ChatGPT

Social Media and Self-Comparison in HCI Research

Executive summary

Research across top-tier HCI venues and adjacent psychology/communication/health journals converges on a clear mechanism: social media systems repeatedly *make social ranking legible* by combining (a) curated self-presentation, (b) visible popularity signals (likes, comments, follower counts), and (c) algorithmic distribution that shapes who is seen and when. Across platforms—especially Instagram [1] and Facebook [2] —this produces frequent opportunities for upward comparison (e.g., "others are doing better"), but the *valence* and *impact* of those comparisons varies substantially by person, context, and design. [3]

Evidence is strongest for two claims. First, self-comparison is not merely a user trait; it is also *structurally elicited*: large-scale mixed-method and log-linked studies show that people who report more frequent comparison are exposed to more social content and more feedback signals, and they spend disproportionately more time in comparison-relevant behaviors such as profile viewing. [4] Second, psychological outcomes are heterogeneous: observational and experimental work links comparison to negative affect, depressive symptoms, poorer body image, and lower self-esteem, but other work demonstrates that upward comparison can also produce *inspiration* and improved well-being when it is appraised as attainable and non-threatening (often framed as benign envy). [5]

A third, design-relevant pattern is that users actively adapt to comparison pressures through identity and audience management (e.g., "Finsta/Rinsta" account separation, selective disclosure, and migrations to "authenticity-oriented" platforms such as BeReal [6]). Yet these strategies involve tradeoffs: "authentic" spaces can reduce performative pressure but may also reduce supportive feedback or introduce new norms that reintroduce comparison and surveillance. [7]

Methodologically, the landscape is constrained by (1) cross-sectional designs and self-report bias, (2) limited longitudinal/ecological measurement of *moment-to-moment comparison episodes*, and (3) under-specified constructs (comparison orientation vs. comparison frequency vs. envy vs. body comparison). Newer HCI work points toward multi-method measurement (ESM/diaries + logs + sensing) and personalization (motivational profiles; feature-level usage profiles) as promising directions for interventions that go beyond reducing "screen time." [8]

Corpus and thematic framework

Corpus verification and venue mix

This synthesis is based on **30 peer-reviewed papers**. The corpus includes **22 papers from top-tier HCI venues** (CHI, CSCW/PACM HCI-CSCW, and IMWUT/PACM IMWUT) and **8 interdisciplinary papers**

(psychology, communication, and JMIR journals). Two notes matter for meeting typical HCI literature-review constraints:

- One HCI item is a **CHI Extended Abstract** (peer-reviewed, but shorter and sometimes not counted as a "full paper" for minimum-CHI-paper requirements). [9]
- The corpus contains **8 (not 7) non–top-tier-HCI papers**. All appear peer-reviewed, but this exceeds your assignment's suggested "remaining papers" count; if your instructor enforces "exactly 7," one would need to be swapped out in instruction 1. [10]

Why four themes

The literature clusters most coherently around a causal-and-design chain:

1) **Platform triggers/affordances** that make comparison likely (metrics, curation, algorithms, visibility rules).
2) **Comparison episodes and outcomes**, including both negative (envy, depressive affect, body dissatisfaction) and positive (inspiration) pathways.
3) **Identity practices** users adopt to manage comparison (authenticity norms, audience segmentation, secondary accounts).
4) **Interventions and supportive systems** that seek to mitigate harms or scaffold healthier engagement (design changes, cognitive reframing, personalization, sensing).

This grouping is optimal because it aligns (a) with how HCI frames sociotechnical causality ("design → experience → behavior/well-being"), and (b) with your project goal of identifying what social media does *inherently* to initiate self-comparison and what can be redesigned. [11]

