goal framing, the authors discuss messages encouraging breast self-examination. One message emphasized that performing the examination increased the chance of detecting a tumor at an early, more treatable stage. The other emphasized that not performing it reduced this chance. Both messages promoted the same action, but one focused on the benefit of acting while the other focused on the negative consequence of not acting. In that study, the negatively framed message had the stronger persuasive effect.

The present study applies the reference-dependent logic to monetary outcomes: matched final amounts are framed either as gains from a lower initial amount or as losses from a higher initial amount. Because the outcome of interest is subsequent information seeking rather than choice between a sure and a risky option, this manipulation is best understood as a task-specific gain-loss domain manipulation rather than as a standard risky-choice framing paradigm.

2.3.2.2 - What the Evidence Supports

Later research indicates that risky-choice framing is reliable, but also sensitive to how the task is constructed. Kühberger (1998) assembled a broad historical corpus that Steiger & Kühberger (2018) subsequently re-examined. The reappraisal found clear evidence for risky-choice framing, while showing that its magnitude varied with features such as the structure of the options, the response participants were asked to give, and the study design. Because these features often occurred together, their individual contributions could not be separated cleanly. The evidence therefore supports a context-sensitive family of framing effects rather than a fixed response produced by gain-loss wording alone.⁴

The strength of the evidence also differs across framing tasks. In his critical synthesis, Kühberger (2023) describes risky-choice framing as the best-supported form, considers attribute-framing effects weaker but established, and finds no reliable overall effect for goal framing. These conclusions concern different outcomes: choices between risky and certain options, evaluations of an attribute, and responses to persuasive messages (Levin

⁴The principal p-curve analysis included statistically significant effects and excluded significant effects in the opposite direction. The authors also found a small excess of results just below the conventional significance threshold, but no evidence of intense p-hacking (Steiger & Kühberger, 2018).

et al., 1998). Evidence from one form of framing therefore cannot simply be transferred to another. For the present thesis, the important boundary is that risky-choice studies show how gain-loss representation can alter choices under risk. Whether the same representation affects information seeking remains a separate empirical question.

2.4 - Research Gap: Gain-Loss Domain and Social Comparison

This section places the specific question examined in this thesis within a broader research gap. The thesis focuses on social comparison seeking, one phase of the social comparison process, but the wider question is whether experiencing an outcome as a gain or a loss can influence social comparison more generally. The first subsection reviews how prospect theory and social comparison theory have been studied together. The second turns to a question, related to the thesis's question, for which the literature offers more direct evidence: how gain and loss domains influence information seeking.⁵

2.4.1 - Prospect Theory and Social Comparison: What Has Been Studied So Far?

Prospect theory and social comparison theory approach the evaluation of outcomes from different perspectives. Prospect theory describes how outcomes are valued as gains or losses relative to a reference point, whereas social comparison theory examines how people evaluate themselves (and their outcomes) in relation to others. Although these perspectives can inform one another, research connecting them remains fragmented. In a systematic review of social comparison in applied decision making, Aggarwal (2026) identifies prospect theory as an underdeveloped theoretical perspective and calls for stronger integration. Existing studies have nevertheless examined some points of contact. Two main ones are described in the following paragraphs: how social reference points shape risky choice, and whether properties associated with gain-loss valuation extend to social or relative outcomes.

The clearest overlap appears in studies of risky choice in which participants know what another person earns. In the experiment by Linde & Sonnemans (2012), participants chose the safer lottery more often when every possible outcome would leave them earning no more than a peer than when their outcomes would leave them earning at least as much. This

⁵The empirical studies discussed in this section were selected for their relevance to the thesis question and do not constitute a systematic review. The patterns described should therefore be treated as illustrative rather than representative of the literature as a whole.

was the opposite of the standard reflection effect, which predicts greater risk seeking in the loss domain. Schwerter (2024) found a different response in a related design. Participants made less risk-averse choices when the peer's predetermined earnings were higher, giving themselves a chance to catch up, whereas lower peer earnings encouraged safer choices that made it more likely they would remain ahead. Social influence can also develop over time. In the experiment by Fafchamps et al. (2015), participants observed the investments and winnings of other group members across several rounds. Greater winnings among peers were followed by greater risk taking, and the pattern was more consistent with trying to keep up with the winners than with treating the group average as the reference point. Taken together, these studies show that other people's outcomes can influence decisions under risk, but their influence does not follow a single, context-independent pattern.

Other studies ask whether properties normally associated with gain-loss valuation also appear when outcomes are evaluated socially. Lu et al. (2015) found that financial and social reference points influenced risky choice together: the effect of a social comparison depended on whether the person was in a financial gain or loss domain, which reference point was salient, and the size of the stakes. Bault et al. (2008) compared private and social evaluations in a lottery task. When participants compared their outcome with the result of an unchosen alternative, private losses had a stronger effect than private gains. When they compared their outcome with another player's, however, favorable social comparisons had a stronger emotional and physiological effect than unfavorable ones. Being worse off than another person therefore cannot simply be treated as the social equivalent of losing money. Using a different outcome and timescale, Vendrik & Woltjer (2007) examined life satisfaction as a function of relative income. Their estimates supported loss aversion in a broad sense, but life satisfaction was concave both above and below the relative-income reference point, rather than becoming convex below it as the standard prospect-theory value function would predict. Some properties of gain-loss valuation can therefore extend to social outcomes, but they do not form a single and stable social value function across contexts.

Taken together, these studies show that social information can shape how outcomes are evaluated and how people choose under risk. They do not, however, address the question that motivates the present thesis: whether experiencing an outcome in a gain or loss domain influences social comparison. More specifically, they do not show whether gain-loss domain affects social comparison seeking, because the studies provide social outcomes or

comparison standards and then examine how they affect evaluation or choice.⁶ The next subsection therefore turns to research on how gain and loss domains influence information seeking. Although this literature does not examine social comparison directly, it is closely connected to the thesis because social comparison seeking involves information seeking.

2.4.2 - How Do Gain and Loss Domains Shape Information Seeking?

Research on gain-loss domain and information seeking can be conceptually divided into two broad groups, depending on whether the information is instrumental. The first examines situations in which information can guide future actions (Kobayashi & Kable, 2024). This includes selective consultation after an initial decision and sampling from outcome distributions before choosing (Fischer et al., 2008; Lejarraga et al., 2012; Spaniol & Wegier, 2012). The second group examines non-instrumental information seeking, in which information cannot be used to change or influence future outcomes (Kobayashi & Kable, 2024). This literature is more directly connected to the present study because the comparison-relevant information that participants could seek was non-instrumental.

Across several non-instrumental paradigms, participants showed greater interest in information about possible gains than possible losses. Charpentier et al. (2018) found that participants chose the offer with the higher probability of revealing the outcome more often in gain trials than in loss trials. In a separate experiment, they were willing to pay for knowledge when they expected desirable portfolio information and for ignorance when they expected undesirable information, even though obtaining that information could not change their earnings. Across separate experiments, van Lieshout et al. (2021) found that participants reported greater curiosity and were more willing to wait for information about gains than losses. In the sequential visual-search task of Hilchey et al. (2022), participants decided whether to look for information about a potential monetary outcome and could stop before finding it. Across the three experiments, gain trials generally elicited more search initiation than loss trials, although the pattern reversed at 0% outcome probability in Experiment 3. Among searches that had begun, completion was more likely on gain trials in all three experiments.

This pattern is not a general rule. van Lieshout et al. (2021) also found that greater uncertainty increased information demand in both domains and did not reliably interact

⁶The articles discussed here constitute a minority of the literature on the intersection between the two theories. Other studies were screened to check whether they answered the thesis's question, but no relevant studies were found.

with valence. Kobayashi et al. (2019) showed that both lottery variance and expected value influenced which of two lottery outcomes participants chose to reveal. Because one outcome had to be selected, this design measured how information seeking was allocated between the two options rather than whether or how much information participants wanted overall. Outcome probability produced a different boundary. In Experiment 1 of Jiwa & Gottlieb (2026), curiosity was higher for gains than losses at probabilities above .50, but higher for losses than gains at probabilities below .50. Uncertainty can therefore increase information demand in both domains, while probability can reverse the relative preference for gain versus loss information. The meaning of this preference also depends on whether a task measures reported curiosity, the decision to seek any information, or the choice of which outcome to reveal when one must be selected. Moreover, these studies mainly concern information about prospective outcomes, rather than information sought after a gain or loss has already been experienced.

Within the non-instrumental evidence reviewed here, the three studies discussed above illustrate a recurring pattern of lower demand for information about prospective losses than prospective gains. The main prediction of the present study is consistent with this pattern: if it extends to comparison-relevant information, social comparison seeking should be lower in the loss domain than in the gain domain. This prediction extends beyond the existing evidence because the studies reviewed here mainly examined non-social information about outcomes that had not yet occurred. The experiment presented in the next chapter tests whether the same directional pattern appears when people decide whether to seek comparison-relevant information after experiencing a gain or a loss.

Empirical Study

3.1 - Study Rationale and Hypotheses

Social comparison is a pervasive feature of psychological life. It occurs when information about one or more other people is considered in relation to the self, whether deliberately or spontaneously (Wood, 1996, pp. 520-521). A comparison can affect how people evaluate themselves and how they feel in the moment, while recurring comparison patterns are also associated with broader differences in well-being and clinically relevant symptoms (Gerber et al., 2018; Morina et al., 2026). Understanding the conditions under which people engage in social comparison is therefore relevant both to social comparison theory and to the study of its possible psychological consequences.

The way people can engage in social comparison can differ quite a lot. Information about others may be encountered incidentally, supplied by the environment, or actively sought (Wood, 1989, 1996). Information seeking specifically involves the active pursuit of knowledge (Sharot & Sunstein, 2020). The present study focuses on information seeking directed at information that can provide a comparison standard, here termed *social comparison seeking* (Buckingham et al., 2012; White & Lehman, 2005).

In the present study, participants could seek non-instrumental information, meaning that the information could not change the participant's own outcome (Kobayashi & Kable, 2024). This feature allowed the study to distinguish the willingness to seek comparison information from its practical usefulness. The information could nevertheless potentially help participants evaluate their own position, produce favorable or unfavorable feelings (self-enhancement and hedonic value), or reduce uncertainty (cognitive value) (Crusius et al., 2022; Sharot & Sunstein, 2020).⁷

Within this non-instrumental setting, one condition that may influence social comparison seeking is whether an outcome is experienced as a gain or a loss. Gains and losses

⁷These possible drivers of behavior were not examined in the current study.

are common features of everyday evaluation of outcomes and are defined relative to a reference point rather than by the absolute outcome alone (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). The same final position can therefore be reached through a gain from a lower reference point or a loss from a higher reference point. Across several non-instrumental studies, participants showed greater interest in information about prospective gains than prospective losses (Charpentier et al., 2018; Hilchey et al., 2022; van Lieshout et al., 2021). Although this pattern is not universal and can depend on features such as outcome probability (Jiwa & Gottlieb, 2026), it provides a direct basis for asking whether social comparison seeking is similarly lower after losses than after gains.

A related social comparison literature has examined how social reference points and relative outcomes shape evaluation and choice, but it has generally addressed different research questions. In studies of risky choice, participants' choices between safer and riskier options depended on a peer's payoff (Linde & Sonnemans, 2012; Schwerter, 2024), while greater peer winnings across repeated rounds were followed by greater risk taking (Fafchamps et al., 2015). Other studies have examined whether properties associated with gain-loss valuation extend to social or relative outcomes. Financial and social reference points can jointly influence risky choice (Lu et al., 2015), but favorable and unfavorable social comparisons do not map straightforwardly onto monetary gains and losses (Bault et al., 2008), and the relationship between relative income and life satisfaction does not reproduce all features of the standard prospect-theory value function (Vendrik & Woltjer, 2007).

Across this literature, information about others that could provide a social comparison standard was supplied, displayed, or otherwise treated as already available rather than made contingent on a participant's decision to seek it. The studies therefore focused on how relative outcomes and social information related to evaluations or choices, rather than on whether people voluntarily sought comparison-relevant information or how much they chose to obtain. Taken together, the information-seeking literature suggests that gain and loss domains may affect the demand for information, while the social comparison literature leaves their influence on the active pursuit of comparison-relevant information unresolved. The present study therefore addressed the following *research question*: Do gain and loss domains influence social comparison seeking?

To translate this research question into an experiment, the present study drew on laboratory selection studies and behavioral studies of social comparison seeking. Selection studies typically allow participants to choose a comparison standard who performed better, worse, or similarly to themselves and are therefore primarily used to examine the

preferred direction of comparison (Gerber et al., 2018; Wheeler, 1966; Wheeler & Suls, 2020). Behavioral studies of social comparison seeking, by contrast, allow participants to decide whether to access comparison-relevant performance information and how much information to obtain (Pyszczynski et al., 1985; White & Lehman, 2005). Several studies have also incorporated comparison direction. White & Lehman (2005) allowed participants to select records belonging to people who had performed either above or below them, whereas Pyszczynski et al. (1985) manipulated whether the available information was expected to concern others who had performed better, similarly, or worse. These traditions contribute complementary elements: selection paradigms make the chosen comparison standard observable, whereas seeking designs can make both non-initiation and the amount requested observable.

Building on these overlapping methodological precedents, the current study used a sequential information-seeking task. Participants played a roulette game in which outcomes were framed as either gains or losses. On each trial, after seeing their own roulette outcome, participants could proceed to the next roulette or request an outcome attributed to a previous participant who had played the same roulette. Unlike earlier laboratory procedures, in which participants selected specific records or specified the desired number in advance, each requested outcome was displayed before participants decided whether to request another one or stop seeking.

