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# Understanding the Influence of Temporal Focus on Users' Self-Disclosure on Social Networking Sites

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## ABSTRACT

Self-disclosure decision-making on social networking sites (SNSs) can be considered an intertemporal choice between gaining benefits at the present and experiencing privacy harm in the future. Prior research shows that people tend to overemphasize the immediate benefits while discounting the delayed risks, but it remains unclear how and why different SNS users may subjectively discount the long-term risks against the short-term benefits. This paper considers heterogeneity in users' self-disclosure decisions by focusing on the effects of temporal focus (i.e., the degree to which people think about the past, present, and future) on users' self-disclosure willingness. Using online experiments, this study tests the effectiveness of different interventions that manipulate people's temporal focus in influencing SNS self-disclosure willingness. The findings of this study provide practical implications for the design of SNS platforms and development of data policies.

## Keywords

Intertemporal choice, privacy, self-disclosure, social networking site, temporal focus.

## INTRODUCTION

Social networking sites (SNSs), such as Twitter and Facebook, have increased self-disclosure (Zhang, Wang, Karahanna and Xu, 2022). Although disclosing personal information means surrendering some degree of privacy, individuals keep performing self-disclosure when they set up profiles, post, comment, or like on SNSs. Information Systems (IS) research has attempted to interpret this paradoxical phenomenon from multiple perspectives. For example, the privacy calculus model views self-disclosure as the result of normative benefit-risk tradeoffs (Dinev and Hart, 2006).

However, certain characteristics of SNSs have rendered privacy decision-making complex and deviated users from making rational benefit-risk choices. First, SNSs are designed to be hedonically oriented (Rosen and Sherman,

2006). When it comes to user self-disclosure, SNSs stress the gratifications (e.g., enjoyment from a great number of views and likes) but provide little visibility on the harm (e.g., unwanted audience of historical posts). Second, SNS users are habitual to constant checking (Gerlach and Cenfetelli, 2020) and orient themselves to focus on the present (Zimbardo and Boyd, 2008). Expectations of immediate feedback can lead users to overemphasize the short-term gains rather than the long-term risks. In combination, the hedonic and present-focused mindsets may drive SNS users to pursue convenience such as accepting everything as default, possibly putting them at long-term risk from massive data harvesting.

Accounting for these complexities, we consider self-disclosure as an intertemporal choice (Loewenstein and Prelec, 1992); that is, people choose between receiving gratifications at the present (e.g., access to desired services) or experiencing privacy harms in the future (e.g., embarrassment and misuse). People have the general tendency to overemphasize immediate benefits while discounting delayed risks (Acquisti and Grossklags, 2005), jeopardizing their ability to accurately engage in rational privacy decision-making. However, in this paper, we are more interested in the heterogeneity in users' temporal preferences over self-disclosure benefits and risks.

We answer this question from the perspective of *temporal focus* (TF) - one's momentary direction of attention to the past, present, and/or future at a moment in time (Shipp et al., 2009). People can have relatively stable TF such as past-focused (past TF), present-focused (present TF), and future-focused (future TF), but research also shows that TF can vary substantially in response to situational cues and can be manipulated in experimental settings (Tan, Salo, Juntunen and Kumar, 2019). We hypothesize that present TF will increase SNS users' self-disclosure, whereas past TF and future TF will decrease SNS users' self-disclosure. We conduct randomized online experiments to test the effectiveness of different interventions that manipulated TF in influencing SNS self-disclosure.

## CONCEPTUAL FRAMEWORK AND HYPOTHESES

### SNS Self-Disclosure as Intertemporal Choice

Self-disclosure is the act of revealing truthful information about oneself to others (Jiang, Heng and Choi, 2013). On SNSs, users can perform self-disclosure by sharing information about themselves in their posts or profile, but they also perform self-disclosure when they comment, like, or share content. Existing literature have attempted to interpret self-disclosure through different theoretical lenses, such as the normative privacy calculus model and the behavioral heuristics and biases (Acquisti, John and Loewenstein, 2012) among others.

A complementary perspective that this paper takes is an intertemporal choice view of self-disclosure (Loewenstein and Prelec, 1992). If people decide to disclose sensitive information for immediate gratification, such as access to desired services, they may encounter privacy costs in the future, such as embarrassment and misuse (Acquisti et al., 2020). If people withhold from disclosing personal information now, they forgo certain benefits but may avoid future privacy harms. For instance, some SNS users may post sexual or offensive material to get instant emotional relief but usually end up with regret (Xie and Kang, 2015). Some SNS users who share work-related attitudes or express personal preferences over contentious topics (i.e., religion and politics) are found to suffer from hiring discrimination in the future (Acquisti and Fong, 2020).