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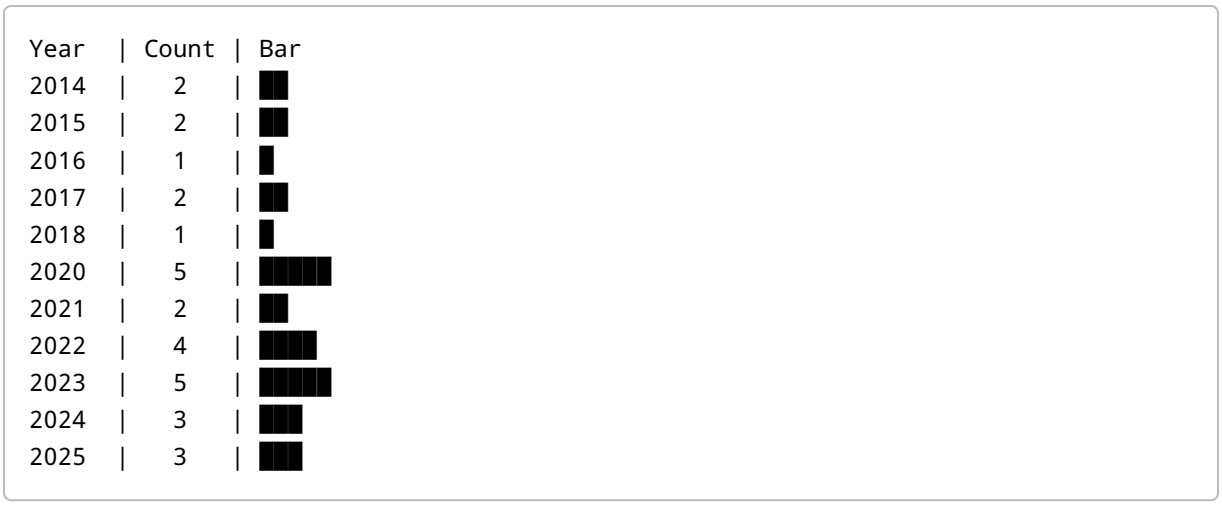
flowchart LR
  A[Platform affordances that cue comparison<br/>metrics, curation, algorithmic
distribution] --> B[Comparison episodes<br/>upward/lateral/downward]
  B --> C[Outcomes<br/>envy, affect, self-esteem, body image, well-being]
  A --> D[Identity & audience practices<br/>authenticity norms, multi-accounts,
selective disclosure]
  D --> B
  D --> C
  E[Interventions & supportive systems<br/>nudges, reframing, personalization,
sensing] --> A
  E --> B
  E --> C
  E --> D
```

Timeline of publication years in this corpus

The corpus reflects a shift from early "platform comparison" and engagement-quantification work (2014–2017) to richer qualitative identity work (2020–2022) and then to personalization/sensing/feature-level analytics and authenticity-oriented platforms (2023–2025). [12]



Corpus table of the 30 reviewed papers

Themes: **T1** triggers/affordances; **T2** outcomes/measurement; **T3** identity/authenticity; **T4** interventions/supportive systems.

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
1	Panger, Galen. 2014. Social comparison in social media: a look at Facebook and Twitter. In *CHI '14 Extended Abstracts on Human Factors in Computing Systems (CHI EA '14)*, 2095–2100. Association for Computing Machinery.	CHI EA (HCI)	2014	10.1145/2559206.2581184	Survey evidence suggests lower well-being users are more vulnerable to unfavorable comparison, with envy more likely on Facebook than Twitter. [13]	T1, T2

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
2	Bakhshi, Saeideh, David A. Shamma, and Eric Gilbert. 2014. Faces engage us: photos with faces attract more likes and comments on Instagram. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '14)*. Association for Computing Machinery.	CHI (HCI)	2014	10.1145/2556288.2557403	Visual features (faces) systematically increase visible popularity signals, shaping what content becomes "comparably successful." [14]	T1
3	Jang, Jin Yea, Kyungsik Han, Patrick C. Shih, and Dongwon Lee. 2015. Generation Like: Comparative Characteristics in Instagram. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. Association for Computing Machinery.	CHI (HCI)	2015	10.1145/2702123.2702555	Large-scale analysis contrasts teens vs. adults on engagement/ likes/comments, illustrating how feedback-rich environments differ by age group. [15]	T1, T2

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
4	Scissors, Lauren, Moira Burke, and Steven Wengrovitz. 2016. What's in a Like? Attitudes and behaviors around receiving Likes on Facebook. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW '16)*. Association for Computing Machinery.	CSCW (HCI)	2016	10.1145/2818048.2820066	"Likes" operate as ambiguous social value signals; who likes often matters more than how many, and individual differences shape perceived importance. [16]	T1, T2
5	Huber, Bernd, Katharina Reinecke, and Krzysztof Z. Gajos. 2017. The Effect of Performance Feedback on Social Media Sharing at Volunteer-Based Online Experiment Platforms. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17)*. Association for Computing Machinery.	CHI (HCI)	2017	10.1145/3025453.3025553	Experimental manipulation of comparison-framed feedback changes sharing rates, showing how "relative performance" presentation designs can amplify social signaling. [17]	T1, T4

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
6	Burke, Moira, Justin Cheng, and Bethany de Gant. 2020. Social Comparison and Facebook: Feedback, Positivity, and Opportunities for Comparison. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery.	CHI (HCI)	2020	10.1145/3313831.3376482	Large-scale survey + logged-use patterns link frequent comparison with higher exposure to social content and feedback counts, suggesting concrete design levers. [18]	T1, T2, T4
7	Cheng, Justin, Moira Burke, and Bethany de Gant. 2021. Country Differences in Social Comparison on Social Media. *Proc. ACM Hum.-Comput. Interact.* 4, CSCW3. Association for Computing Machinery.	PACM HCI (CSCW)	2021	10.1145/3434179	Comparison frequency and its correlates vary by country; feedback-count exposure relates to comparison only in some contexts, complicating "one-size-fits-all" interventions. [19]	T1, T2, T4

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
8	Haimson, Oliver L., Tianxiao Liu, Ben Zefeng Zhang, and Shanley Corvite. 2021. The Online Authenticity Paradox: What Being “Authentic” on Social Media Means, and Barriers to Achieving It. *Proc. ACM Hum.-Comput. Interact.* 5, CSCW2, Article 423. Association for Computing Machinery.	PACM HCI (CSCW)	2021	10.1145/3479567	Interviews show “authenticity” is valued yet hard to achieve because broad-audience contexts discourage sharing negative or stigmatized experiences. [20]	T3
9	Taber, Lee, and Steve Whittaker. 2020. “On Finsta, I can say ‘Hail Satan’”: Being Authentic but Disagreeable on Instagram. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI ’20)*. Association for Computing Machinery.	CHI (HCI)	2020	10.1145/3313831.3376182	Comparing multiple accounts suggests secondary accounts enable more authentic but less agreeable self-presentation, reframing comparison pressures via audience segmentation. [21]	T3