The participant's roulette outcome also determined which comparison directions were possible on each trial. This feature enabled the study to compare social comparison seeking across opportunities for upward versus downward comparison, even though participants did not select the comparison direction because each requested outcome was sampled randomly. The task also separated *initiation* (requesting any comparison information) from *conditional extent* (the amount requested once seeking had begun). A single count would combine these observable aspects of behavior; analyzing them separately allowed the study to test whether the factors examined were associated with one or both, without assuming distinct psychological mechanisms.

Together, these features allowed the study to examine gain-loss framing through sequential social comparison seeking across opportunities for upward and downward comparison.

3.1.1 - Hypotheses

We expected gain-loss framing to influence social comparison seeking. Specifically, we predicted that participants would engage in less social comparison seeking in the loss domain than in the gain domain.

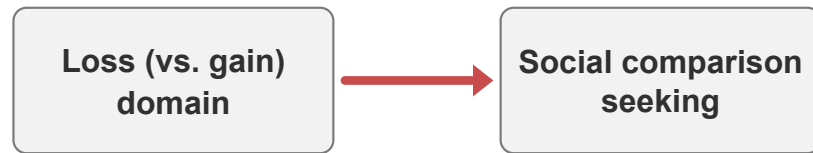


Figure 3.1: H1: Domain Effect on Social Comparison Seeking

We also considered group identification as a potential mechanism underlying this relationship. Research on collective responses to natural disasters suggests that shared adversity may foster identification when it creates a sense of common fate. In repeated cross-sectional samples collected before and after the 2010 Chile earthquake, national identification was higher in the post-earthquake sample (Maki et al., 2019); among adults affected by the same earthquake, disaster exposure was associated with identification with other survivors through perceived common fate (Drury et al., 2016). By analogy, we expected the loss domain to increase identification with the people whose outcomes were observed (H2a). Second, since self-categorization theory proposes that group identification can foster empathic altruism toward fellow ingroup members (Turner et al., 1987), and empirical research has found greater empathic concern for ingroup than for outgroup members (Hein et al., 2010), we reasoned that stronger identification could increase participants' affective responsiveness to the outcomes of others.

Empathy-related responses may result in two broad behavioral tendencies: approach or avoidance. Other-oriented empathic concern is generally associated with approach, whereas sufficiently intense aversive arousal may elicit self-oriented personal distress and avoidance (Batson et al., 1987; Singer & Klimecki, 2014). For the present hypothesis, we assumed that the task would elicit sufficient aversive arousal for stronger identification to promote avoidance of further comparison-relevant information. Hence, we hypothesized that higher identification would lead to lower social comparison seeking (H2b).⁸

⁸The task measured seeking rather than deliberate avoidance; lower seeking would be compatible with, but would not establish, the proposed avoidance process.

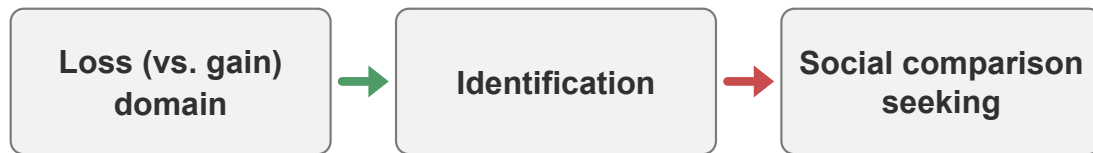


Figure 3.2: H2: Mediating Role of Identification

We then hypothesized that social comparison seeking would be greater when upward rather than downward comparison was possible. This prediction was based on the general tendency to prefer upward comparison standards described in the social comparison literature (Gerber et al., 2018).

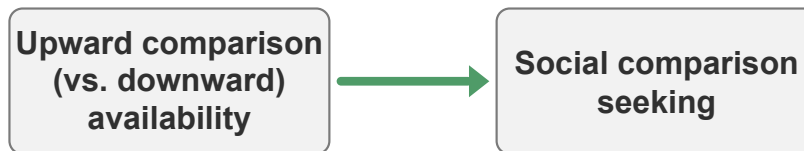


Figure 3.3: H3: Upward Comparison Effect

Manipulation Check Prediction. In addition to the main hypotheses, we expected the domain manipulation to produce an affective difference between gain and loss blocks. Research on gain- and loss-framed persuasive messages has found that gain frames elicit more positive emotions, whereas loss frames elicit more negative emotions (Nabi et al., 2020). Drawing on this evidence, we predicted lower momentary happiness after the loss block than after the gain block. This prediction served as a manipulation check of the intended affective difference between domains.

3.2 - Method

3.2.1 - Participants

Participants were recruited through Prolific, with eligibility restricted to participants located in the United States. A total of 342 participants took part in the study. Of these, 140 participants passed both attention checks and were included in the final sample. The sample had a mean age of 30.94 years ($SD = 6.26$). 63 participants reported being male and 76 reported being female, while one participant chose not to disclose this information.

3.2.2 - Design

The study used a within-subjects design to examine whether social comparison seeking differed between gain and loss domains. Each participant completed both a gain block and

a loss block, with block order randomized across participants. The central manipulation was outcome domain: in the gain block, monetary outcomes were framed as gains from an initial endowment of \$0, whereas in the loss block, monetary outcomes were framed as losses from an initial endowment of \$60.

The two domains were constructed so that the possible final monetary amounts were equivalent across gain and loss frames. This allowed the study to isolate the effect of gain versus loss framing while holding objective final outcomes constant. The design also included comparison direction and inequality as within-subjects variables. Comparison direction was operationalized through the participant's roulette outcome: after the worst outcome, requested outcomes could be equal to or better than the participant's outcome, allowing lateral or upward comparison; after the best outcome, they could be equal to or worse, allowing lateral or downward comparison. Inequality referred to the degree of disparity between the two possible final monetary amounts and was operationalized through three outcome-pair conditions: \$10/\$20, \$10/\$30, and \$10/\$50. Trial order was randomized within each block.

The primary dependent variable was social comparison seeking. Momentary happiness and identification with the observed participants were collected after each block as secondary measures.

3.2.3 - Materials and Measures

The experimental task was a roulette game composed of two main blocks: one gain block and one loss block. In each block, participants completed three consecutive roulettes. Each roulette displayed two possible monetary outcomes, and participants learned in the instructions that the outcomes were equally likely. In the gain block, participants started from \$0 and the possible roulette outcomes were positive. The three gain roulettes paired \$10 with \$20, \$30, or \$50. In the loss block, participants started from \$60 and the possible roulette outcomes were negative. The three loss roulettes paired -\$50 with -\$40, -\$30, or -\$10. Thus, although the two blocks differed in whether the outcomes were framed as gains or losses, the final possible monetary amounts were matched across domains: \$10, \$20, \$30, and \$50. Within each roulette, the more favorable of the two monetary outcomes is referred to as the best outcome and the less favorable as the worst outcome.

The main behavioral measure was social comparison seeking, operationalized as the number of previous participants' outcomes requested after each roulette spin. The task also recorded the participant's roulette outcome, the unreceived alternative outcome, the resulting final amount, the block domain, and the trial order.

Because the study examined social comparison, participants were told that the outcomes displayed during the task had been obtained by previous participants, so that the information would be perceived as socially meaningful. In reality, each displayed name-outcome pair combined a first name with a randomly selected outcome from the two possible outcomes of the current roulette. Names were randomly sampled from a pool of 100 common first names: 50 male and 50 female names. The name pool was constructed from the Social Security Administration list of the most popular baby names in the United States during the 2000s (Social Security Administration, 2026). Starting from the most frequent name, every fourth name was selected separately for male and female names until 50 names per sex were obtained. Within each roulette, names were sampled from this pool in random order.

Momentary happiness was measured after each block both as a domain manipulation check and as a measure of the hedonic effect, using a single item adapted from research on momentary subjective well-being (Rutledge et al., 2016). Participants answered the question “How happy are you at this moment?” using the mouse on a continuous slider anchored by “Very unhappy” and “Very happy”. The task stored the response on a 0-100 scale separately for the gain and loss blocks.

Identification with the observed previous participants was measured after each block using a single-item social identification measure adapted from Postmes et al. (2013). Participants indicated their agreement with the statement “I identified with the people whose roulette outcomes I observed”. Responses were made on a 7-point scale ranging from 1 (“Fully disagree”) to 7 (“Fully agree”) and were stored separately for the gain and loss blocks.

After the roulette task, subjective socioeconomic status was measured with the MacArthur Scale of Subjective Social Status (Adler et al., 2000). Participants were shown a 10-rung ladder representing where people stand in the United States, with the top described as people with the most money, education, and respected jobs, and the bottom as people with the least money, education, and respected jobs or no job. Participants clicked the rung corresponding to where they perceived themselves to stand at that moment in their life. Participants also reported their gender and could optionally provide a brief open-ended description of their experience during the Roulette Game.

3.2.4 - Procedure

The study was completed online. Participants first read the information sheet, gave informed consent, and entered their Prolific ID. Only participants who gave consent could continue.

Participants then read the task instructions. The instructions introduced the Roulette Game and explained that the task included six roulettes, each with two equally likely monetary outcomes. Participants were told that one participant would be randomly selected for a bonus payment and that one of that participant's roulettes would be randomly drawn to determine the bonus. The instructions also stated that the roulettes were independent: the outcome of one roulette did not affect the outcome or payment of any other roulette. After each spin, participants could either continue to the next roulette or view outcomes attributed to previous participants who had played the same roulette. Before the tutorial, participants entered their first name so that their own outcomes could be shown to future participants in the same format.

After the instructions, participants completed an interactive tutorial. The tutorial introduced the three keys used during the task: SPACE to spin the roulette, J to view previous participants' outcomes, and F to continue to the next roulette. After the tutorial, participants answered comprehension questions about the task rules. If they answered a question incorrectly, they returned to the instructions and attempted the comprehension questions again. Participants who failed the comprehension check twice could not proceed.

The main roulette task started after the comprehension check. Before each block, participants received block-specific information about the starting amount and the sign of the possible roulette outcomes. Each block contained three roulette trials. On each trial, participants pressed SPACE to spin the roulette. After their outcome appeared, they could press J to request social comparison information or press F to continue. When participants pressed J, the task displayed the first name and outcome of a previous participant for the same roulette. Participants could request more than one previous participant's outcome before moving to the next roulette.

At the end of each block, participants completed the two post-block measures described above: momentary happiness and identification with the observed previous participants.

After both roulette blocks, participants completed two attention checks. The first asked about the lowest possible bonus payment. The second presented a special roulette and instructed participants to press the number one, rather than SPACE, to spin it. Participants then completed post-experiment questions about subjective socioeconomic status, gender,

and, optionally, their experience during the Roulette Game. The study ended with a debriefing page.

3.3 - Statistical Analyses

Mixed-effects models were used to account for repeated observations within participants. Candidate random-effects structures began with the richest structure justified by the design and, when necessary, followed a predefined simplification sequence until a numerically admissible model was obtained (Barr et al., 2013; Bolker et al., 2009). For the confirmatory hypothesis tests, the model-selection rules were specified independently of the focal results (Kahan et al., 2020). Appendix A summarizes the outcome of this selection process for each model, reporting the accepted random-effects structure, selected model, and final formula.

3.3.1 - Preliminary Analyses

Two preliminary analyses were conducted. Possible order effects were examined using a trial-level mixed-effects hurdle model of sample count, fitted to all 840 valid trials from 140 participants. Block position, domain, and their interaction were included as fixed effects. The selected model was hurdle-Poisson and followed the hurdle-model procedure described under Confirmatory Analyses.

The effectiveness of the domain manipulation was assessed using a Gaussian mixed-effects model of post-block happiness. The model included all 280 participant-domain observations, with domain as a fixed effect and participant-level random effects accounting for repeated observations. Model adequacy was assessed using residual and random-effect diagnostics with parametric-bootstrap reference plots (Loy et al., 2017). The exploratory happiness models followed the same Gaussian procedure.

3.3.2 - Confirmatory Analyses

The confirmatory tests of the Domain Effect on Social Comparison Seeking Hypothesis (H1), the Identification Effect on Social Comparison Seeking Hypothesis (H2b), and the Upward Comparison Hypothesis (H3) analyzed trial-level social comparison seeking using mixed-effects hurdle models, which separately model whether any outcome was sampled and the number of outcomes sampled once sampling had begun (Brooks et al., 2017; Too et al., 2025). The observed trial-level distribution was also consistent with this two-part approach: zero was the most frequent sample count (368 of 840 valid trials, 43.8%; see Figure 3.4). Effects on the probability of requesting at least one outcome

were reported as odds ratios, reversing the direction of the model's native zero-probability coefficients, whereas effects on positive sampling extent were reported as incidence rate ratios. The Domain Effect on Social Comparison Seeking Hypothesis tested the effect of domain, and the Upward Comparison Hypothesis tested the association between comparison direction and social comparison seeking, using all 840 valid trials from 140 participants.