Past work on intertemporal choice has adapted the temporal discounting concept to argue that people tend to overestimate the instant rewards while discounting rewards that are distant in time (Acquisti et al. 2020). However, such a general inclination toward the present does not account for individual heterogeneity in preferences of benefits versus risks in self-disclosure decision-making.

### Temporal Focus and SNS Self-Disclosure

Researchers have shown that the degree to which people think about the past, present, and future, namely temporal focus (Shipp et al., 2009), can have impacts on many cognitive, attitudinal, and behavioral outcomes such as career (Zacher, 2014). SNS interfaces can be designed to include tasks that manipulate TFs.

SNS self-disclosure can be understood as a situation where users face a conflict between the immediate motivation of self-disclosure benefits and long-term concern of self-disclosure risks. When users have a present TF, they tend to direct their minds to immediate experience and contract their scope of thoughts to immediate concerns (Maglio and Trope, 2019). Thus, SNS users are inclined to make self-disclosure decisions based on the immediate gratifications or instantaneous emotional satisfaction, whereas long-term concern of self-disclosure risks is not in the contracted consideration set of SNS users.

H1. Present TF will increase SNS users' self-disclosure willingness.

When SNS users are in the past or future TF, they traverse time. Such time travel allows reflection as well as consideration of long-term goals (Shipp and Jensen, 2021). Thus, SNS users in a past or future TF can transcend from the immediate gratifications or instantaneous emotional satisfaction at the present and make self-disclosure decisions based on a wider consideration set in a broader time span, i.e., prior experience (e.g., privacy violation) and/or future ramifications (e.g., identity management).

H2. Past TF will decrease SNS users' self-disclosure willingness.

H3. Future TF will decrease SNS users' self-disclosure willingness.

Figure 1 presents our conceptual framework.

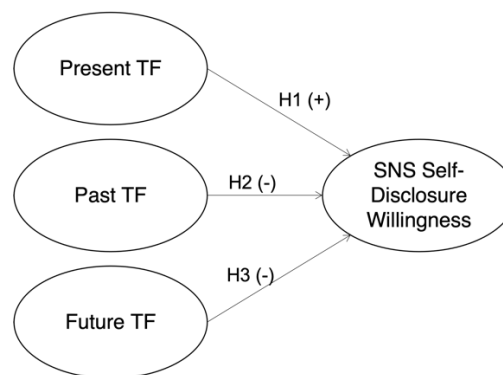


Figure 1. Conceptual Model

## METHODS

In the main study, we examine the effects of TF treatments on SNS self-disclosure. We plan to recruit adult participants in the United States from Amazon Mechanical Turk and randomly assign them to one of four groups, including one control group, one past TF group, one present TF group, and one future TF group. Following prior work (Tan et al., 2019; Zimbardo and Boyd, 2008), we adopt the “Who Was I” task to manipulate people into a past TF, “Who Am I” task to manipulate people into a present TF, and “Who Will I Be” task to manipulate people into a future TF. Participants in the control group will complete a filler task to make sure they spend similar amount of time before moving to the next section. We will measure participants' TF before and after they receive the treatments on seven-point Likert scales adapted from Shipp et al. (2009). This would help to verify the effectiveness of interventions in manipulating TFs.

The dependent variable is SNS users' self-disclosure willingness. Prior literature has measured SNS self-disclosure willingness by asking participants about their general activities on SNSs, such as having a detailed SNS profile or disclosing intimate things without hesitation (e.g., Yu, Hu and Cheng, 2015). However, research has shown that privacy concerns vary across contexts in which types and sensitivity levels of information collected are different (Malhotra, Kim and Agarwal, 2004). Therefore,

in this study, we will present participants with alternative scenarios on SNSs, asking participants whether to disclose information with varying sensitivity levels. Self-disclosure willingness will be measured on seven-point Likert scales using three items adapted from Malhotra et al. (2004).

Existing literature has shown that perceived benefits (PBs) and perceived privacy risks (PPRs) can influence SNS self-disclosure (Dinev and Hart, 2006), so we will measure them in each scenario as control variables. We will measure participants' trust on Twitter using four items adapted from McKnight, Carter, Thatcher and Clay (2011). In addition, we control for participants' experience with Twitter by asking how frequently they use and post on Twitter. We also include demographic variables (i.e., age, gender, ethnicity, and education) as control variables.