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
10	Xiao, Sijia, Danaë Metaxa, Joon Sung Park, Karrie Karahalios, and Niloufar Salehi. 2020. Random, Messy, Funny, Raw: Finstas as Intimate Reconfigurations of Social Media. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery.	CHI (HCI)	2020	10.1145/3313831.3376424	Qualitative work frames finstas as "intimate reconfigurations" that relieve dominant performative pressures by enabling vulnerability and close-friend reciprocity. [22]	T3
11	Eschler, Jordan, Eleanor R. Burgess, Madhu Reddy, and David C. Mohr. 2020. Emergent Self-Regulation Practices in Technology and Social Media Use of Individuals Living with Depression. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery.	CHI (HCI)	2020	10.1145/3313831.3376773	People living with depression describe emergent practices to regulate social media exposure and emotional impact, grounding intervention design in lived experience. [23]	T2, T4

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
12	Huang, Xiaoyun, and Jessica Vitak. 2022. “Finsta gets all my bad pictures”: Instagram Users’ Self-Presentation Across Finsta and Rinsta Accounts. *Proc. ACM Hum.-Comput. Interact.* 6, CSCW1, Article 69. Association for Computing Machinery.	PACM HCI (CSCW)	2022	10.1145/3512916	Survey + mediation analyses quantify differences: finstas host more negative/off-the-cuff content but receive less satisfying/ supportive responses, complicating “authenticity is protective” assumptions. [24]	T3, T2
13	Baughan, Amanda, Mingrui “Ray” Zhang, Raveena Rao, Kai Lukoff, Anastasia Schaadhardt, Lisa D. Butler, and Alexis Hiniker. 2022. “I Don’t Even Remember What I Read”: How Design Influences Dissociation on Social Media. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI ’22)*. Association for Computing Machinery.	CHI (HCI)	2022	10.1145/3491102.3501899	Feed designs can foster dissociation; design interventions (e.g., reading history labels) are evaluated via ESM and deployment as potential reflective countermeasures. [25]	T2, T4

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
14	Ruensuk, Mintra, Taewan Kim, Hwajung Hong, and Ian Oakley. 2022. Sad or just jealous? Using Experience Sampling to Understand and Detect Negative Affective Experiences on Instagram. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22)*. Association for Computing Machinery.	CHI (HCI)	2022	10.1145/3491102.3517561	ESM captures in-the-wild negative affect during Instagram use, enabling finer-grained characterization (and potential detection) of harmful comparison-adjacent experiences. [26]	T2
15	Register, Yim, Lucy Qin, Amanda Baughan, and Emma S. Spiro. 2023. Attached to "The Algorithm": Making Sense of Algorithmic Precarity on Instagram. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*. Association for Computing Machinery.	CHI (HCI)	2023	10.1145/3544548.3581257	Qualitative/ interpretive analysis of algorithmic precarity highlights how opaque distribution and engagement norms create continual evaluation and "visibility competition." [27]	T1, T3

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
16	Barta, Kristen, Katelyn Wolberg, and Nazanin Andalibi. 2023. Similar Others, Social Comparison, and Social Support in Online Support Groups. *Proc. ACM Hum.-Comput. Interact.* 7, CSCW2. Association for Computing Machinery.	PACM HCI (CSCW)	2023	10.1145/3610086	Similarity can simultaneously scaffold support and intensify painful comparison, motivating design principles that manage this tension in sensitive communities. [28]	T2, T4
17	Gebhardt, Christoph, Andreas Brombach, Tiffany Luong, Otmar Hilliges, and Christian Holz. 2024. Detecting Users' Emotional States during Passive Social Media Use. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 8, 2, Article 77. Association for Computing Machinery.	IMWUT (HCI)	2024	10.1145/3659606	Controlled-feed study builds models to infer emotional states during passive consumption using phone/ physiology signals, enabling future "warning systems" but raising misuse risks. [29]	T2, T4

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
18	Reddy, Ananya, and Priya C. Kumar. 2024. “A Teaspoon of Authenticity”: Exploring How Young Adults BeReal on Social Media. In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI ’24)*. Association for Computing Machinery.	CHI (HCI)	2024	10.1145/3613904.3642690	Young adults describe partial authenticity benefits and shifting comparison norms on BeReal, suggesting design can reshape (not eliminate) comparison dynamics. 30	T3, T2
19	Kim, JaeWon, Robert Wolfe, Ishita Chordia, Katie Davis, and Alexis Hiniker. 2024. “Sharing, Not Showing Off”: How BeReal Approaches Authentic Self-Presentation on Social Media Through Its Design. *Proc. ACM Hum.-Comput. Interact.* 8, CSCW2, Article 370. Association for Computing Machinery.	PACM HCI (CSCW)	2024	10.1145/3686909	Feature analysis + interviews show BeReal’s constraints (random prompts, reciprocity) encourage spontaneous sharing and can reframe comparison, but also introduce new pressures and limits. 31	T1, T3, T4