The Identification Effect on Social Comparison Seeking Hypothesis tested the effect of post-block identification on trial-level social comparison seeking while adjusting for domain. It included 633 trial observations from the 211 participant-domain blocks, contributed by 119 participants, in which at least one outcome had been sampled. All trials within eligible blocks were retained, including trials with zero sampling.⁹

For the hurdle-family comparison, hurdle-Poisson and hurdle-NB2 candidates were fitted at each step of the random-effects sequence. The first random-effects structure at which both candidates were numerically admissible was retained, ensuring that the families were compared using identical observations and model terms. The candidates were then evaluated using a likelihood-ratio test, AIC, BIC, and a hanging rootogram (Too et al., 2025). A family was retained only when the prespecified evidence was concordant; a discordant or numerically unevaluable comparison was left unresolved rather than settled by default. The selected fitted candidate was used directly for inference. Hurdle-Poisson candidates were selected for the Domain Effect on Social Comparison Seeking Hypothesis, the Identification Effect on Social Comparison Seeking Hypothesis, and the Upward Comparison Hypothesis; their accepted random-effects structures are reported in Appendix A.

The Domain Effect on Identification Hypothesis (H2a) tested the difference in identification between domains using the ordered seven-category response from the 211 sampled participant-domain blocks contributed by 119 participants. The random-effects structure was first resolved using cumulative-link mixed models and was then held fixed. Proportional-odds and non-proportional-odds transformation models were fitted to the same observations (Tamási, 2025; Tamási & Hothorn, 2021). Provided that both candidates were numerically admissible, the non-proportional-odds model was selected when a nested likelihood-ratio test yielded $p < .05$; otherwise, the proportional-odds model was retained (Silva et al., 2016). If the comparison could not be evaluated, no odds structure

⁹This restriction reflects the wording of the identification item; see Section 3.2.3.

was selected automatically. The selected specification was a proportional-odds model with a participant random intercept.

The Identification-Mediation Hypothesis (H2) was tested by combining the selected models for the Domain Effect on Identification Hypothesis and the Identification Effect on Social Comparison Seeking Hypothesis. Counterfactual standardization was adapted from the general framework of Imai et al. (2010) for nonlinear outcomes and discrete mediators. Population-level predictions integrated exactly over all seven possible identification categories and gave each participant equal final weight. Primary indirect effects were calculated for the probability of zero sampling and for the expected positive count conditional on sampling. The indirect effect on the probability of any sampling was reported as the exact complement of the zero-probability effect rather than as a third independently estimated effect. The indirect effect on the overall expected count was treated as supplementary. Separate reporting of the zero-probability and positive-count functionals was conceptually motivated by O'Rourke & Han (2023).

Uncertainty was estimated using a participant-cluster bootstrap that resampled participants as intact clusters (Field & Welsh, 2007). Of 10,000 requested replicates, 9,823 produced numerically admissible refits. Following a post hoc numerical audit, percentile 95% intervals were calculated from these admissible refits (Hesterberg, 2015). This amendment affected interval construction but not the point estimates.

3.3.3 - Exploratory Analyses

The following analyses were not specified before data collection and analysis and should therefore be treated as exploratory and hypothesis-generating rather than as confirmatory tests (Wagenmakers et al., 2012). The analysis of social comparison seeking followed the hurdle-model fitting, family-comparison, and reporting procedure described under Confirmatory Analyses. The analyses of happiness followed the Gaussian fitting and diagnostic procedure described under Preliminary Analyses.

First, the joint associations of comparison direction and inequality with social comparison seeking were examined using a trial-level hurdle-Poisson model fitted to all 840 valid trials from 140 participants. Comparison direction was operationalized through the contrast between worst- and best-outcome trials, whereas inequality was operationalized through indicator contrasts comparing the \$10/\$30 and \$10/\$50 outcome pairs with the \$10/\$20 outcome pair. The model included these contrasts and their interactions. Omnibus Wald tests evaluated the overall association of inequality and the comparison-direction-by-inequality interaction with each hurdle component, followed by the reported outcome-

pair contrasts. A supplementary domain-moderation hurdle-Poisson model additionally included domain and its interactions with comparison direction and inequality.

Second, post-block happiness was examined using a Gaussian mixed-effects model fitted to the 211 sampled participant-domain blocks contributed by 119 participants. The model included domain, centered personal earnings, the centered proportion of sampled outcomes corresponding to the best outcome in each roulette, and their two- and three-way interactions. An auxiliary Gaussian model replaced the absolute sampled-outcome proportion with separate centered proportions of sampled outcomes that were better and worse than the participant's own outcome and included their corresponding interactions with domain and personal earnings. The complete accepted specifications are reported in Appendix A.

3.4 - Results

3.4.1 - Descriptive Statistics of the Three Main Measurements

The descriptive analyses included 140 participants, 840 trial observations, and 280 participant-domain block observations. Sampling was examined at both the trial and participant levels. Happiness was measured once after every block; identification was described only for blocks in which participants requested at least one social-comparison outcome.

Most participants (119 of 140; 85.0%) requested social-comparison information at least once, whereas 21 participants (15.0%) did not sample in any trial. At the trial level, participants requested no social-comparison information in 368 of the 840 trials (43.8%). Although zero was the single most frequent sample count, sampling occurred in the remaining 472 trials (56.2%). The distribution of sample counts across trials is shown in Figure 3.4. Across all trials, participants requested an average of 2.32 outcomes ($SD = 2.82$, $Mdn = 2$). Among trials in which sampling occurred, the average was 4.12 outcomes ($SD = 2.58$, $Mdn = 3$).

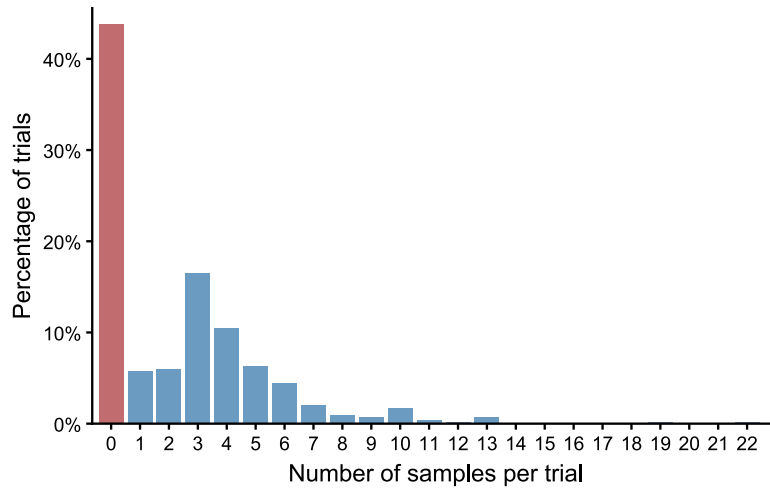


Figure 3.4: Distribution of the number of social-comparison outcomes requested per trial. The red bar represents trials with no sampling; blue bars represent positive sample counts.

Across block observations, happiness averaged 53.41 on the 0-100 scale ($SD = 23.42$, $Mdn = 50.70$), with responses spanning the full scale (Figure 3.5).

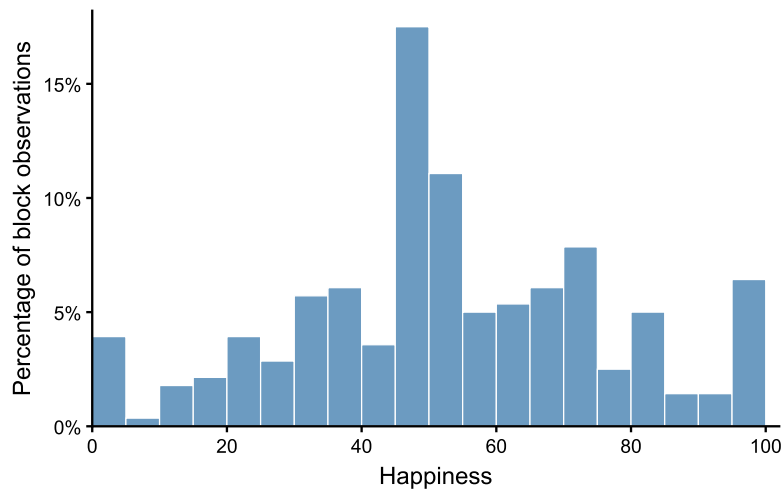


Figure 3.5: Overall distribution of happiness across block observations.

Among the 211 blocks with at least one requested social-comparison outcome, identification responses covered the full 1-7 scale and were centered slightly above the scale midpoint ($M = 4.15$, $Mdn = 4$, $IQR = 2$; Figure 3.6).

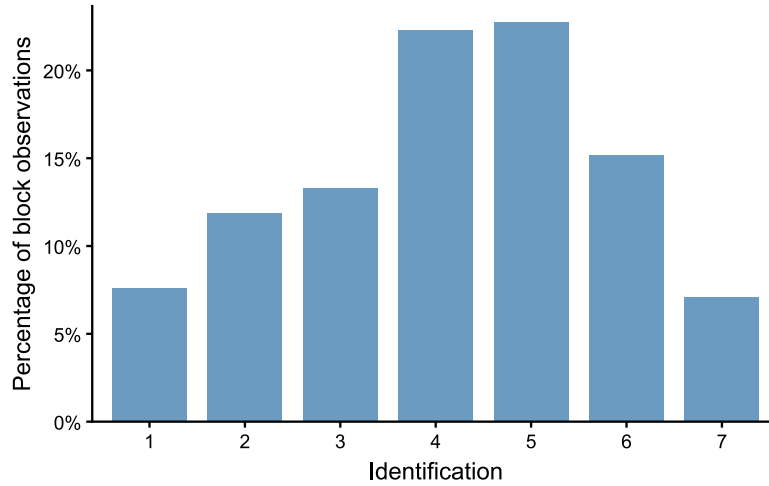


Figure 3.6: Distribution of identification responses among block observations with at least one sample.

3.4.2 - Preliminary Analyses

3.4.2.1 - Order Effect and Counterbalancing

A block-position effect was observed for sampling initiation: the odds of requesting at least one outcome were higher in the second than in the first block ($OR = 2.27$, 95% CI $[1.57, 3.27]$, $p < .001$). There was no clear evidence of a block-position effect on conditional sampling extent ($IRR = 1.01$, 95% CI $[0.91, 1.11]$, $p = .872$). The block-position-by-domain interaction was not statistically significant for either the probability of any sampling ($OR = 1.10$, 95% CI $[0.23, 5.26]$, $p = .905$) or the sampling extent ($IRR = 0.83$, 95% CI $[0.55, 1.26]$, $p = .385$). Observed sampling patterns are also presented (see Appendix B).

The similar descriptive pattern across domains and the absence of a significant block-position-by-domain interaction are consistent with adequate counterbalancing.¹⁰

3.4.2.2 - Manipulation Check

The manipulation correctly altered affective responses in the expected direction: happiness was lower following the loss block than following the gain block ($b = -17.68$, 95% CI $[-21.52, -13.83]$, $p < .001$); the observed means were 62.24 in the gain domain and 44.57 in the loss domain (Appendix B).

¹⁰The non-significant interactions do not prove the absence of differential carryover because carryover tests can be biased and have low power (Senn & Hildebrand, 1991).

3.4.3 - Hypothesis Tests

3.4.3.1 - H1: Domain Effect on Social Comparison Seeking

The domain effect hypothesis predicted less social comparison seeking in the loss domain than in the gain domain. Neither the effect on sampling initiation ($OR = 1.09$, 95% CI $[0.70, 1.70]$, $p = .693$) nor the effect on conditional sampling extent ($IRR = 0.97$, 95% CI $[0.87, 1.08]$, $p = .573$) was statistically significant. The hypothesis was therefore not supported.

3.4.3.2 - H2: Mediating Role of Identification

H2a: Domain Effect on Identification

We predicted greater identification in the loss domain than in the gain domain. Identification did not differ significantly between domains ($OR = 1.31$, 95% CI $[0.76, 2.28]$, $p = .334$). The hypothesis was therefore not supported.

H2b: Identification Effect on Social Comparison Seeking

We predicted that greater identification would be associated with less social comparison seeking. As shown in Figure 3.7, higher identification was associated with a greater probability of sampling at least one outcome, contrary to the predicted direction ($OR = 1.23$, 95% CI $[1.07, 1.41]$, $p = .003$). Identification was not associated with sampling extent ($IRR = 0.99$, 95% CI $[0.94, 1.05]$, $p = .797$).

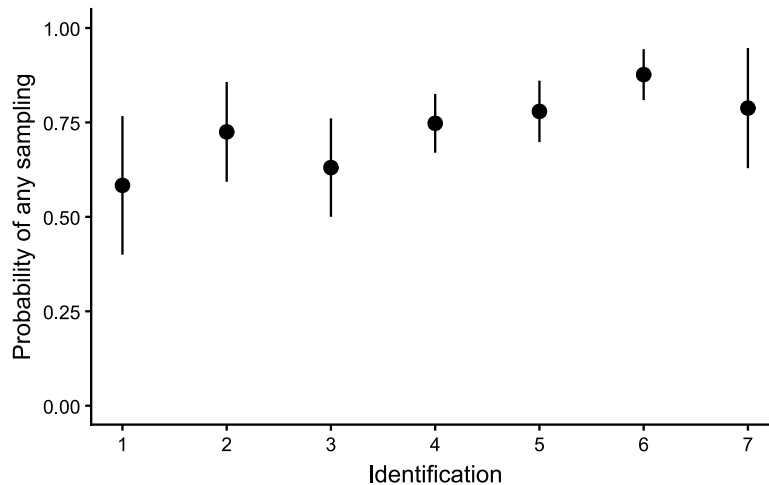


Figure 3.7: Observed probability of requesting at least one social-comparison outcome by identification score. Points are participant-level means and error bars are 95% confidence intervals, restricted to blocks in which at least one outcome was sampled.

