

WITH FRIENDS LIKE THESE: MODELING SELF-DISCLOSURE
DEPENETRATION AND RECONNECTION TRAJECTORIES

by

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ABSTRACT

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Self-disclosure is a common relationship development behavior. As relationships develop the topics that individuals share expand, and get deeper (i.e., penetration processes). Both current and previous literature, however, neglected the opposing process of depenetration. Depenetration may be an important consideration for how changes in information intimacy affect relationship dissolution. The present study attempts to model depenetration processes to observe how depenetration affects perceptions within a relationship. A total of 825 participants were recruited from a midwestern university or online. Participants completed a series of vignettes manipulating the intensity of depenetration while measuring their perceptions. Results indicated depenetration rate affected the perceived intimacy of the relationship negatively but also led to stronger reconnection. In other words, although sharing less intimate information may initially turn people away, they may not be as reluctant to come back. Further studies should consider how other variations in information intimacy affect relationship development and dissolution.

Keywords: Depenetration; Tipping Points; Self-Disclosure; Change Perception;
Relationship Development

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CHAPTER ONE

INTRODUCTION

Imagine two strangers meeting for the first time. What do you think they would talk about? For many, this is a familiar circumstance; individuals meet as strangers and create something from nothing. One of the ways in which individuals can break past being strangers is by sharing information about themselves. Topics such as “what do you like to do for fun” can become “I got into cars because my dad worked as a mechanic” and end up at even deeper topics such as “I miss him”. This incremental process allows us to learn about others to reduce the sense of being strangers as a result. When individuals share information, you may be inclined to share as well leading to a dialogue. But what happens when an individual stops talking to you, what happens when talking every day becomes talking every week? When does being a shoulder to lean on become “I don’t want to talk about it”; creating distance in previously chartered territory, and when do friends become strangers again? Taking this a step further, let’s say said strangers meet again and start talking. How do people start over; can people simply “start over”?

Self-Disclosure is defined as a deliberate process of conveying personal information to another person (Carpenter & Greene, 2016; Finkenauer et al., 2018). The information that we choose to disclose can vary, based on what we want to share. Topics of disclosure may include identifiable information (e.g., names, birthday, phone numbers), opinions and interests (e.g., what does the person like to do, what are their aspirations, what are their world beliefs), or private and sensitive information, such as

child sexual abuse, sexual assault, suicide ideation, traumatic experiences, and more (Ammerman et al., 2022; Cipollina et al., 2022; Gemara et al., 2023). Sharing information about ourselves has the advantage of facilitating feelings of liking in the receiver (Barak & Gluck-Ofri, 2007; Burger, 1981; Collins & Miller, 1994; Dalmás & Hinds, 1985; Gelman & McGinley, 1978; Kashian et al., 2017; McAllister, 1980; Sprecher et al., 2013). When someone we like shares information with us we may be inclined to share something about ourselves (Cozby, 1972; Derlega et al., 1976; Levesque et al., 2002; Mann & Murphy, 1975; Shaffer et al., 1982). In other words, the disclosures that we give to other people can be reciprocated by their own disclosures about themselves. Reciprocity describes this phenomenon of disclosure resulting in others disclosing to us, and vice versa. On top of the mentioned motivations, we may benefit from sharing information about ourselves through increased life satisfaction, a sense of personal growth, a sense of bonding, and other positive outcomes (Adelstein Yardeni et al., 2022; Jiang & Hu, 2016; Kanefsky et al., 2022; Pinciotti et al., 2023b; Slavin-Spenny et al., 2011; Taku et al., 2021). Ultimately, we can use communication as a tool to make connections with others and even take our connections to different levels of intimacy. How people utilize that tool is important because individuals in the same context may share different information. The question becomes what makes one piece of information more or less readily able to be shared relative to other information?

Self-Disclosure and Social Penetration Theory

Sidney Jourard, the main proponent of previous self-disclosure research, identified self-disclosure as a reciprocal process that can increase liking (Barrell &

Jourard, 1976; Jourard, 1959, 1970). But it wasn't until Social Penetration Theory (SPT) that the properties of self-disclosure were expanded upon. Breadth (i.e., the variety of topics we share in a given area) and depth (i.e., the level of intimacy that may be attributed to a piece of information) are two dimensions that describe the information we share (Altman & Taylor, 1973). Depth and breadth are similar but distinct because sharing a new topic (breadth) may not demonstrate depth if it is still of relatively low intimacy. A new topic can demonstrate depth if it is of a higher intimacy than previously sharing information. The increasing intimacy of information acts as an indicator that an individual is more comfortable and willing to share deeper information. Intimacy can be defined as the ascribed value, sensitivity, importance, or other qualifiers to a piece of information (e.g., information about your relationship may be more intimate than your favorite food). SPT posits that individuals may be less willing to share intimate information until the relationship reaches a certain point. That point is vague and required other theories to better understand those points at which more information is shared. One factor is the closeness of the relationship.