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
20	Bennett, Dan, Feng Feng, and Elisa D. Mekler. 2025. Autonomous Regulation of Social Media Use: Implications for Self-control, Well-Being, and UX. In *CHI 2025 – Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)*. Association for Computing Machinery.	CHI (HCI)	2025	10.1145/3706598.3713094	Latent profile analysis identifies motivational profiles linked to affect/need satisfaction, highlighting personalization opportunities beyond "time reduction." [32]	T4, T2

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
21	Davis, Katie, Rotem Landesman, Jina Yoon, JaeWon Kim, Daniela E. Muñoz Lopez, Lucía Magis-Weinberg, and Alexis Hiniker. 2025. “You Go Through So Many Emotions Scrolling Through Instagram”: How Teens Use Instagram To Regulate Their Emotions. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI ’25)*. Association for Computing Machinery.	CHI (HCI)	2025	10.1145/3706598.3713844	Diaries show teens use Instagram for emotion regulation (escape/engage), but unpredictability and aspirational content can undermine regulation and trigger discouraging comparison. [33]	T2, T4

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
22	Sramek, Zefan, Sachinthya Lokuge, Tia Sternat, Martin A. Katzman, and Koji Yatani. 2025. Beyond the Feature Level: A Cluster Analysis of Feature-level Social Media Behaviour Patterns, Maladaptive Use, and Psychological Well-being. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 9, 4, Article 210. Association for Computing Machinery.	IMWUT (HCI)	2025	10.1145/3770713	Two-week feature-level tracking of Instagram reveals distinct user clusters and challenges assumptions that reduced duration alone reduces maladaptive outcomes. [34]	T1, T2, T4
23	Andrade, Fernanda C., Savannah Erwin, Kaitlyn Burnell, Jalisa Jackson, Marley Storch, Julia Nicholas, and Nancy Zucker. 2023. Intervening on Social Comparisons on Social Media: Electronic Daily Diary Pilot Study. *JMIR Mental Health* 10:e42024.	JMIR Ment Health (interdisciplinary)	2023	10.2196/42024	A “social savoring” daily-diary intervention shows initial evidence for reducing harm from comparison in some domains, motivating scalable reframing tools. [35]	T4

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
24	Alfonso-Fuertes, I., et al. 2023. Time Spent on Instagram and Body Image, Self-esteem, and Physical Comparison Among Young Adults in Spain: Observational Study. *JMIR Formative Research* 7:e42207.	JMIR Form Res (interdisciplinary)	2023	10.2196/42207	Instagram time relates to poorer body image and self-esteem *via* physical comparison, reinforcing comparison as a mediator rather than mere correlate. [36]	T2
25	Lup, Katerina, Leora Trub, and Lisa Rosenthal. 2015. Instagram #instasad?: exploring associations among Instagram use, depressive symptoms, negative social comparison, and strangers followed. *Cyberpsychology, Behavior, and Social Networking* 18(5):247–252.	Cyberpsychology journal (interdisciplinary)	2015	10.1089/cyber.2014.0560	Negative social comparison mediates the Instagram–depression link and is moderated by following strangers, highlighting audience composition as a risk amplifier. [37]	T2

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
26	Tiggemann, Marika, Susannah Hayden, Zoe Brown, and Jolanda Veldhuis. 2018. The effect of Instagram “likes” on women’s social comparison and body dissatisfaction. *Body Image* 26:90–97.	Body Image journal (interdisciplinary)	2018	10.1016/j.bodyim.2018.07.002	Experiments show popularity feedback (“likes”) shapes comparison and body dissatisfaction responses, supporting metrics as causal levers. [38]	T1, T2
27	Meier, Adrian, and colleagues. 2020. Instagram Inspiration: How Upward Comparison on Social Network Sites Can Contribute to Well-Being. *Journal of Communication* 70(5):721–743.	Journal of Communication (interdisciplinary)	2020	10.1093/joc/jqaa025	Upward comparison can elicit inspiration (via benign envy) and improve well-being, clarifying when comparison is not purely harmful. [39]	T2
28	Meier, Adrian, and Benjamin K. Johnson. 2022. Social comparison and envy on social media: A critical review. *Current Opinion in Psychology* 45:101302.	Curr Opin Psychol (interdisciplinary)	2022	10.1016/j.copsyc.2022.101302	Review synthesizes mechanisms and moderators (platform affordances, user traits, contexts), emphasizing why effects vary and why design-specific research is needed. [40]	T1, T2

ID	ACM-style citation (full)	Venue (type)	Year	DOI	One-sentence summary	Theme(s)
29	Stsiampkouskaya, Kseniya, Adam Joinson, and Lukasz Piwek. 2023. To Like or Not to Like? An Experimental Study on Relational Closeness, Social Grooming, Reciprocity, and Emotions in Social Media Liking. *Journal of Computer-Mediated Communication* 28(2).	JCMC (interdisciplinary)	2023	10.1093/jcmc/zmac036	Experiments isolate how liking behavior produces emotional/ relational effects (reciprocity and closeness), clarifying why feedback signals matter. [41]	T1, T2