Mediation Analysis

The mediation analysis provided no evidence of an indirect effect through identification. The average indirect effect was 0.0050 on the probability of any sampling (percentile 95% CI $[-0.0051, 0.0179]$) and -0.0029 on the expected sampling extent (percentile 95% CI $[-0.0388, 0.0332]$). Both intervals included zero, providing no support for mediation of either sampling initiation or sampling extent.

3.4.3.3 - H3: Upward Comparison Effect on Social Comparison Seeking

The upward comparison hypothesis predicted greater social comparison seeking when upward rather than downward comparison was possible. Comparison direction was associated with seeking initiation: participants were more likely to request at least one outcome after the worst outcome, when lateral or upward comparison was possible, than after the best outcome, when lateral or downward comparison was possible ($OR = 1.65$, 95% CI $[1.13, 2.40]$, $p = .009$). As shown in Figure 3.8, the observed probabilities were .608 after the worst outcome and .528 after the best outcome. Comparison direction was not associated with sampling extent ($IRR = 1.06$, 95% CI $[0.96, 1.17]$, $p = .262$). Thus, support for this hypothesis was limited to seeking initiation.

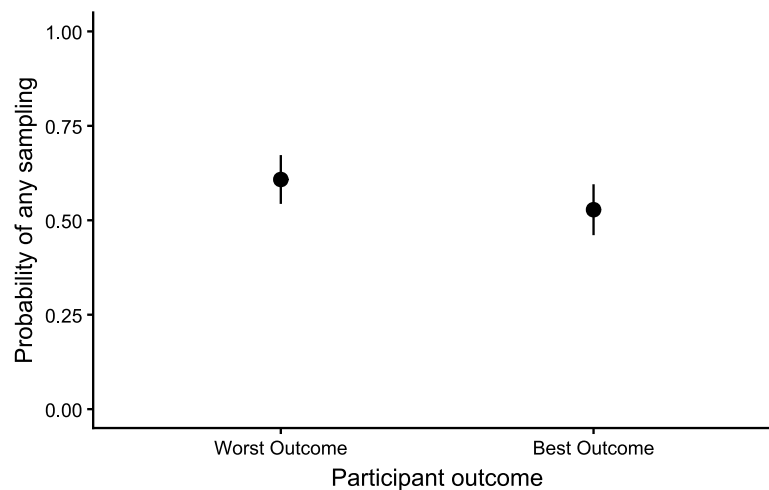


Figure 3.8: Observed probability of requesting at least one social-comparison outcome by participant outcome. The worst outcome permitted lateral or upward comparison, whereas the best outcome permitted lateral or downward comparison. Points are participant-level means and error bars are 95% confidence intervals.

3.4.4 - Exploratory Analyses

The following analyses were not planned ahead of data collection and data analysis; for this reason, they should be treated as exploratory and as a useful tool for hypothesis generation for future research, rather than as providing confirmatory tests (Wagenmakers et al., 2012).

3.4.4.1 - Comparison Direction by Inequality

Inequality between the two possible final monetary amounts was a central feature of the experimental design. We therefore examined whether social comparison seeking differed across the three inequality levels, implemented through the \$10/\$20, \$10/\$30, and \$10/\$50 outcome pairs, and whether the association between comparison direction and social comparison seeking varied across inequality levels.

Averaged equally across the three inequality levels, comparison direction was associated with seeking initiation: the odds of sampling at least one outcome were greater after participants received the worst rather than the best of the two roulette outcomes (OR = 1.69, 95% CI [1.15, 2.47], $p = .007$).

An omnibus Wald test indicated that sampling initiation differed across outcome pairs, $\chi^2(2) = 6.18$, $p = .045$, whereas sampling extent did not, $\chi^2(2) = 0.62$, $p = .734$. Regarding the specific outcome-pair contrasts, there were greater odds of initiating sampling for the \$10/\$50 outcome pair than for the \$10/\$20 pair (OR = 1.68, 95% CI [1.08, 2.60], $p = .021$) or the \$10/\$30 pair (OR = 1.56, 95% CI [1.01, 2.42], $p = .046$). The \$10/\$30 versus \$10/\$20 contrast was not statistically significant (OR = 1.07, 95% CI [0.70, 1.65], $p = .751$).

There was no evidence that the worst-versus-best participant-outcome contrast varied across outcome pairs, either for sampling initiation, $\chi^2(2) = 0.52$, $p = .770$, or for sampling extent, $\chi^2(2) = 1.45$, $p = .485$. A supplementary domain-moderation model additionally included domain and its interactions with comparison direction and inequality. None of the individual interaction coefficients involving domain was statistically significant, all p values $\geq .219$, providing no clear evidence of domain-related moderation.

The corresponding observed patterns for both hurdle components are shown in Figure 4.4.

3.4.4.2 - What Drives the Hedonic Effect?

Participants could derive positive emotions from two sources: their own monetary outcomes and the social information revealed through sampling. We therefore examined whether happiness was associated with participants' personal earnings and with the composition of the outcomes they sampled, while accounting for the gain-loss domain. We expected greater personal earnings to be associated with greater happiness and exposure to a higher proportion of best sampled outcomes to be associated with lower happiness.

Personal monetary outcomes were implemented as the participant's total earnings within each block. Sampled-outcome composition was implemented as the proportion of sampled outcomes corresponding to the best outcome available in each roulette. For each participant-domain block, this proportion was calculated by dividing the number of times the best outcome was sampled by the total number of outcomes sampled.

The Gaussian mixed model included 211 sampled participant-domain blocks from 119 participants. Consistent with the manipulation check, happiness was lower in the loss than in the gain domain at the centered values of the other predictors ($b = -15.27$, 95% CI $[-19.44, -11.10]$, $p < .001$). Higher personal earnings were associated with greater happiness ($b = 0.279$ per dollar, 95% CI $[0.162, 0.396]$, $p < .001$). By contrast, a greater proportion of sampled best outcomes was associated with lower happiness after accounting for domain and personal earnings ($b = -14.17$, 95% CI $[-26.90, -1.44]$, $p = .029$). The only statistically significant interaction was between personal earnings and domain: the positive association between earnings and happiness was stronger in gain than in loss blocks ($b = -0.242$, 95% CI $[-0.471, -0.014]$, $p = .038$). None of the interactions involving the proportion of sampled best outcomes was statistically significant, all p values $\geq .286$.

The observed earnings-by-domain pattern in the same analytic sample is shown in Figure 4.5. For descriptive context, Figure 4.6 shows unadjusted mean happiness across eight bins of the sampled best-outcome proportion.

An auxiliary model used proportions of sampled outcomes that were better or worse than the participant's own roulette outcome. It retained domain and personal earnings but replaced the absolute sampled-outcome proportion with two predictors: the proportion of sampled outcomes that were better than the participant's own outcome and the proportion that were worse than the participant's own outcome. Neither the better-than-self proportion ($b = -10.17$, 95% CI $[-24.38, 4.03]$, $p = .160$) nor the worse-than-self proportion ($b = -7.91$, 95% CI $[-22.96, 7.14]$, $p = .303$) was independently associated with happiness.

3.5 - Discussion

The present study examined whether gain-loss framing influenced social comparison seeking. We predicted less seeking in the loss domain than in the gain domain, hypothesized that the loss domain would increase identification, which would in turn decrease social comparison seeking, and finally, we expected more seeking when upward rather than downward comparison was possible. Because the sequential task distinguished whether participants requested any information from how much they requested after starting, these hypotheses were examined separately for seeking initiation and extent.

The confirmatory analyses provided no evidence for the domain difference predicted: gain-loss domain was not associated with either initiation or extent. The identification-mediation hypothesis was also not supported. The analyses provided no evidence of a domain difference in identification or of an indirect association between domain and seeking through identification. Higher identification was nevertheless associated with a greater probability of seeking initiation, contrary to the predicted direction. Finally, the upward comparison hypothesis received partial support: participants were more likely to initiate seeking when upward rather than downward comparison was possible. This initiation pattern is consistent with the broader tendency toward upward comparison reported in the literature (Gerber et al., 2018), although the present task measured the opportunity to encounter upward comparison rather than an explicit preference for an upward target.

Although gain-loss domain was not associated with seeking, the manipulation check showed the expected affective difference: participants reported lower happiness after the loss block than after the gain block. Gain-loss framing was therefore psychologically consequential at the affective level, but this difference did not translate into a detectable change in social comparison seeking in the present task. Taken together, these findings indicate an affective response to the manipulation but provide no evidence of a corresponding domain effect on social comparison seeking under the conditions examined in this study.

The positive association between identification and sampling initiation was opposite to the predicted reduction in seeking. The prediction assumed that the task would elicit sufficiently intense aversive arousal for stronger identification to promote avoidance of further information. The task measured requests rather than aversive arousal or deliberate avoidance, so the finding does not directly test the proposed avoidance process or explain the positive association. Nevertheless, the result is inconsistent with our hypothesis. Because identification was measured after each block and analyzed only in blocks in

which sampling occurred, its temporal relationship with seeking remains unclear. Greater identification may have increased participants' willingness to seek information, but exposure to outcomes attributed to previous participants may also have increased identification with them.

The exploratory analyses provided additional information about social comparison seeking. Sampling initiation differed across outcome-pair conditions, suggesting that inequality may drive social comparison seeking. This result is consistent with previous research (W. Liu et al., 2025; Sommet & Elliot, 2026), although the pattern was concentrated in the \$10/\$50 outcome pair rather than showing a progressive increase across all three pairs. Inequality did not moderate the association between comparison direction and either seeking initiation or conditional extent. Also, domain did not moderate either the association with comparison direction or the association with inequality, suggesting, again, that domain may not have a relevant role in social comparison seeking.

The exploratory model of momentary happiness indicated that higher personal earnings were associated with greater happiness. By contrast, a larger proportion of sampled outcomes corresponding to the best outcome in their respective roulettes (representing a greater likelihood of upward comparison) was associated with lower happiness after accounting for domain and personal earnings. This result is consistent with previous literature that shows the negative effect of upward comparison (Gerber et al., 2018). However, the proportions relative to the participant outcomes, which allowed upward and downward comparison to be clearly distinguished, were not independently associated with happiness. The result therefore does not provide clear evidence of a negative hedonic consequence of upward comparison.

The main conclusion to be drawn is that the findings provided no evidence that gain-loss domain influenced social comparison seeking, despite the affective difference between gain and loss blocks. The hypothesized mediation through identification was not supported, while upward comparison and identification were associated only with the decision to initiate seeking. The analyses did not detect corresponding associations with the amount requested once seeking had begun. These results make initiation and conditional extent worth distinguishing as observable components of seeking, although they do not establish separate psychological mechanisms or rule out associations with extent.

3.6 - Limitations and Future Research

The findings of this study should be interpreted in light of five main limitations.

One limitation is the absence of a non-social control condition. The study examined information presented as outcomes of previous participants, but it did not compare this condition with equivalent non-social information, such as outcomes generated by a computer. It therefore couldn't show whether sampling was influenced specifically by the social source of the information or reflected a more general interest in information seeking. Future studies could compare identical information attributed either to people or to a non-social source and assess whether participants behave differently.

A second limitation concerns whether seeking social information resulted in social comparison. Social comparison requires information about another person to be considered in relation to the self (Wood, 1996). The task recorded whether participants requested other people's outcomes, but not how they processed those outcomes. Requests may therefore have reflected comparison with the self, but also other phenomena. Future studies could, for example, assess whether participants related the outcomes to their own and ask about their reasons for seeking the information.

A third limitation concerns comparison direction. In the present task, comparison direction was operationalized through participant outcome: the worst outcome permitted lateral or upward comparison, whereas the best outcome permitted lateral or downward comparison. Comparison direction was therefore confounded with participant outcome. Greater initiation when upward comparison was possible may reflect sensitivity to comparison direction, a response to receiving the worst outcome, or both.

A fourth limitation concerns the causal interpretation of identification. Identification was measured after sampling, so it is unclear whether greater identification increased seeking or whether seeking increased identification. Future studies could manipulate identification before the social comparison seeking task, for example through shared group membership, and test whether it changes social comparison seeking (the reverse could be done as well).

Finally, the study examined, for experimental reasons, a narrow form of social comparison. Targets were unknown people represented only by a first name and a randomly sampled monetary outcome. This may have reduced the personal meaning of the comparisons and weakened the observed effects. The limited support for the hypotheses may therefore reflect features of the task rather than the absence of effects, which might be present in richer social settings. Future studies could test this possibility using more meaningful targets and more personalized comparisons.

Conclusion

This thesis analyzed social comparison seeking as a form of information seeking within the broader social comparison process, in which seeking is directed at information that can provide a comparison standard. It connected social comparison theory with research on information seeking and gain-loss framing, asking whether gain-loss domains change whether and how much people seek information about others. The empirical study addressed this question through an online sequential, non-instrumental sampling task. After receiving their own monetary outcome, framed either as a gain or as a loss, participants could request outcomes attributed to previous participants, making it possible to distinguish seeking initiation from seeking extent.

The first hypothesis predicted that participants would engage in less social comparison seeking in the loss domain than in the gain domain. Although the manipulation check showed the expected affective difference, with lower momentary happiness after the loss block, the confirmatory analyses provided no evidence of the predicted domain difference in social comparison seeking. The second hypothesis proposed that the loss domain would increase identification with previous participants and that stronger identification would, in turn, reduce seeking. This hypothesized mediation was not supported: identification did not differ between domains, and the mediation analysis provided no evidence of an indirect effect on either initiation or extent. Higher identification was instead associated with a greater probability of initiating seeking, contrary to the predicted direction, but not with seeking extent. Finally, the third hypothesis predicted greater social comparison seeking when upward rather than downward comparison was possible. This hypothesis received partial support: comparison direction was associated with seeking initiation, with a higher probability of initiating seeking when upward comparison was possible, but not with seeking extent. This pattern is consistent with evidence that upward comparison standards are generally preferred (Gerber et al., 2018).