The term intimacy may also be a word that describes the quality of interactions (Laurenceau et al., 1998). Reciprocation may also be related to the current status of the relationship as Sprecher et al (2013) found higher levels of relational intimacy being related with greater reciprocity. These effects differ from stranger interactions, where the reciprocation may be more based on matching what was received (Ehrlich & Graeven, 1971). In other words, people will share higher intimacy information on average if they receive a higher intimacy disclosure compared to when receiving lower intimacy

information. While individuals may be inclined to share information if they receive intimate information, the closeness of a relationship may also determine the kinds of information shared. Reciprocity, however, may not be as simple as a 1:1 input-output ratio. Current literature has attempted to challenge the dichotomous model of disclosure to investigate phenomena such as partial disclosure, active versus tentative, and reevaluating the contents of disclosures (Anderson, 2016; Gemara et al., 2023; Pinciotti et al., 2023a). Partial and tentative disclosures describe similar processes by which individuals only share some details regarding themselves or an event they experience. Understanding reciprocation requires more understanding of the exceptions, there may be several rules that govern how individuals share their information, and many factors may lead an individual to change how they are sharing their information. Intimacy alone may not explain the whole picture, as the valence may have an effect. Positive valence increased reciprocity more so than negative valence (Taylor & Belgrave, 1986).

While many acknowledge the benefits of self-disclosure and its viability in early stages of friendships/relationships, reciprocity, and self-disclosure for that matter, should realistically have limits in what and how people disclose information. Savicki (1972) was concerned with the consequences of sharing information that is highly intimate early, which they called intrusive self-disclosure. The thought process was that individuals who excessively disclose would be perceived as making a leap too soon in disclosing sensitive information when the other party is not ready, leading to lower reciprocation than having said too little. However, strangely enough, individuals who received highly intrusive (i.e., highly intimate) information unexpectedly received more self-disclosure, contradictory to

their hypotheses. In fact, the individuals who received intrusive self-disclosures had reciprocated more than with people who shared very little. This in some ways supports the previous beliefs about self-disclosure, begetting self-disclosure even if the strategy may reveal too much information about the sender. While it may be better to share information gradually for better responses according to Savicki: sharing is better than not sharing.

Researchers then addressed what was considered the “norm of reciprocity” (i.e., the obligation to disclose information to another person if you receive a disclosure yourself), being inspired by Derlega et al. (1976) where strangers displayed higher rates of reciprocity than friends. A seemingly contradictory result was rationalized as a product of friendships already having a foundation of trust. Due to friends already knowing information about one another, there may be less of an expectation to reciprocate or share information (Derlega et al., 1976). However, later studies still show that reciprocation can increase and the topics that are being reciprocated to are of higher intimacy (Sprechter et al., 2013). In both examples, reciprocation had certain expectations which defined different outcomes. Savicki (1972) highlighted that sharing more was better than sharing less and contributed to more conversations overall. Within friendships reciprocations role in friendships may change when compared to stranger interactions where strangers share more to find out information, whereas reciprocation may be used to maintain a relationship when the demand is present. But both of these focused their conclusions more on how disclosures affected these with less attention to changes in the opposite

direction. How might a relationship react when reciprocation decreases past the typical amount?

Tolstedt and Stokes (1984) study focused specifically on the antithesis of penetration: depenetration. Depenetration in this study was defined as the decreases in breadth and depth of topics as relationships deteriorate. They tested whether decreases in reciprocation would function how SPT previously hypothesized. Previous studies found that increased intimacy resulted in increased liking and increased reciprocation; however, the opposite has not been proven at that time. The thought process was that if penetration processes deepen relationship intimacy, then depenetration may result in decreases in relational intimacy. Tolstedt and Stokes accomplished this by observing failing romantic relationships, a situation ripe for changes in relational intimacy. The result demonstrated predictable patterns regarding increased negative valence and decreased breadth of disclosure (Tolstedt & Stokes, 1984). In their study, what is less clear is that the depth of disclosure increased despite the decreasing intimacy. Due to the sample, the unique role of communication could be called into question because it is difficult to determine if the couple's communication led to failing relationships, or if the failing relationship led to poorer communication. In other words, these results may reflect the situation that people were in (e.g., in failing relationships), explaining the unique depenetration finding. These results require further testing to see the unique role that communication may have as being an indicator for change rather than observing communication as a symptom of the situation. Afterall, talking behaviors may be some of the first signals that individuals may be able to perceive and determine if a response is necessary.