30	Thomas, Lisa, Pam Briggs, Andrew Hart, and Finola Kerrigan. 2017. Understanding social media and identity work in young people transitioning to university. *Computers in Human Behavior* 76:541–553.	CHB (interdisciplinary)	2017	10.1016/j.chb.2017.08.021	Identity construction during life transition is shaped by peer visibility and self-presentation demands, providing context for comparison vulnerability during transitions. [42]	T3, T2

Data-quality note: The PDF copy of Cheng et al.'s "Country Differences…" that was accessible in this research contained an incorrect DOI string; the DOI reported above is taken from the Association for Computing Machinery [43] record. [44]

Platform affordances that initiate self-comparison

Quantified popularity signals turn attention into rank inference

Across this corpus, "countable" signals—likes, comments, and related engagement metrics—are repeatedly treated as *comparison triggers* because they (1) publicly encode social evaluation and (2) provide a low-effort

basis for inferiority/superiority judgments. In Facebook contexts, users explicitly interpret feedback as a social value cue: Scissors et al. show that people care about "who liked" and, for some, not getting "enough" likes feels bad; importantly, self-esteem and self-monitoring differences predict whether likes are experienced as salient evaluation. [45] At a population level, Burke et al. find that more frequent social comparison relates to seeing more feedback on others' posts (among other exposure patterns), which makes comparison not only a psychological tendency but also a *predictable product of what is shown*. [46]

Work that is not explicitly "about comparison" still demonstrates why these metrics become unavoidable reference points. For instance, Bakhshi et al. show that photos with faces attract more likes and comments; regardless of user intent, such regularities create learnable "success rules," increasing pressure to optimize one's own presentation against visible peer benchmarks. [14]

Content curation and positivity norms disproportionately cue upward comparisons

Platform norms of positivity and polished presentation provide the *content substrate* for upward comparisons. Panger's cross-platform survey-based evidence suggests participants are more prone to envy on Facebook than Twitter, and posits that structural differences (e.g., self-referential content and organizational/public-figure presence) may partially explain that gap—an early articulation of "design differences → comparison differences." [47] Burke et al. later scale this kind of argument by showing that people reporting frequent comparison observe more positive-affect content (and more social content overall), reinforcing an HCI-relevant hypothesis: curation and feed composition can tilt the comparison distribution toward "upward," even when users are passively browsing. [46]

Algorithms add "precarity" and scarcity, creating a new comparison object: visibility itself

Newer HCI work argues that comparison is not only "me vs. peers," but also "my visibility vs. others' visibility." Register et al. describe algorithmic precarity on Instagram, where opaque ranking and shifting engagement norms make creators/users feel "attached" to the algorithm and compelled to continually interpret outcomes (reach, engagement) relative to others. [48] This shifts comparison from discrete moments ("their vacation vs. my life") to *continuous diagnosis* ("why did their post get distribution and mine didn't?"), which resembles a chronic status-uncertainty condition rather than a single envy episode.

Comparison triggers are culturally contingent, complicating universal design fixes

Cross-cultural HCI evidence indicates that the same affordance can initiate comparison differently depending on context. Cheng et al.'s 18-country analysis finds that country predicts comparison frequency more strongly than demographic variables and Facebook activity combined, and that exposure to high feedback counts is associated with more frequent comparison only in some countries. [19] This suggests that "remove like counts" or "hide feedback metrics" may reduce comparison in one population while being neutral elsewhere—an important constraint if your project aims to propose broadly applicable interventions.

Psychological outcomes and how the literature measures them

Convergent evidence for negative outcomes, with comparison as a mediator

Interdisciplinary work provides robust support for the pathway "platform use → social comparison → negative affect/mental health correlates," but the evidence is strongest for *associational* (not causal) claims. Lup et al. report that Instagram use is (marginally) positively associated with depressive symptoms in young adults, with social comparison as a mechanism and "strangers followed" as a moderator. [37] Alfonso-Fuertes et al. similarly find that time spent on Instagram relates to poorer body image satisfaction and self-esteem, mediated by physical appearance comparison. [36] Experimental evidence adds causal leverage around *specific features*: Tiggemann et al. show that "likes" can change women's social comparison and body dissatisfaction responses, supporting the claim that visible feedback signals are more than correlates—they can be active ingredients. [38]