Overall, the findings provided no evidence that gain-loss domain influenced either the initiation or extent of social comparison seeking. The central predicted domain effect was therefore not supported under the conditions examined in this study.

Despite the limited support for the predicted domain effect, the study contributes to research on social comparison seeking in two main ways. First, it addressed a question left unresolved by previous research: whether gain-loss domain influences social comparison seeking. Second, drawing on both selection studies and information-seeking designs, it developed a novel sequential social comparison-seeking task that distinguished initiation from the extent of information seeking. The findings also illustrate why this distinction might matter: factors associated with whether participants began seeking were not necessarily associated with how much information they requested after initiation. Initiation and conditional extent should therefore be treated as distinct observable components of social comparison seeking.

Appendix A: Model Specifications

This appendix records the accepted specifications of the preliminary, confirmatory, and exploratory models reported in the thesis.

Analysis	Random-effects structure	Selected model
Order effect Block position, domain, and their interaction sample_count ~ block_order_c + domain_c + block_order_by_domain_c + (1 participant_id)	Random intercept only	Hurdle Poisson
Manipulation check Domain and post-block happiness happiness ~ domain_c + (1 participant_id)	Random intercept only	Gaussian mixed model

Table 4.1: Accepted specification for each preliminary model.

Hypothesis	Random-effects structure	Selected model
H1 Domain and social comparison seeking sample_count ~ domain_c + (1 participant_id) + (0 + domain_c participant_id)	Maximal uncorrelated	Hurdle Poisson
H2a Domain and identification identification_ordered ~ domain_c + (1 participant_id)	Random intercept only	Proportional-odds model
H2b Identification and social comparison seeking sample_count ~ domain_c + sampled_block_identification_c + (1 participant_id) + (0 + sampled_block_identification_c participant_id)	Design-core uncorrelated	Hurdle Poisson
H3 Comparison direction and social comparison seeking sample_count ~ outcome_type_c + (1 participant_id)	Random intercept only	Hurdle Poisson

Table 4.2: Accepted specification for each confirmatory model.

Analysis	Random-effects structure	Accepted model
Comparison direction by inequality Participant-outcome and outcome-pair contrasts $\text{sample_count} \sim \text{outcome_type_c} * (\text{interval_200_vs_100_c} + \text{interval_400_vs_100_c}) + (1 + \text{outcome_type_c} * (\text{interval_200_vs_100_c} + \text{interval_400_vs_100_c}) \text{participant_id})$	Maximal uncorrelated	Hurdle Poisson
Domain moderation (auxiliary) Domain, comparison direction, inequality, and their interactions $\text{sample_count} \sim \text{domain_c} * \text{outcome_type_c} * (\text{interval_200_vs_100_c} + \text{interval_400_vs_100_c}) + (1 + \text{domain_c} + \text{outcome_type_c} + \text{interval_200_vs_100_c} + \text{interval_400_vs_100_c} \text{participant_id})$	Main-slope uncorrelated	Hurdle Poisson
Hedonic value Personal earnings and sampled-outcome composition $\text{happiness} \sim \text{domain_c} * \text{block_total_earnings_c} * \text{prop_sampled_best_outcome_c} + (1 + \text{domain_c} \text{participant_id})$	Design-core uncorrelated	Gaussian mixed model
Hedonic value (auxiliary) Self-relative sampled-outcome composition $\text{happiness} \sim \text{domain_c} * \text{block_total_earnings_c} * (\text{prop_comparison_worse_than_self_c} + \text{prop_comparison_better_than_self_c}) + (1 + \text{domain_c} * \text{block_total_earnings_c} * (\text{prop_comparison_worse_than_self_c} + \text{prop_comparison_better_than_self_c}) \text{participant_id})$	Maximal uncorrelated	Gaussian mixed model

Table 4.3: Accepted specification for each exploratory model.

Note. Model formulas are presented in reduced `lme4` notation. The symbols `|` and `||` denote participant-level random effects estimated with and without correlations, respectively, whereas `*` includes the relevant main effects and their interactions. The suffix `_c` identifies predictors entered using their analysis coding, including mean-centered variables, effect-coded variables, and indicator contrasts. “Maximal” includes all random slopes supported by the design; “design core” denotes a reduced structure retaining only the single random slope defined a priori as theoretically most relevant for that model. “Random intercept only” excludes random slopes. “Main-slope uncorrelated” retains uncorrelated participant-level random slopes for domain, comparison direction, and the two inequality contrasts.

Appendix B: Additional Figures

Preliminary Analysis Figures

The figures below present the observed descriptive patterns supporting the order-effect assessment and manipulation check reported in the preliminary analyses.

Social comparison seeking initiation by block position and domain

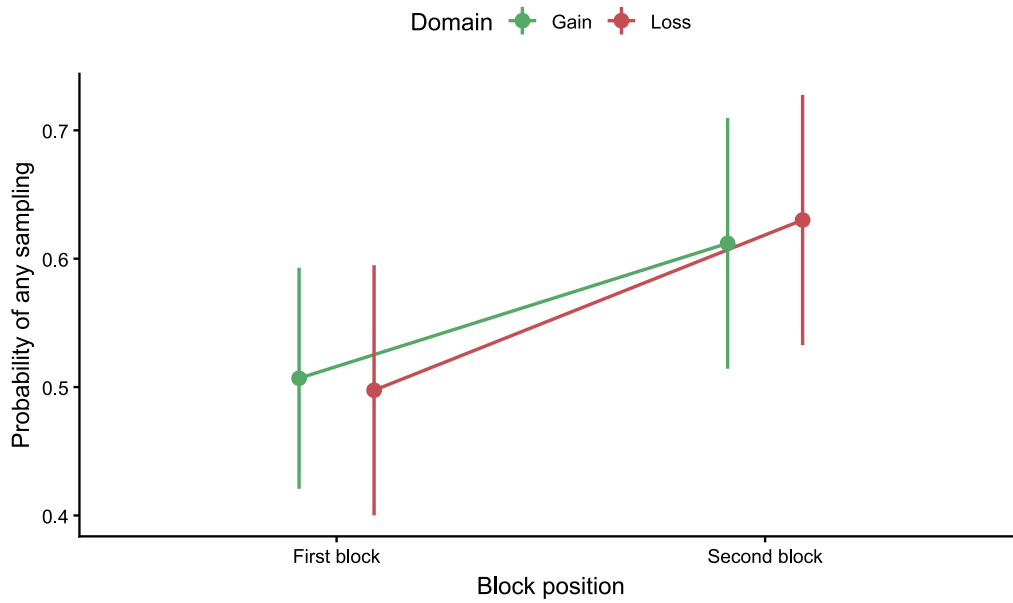


Figure 4.1: Observed social comparison seeking initiation by block position and domain.

Points are cell means and error bars are 95% confidence intervals.

Social comparison seeking extent by block position and domain

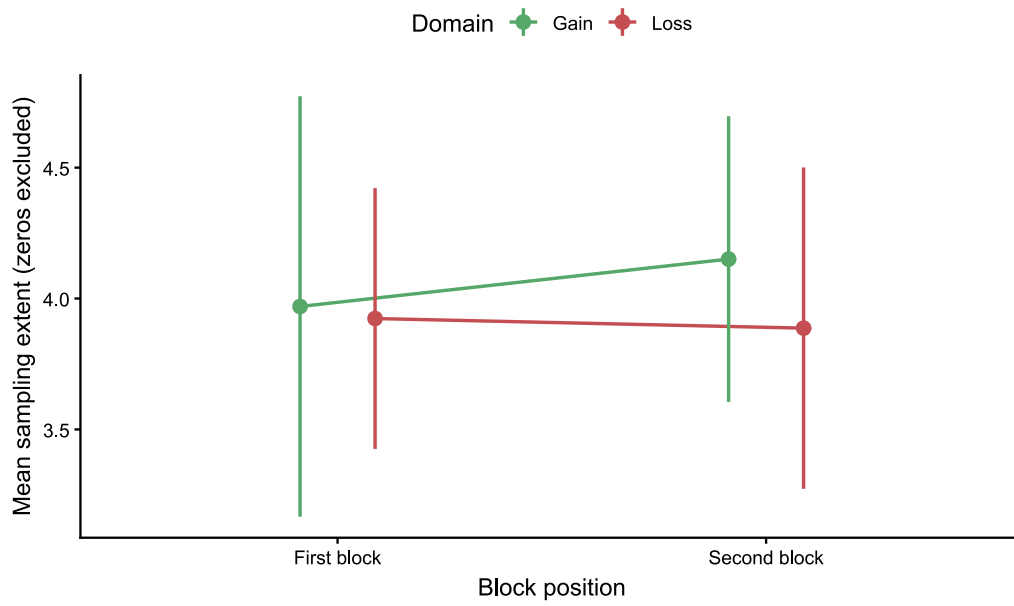


Figure 4.2: Observed social comparison seeking extent by block position and domain.

Points are cell means and error bars are 95% confidence intervals.

Distribution of Happiness by Domain

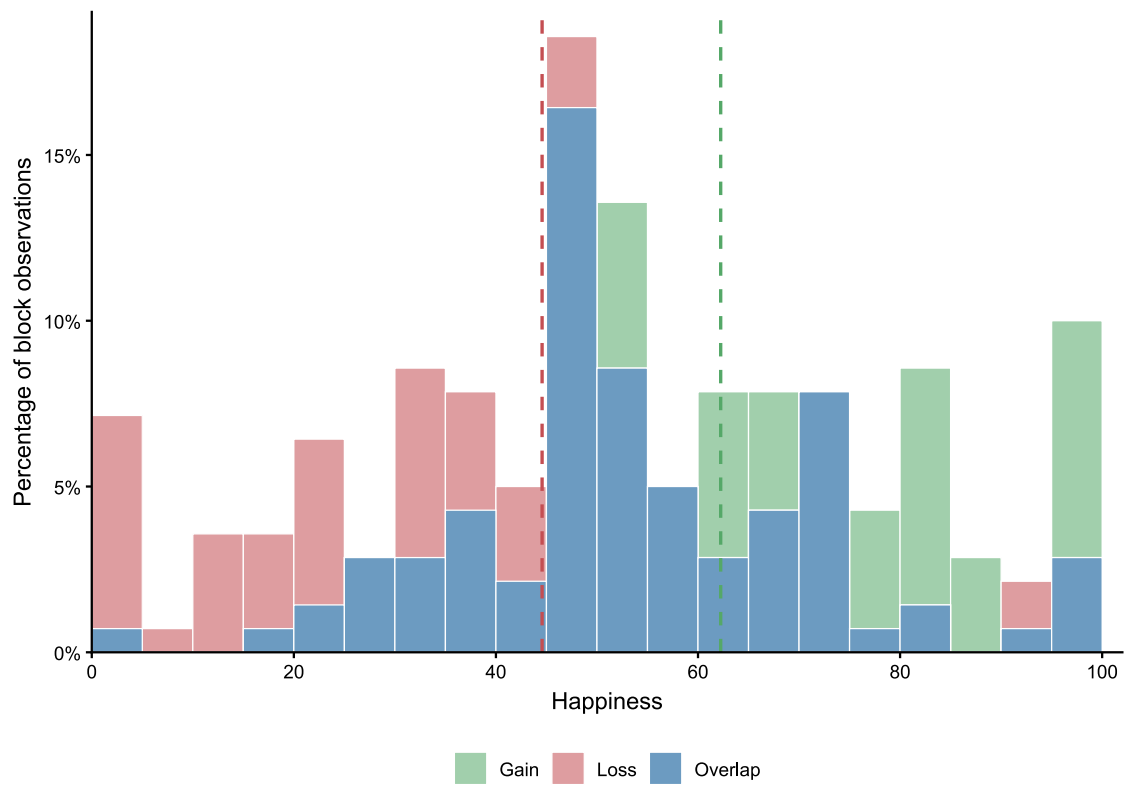
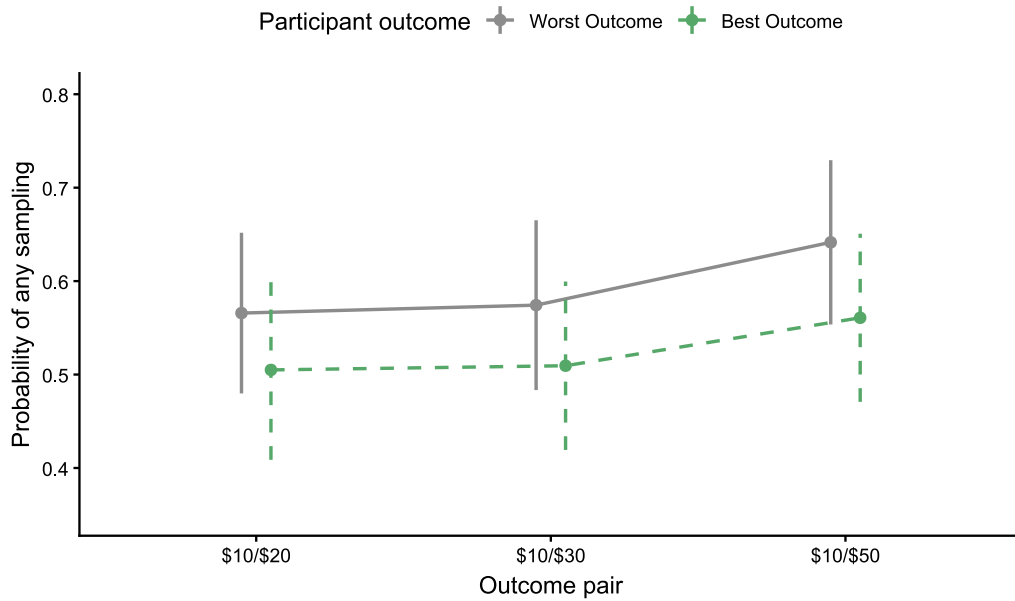


Figure 4.3: Observed distributions of post-block happiness in the gain and loss domains. Bars show percentages of block observations within each domain in five-point bins; dashed lines mark the domain means.