In sum, studies, although limited, have revealed that depenetration does occur with decrease liking between individuals. Tolstedt and Stokes also found that breadth of topics decreased alongside disclosure. Taken together with other works, depenetration may occur when abnormalities of disclosure when someone shares too little, and friendship reciprocation norms are violated. Several questions arise from these findings. Did the gradual decline in the breadth and depth of information coincide with a decline in liking between the couples? Moreover, did the lack of disclosure precede the failure of the relationship, or does the decline in the relationship necessitate decreased disclosure amongst partners? Perhaps they trust this individual with information regarding the relationship but no new information, or information withheld for that matter, is divulged. Additionally, the generalizability of the study may help to explain existing relationships between couples but does not describe those between friends. To better resolve some of the inconsistencies of disclosure expectations, we must examine other aspects that declining relationships exhibit.

Relationship Dissolution

Not all relationships are able to last. Relationship dissolution, or the end of romantic or intimate relationships, captures other factors which may precede the relationship's end. Several factors are focused on in the relationship dissolution literature including clinical factors, relationship factors, and communication patterns. For example, Weigel and Shrout (2021) found that higher depressive symptoms were associated with relationship dissolution. These results have also been further replicated (Duncan et al., 2024). In the previously mentioned replication, they also found that decreases in positive

perceptions of couple interactions mediated the association between depressive symptoms and relationship dissolution. In other words, clinically relevant factors may affect the relationship and cause relationship dissolution processes to start; and this may be partly due to shifting perceptions of said relationship. The relationship itself may have indicators that show if a relationship is at risk for dissolution. Individuals who are dissatisfied (Røsand et al., 2014) and have been in a relationship for a shorter time (Scott et al., 2025) demonstrate higher risk of dissolution. Communication within the relationship influences how intimacy in the relationship is gained or lost. In an experimental study, Huh (2025) found that simple gestures such as including emojis can increase perceived responsiveness which was then related to increased ratings of intimacy within the relationship. Constructive communication is another example of how communication can also promote healthy relationships by decreasing relationship dissatisfaction (Hafeez et al., 2025). How couples communicate can affect what topics are communicated, with poorer partner communication skills was associated with avoiding more topics which was an indicator of relationship dissatisfaction (Merrill & Afifi, 2012). However, there is a problem that both the self-disclosure and relationship dissolution literature neglect: how communication may also play a counteractive role.

Although many of these relationships may assume that a lack of communication elements (e.g., emojis or constructive undertones), they do not address the intimacy of the information itself which SPT emphasizes. Both bodies of research give implied associations that require further understanding of how the disclosure of information relates to dissolution and depenetration processes. When another person starts to pull

away from a relationship, and when another person shares less information may be out of an individual's control. What we may be able to control, is how we respond and when we start to share less information as a response. Individuals may also improve their ability to detect such signals and respond to dissolving relationships.

Tipping Points and Change Perception

When signals are present that catch an individual's attention, the individual can either react or not react (Pastore & Scheirer, 1974). Several transitional points within relationships can be thought of as signals that required detection. When does your friend become your best friend, when do you decide that your relationship has gone “official”, or when they can meet your parents. Acknowledging these changes when they occurred is change perception. Detecting such changes is not unanimous as individual differences exist in change detection. According to SPT, *when* we decide to share information should also be considered signals. SPT vaguely described that relationships transition into further levels of intimacy with clear understanding of the conditions that are ideal for sharing more without understanding what “changed” to illicit the sharing of more intimate information in the first place. Depenetration should also have its own distinct signals; when is too little information damaging to the relationship, when does a lack of good conversation come across as avoidance? At some point in a relationship, people's perceptions change which may result in relationship continuing to a next stage; or go receding. Self-disclosure in this sense can be thought of as a signal that others detect, making it salient. Individuals differ in their recognition of change (e.g., change in the

depth of self-disclosure), and context affects the times in which individuals detect and postulate acting on said change.