A critical synthesis by Meier and Johnson emphasizes that social comparison and envy effects vary because they are jointly shaped by user predispositions, the affordances of specific features, and situational context—helpful framing for explaining why HCI studies often find mixed effects across designs and populations. [40]

Positive pathways exist: inspiration and benign envy as design opportunities

A key contradiction (and design opportunity) is that upward comparison is not uniformly harmful. Meier et al. experimentally demonstrate that optimized Instagram nature/travel posts can evoke stronger upward comparison yet lead to *inspiration* through benign envy (an "assimilative" response), ultimately improving well-being. [39] This result matters for HCI because it implies that "reduce comparison" is not always the right design goal. Instead, the design goal may be: reduce *threatening, unattainable upward comparison* while preserving *aspirational, self-improvement-oriented upward comparison*.

HCI measurement moves "closer to the moment," but still rarely captures comparison directly in the wild

A methodological trend is a shift from global retrospection ("how do you feel about Instagram?") to in-situ or quasi-in-situ approaches. Ruensuk et al. use experience sampling to capture negative affective experiences during Instagram use and explore detectability, directly addressing the "micro-timescale" at which comparison episodes likely occur. [26] Davis et al. employ diary methods with teens to model emotionally-salient drivers and on-platform behaviors; teens describe aspirational content as both motivating and discouraging, highlighting that comparison outcomes can flip within the same user/population depending on momentary appraisals and context. [33]

Complementary to self-report, sensing approaches can detect affect during passive consumption. Gebhardt et al. build models that infer emotional state during passive browsing with phone and physiological signals, proposing future "warning systems" while also explicitly acknowledging the risk of misuse for manipulation. [29] However, most sensing work detects *emotion* rather than *comparison*, leaving a gap: comparison-specific detection or inference remains underdeveloped.

Identity, authenticity, and audience management as comparison regulation

Authenticity is aspirational but structurally constrained by context collapse

Haimson et al. articulate the "online authenticity paradox": people value being authentic, often interpret authenticity as consistency across online/offline contexts, yet broad-audience social media makes sharing negative or stigmatized experiences costly, rendering authenticity difficult or only achievable with tradeoffs (especially for marginalized identities). [20] This contributes a design-relevant insight: comparison pressure is bound up with audience management and stigma. Users may avoid "real" disclosures not just to appear impressive, but to avoid harm—yet that avoidance increases the positivity bias that fuels others' upward comparisons.

Multi-account ecologies create "back stages," but they do not eliminate comparison dynamics

The finsta/rinsta literature demonstrates an HCI pattern: users repurpose platform structures to create "smaller publics" where they can escape performance norms. Xiao et al. argue finstas enable "intimate reconfigurations" characterized by messy self-image, deeper engagement, and vulnerability—explicitly positioned as relief from dominant pressures on mainstream Instagram. [22] Taber and Whittaker quantify this intuition through a personality-theory framing: finstas are more authentic but also more disagreeable, implying that "authenticity" can involve socially risky self-presentation that is not rewarded in broader audiences. [21]

Huang and Vitak add a crucial corrective: even when finstas reduce judgment exposure, they can also reduce *supportive reinforcement*. Their mediation results suggest finsta posts are perceived as receiving less satisfying/useful/supportive responses, partly because finsta content contains more negative emotions and receives fewer comments than rinsta posts. [24] In other words, audience segmentation can protect self-presentation but may simultaneously reduce the feedback that helps users feel socially supported; those tradeoffs may matter for projects aiming to "fix social comparison" through private/close-friend spaces.

BeReal reframes comparison through constrained authenticity, but introduces new norms