Exploratory Figures

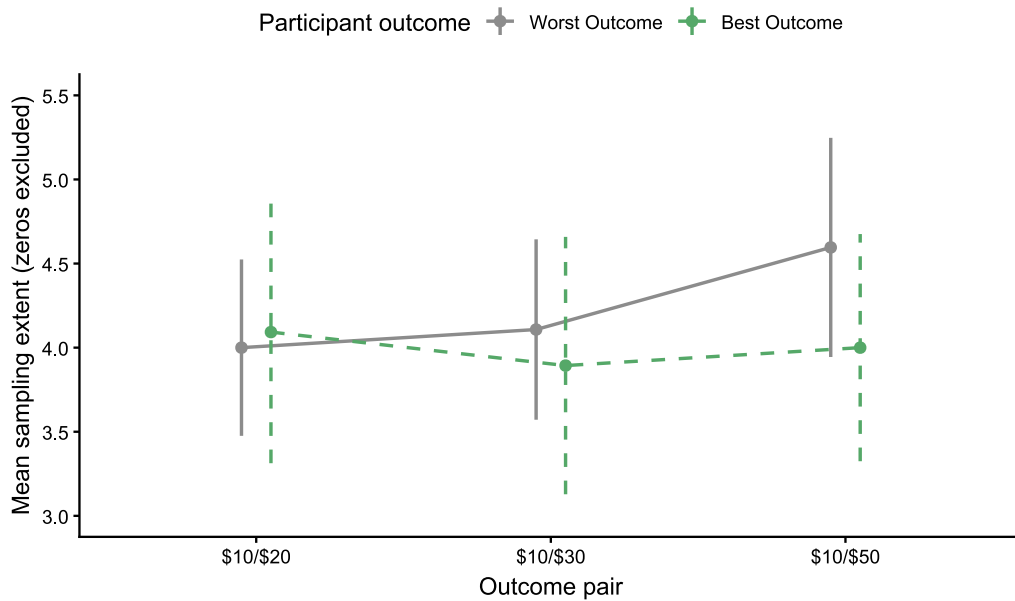
The figures below show observed patterns corresponding to the exploratory analyses reported in the Results.

Social comparison seeking initiation by inequality



(a) Probability of any sampling.

Social comparison seeking extent by inequality



(b) Mean sampling extent (zeros excluded).

Figure 4.4: Observed sampling by outcome pair and participant outcome. Points show participant-level cell means with 95% confidence intervals. Both vertical axes are truncated.

Happiness by block total earnings and domain

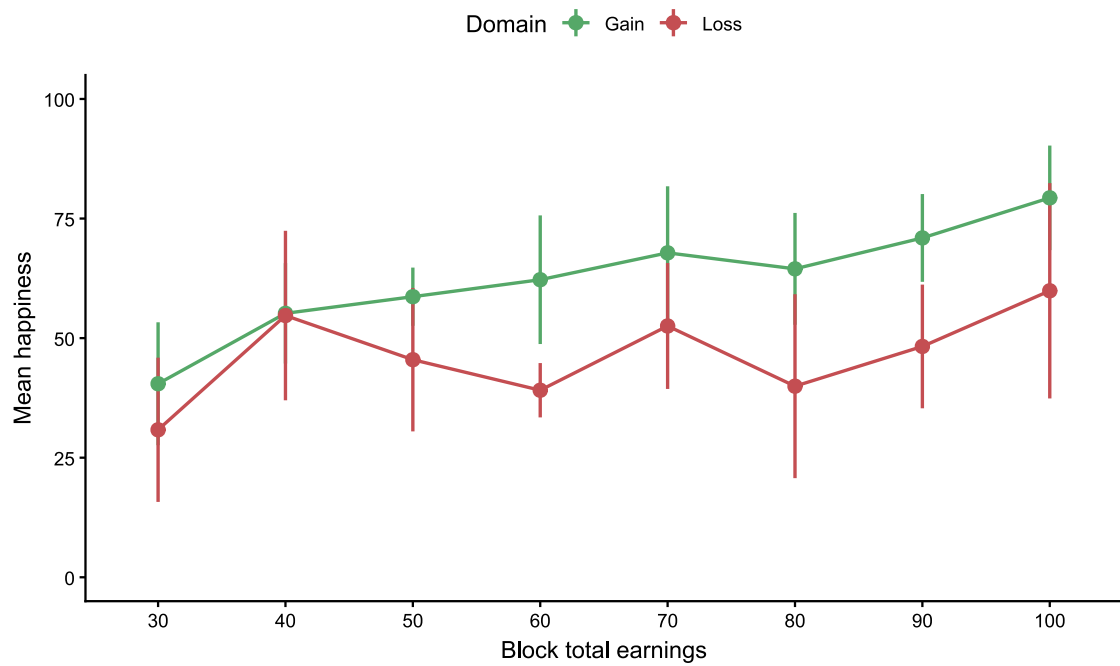


Figure 4.5: Observed mean happiness by block total earnings and domain among 211 participant-domain blocks with at least one sampled outcome. Error bars show 95% confidence intervals.

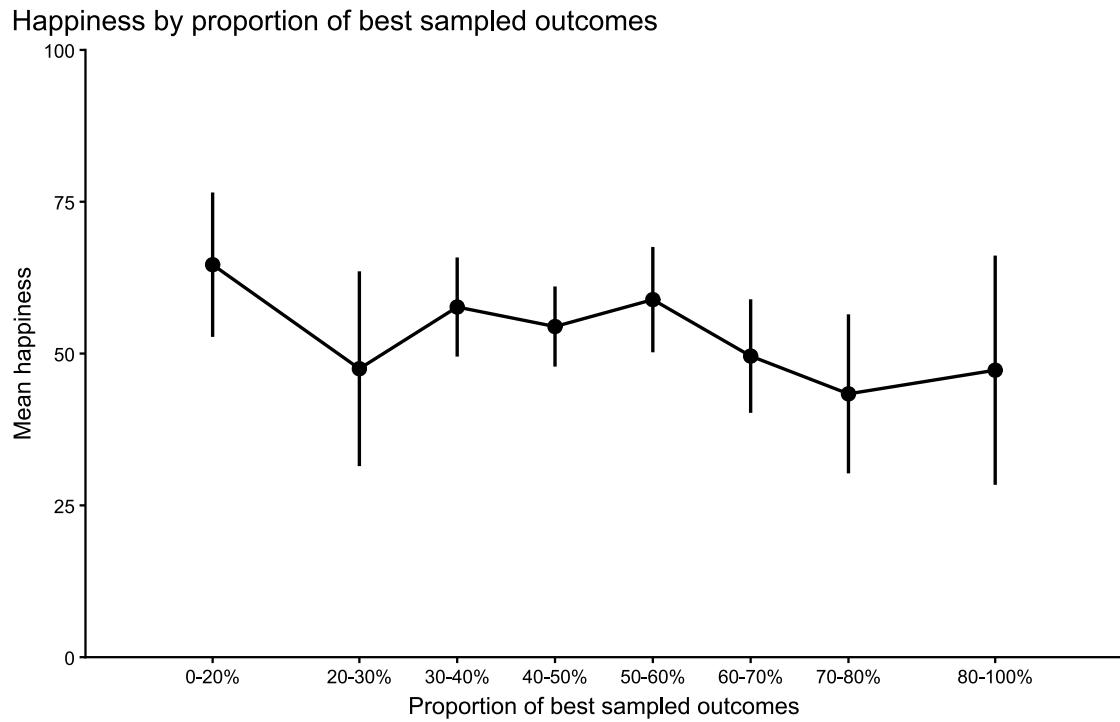


Figure 4.6: Observed mean happiness by the proportion of sampled outcomes corresponding to the best outcome available in each roulette, pooling gain and loss blocks. Points are participant-level bin means with t-based 95% confidence intervals. Values are unadjusted.

Bibliography

- Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women. *Health Psychology, 19*(6), 586-592. <https://doi.org/10.1037/0278-6133.19.6.586>
- Afifi, W. A., Dillow, M. R., & Morse, C. (2004). Examining predictors and consequences of information seeking in close relationships. *Personal Relationships, 11*(4), 429-449. <https://doi.org/10.1111/j.1475-6811.2004.00091.x>
- Aggarwal, D. (2026). Thirty-five years of social comparison in applied decision-making contexts: An integrated systematic review proposing multidisciplinary research gaps. *Acta Psychologica, 264*, 106588. <https://doi.org/10.1016/j.actpsy.2026.106588>
- Albert, S. (1977). Temporal comparison theory. *Psychological Review, 84*(6), 485-503. <https://doi.org/10.1037/0033-295X.84.6.485>
- Antony, M. M., Rowa, K., Liss, A., Swallow, S. R., & Swinson, R. P. (2005). Social comparison processes in social phobia. *Behavior Therapy, 36*(1), 65-75. [https://doi.org/10.1016/S0005-7894\(05\)80055-3](https://doi.org/10.1016/S0005-7894(05)80055-3)
- Arigo, D., Bercovitz, I., Lapitan, E., & Gular, S. (2024). Social Comparison and Mental Health. *Current Treatment Options in Psychiatry, 11*(2), 17-33. <https://doi.org/10.1007/s40501-024-00313-0>
- Arigo, D., Gray, R. C., Dallal, D. H., Villareale, J., & Zhu, J. (2023). Selection of and response to physical activity-based social comparisons in a digital environment: Series of daily assessment studies. *JMIR Human Factors, 10*, e41239. <https://doi.org/10.2196/41239>
- Barberis, N. C. (2013). Thirty Years of Prospect Theory in Economics: A Review and Assessment. *Journal of Economic Perspectives, 27*(1), 173-196. <https://doi.org/10.1257/jep.27.1.173>
- Barbour, J. B., Rintamaki, L. S., Ramsey, J. A., & Brashers, D. E. (2012). Avoiding Health Information. *Journal of Health Communication, 17*(2), 212-229. <https://doi.org/10.1080/10810730.2011.585691>
- Barr, D. J., Levy, R., Scheepers, C., & Tily, H. J. (2013). Random effects structure for confirmatory hypothesis testing: Keep it maximal. *Journal of Memory and Language, 68*(3), 255-278. <https://doi.org/10.1016/j.jml.2012.11.001>

- Batson, C. D., Fultz, J., & Schoenrade, P. A. (1987). Distress and Empathy: Two Qualitatively Distinct Vicarious Emotions with Different Motivational Consequences. *Journal of Personality*, 55(1), 19-39. <https://doi.org/10.1111/j.1467-6494.1987.tb00426.x>
- Bault, N., Coricelli, G., & Rustichini, A. (2008). Interdependent Utilities: How Social Ranking Affects Choice Behavior. *PLOS ONE*, 3(10), e3477. <https://doi.org/10.1371/journal.pone.0003477>
- Bennenbroek, F. T. C., Buunk, B. P., Van der Zee, K. I., & Grol, B. (2002). Social comparison and patient information: What do cancer patients want? *Patient Education and Counseling*, 47(1), 5-12. [https://doi.org/10.1016/S0738-3991\(02\)00018-6](https://doi.org/10.1016/S0738-3991(02)00018-6)
- Boecker, L., Loschelder, D., & Topolinski, S. (2022). How Individuals React Emotionally to Others' (Mis)Fortunes: A Social Comparison Framework. *Journal of Personality and Social Psychology*, 123, 55-83. <https://doi.org/10.1037/pspa0000299>
- Bolker, B. M., Brooks, M. E., Clark, C. J., Geange, S. W., Poulsen, J. R., Stevens, M. H. H., & White, J.-S. S. (2009). Generalized linear mixed models: A practical guide for ecology and evolution. *Trends in Ecology & Evolution*, 24(3), 127-135. <https://doi.org/10.1016/j.tree.2008.10.008>
- Brinker, D. L., Zhou, Y., Acevedo Callejas, M. L., & MacGeorge, E. L. (2020). Increasing Information Seeking About Antibiotic Risks: Testing a Clinical Intervention Message Using the Risk Information Seeking and Processing Model. *Science Communication*, 42(2), 218-243. <https://doi.org/10.1177/1075547020914610>
- Brooks, M. E., Kristensen, K., Benthem, K. J. van, Magnusson, A., Berg, C. W., Nielsen, A., Skaug, H. J., Mächler, M., & Bolker, B. M. (2017). glmmTMB Balances Speed and Flexibility Among Packages for Zero-inflated Generalized Linear Mixed Modeling. *The R Journal*, 9(2), 378-400. <https://doi.org/10.32614/RJ-2017-066>
- Buckingham, J. T., Zell, E., & Schurtz, D. R. (2012). Social comparison seeking: Providing general comparison curtails local comparison. *Current Research in Social Psychology*, 20.
- 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, Special Issue on Social Comparison Processes*, 102(1), 3-21. <https://doi.org/10.1016/j.obhdp.2006.09.007>
- Buunk, A. P., Gibbons, F. X., Dijkstra, P., & Križan, Z. (2020). Individual Differences in Social Comparison: The Complex Effects of Social Comparison Orientation. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social Comparison, Judgment, and Behavior* (pp. 77-104). Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0004>