Several findings corroborate these ideas providing unique insights into the context of change perception. Klein and O'Brien (2018) found that individuals require less information than they predicted when forming opinions on a variety of topics. When forming opinions about individuals, it required fewer bad actions to judge a good individual as bad, than it took for good actions to judge a bad individual as good (Klein & O'Brien, 2016). Replicating this effect, individuals are quicker to perceive changes that indicate a decline versus those that indicate improvement (O'Brien & Klein, 2017). In each of these cases the information provided to participants, despite having similar motivations for detecting a change, were perceived differently depending on how the information is interpreted. Self-disclosures are often valenced which may apply. The disclosure of negative information may not always be received negatively and may promote connection (Cheng et al., 2024). Additionally, factors that affect the perception of the information (e.g., appropriateness) can affect how negative information is received (Qin et al., 2024). These findings prompt additional explorations into the valence of information because reactions to intimate disclosures may change based on the valence of the information.

O'Brien's (2023) Flexible Threshold Theory (FTT) builds upon the current understanding of signal detection theory by conceptualizing how people acknowledge change. Perceptions of change hinge on three main factors: salience, (i.e., the amount of attention a stimulus can garner), the quality or strength of a stimulus, and behavioral

monitoring, which is concerned with the costs of acknowledging said change. The ability to meet said change (e.g., is the person physically able to enact on the change if it has occurred), an individual's willingness (e.g., is the person mentally ready or able to accept a change has occurred), and the value of acknowledging the change (e.g., if a change has occurred, is it worth saying that something has changed) are all factors that affect the constricting and expanding of change thresholds (O'Brien, 2023). Many of the previous results are explained by these principles. Individuals do not want to acknowledge change if it means unnecessarily disrupting their current state (O'Brien, 2023).

Previously mentioned studies corroborated these results. Individuals are quicker to change their perceptions of other individuals (e.g., when assessing good/bad character and improvement/decline) because there is a high value in doing so. Individuals may also believe they are capable of changing their perception and have higher willingness to do so. Changing our perceptions means potentially protecting ourselves if we mischaracterize a person who is drifting far from our previous impressions. This idea is applicable to help understand how individuals change their perception of someone during the depenetration process. When someone is sharing less information with us, there comes a time to assess whether that is a real change that we should act upon. These perceptions may also help to understand when people start changing their own behavior within the relationship once a change has been acknowledged. However, several questions remain as these two theories coincide with one another in many respects but the questions regarding depenetration processes remain amiss. In Klein and O'Brien's (2016) study, tipping points were observed for moral character ascribed to strangers. Said

tipping points were asymmetrical, and people acknowledged changes in a good character becoming bad quicker than they were to acknowledge a bad actor had become good. However, to individuals that we come to know personally some of these effects may differ.

While we may have negativity biases towards moral infractions, can the same be said for those we have invested relationships with? Do dimensions such as willingness and ability falter in invested relationships despite the value that a change signal may bring? Likewise, the separate study of depenetration processes is necessary due to the asymmetrical findings between change perception when positive and negative information is present. Penetration and depenetration may similarly have different change thresholds which hold asymmetrical properties. Therefore, studying depenetration separately may be necessary so as to not assume it acts as the opposite of penetration. Additionally, the changes that we make should not be considered only as gradual processes. An objective threshold that fits all individuals for how much information is necessary to conclude our perceptions is unrealistic. Given this, individuals may be quicker or slower to like an individual. Due to the differences in the rate, the intensity of gaining or losing an impression may be different too. Some individuals may be likely to like someone rather suddenly. Additionally, liking should not gradually decline in an individual at small infractions of depenetration. Instead, there may be a change where depenetration can no longer be tolerated and the individual suddenly changes their own behavior via their own self-disclosure after attempting to give the benefit of the doubt. A sudden change may come from individuals in invested relationships tolerating signals of

change and delaying their reaction until they receive more information. There may come a point at which this strategy does not work anymore which leads to the more intense sudden reactions. Signal research helps us to understand how people detect and act upon stimuli. A big emphasis within this literature is when people accurately pick up on these signals of change. Sharing increasingly intimate information can be perceived positively, whereas sharing decreasingly intimate information can be perceived negatively. But does not sharing information always have negative motivations, or does the negative perceptions come from our own assumptions?