BeReal-oriented HCI work argues that platform design can operationalize authenticity. Kim et al. document how BeReal's randomly timed daily notifications, reciprocal posting, and constrained content window nudge users toward spontaneous sharing and careful audience curation, which can reduce "showing off" pressures and sometimes reframe social comparison. [31] Yet they also report perceived downsides: users find the approach limited, unappealing, or even toxic in some contexts—suggesting that "authenticity-by-constraint" does not universally improve experience. [31] Reddy and Kumar's CHI work with young adults similarly frames BeReal as partial authenticity ("a teaspoon"), consistent with the idea that authenticity is not a binary state but a negotiated practice. [30]

Life transitions amplify identity work and may amplify comparison vulnerability

Thomas et al.'s study of young people transitioning to university highlights that social media becomes a site of identity work during periods of social reconfiguration. [42] In the comparison context, this implies a plausible vulnerability window: when offline roles and peer networks are shifting, digital visibility of peers may become a stronger comparative signal, especially if "success" norms (social life, achievement, body, lifestyle) are salient.

Interventions, redesigns, and supportive systems

Design levers from log-linked studies emphasize exposure and feedback visibility

Burke et al. explicitly translate their log-linked findings into design opportunities such as hiding feedback counts and supporting filters for people/topics. [46] Cheng et al. complicate implementation by showing that feedback-count exposure predicts comparison only in some countries, pointing toward either culturally adaptive interventions or user-configurable controls rather than universal defaults. [19]

At the "micro-interaction" level, Scissors et al.'s finding that *who* likes matters more than *how many* suggests interventions that merely remove counts may not address the deeper issue: the social meaning users infer from *which relationships* show visible endorsement (or absence). [45]

Cognitive reappraisal and alternative social emotions can be scaffolded

A rare intervention study in this corpus is Andrade et al.'s pilot of a web-based "social savoring" intervention delivered via daily diaries, intended as an alternative to social comparison. They report initial evidence that it may minimize harmful consequences (in some domains), while also calling for testing in other age groups and clinical samples. [35] This work offers HCI-relevant scaffolding: rather than suppressing comparison triggers, systems can redirect interpretation toward other-oriented positive affect ("happy for them")—a direct bridge to the benign-envious inspiration pathway shown by Meier et al. [49]

Self-regulation interventions need to go beyond "less time online"

Several HCI papers challenge the "time spent" framing. Sramek et al.'s two-week feature-level tracking and clustering shows heterogeneous user profiles and explicitly questions the assumption that decreased use duration necessarily reduces maladaptive outcomes. [34] Bennett et al. similarly argue that autonomy in self-regulation relates to better experience and well-being but not necessarily less time online; their motivational profiles point toward personalization opportunities (e.g., designing different supports for amotivated vs. autonomously motivated users). [32]

On the behavioral-design side, Baughan et al. show that feed design can foster dissociation and test interventions like reading history labels and other reflective prompts via ESM/deployment, implying that making consumption *legible to oneself* can interrupt mindless engagement—potentially reducing comparison spirals that occur during passive scrolling. [25] For clinical-relevant contexts, Eschler et al. document emergent strategies among people living with depression, anchoring intervention design requirements (e.g., reducing triggering exposures, supporting intentional use) in lived experience rather than abstract "digital detox" ideals. [23]

Sensing and detection systems are promising but ethically fraught

Emotion detection during passive browsing (Gebhardt et al.) creates a potential technical backbone for real-time warnings or adaptive feed interventions, but the same capability could facilitate manipulation of users' emotional states and engagement. Their discussion of misuse risk is directly relevant for any project proposing "smart" interventions in comparison-heavy contexts. [29]

Cross-cutting patterns, contradictions, and methodological gaps

A consistent cross-cutting pattern is that **comparison is initiated by a bundle of design features**, not a single affordance: (i) positive curation norms, (ii) quantified feedback, and (iii) distribution mechanisms that determine visibility. Evidence for this bundle appears across platforms (Facebook vs Twitter differences; Instagram engagement regularities) and across methods (survey, server logs, experiments). [50]

The main theoretical contradiction is *not* whether comparisons happen—they do—but **whether upward comparisons are harmful or helpful**. Negative pathways are repeatedly documented (depressive symptoms mediated by comparison; body dissatisfaction linked to likes and physical comparison). [51] Yet upward comparison can also produce positive outcomes (inspiration via benign envy) in controlled experiments. [52] The literature therefore suggests that "comparison" is an umbrella process with divergent appraisal routes; designs that flatten it into a single construct (e.g., "comparison = bad") risk mis-targeting interventions.