- Chae, J. (2016). Who Avoids Cancer Information? Examining a Psychological Process Leading to Cancer Information Avoidance. *Journal of Health Communication*, 21(7), 837-844. <https://doi.org/10.1080/10810730.2016.1177144>
- Charpentier, C. J., Bromberg-Martin, E. S., & Sharot, T. (2018). Valuation of knowledge and ignorance in mesolimbic reward circuitry. *Proceedings of the National Academy of Sciences*, 115(31), E7255-E7264. <https://doi.org/10.1073/pnas.1800547115>
- Crusius, J., Corcoran, K., & Mussweiler, T. (2022). Social Comparison: Theory, Research, and Applications. In D. Chadee (Ed.), *Theories in Social Psychology* (2nd ed., pp. 165-187). Wiley. <https://doi.org/10.1002/9781394266616.ch7>
- Diel, K., Boecker, L., Lange, J., Hofmann, W., & Crusius, J. (2026). Emotional Dynamics of Social Comparisons: Nonlinear Relationships Between Comparison Extremity and Social Emotions, and Their Motivational Functioning. *Personality and Social Psychology Bulletin*, 52(7), 2116-2132. <https://doi.org/10.1177/01461672251333249>
- Diel, K., Grelle, S., & Hofmann, W. (2021). A Motivational Framework of Social Comparison. *Journal of Personality and Social Psychology*, 120, 1415-1430. <https://doi.org/10.1037/pspa0000204>
- Diel, K., Hofmann, W., Grelle, S., Boecker, L., & Friese, M. (2025). Prepare to Compare: Effects of an Intervention Involving Upward and Downward Social Comparisons on Goal Pursuit in Daily Life. *Personality and Social Psychology Bulletin*, 51(9), 1523-1537. <https://doi.org/10.1177/01461672231219378>
- Drury, J., Brown, R., González, R., & Miranda, D. (2016). Emergent social identity and observing social support predict social support provided by survivors in a disaster: Solidarity in the 2010 Chile earthquake. *European Journal of Social Psychology*, 46(2), 209-223. <https://doi.org/10.1002/ejsp.2146>
- Emanuel, A. S., Kiviniemi, M. T., Howell, J. L., Hay, J. L., Waters, E. A., Orom, H., & Shepperd, J. A. (2015). Avoiding cancer risk information. *Social Science & Medicine*, 147, 113-120. <https://doi.org/10.1016/j.socscimed.2015.10.058>
- Fafchamps, M., Kebede, B., & Zizzo, D. J. (2015). Keep up with the winners: Experimental evidence on risk taking, asset integration, and peer effects. *European Economic Review*, 79, 59-79. <https://doi.org/10.1016/j.euroecorev.2015.07.001>
- Festinger, L. (1954). A Theory of Social Comparison Processes. *Human Relations*, 7(2), 117-140. <https://doi.org/10.1177/001872675400700202>
- Field, C. A., & Welsh, A. H. (2007). Bootstrapping clustered data. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 69(3), 369-390. <https://doi.org/10.1111/j.1467-9868.2007.00593.x>

- Fischer, P., Jonas, E., Frey, D., & Kastenmüller, A. (2008). Selective exposure and decision framing: The impact of gain and loss framing on confirmatory information search after decisions. *Journal of Experimental Social Psychology*, 44(2), 312-320. <https://doi.org/10.1016/j.jesp.2007.06.001>
- Foust, J. L., & Taber, J. M. (2025). Information Avoidance: Past Perspectives and Future Directions. *Perspectives on Psychological Science*, 20(2), 241-263. <https://doi.org/10.1177/17456916231197668>
- Gerber, J. P., Wheeler, L., & Suls, J. (2018). A Social Comparison Theory Meta-Analysis 60+ Years On. *Psychological Bulletin*, 144(2), 177-197. <https://doi.org/10.1037/bul0000127>
- Germeni, E., & Schulz, P. J. (2014). Information seeking and avoidance throughout the cancer patient journey: Two sides of the same coin? A synthesis of qualitative studies. *Psycho-Oncology*, 23(12), 1373-1381. <https://doi.org/10.1002/pon.3575>
- Gibbons, F. X., & Buunk, B. P. (1999). Individual Differences in Social Comparison: Development of a Scale of Social Comparison Orientation. *Journal of Personality and Social Psychology*, 76, 129-142. <https://doi.org/10.1037/0022-3514.76.1.129>
- Golman, R., Hagmann, D., & Loewenstein, G. (2017). Information Avoidance. *Journal of Economic Literature*, 55(1), 96-135. <https://doi.org/10.1257/jel.20151245>
- Goodman, F. R., Kelso, K. C., Wiernik, B. M., & Kashdan, T. B. (2021). Social comparisons and social anxiety in daily life: An experience-sampling approach. *Journal of Abnormal Psychology*, 130(5), 468-489. <https://doi.org/10.1037/abn0000671>
- Gottlieb, J., Oudeyer, P.-Y., Lopes, M., & Baranes, A. (2013). Information-seeking, curiosity, and attention: Computational and neural mechanisms. *Trends in Cognitive Sciences*, 17(11), 585-593. <https://doi.org/10.1016/j.tics.2013.09.001>
- Hein, G., Silani, G., Preuschoff, K., Batson, C. D., & Singer, T. (2010). Neural Responses to Ingroup and Outgroup Members' Suffering Predict Individual Differences in Costly Helping. *Neuron*, 68(1), 149-160. <https://doi.org/10.1016/j.neuron.2010.09.003>
- Helm, F., Marsh, H. W., Dicke, T., & Möller, J. (2020). Dimensional Comparison Theory: Extending the Internal/External Frame of Reference Model. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social Comparison, Judgment, and Behavior* (pp. 201-225). Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0008>
- Hertwig, R., & Engel, C. (2016). Homo Ignorans: Deliberately Choosing Not to Know. *Perspectives on Psychological Science*, 11(3), 359-372. <https://doi.org/10.1177/1745691616635594>

- Hesterberg, T. C. (2015). What Teachers Should Know About the Bootstrap: Resampling in the Undergraduate Statistics Curriculum. *The American Statistician*, 69(4), 371-386. <https://doi.org/10.1080/00031305.2015.1089789>
- Hilchey, M. D., Rondina, R., & Soman, D. (2022). Information-seeking when information doesn't matter. *Journal of Behavioral Decision Making*, 35(5), e2280. <https://doi.org/10.1002/bdm.2280>
- Imai, K., Keele, L., & Tingley, D. (2010). A General Approach to Causal Mediation Analysis. *Psychological Methods*, 15, 309-334. <https://doi.org/10.1037/a0020761>
- Jiwa, M. W., & Gottlieb, J. (2026). Modeling information demand in the framework of probabilistic reasoning. *Communications Psychology*, 4(1), 31. <https://doi.org/10.1038/s44271-026-00398-8>
- Johnson, B. K., & Knobloch-Westerwick, S. (2017). When misery avoids company: Selective social comparisons to photographic online profiles. *Human Communication Research*, 43(1), 54-75. <https://doi.org/10.1111/hcre.12095>
- Kahan, B. C., Forbes, G., & Cro, S. (2020). How to design a pre-specified statistical analysis approach to limit p-hacking in clinical trials: The Pre-SPEC framework. *BMC Medicine*, 18(1), 253. <https://doi.org/10.1186/s12916-020-01706-7>
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263-291. <https://doi.org/10.2307/1914185>
- Kang, M. J., Hsu, M., Krajbich, I. M., Loewenstein, G., McClure, S. M., Wang, J. T., & Camerer, C. F. (2009). The Wick in the Candle of Learning: Epistemic Curiosity Activates Reward Circuitry and Enhances Memory. *Psychological Science*, 20(8), 963-973. <https://doi.org/10.1111/j.1467-9280.2009.02402.x>
- Kelly, Christopher. A., & Sharot, T. (2021). Individual differences in information-seeking. *Nature Communications*, 12(1). <https://doi.org/10.1038/s41467-021-27046-5>
- Kidd, C., & Hayden, B. Y. (2015). The Psychology and Neuroscience of Curiosity. *Neuron*, 88(3), 449-460. <https://doi.org/10.1016/j.neuron.2015.09.010>
- Knobloch-Westerwick, S., & Romero, J. P. (2011). Body ideals in the media: Perceived attainability and social comparison choices. *Media Psychology*, 14(1), 27-48. <https://doi.org/10.1080/15213269.2010.547833>
- Kobayashi, K., & Kable, J. W. (2024). Neural mechanisms of information seeking. *Neuron*, 112(11), 1741-1756. <https://doi.org/10.1016/j.neuron.2024.04.008>
- Kobayashi, K., Ravaoli, S., Baranès, A., Woodford, M., & Gottlieb, J. (2019). Diverse motives for human curiosity. *Nature Human Behaviour*, 3(6), 587-595. <https://doi.org/10.1038/s41562-019-0589-3>

- Kühberger, A. (1998). The Influence of Framing on Risky Decisions: A Meta-analysis. *Organizational Behavior and Human Decision Processes*, 75(1), 23-55. <https://doi.org/10.1006/obhd.1998.2781>
- Kühberger, A. (2023). A systematic review of risky-choice framing effects. *EXCLI Journal*, 22, 1012-1031. <https://doi.org/10.17179/excli2023-6169>
- Lejarraga, T., Hertwig, R., & Gonzalez, C. (2012). How choice ecology influences search in decisions from experience. *Cognition*, 124(3), 334-342. <https://doi.org/10.1016/j.cognition.2012.06.002>
- Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All Frames Are Not Created Equal: A Typology and Critical Analysis of Framing Effects. *Organizational Behavior and Human Decision Processes*, 76(2), 149-188. <https://doi.org/10.1006/obhd.1998.2804>
- Levy, J. S. (1992). An Introduction to Prospect Theory. *Political Psychology*, 13(2), 171-186. <https://doi.org/10.2307/3791677>
- Li, W., & Knobloch-Westerwick, S. (2025). The good, the bad, and the self on social media: How self-awareness and self-esteem influence selective exposure to social comparisons. *Current Psychology*, 44(1), 418-430. <https://doi.org/10.1007/s12144-024-07192-x>
- Linde, J., & Sonnemans, J. (2012). Social comparison and risky choices. *Journal of Risk and Uncertainty*, 44(1), 45-72. <https://doi.org/10.1007/s11166-011-9135-z>
- Link, E. (2026). A Scoping Review to Clarify the Concept of Information Avoidance and Its Postulated and Examined Consequences. *Communication Research*, 53(3), 319-350. <https://doi.org/10.1177/00936502251359856>
- Lipse, N. P., & Shepperd, J. A. (2019). Powerful audiences are linked to health information avoidance: Results from two surveys. *Social Science & Medicine*, 225, 51-59. <https://doi.org/10.1016/j.socscimed.2019.01.046>
- Liu, K., & Chen, M. (2024). Disentangling the Effects of Cognitive, Affective, and Sociocultural Factors on Risk Information Avoidance: A Meta-Analysis. *Communication Research*, 53, 351-385. <https://doi.org/10.1177/00936502241246513>
- Liu, W., Wu, Q., Xu, Y., Sommet, N., & Du, H. (2025). Perceived economic inequality is linked to poorer sleep quality. *BMC Psychology*, 13(1), 1099. <https://doi.org/10.1186/s40359-025-03405-5>
- Locke, K. D. (2003). Status and Solidarity in Social Comparison: Agentic and Communal Values and Vertical and Horizontal Directions. *Journal of Personality and Social Psychology*, 84, 619-631. <https://doi.org/10.1037/0022-3514.84.3.619>

- Locke, K. D. (2020). Agency and Communion in Social Comparison. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social Comparison, Judgment, and Behavior*. Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0007>
- Loewenstein, G. (1994). The Psychology of Curiosity: A Review and Reinterpretation. *Psychological Bulletin*, 116, 75-98. <https://doi.org/10.1037/0033-2909.116.1.75>
- Loy, A., Hofmann, H., & Cook, D. (2017). Model Choice and Diagnostics for Linear Mixed-Effects Models Using Statistics on Street Corners. *Journal of Computational and Graphical Statistics*, 26(3), 478-492. <https://doi.org/10.1080/10618600.2017.1330207>
- Lu, J., Xie, X., Wang, M., & Tang, X. (2015). Double Reference Points: The Effects of Social and Financial Reference Points on Decisions Under Risk. *Journal of Behavioral Decision Making*, 28, 451-463. <https://doi.org/10.1002/bdm.1862>
- Maki, A., Dwyer, P., Blazek, S., Snyder, M., González, R., & Lay Martinez, S. (2019). Responding to natural disasters: Examining identity and prosociality in the context of a major earthquake. *British Journal of Social Psychology*, 58, 66-87. <https://doi.org/10.1111/bjso.12281>
- Marsh, H. W., Parker, P. D., Guo, J., Pekrun, R., & Basarkod, G. (2020). Psychological Comparison Processes and Self-Concept in Relation to Five Distinct Frame-Of-Reference Effects: Pan-Human Cross-Cultural Generalizability over 68 Countries. *European Journal of Personality*, 34(2), 180-202. <https://doi.org/10.1002/per.2232>
- McCarthy, P. A., Meyer, T., Back, M. D., & Morina, N. (2023). How we compare: A new approach to assess aspects of the comparison process for appearance-based standards and their associations with individual differences in wellbeing and personality measures. *PLOS ONE*, 18(1), e0280072. <https://doi.org/10.1371/journal.pone.0280072>
- Miller, S. M. (1987). Monitoring and Blunting: Validation of a Questionnaire to Assess Styles of Information Seeking Under Threat. *Journal of Personality and Social Psychology*, 52(2), 345-353. <https://doi.org/10.1037/0022-3514.52.2.345>
- Möller, J. (2016). THE GENERALIZED INTERNAL/EXTERNAL FRAME OF REFERENCE MODEL: AN EXTENSION TO DIMENSIONAL COMPARISON THEORY. *Frontline Learning Research*, 4, 1-11. <https://doi.org/10.14786/flr.v4i2.169>
- Morina, N. (2021). Comparisons Inform Me Who I Am: A General Comparative-Processing Model of Self-Perception. *Perspectives on Psychological Science*, 16(6), 1281-1299. <https://doi.org/10.1177/1745691620966788>
- Morina, N., Lemmel, F. K., Schlechter, P., & Hoppen, T. H. (2026). Unraveling Social Comparison in Mental Health: A Process-Based Model and a Systematic Review and