## DISCUSSION

### Implications for Research

First, this study takes the intertemporal choice perspective, which is complementary to the normative (i.e., privacy calculus) and behavioral perspectives in IS privacy literature. Specifically, this perspective is able to explain the difference in temporal preferences over benefits and risks across users as well as within users' different momentary conditions. Self-disclosure decisions are not one-time but intertemporal choices of benefits and costs at different points in time. Although the privacy calculus model suggests that people conduct a cost-benefit analysis in self-disclosure decision-making (Dinev and Hart, 2006), it remains unclear how and why different individuals may have different preferences over the immediate gratification (e.g., convenience) versus the delayed gratification (e.g., privacy protection) when asked to disclose certain types of information. Our intertemporal choice perspective suggests that TF may be able to capture such individual heterogeneity.

Second, our work contributes to the HCI literature in privacy by developing and verifying the effectiveness of "state" interventions in influencing SNS self-disclosure. The consideration of momentary TF adds to prior frameworks by integrating the impacts of technological contexts, which is consistent with the emphasis on the contextual nature of information privacy in recent IS research (e.g., Bélanger and Xu, 2015; Smith, Dinev and Xu, 2011; Xu, Teo, Tan and Agarwal, 2012). On top of the between-individual heterogeneity, future HCI research in privacy can explore more within-individual "state" heterogeneity due to variation in the technological contexts.

### Implications for Practice

First, our research has practical implications for the design of SNS interface. There is a trade-off between short-term user data collection and long-term user retention for SNSs. To enhance long-term retention, SNSs can implement design features to increase users' past or future TF, which

can help to ensure that users' self-disclosure decisions are in alignment with their preferences and long-term goals. Second, our research provides insights for educating and protecting SNS users. Users should choose SNSs with designs that support self-disclosure decisions that align with their preferences and long-term goals. Consumer advocacy groups need to attend to the temporal implications of SNS designs on privacy and embark on user education campaigns.

## CONCLUSION

Self-disclosure decision-making on SNSs can be considered an intertemporal choice, a largely unexplored perspective in IS privacy research. This paper takes this intertemporal perspective and investigates how and why different SNS users may subjectively discount the long-term risks against the short-term benefits differently. Past- or future temporal focus would reduce SNS self-disclosure willingness, whereas present temporal focus would increase the willingness. Our work demonstrates the effects of temporal focus on SNS self-disclosure and provides practical implications for designing SNS interface and policies and educating users.

## REFERENCES

1. Acquisti, A. and Fong, C. (2020) An Experiment in Hiring Discrimination via Online Social Networks, *Management Science*, 66, 3, 1005-1024.
2. Acquisti, A. and Grossklags, J. (2005) Privacy and Rationality in Individual Decision Making, *IEEE Security & Privacy*, 3, 1, 26-33.
3. Acquisti, A., Brandimarte, L. and Loewenstein, G. (2020) Secrets and Likes: The Drive for Privacy and the Difficulty of Achieving it in the Digital Age, *Journal of Consumer Psychology*, 30, 4, 736-758.
4. Acquisti, A., John, L. K. and Loewenstein, G. (2012) The Impact of Relative Standards on the Propensity to Disclose, *Journal of Marketing Research*, 49, 2, 160-174.
5. Adjerid, I., Peer, E. and Acquisti, A. (2018) Beyond the Privacy Paradox: Objective versus Relative Risk in Privacy Decision Making, *MIS Quarterly*, 42, 2, 465-488.
6. Bélanger, F., and Xu, H. (2015) The Role of Information Systems Research in Shaping the Future of Information Privacy, *Information Systems Journal*, 25, 6, 573-578.
7. Dinev, T. and Hart, P. (2006) An Extended Privacy Calculus Model for E-commerce Transactions, *Information Systems Research*, 17,1, 61-80.
8. Dinev, T., McConnell, A. R. and Smith, H. J. (2015) Research Commentary—Informing Privacy Research through Information Systems, Psychology, and Behavioral Economics: Thinking Outside the