Methodologically, the field is shaped by four constraints:

First, **causality is hard to establish**: much evidence is cross-sectional or correlational, and even large-scale studies often infer mechanisms (e.g., "seeing more positive content leads to more comparison") without randomized exposure. [53] Second, **construct measurement is inconsistent**: papers alternately operationalize comparison as a trait orientation, a frequency scale, an affective outcome (envy), or a domain-specific form (physical appearance comparison). [54] Third, **ecological validity is uneven**: sensing work often uses controlled or simulated feeds, while qualitative studies capture lived experience but can under-specify causal sequences; only a minority of studies collect moment-by-moment data in situ. [55] Fourth, **population coverage remains narrow**: many studies emphasize teens/young adults, leaving older adults, diverse socioeconomic contexts, and intersectional identity groups less directly addressed—even though authenticity work suggests marginalized identities face higher costs in disclosure and self-presentation. [56]

Open research gaps and questions for an HCI project

- **Comparison episode detection in the wild:** How can systems detect *comparison specifically* (not just negative affect) during passive scrolling using lightweight signals, and how well can these detections be validated against ESM? (Motivated by Ruensuk et al.; Gebhardt et al.). [57]
- **Designing for "benign" upward comparison:** What feed/interface interventions increase inspiration/self-improvement appraisals while reducing threat-based envy (e.g., by surfacing attainability cues or context about effort)? (Motivated by Meier et al.; Meier & Johnson; Burke et al.). [58]

- **Cross-cultural adaptivity of interventions:** Which anti-comparison interventions generalize across cultures, and which require localized defaults or user-tunable controls? (Motivated by Cheng et al.; Burke et al.). [59]
- **Audience composition as a controllable risk factor:** How do "strangers followed," social distance, and profile-viewing behaviors interact to create comparison risk, and can platforms provide actionable audience-level controls without harming social connection? (Motivated by Lup et al.; Burke et al.; Scissors et al.). [60]
- **Secondary-account tradeoffs:** When do finsta/rinsta-like strategies reduce harmful comparison, and when do they reduce social support or create new comparison norms? What designs preserve benefits while mitigating reduced supportive feedback? (Motivated by Xiao et al.; Taber & Whittaker; Huang & Vitak). [61]
- **Authenticity-by-constraint vs. authenticity-by-control:** Do BeReal-style constraints reduce comparison *because* they limit curation, or do they shift comparison toward new norms (timeliness, participation streaks, "realness policing")? (Motivated by Kim et al.; Reddy & Kumar; Haimson et al.). [62]
- **Beyond "screen time": feature-level pathways:** Which specific feature bundles (profiles, explore/recommendations, reels, comments) are most comparison-inducing, and how do these map onto distinct user profiles? (Motivated by Sramek et al.; Register et al.; Burke et al.). [63]
- **Personalized interventions grounded in motivation and mental health context:** How should interventions differ for users with different motivational profiles or mental health conditions (e.g., depression), and what are the risks of mis-personalization? (Motivated by Bennett et al.; Eschler et al.; Andrade et al.). [64]

Project positioning (≤200 words): Our project will target the gap between (a) well-established evidence that social media affordances (feedback visibility, curated positivity, and algorithmic distribution) cue frequent upward comparison and negative affect, and (b) the limited HCI evidence on *moment-to-moment comparison episodes* and how to intervene without eliminating potentially beneficial inspiration. We will focus on designing and evaluating a lightweight, platform-agnostic intervention concept that (1) detects or elicits in-situ reflection at high-risk moments (e.g., immediately after exposure to high-feedback/aspirational content), and (2) redirects appraisal from threat-based envy toward benign, self-improvement or social-savoring interpretations. The contribution will be an interaction design and evaluation framework that integrates diary/ESM-style measurement with feature-level triggers, informed by evidence that interventions must go beyond "less time online" and may need personalization. This matters because prior work either reveals mechanisms (metrics, curation) or proposes interventions, but rarely closes the loop with ecologically grounded, comparison-specific measures that preserve positive pathways while reducing harm. [65]

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