- Meta-Analysis of Current Evidence. *Clinical Psychological Science*. <https://doi.org/10.1177/21677026261442164>
- Mussweiler, T. (2003). Comparison Processes in Social Judgment: Mechanisms and Consequences. *Psychological Review*, 110(3), 472-489. <https://doi.org/10.1037/0033-295X.110.3.472>
- Mussweiler, T. (2020). How Social Comparison Affects the Self: The Selective Accessibility Mechanism. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social Comparison, Judgment, and Behavior*. Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0002>
- Nabi, R. L., Walter, N., Oshidary, N., Endacott, C. G., Love-Nichols, J., Lew, Z. J., & Aune, A. (2020). Can Emotions Capture the Elusive Gain-Loss Framing Effect? A Meta-Analysis. *Communication Research*, 47(8), 1107-1130. <https://doi.org/10.1177/0093650219861256>
- Narayan, B., Case, D. O., & Edwards, S. L. (2011). The role of information avoidance in everyday-life information behaviors. *Proceedings of the American Society for Information Science and Technology*, 48(1), 1-9. <https://doi.org/10.1002/meet.2011.14504801085>
- O'Rourke, H., & Han, D. E. (2023). Considering the Distributional Form of Zeroes When Calculating Mediation Effects with Zero-Inflated Count Outcomes. *Journal of Behavioral Data Science*, 3(2), 1-14. <https://doi.org/10.35566/jbds/v3n2/orourke>
- Offer, K., Oglanova, N., Oswald, L., & Hertwig, R. (2025). Prevalence and predictors of medical information avoidance: A systematic review and meta-analysis. *Annals of Behavioral Medicine*, 59(1), kaaf058. <https://doi.org/10.1093/abm/kaaf058>
- Postmes, T., Haslam, S. A., & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. *British Journal of Social Psychology*, 52(4), 597-617. <https://doi.org/10.1111/bjso.12006>
- Pyszczynski, T., Greenberg, J., & LaPrelle, J. (1985). Social comparison after success and failure: Biased search for information consistent with a self-serving conclusion. *Journal of Experimental Social Psychology*, 21(2), 195-211. [https://doi.org/10.1016/0022-1031\(85\)90015-0](https://doi.org/10.1016/0022-1031(85)90015-0)
- Rutledge, R. B., Berker, A. O. de, Espenhahn, S., Dayan, P., & Dolan, R. J. (2016). The social contingency of momentary subjective well-being. *Nature Communications*, 7(1), 11825. <https://doi.org/10.1038/ncomms11825>
- Schlechter, P., Meyer, T., & Morina, N. (2024). Social comparison selection in individuals with depression and the role of self-assessment and self-enhancement mo-

tives: An experimental investigation. *Journal of Experimental Psychopathology*, 15(4), 20438087241288532. <https://doi.org/10.1177/20438087241288532>

Schwerter, F. (2024). Social Reference Points and Risk Taking. *Management Science*, 70(1), 616-632. <https://doi.org/10.1287/mnsc.2023.4698>

Sedikides, C., & Strube, M. J. (1995). The Multiply Motivated Self. *Personality and Social Psychology Bulletin*, 21(12), 1330-1335. <https://doi.org/10.1177/01461672952112010>

Senn, S. J., & Hildebrand, H. (1991). Crossover trials, degrees of freedom, the carryover problem and its dual. *Statistics in Medicine*, 10(9), 1361-1374. <https://doi.org/10.1002/sim.4780100905>

Sharot, T., & Sunstein, C. R. (2020). How people decide what they want to know. *Nature Human Behaviour*, 4(1), 14-19. <https://doi.org/10.1038/s41562-019-0793-1>

Silva, N. B. da, Amorim, L. D. A. F., Colosimo, E. A., & Heller, L. (2016). Modeling ordinal longitudinal outcomes: An applied perspective of marginal and conditional approaches. *Chilean Journal of Statistics*, 7(2), 51-68. https://soche.cl/chjs/volumes/07/02/da_Silva_etal%282016%29.pdf

Singer, T., & Klimecki, O. M. (2014). Empathy and compassion. *Current Biology*, 24(18), R875-R878. <https://doi.org/10.1016/j.cub.2014.06.054>

Smith, R. H. (2000). Assimilative and Contrastive Emotional Reactions to Upward and Downward Social Comparisons. In J. Suls & L. Wheeler (Eds.), *Handbook of Social Comparison: Theory and Research* (pp. 173-200). Springer US. https://doi.org/10.1007/978-1-4615-4237-7_10

Social Security Administration. (2026). *Top names of the 2000s*. <https://www.ssa.gov/oact/babynames/decades/names2000s.html>

Sommet, N., & Elliot, A. (2026). *Income Inequality and Economic Social Comparison*. PsyArXiv. https://doi.org/10.31234/osf.io/9wdxv_v2

Spaniol, J., & Wegier, P. (2012). Decisions from Experience: Adaptive Information Search and Choice in Younger and Older Adults. *Frontiers in Neuroscience*, 6. <https://doi.org/10.3389/fnins.2012.00036>

Steiger, A., & Kühberger, A. (2018). A Meta-Analytic Re-Appraisal of the Framing Effect. *Zeitschrift Für Psychologie*, 226(1), 45-55. <https://doi.org/10.1027/2151-2604/a000321>

Suls, J., Martin, R., & Wheeler, L. (2000). Three Kinds of Opinion Comparison: The Triadic Model. *Personality and Social Psychology Review*, 4(3), 219-237. https://doi.org/10.1207/S15327957PSPR0403_2

Suls, J., & Wheeler, L. (2020). Looking Up and Ahead: The Social Comparison of Abilities, Personal Attributes, and Opinions. In J. Suls, R. L. Collins, & L. Wheeler (Eds.),

- Social Comparison, Judgment, and Behavior* (pp. 53-76). Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0003>
- Swann, W., & Read, S. (1981). Self-Verification Processes: How We Sustain Our Self-Conceptions. *Journal of Experimental Social Psychology*, 17, 351-372. [https://doi.org/10.1016/0022-1031\(81\)90043-3](https://doi.org/10.1016/0022-1031(81)90043-3)
- Sweeny, K., Melnyk, D., Miller, W., & Shepperd, J. A. (2010). Information Avoidance: Who, What, When, and Why. *Review of General Psychology*, 14(4), 340-353. <https://doi.org/10.1037/a0021288>
- Tamási, B. (2025). Mixed-Effects Additive Transformation Models with the R Package tramME. *Journal of Statistical Software*, 114, 1-40. <https://doi.org/10.18637/jss.v114.i11>
- Tamási, B., & Hothorn, T. (2021). tramME: Mixed-effects transformation models using template model builder. *The R Journal*, 13(2), 398-418. <https://doi.org/10.32614/RJ-2021-075>
- Thaler, R. H. (2016). Behavioral Economics: Past, Present, and Future. *American Economic Review*, 106(7), 1577-1600. <https://doi.org/10.1257/aer.106.7.1577>
- Too, M. A., Alter, U., & Flora, D. B. (2025). Modelling count data in psychological research: An applied tutorial. *International Journal of Psychology*, 60(2), e70018. <https://doi.org/10.1002/ijop.70018>
- Turk, F., Bozdogan, A., Hughes, R., Longhurst, P., Chilvers, M., & Fitzsimmons-Craft, E. E. (2026). Social Comparison and Its Association With Disordered Eating Symptoms: A Systematic Review and Meta-Analysis. *International Journal of Eating Disorders*, 59(6), 1117-1194. <https://doi.org/10.1002/eat.70058>
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Basil Blackwell.
- Tversky, A., & Kahneman, D. (1981). The Framing of Decisions and the Psychology of Choice. *Science*, 211(4481), 453-458. <https://doi.org/10.1126/science.7455683>
- Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty*, 5(4), 297-323. <https://doi.org/10.1007/BF00122574>
- Unkelbach, C., Alves, H., Baldwin, M., Crusius, J., Diel, K., Galinsky, A. D., Gast, A., Hofmann, W., Imhoff, R., Genschow, O., Lammers, J., Pauels, E., Schneider, I., Topolinski, S., Westfal, M., & Mussweiler, T. (2023). Relativity in Social Cognition: Basic processes and novel applications of social comparisons. *European Review of Social Psychology*, 34(2), 387-440. <https://doi.org/10.1080/10463283.2022.2161043>

- Van der Zee, K., Oldersma, F., Buunk, B. P., & Bos, D. (1998). Social comparison preferences among cancer patients as related to neuroticism and social comparison orientation. *Journal of Personality and Social Psychology*, 75(3), 801-810. <https://doi.org/10.1037/0022-3514.75.3.801>
- van Lieshout, L. L. F., Traast, I. J., de Lange, F. P., & Cools, R. (2021). Curiosity or savouring? Information seeking is modulated by both uncertainty and valence. *PLOS ONE*, 16(9), e0257011. <https://doi.org/10.1371/journal.pone.0257011>
- Ven, N. van de, & Zeelenberg, M. (2020). Envy and Social Comparison. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social Comparison, Judgment, and Behavior* (pp. 227-250). Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0009>
- Vendrik, M. C. M., & Woltjer, G. B. (2007). Happiness and loss aversion: Is utility concave or convex in relative income? *Journal of Public Economics*, 91(7), 1423-1448. <https://doi.org/10.1016/j.jpubeco.2007.02.008>
- Wagenmakers, E.-J., Wetzels, R., Borsboom, D., Maas, H. L. J. van der, & Kievit, R. A. (2012). An Agenda for Purely Confirmatory Research. *Perspectives on Psychological Science*, 7(6), 632-638. <https://doi.org/10.1177/1745691612463078>
- Wheeler, L. (1966). Motivation as a determinant of upward comparison. *Journal of Experimental Social Psychology*, 1, 27-31. [https://doi.org/10.1016/0022-1031\(66\)90062-X](https://doi.org/10.1016/0022-1031(66)90062-X)
- Wheeler, L., Martin, R., & Suls, J. (1997). The Proxy Model of Social Comparison for Self-Assessment of Ability. *Personality and Social Psychology Review*, 1(1), 54-61. https://doi.org/10.1207/s15327957pspr0101_4
- Wheeler, L., & Suls, J. (2020). A History of Social Comparison Theory. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social Comparison, Judgment, and Behavior* (pp. 5-31). Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0001>
- White, K., & Lehman, D. R. (2005). Culture and Social Comparison Seeking: The Role of Self-Motives. *Personality and Social Psychology Bulletin*, 31(2), 232-242. <https://doi.org/10.1177/0146167204271326>
- Wills, T. (1981). Downward comparison principles in social psychology. *Psychological Bulletin*, 90, 245-271. <https://doi.org/10.1037/0033-2909.90.2.245>
- Wilson, A. E., & Shanahan, E. (2020). Temporal Comparisons in a Social World. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social Comparison, Judgment, and Behavior* (pp. 309-343). Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0012>

- Wood, J. V. (1989). Theory and Research Concerning Social Comparisons of Personal Attributes. *Psychological Bulletin*, 106, 231-248. <https://doi.org/10.1037/0033-2909.106.2.231>
- Wood, J. V. (1996). What is Social Comparison and How Should We Study it? *Personality and Social Psychology Bulletin*, 22(5), 520-537. <https://doi.org/10.1177/0146167296225009>
- Zell, E., & Alicke, M. D. (2020). Effects of Local and General Comparisons on Self-Assessment. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social Comparison, Judgment, and Behavior* (pp. 143-177). Oxford University Press. <https://doi.org/10.1093/oso/9780190629113.003.0006>
- Zell, E., & Strickhouser, J. E. (2020). Comparisons Across Dimensions, People, and Time: On the Primacy of Social Comparison in Self-Evaluations. *Social Psychological and Personality Science*, 11(6), 791-800. <https://doi.org/10.1177/1948550619884564>

Acknowledgments

Looking back at my master's degree experience as a whole, I want to thank first and foremost my parents, who supported me throughout my studies in countless ways, and my friends, whose presence was, without a doubt, a necessary condition for both my well-being and my relative success.

Turning specifically to this thesis and the research behind it, I want to express my gratitude to Professor Vives Moya (also known as Marc), who gave me the opportunity to do research with him and whose supervision greatly helped me grow as a researcher. My gratitude also goes to my dear colleagues, and now friends, Beth and Kadi, who gave me a sense of belonging in a foreign country, even while we were cooped up together in an office. I have fond memories of my time in that research environment, an experience that helped develop me as a person.