- “APCO” Box, *Information Systems Research*, 26, 4, 639-655.
9. Gerlach, J. P. and Cenfetelli, R. T. (2020) Constant Checking is not Addiction: A Grounded Theory of IT-Mediated State-Tracking, *MIS Quarterly*, 44, 4, 1705-1731.
  10. Gross, R. and Acquisti, A. (2005) Information Revelation and Privacy in Online Social Networks, *Proceedings of the 2005 ACM Workshop on Privacy in the Electronic Society*, Alexandria, VA.
  11. Jiang, Z., Heng, C. S. and Choi, B. C. (2013) Research Note—Privacy Concerns and Privacy-Protective Behavior in Synchronous Online Social Interactions, *Information Systems Research*, 24, 3, 579-595.
  12. Kokolakis, S. (2017) Privacy Attitudes and Privacy Behaviour: A Review of Current Research on the Privacy Paradox Phenomenon, *Computers & Security*, 64, 122-134.
  13. Loewenstein, G. and Prelec, D. (1992) Anomalies in Intertemporal Choice: Evidence and an Interpretation, *The Quarterly Journal of Economics*, 107, 2, 573-597.
  14. Maglio, S. J. and Trope, Y. (2019) Temporal Orientation, *Current Opinion in Psychology*, 26, 62-66.
  15. Malhotra, N. K., Kim, S. S. and Agarwal, J. (2004) Internet Users' Information Privacy Concerns (IUIPC): The Construct, the Scale, and a Causal Model, *Information Systems Research*, 15, 4), 336-355.
  16. McGrath, J. E. and Rotchford, N. L. (1983) Time and Behavior in Organizations, *Research in Organizational Behavior*, 5, 57-101.
  17. Mcknight, D. H., Carter, M., Thatcher, J. B. and Clay, P. F. (2011) Trust in a Specific Technology: An Investigation of its Components and Measures, *ACM Transactions on Management Information Systems*, 2, 2, 1-25.
  18. Norberg, P. A., Horne, D. R. and Horne, D. A. (2007) The Privacy Paradox: Personal Information Disclosure Intentions versus Behaviors, *Journal of Consumer Affairs*, 41, 1, 100-126.
  19. Rosen, P. A. and Sherman, P. (2006) Hedonic Information Systems: Acceptance of Social Networking Websites, *Proceedings of the 12th Americas Conference on Information Systems*, Acapulco, Mexico.
  20. Shipp, A. J. and Jansen, K. J. (2021) The “Other” Time: A Review of the Subjective Experience of Time in Organizations, *Academy of Management Annals*, 15, 1, 299-334.
  21. Shipp, A. J., Edwards, J. R., and Lambert, L.S. (2009) Conceptualization and Measurement of Temporal Focus: The Subjective Experience of the Past, Present, and Future, *Organizational Behavior and Human Decision Processes*, 110, 1–22.
  22. Smith, H. J., Dinev, T. and Xu, H. (2011) Information Privacy Research: An Interdisciplinary Review, *MIS Quarterly*, 35, 4, 989-1015.
  23. Tan, T. M., Salo, J., Juntunen, J. and Kumar, A. (2019) The Role of Temporal Focus and Self-Congruence on Consumer Preference and Willingness to Pay: A New Scrutiny in Branding Strategy, *European Journal of Marketing*, 53, 1, 37-62.
  24. Xie, W. and Kang, C. (2015) See You, See Me: Teenagers' Self-Disclosure and Regret of Posting on Social Network Site, *Computers in Human Behavior*, 52, 398-407.
  25. Xu, H., Teo, H. H., Tan, B. C. and Agarwal, R. (2012) Research Note—Effects of Individual Self-Protection, Industry Self-Regulation, and Government Regulation on Privacy Concerns: A Study of Location-Based Services, *Information Systems Research*, 23, 4, 1342-1363.
  26. Yu, J., Hu, P. J. H. and Cheng, T. H. (2015) Role of Affect in Self-Disclosure on Social Network Websites: A Test of Two Competing Models, *Journal of Management Information Systems*, 32, 2), 239-277.
  27. Zacher, H. (2014) Individual Difference Predictors of Change in Career Adaptability over Time, *Journal of Vocational Behavior*, 84, 2, 188-198.
  28. Zhang, N. A., Wang, C. A., Karahanna, E. and Xu, Y. (2022) Peer Privacy Concern: Conceptualization and Measurement. *MIS Quarterly*, 46, 1, 491-529.
  29. Zimbardo, P. and Boyd, J. (2008) *The Time Paradox: The New Psychology of Time That Will Change Your Life*, New York: Simon and Schuster.