Barriers to Self-Disclosure

Deciding when to self-disclose, like many of the other theories mentioned, is a decision-making process which may determine whether or not a piece of information is shared. Greene et al. (2006) detail the decision-making process which follows a general linear trend starting with an individual's characteristics, personality, social network, and cultural background, then weighing the pros and cons of self-disclosure, followed by the factors of the context and situation (e.g. is the area private or public, what is the quality of the relationship, how will the receiver respond to the disclosure?), which finally leads to whether or not the individual actually self-discloses. Sensitive topics (e.g., mental health, disease status, traumatic events) would fit into SPT's model of being a topic with greater intimacy value (Carpenter & Greene, 2016) and as an increasingly difficult topic to share in the decision-making model as there may be perceived downsides (Greene et al., 2006). Individuals experiencing issues that are difficult to talk about may unintentionally signal to another that they are unwilling to talk about intimate topics and thus affect the

relationship. Several barriers obstruct an individual's ability to disclose sensitive information about themselves including stigma, other individuals' findings out, and fear or shame of being judged (Blanchard & Farber, 2020; Frey et al., 2018; Gjesfjeld & Kahn, 2023; Hom et al., 2017). It is, thus, plausible for people to initiate the disclosure process, especially knowing that individuals who did disclose reported seeking help as a motivation for doing so (Frey et al., 2018); but then stopped sharing further information. Even if the time is right, even if you have all the support in the world when it comes to your friends, there may still be difficulties revealing potentially damaging information. Individuals should have the right to withhold information, but that may still affect the other person's perceptions and the quality of the relationship. Hesitation to disclosure, or only partial disclosure, may hinder the bond between individuals and thus cause discord in the relationship. Although not immediate, disclosure withdrawal may wear down the relationship to a breaking point.

Other negative experiences may also help to illuminate barriers to self-disclosure; stigma and bias was observed as a common theme among those who did not seek formal support (e.g., law enforcement, medical professionals) in sexual abuse cases (Lanthier et al., 2023; de Klerk et al., 2023). Another pervasive finding was the disproportionate rates between disclosing to informal and formal supports; with rates of disclosing to informal supports being consistently higher compared to formal across all disclosure types (Gemara et al., 2023; Hallford et al., 2023; Pinciotti et al., 2023a; Starzynski et al., 2005). In all facets of disclosing, negative reactions were associated with negative outcomes such as PTSD symptoms, depression, and self-blame (Ullman, 2023). Our most

vulnerable aspects of ourselves are disclosed to others at times when we may perceive fewer negative reactions from our peers, leading to increased trust. By comparison, choosing to not share information despite the several listed motivations may still lead to fractured relationships. Understanding depenetration may help to inform individuals on both sides of the relationship: to encourage individuals to share if they can, and to understand the biases we may hold and to temper our immediate reactions when signals may conflict with our relational intentions.

In sum, sharing information about ourselves can lead to the development of relationships. However, a taken for granted process, depenetration, lacks current findings to substantiate its claims. Other bases of information provide understanding into how relationships dissolve, and the affect communication can have, but not the intimacy of the information. Therefore, we relied on other theoretical perspectives, such as flexible threshold theory, to understand how individuals may perceive these signals of change. Understanding the perception of changes will assist in capturing how individuals react to changes.

Current Study

The present study aims to observe depenetration processes. Depenetration is the gradual process of sharing less intimate information within a relationship context. By observing depenetration processes we can surmise how other processes, such as relationship perceptions, are affected. The current study aims to observe depenetration processes; a process that may occur after a relationship has been established between friends when one shares less intimate information. The intensity of depenetration should

also determine how intimacy is affected. To observe the differences in intensity, we investigated multiple channels that may foster depenetration (i.e., sharing no new information, sharing only surface information, and gradually sharing less intimate information). These differences should result in different outcomes as they are changing the ways in which depenetration may be interpreted and acted upon. For instance, someone who suddenly stops sharing new and intimate information with you may react harsher than someone who still shares some information. These differences would demonstrate whether or not the rate of intimacy loss affects relationship perception. These rates may be nuanced due to the emphasis in SPT on the different levels of information intimacy (e.g., surface versus intimate information). Therefore, information such as surface information should be considered and not just intimate as even sharing surface information may be better than keeping no contact. Individuals may interpret the unwillingness to continue disclosing, sharing only surface information, and the gradual sharing of less intimate information as depenetration signals. Understanding the depenetration processes could be vital in understanding self-disclosure in interpersonal relationships. Currently, SPT struggles to capture how individuals begin to recede their own disclosures when met with decreasing disclosures from a friend. Tipping points may help to explain the point at which individuals begin to recede their own self-disclosures in times when a friend no longer confides in the other. Incorporating change thresholds could set a future precedent in studying SPT as this may explain penetration and depenetration processes alike. The current study is designed to test the following 5 hypotheses:

Hypotheses

Hypothesis 1: The decrease in intimacy of shared information should relate to decreases in relationship intimacy.

Hypothesis 2: The rate at which the intimacy of information decreases (e.g., by condition) should coincide with the rate of intimacy lost in the perceived relationship, with more rapid losses in informational intimacy being related to more rapid decreases in relationship intimacy.

Hypothesis 3: The rate of intimacy loss should affect the participants' immediate reactions to the individual attempting to rekindle the relationship; with greater amounts of intimacy loss being related with greater decreases in immediate intimacy.

Hypothesis 4: The rate of intimacy loss (e.g., by condition) should affect the rate at which intimacy in the relationship is accrued, with greater amounts of intimacy loss related to slower rates of intimacy development later.

Hypothesis 5: By the end of each process, (i.e., the depenetration and reconnection processes) the intimacy of the relationship should be different between the rate of depenetration experienced, with higher amounts of intimacy in the conditions with lesser forms of depenetration.

CHAPTER TWO

METHODS

Participants

We collected responses from 1153 respondents. Participants were recruited via class participation programs, email solicitation, and online advertisements. Individuals recruited via email and online volunteered to participate whereas students recruiting from classes completed the survey for class credit. Out of these 1153 participants, we retained 825 participants. 324 participants were removed for not completing at least 2 out of 3 attention checks throughout the survey, and 4 were removed for incomplete responses. On average, participants were 21.41 years of age ($SD = 6.07$), with ages ranging from 18-62. The majority of the sample was female ($n = 627, 76.0\%$), with males being the second largest group ($n = 171, 20.7\%$), and the remaining participants identified with a third gender ($n = 25, 3.0\%$) or preferred not to say ($n = 2, 0.2\%$). The racial and ethnic makeup of the sample was as follows: White ($n = 598, 72.5\%$), Black ($n = 71, 8.6\%$), American Indian or Alaskan Native ($n = 2, 0.2\%$), Asian ($n = 58, 7.0\%$), Other ($n = 48, 5.8\%$), and Multiracial ($n = 43, 5.2\%$), and 5 participants (0.6%) who left this question blank. Participants were assigned to one of six conditions.

Measures

Demographics. Participants were asked to answer demographic questions about themselves including gender, race, relationship status, class standing, employment status, hours worked at said job, religious denomination, and religious belief strength.

Self-Disclosure Vignettes (Independent Variable)

Participants read vignettes about a close friend sharing information with them. The first four vignettes were meant as a prime in order for participants to become fond of the individual in the vignettes. The friend shares surface level details in the first vignette, then intimate details in the second, and core details in the third and fourth vignettes; mirroring the social penetration processes. All participants, regardless of condition, read the same pre-manipulation vignettes in a fixed order. After reading these vignettes, participants are randomly assigned to one of 6 conditions. The experimental manipulation section of the experiment consisted of 7 vignettes which each described as week passing. Each condition made slight adjustments to the information being shared after each “week”; thereby manipulating channels that may foster depenetration. The non-depenetration condition was a baseline condition in which no depenetration occurred. Throughout all the experimental vignettes for this baseline condition, the individual in the vignettes shares the same intimate information. All other conditions followed a different procedure. The gradual positive, negative, and neutral conditions slowly share less intimate information over the course of the vignettes. Vignette 5-7 were intimate information (e.g., talking about family, experienced at work, and school experiences), and vignettes 8-10 vignettes were surface level information (e.g., talking about the weather, talking about parking, and talking about music). These conditions also manipulated the valence of information, with the gradual positive condition framing the events as positive (e.g., positive experiences in work, family, and school), the negative condition framing the events as negative (e.g., negative experiences in work, family, and

school), and the neutral condition lacking any valence (e.g., they talked about their family, work, and school with no mention of positive or negative feelings). The surface condition shared only superficial information throughout vignettes 5-10. The no contact condition for all 6 vignettes described that the individual in the vignette has not talked much this week. For all 5 conditions listed, vignette 11 stated the following: “One week later, you and X have not talked much”. This allowed all the conditions to come to the same end point, concluding the depenetration channel. All conditions, excluding the non-depenetration condition, read three vignettes that mirrored the initial penetration vignettes from the start of this section. The participants hear about X again from classmates in the 12th vignette, begin talking about surface level information in the 13th, and end by talking about intimate information with one another again in the 14th.

Interpersonal Reactions (Dependent Variable)

Participants were asked three questions to measure their perceptions of the individual in the vignettes. Participants were asked on a 6-point Likert scale how much they liked X (1 = I do not like X at all, 6 = I like X a lot), how likely they were to continue talking to X (1 = I would not talk to X at all, 6 = I would definitely talk to X), and how likely they were to help X if they needed it (1 = I would not help X at all, 6 = I would definitely help X).

Procedure

Participants completed this study online either by signing up via a university research participation service or other advertisements such as internet and email

advertising. Once recruited, participants had access to the Qualtrics survey link for them to complete the survey. There were three parts to the survey: demographics, the manipulation itself, and after-manipulation questionnaires. All participants will begin the demographics section answering questions about their characteristics. Next, participants will be randomly assigned to one of the six conditions manipulating the channel of depenetration. After responding to the interpersonal reactions' questions for each vignette, participants were asked to complete several psychometric scales. These scales were unrelated to the purpose of this study. Participation in the survey ended once the post-manipulation questions were completed. The average time of completion for the survey was approximately 80 minutes ($SD = 237.09$). The study received ethical approval from an institutional review board. All participants provided informed consent to participate in the study.

Data Analysis

Data analysis was conducted using SPSS ver. 31 and R (R Core Team, 2024). We ran descriptive statistics to observe the demographics of our sample. Manipulation checks were also conducted to ensure several conditions are met. First, we observed each demographic and perception to assure they did not differ by the experimental conditions. Lastly, we will observe the mean level of the vignette 1-4 to ensure liking was at a high level relative to the scale. Using the nlme package (Pinheiro et al., 2024) we fit a discontinuous growth model. All figures were made using ggplot2 (Wickman, 2016). Discontinuous growth models are a subset of multilevel modeling or linear mixed effects models. These models are an appropriate approach as they can show changes in a time

series. For our purposes, we treated the repeated measures as a time series. In other words, the growth rates we are modeling are the changes in perceptions for a one unit increase in the vignettes. Repeated responses from our participants (i.e., level one) will be nested within participants (i.e., level two). To calculate these models, we used the following equations:

Model 1:

$$Y_{ij} = \beta_{0j} + \beta_{1j} \text{Time}_{ij} + R_{ij}$$

Model 2:

$$Y_{ij} = \beta_{0j} + \beta_{1j} \text{Preslope}_{ij} + \beta_{2j} \text{Transition}_{ij} + \beta_{3j} \text{Postslope}_{ij} + R_{ij}$$

Model 3:

$$Y_{ij} = \beta_{0j} + \beta_{1j} \text{Preslope}_{ij} + \beta_{2j} \text{Transition}_{ij} + \beta_{3j} \text{Postslope}_{ij} + \beta_{4j} \text{Transition} * \text{Condition}_{ij} + \beta_{5j} \text{Postslope} * \text{Condition}_{ij} + R_{ij}$$

Table 1 shows the dummy coding that was used in order to calculate each coefficient for the depenetration and reconnection models. The preslope, transition point, and the postslope were fixed based on how the vignettes were designed. In the first model, we model time alone to understand the model before we add the discontinuous components. B_{0j} is the model intercept which displays the average amount of liking before the manipulation. B_{1j} models time as the predictor of our outcome (e.g., how much does liking increase or decrease with a one unit increase in time?). In model 2, B_{2j} is the transition effect, which captures the discontinuity in the predicted outcome between the pre-transition vignettes and the post-transition vignettes. B_{3j} represents the postslope, which is an adjustment to the preslope slope after the transition point. Using the preslope

as a reference, this parameter shows how the rate of change in the outcome differs after the transition. Model 3 includes B_{3j} and B_{4j} ; which allow the transition and postslope variables to be freely estimated by the condition participants were assigned to. Using pairwise comparisons, we can observe whether there were significant differences in the transition and postslope estimates by each condition. In addition to the model estimates, we added auto correlations in order to control the within-vignette correlations. Missing values were excluded from analyses. At each stage, we can compare the more complicated models to the previous simpler one to assure our adjustments improve model fit.

We used the same format for the depenetration and reconnection analyses. However, for the reconnection analyses we will allow the pre-slope to vary by condition because in the depenetration analysis it was allowed to vary by condition and the postslope 1 and pre-slope 2. Additionally, we ran these models as unfrozen models. How time is coded can drastically affect the interpretation of the preslope and postslope parameters. (Bliese & Lang, 2016). In our model, we decided to run our parameters so that they are relative to the preslope. What this means is that the postslope is estimating its unique contribution to the growth rates when controlling for the initial pre-slope trajectory. For our analyses, we set our probability level to $\alpha = .05$ as this is standard in the social sciences.

CHAPTER THREE

RESULTS

Manipulation Checks

The number of participants per each condition was as follows: Condition 1 (Non-depenetration, $N = 132$), Condition 2 (Gradual Positive, $N = 143$), Condition 3 (Gradual Negative, $N = 141$), Condition 4 (Gradual Neutral, $N = 140$), Condition 5 (Surface, $N = 138$), and Condition 6 (No Contact, $N = 131$). We tested whether any of the conditions differed based on demographic characteristics. Participants did not differ based on age $F(5,819) = .79, n.s.$, gender $\chi^2(15,825) = 16.55, n.s.$, or race $\chi^2(25,825) = 14.40, n.s.$ Next, we tested whether each condition differed in their responses to the pre-manipulation vignettes that all participants read. Participants across all conditions did not differ in liking $F(5,819) = 1.66, n.s.$, talking $F(5,819) = 1.32, n.s.$, or helping intentions $F(5,819) = 1.20, n.s.$ Taken together, our sample did not differ between demographic characteristics, and pre-manipulation perceptions of the friend in the vignettes. Therefore, the conditions could be compared against one another with some confidence that other factors are not influencing the results.

We also observed the mean levels of interpersonal reactions to see if the outcomes of liking, talking, and helping have relatively similar response distributions. Figures A 1, 2, and 3 showed that the participants demonstrated similar tendencies. As a follow-up, correlations were conducted to observe the association between the interpersonal reactions. Liking had a large correlation with talking ($r = .85, p < .001$), and helping ($r =$

.73, $p < .001$). Talking similarly, had a large correlation with helping ($r = .79, p < .001$). Curiously, looking at mean levels of the depenetration vignettes (i.e., vignette 5-11) we also found large correlations between liking and talking ($r = .92, p < .001$), liking and helping ($r = .83, p < .001$), and talking and helping ($r = .85, p < .001$). Lastly, to be sure that these outcomes were related, we observed mean levels of the interpersonal perceptions during the reconnection vignettes (i.e., vignettes 12-14). Once again, all correlations exhibited large correlations between liking and talking ($r = .93, p < .001$), liking and helping ($r = .80, p < .001$), and talking and helping ($r = .84, p < .001$). Due to the high correlations between these reactions, and the similar trends observed in figure 1, we decided to only observe liking in our discontinuous growth models. Our original intentions were to model liking, talking, and helping separately. However, due to the high correlations these may reveal similar trends. The focus of the analyses is on liking specifically as these are the most related to depenetration. Total scores of liking, talking, and helping were not used as they may tap into different constructs. For instance, an individual may dislike someone, but may still talk to them to keep up social norms. Helping perceptions may also be similar where if a situation demands it, individuals may be obligated to help. Therefore, to better understand the perceptions in depenetration processes, liking was the ideal candidate due to less pressure to hold a personal perception such as liking.

Lastly, we looked at the mean levels of liking across the initial four vignettes participants read in order to observe penetration processes. We found the mean level of all four vignettes to be high ($M = 4.92, SD = .83$). However, when observing the mean

level at each vignette we found unintended trends in liking perceptions. Liking at vignette 1 ($M = 4.81$, $SD = .91$) was lower compared to vignette 2 ($M = 5.25$, $SD = .85$; $t(797) = -18.32$, $p < .001$), but vignette 2 was higher than vignette 3 ($M = 5.03$, $SD = .99$; $t(799) = 8.25$, $p < .001$). Moreover, vignette 3 had higher liking on average compared to vignette 4 ($M = 4.59$, $SD = 1.18$; $t(803) = 18.14$, $p < .001$). These trends show a decrease in liking by vignettes 3 and 4. It should be acknowledged that there seemed to be a decline towards the later vignettes, potentially because the individual is sharing deeper information about problematic alcohol use, which may create discomfort for some participants. Regardless, the data established, on average, that liking X was the typical response which set proper circumstances for depenetration to occur. Table 2 shows liking throughout the depenetration vignettes at an observational level.

Liking Discontinuous Growth Model: Depenetration

Table 3 details the different models we fit. First, we tested the random intercept model (null model) to estimate the intraclass correlation coefficient (ICC) to determine the among of between-person variability. In other words, how much of the variability in liking resulted from between person differences. Our null model fitting liking had an ICC of .62. In other words, 62% of variability was attributable to between-cluster differences, or differences between the individuals. The other 38% may be attributable to within-subject differences (i.e., variability in responding to the vignettes overtime). In Model 1, we added time (e.g., the series of vignettes) as a sole predictor in the model. Relative to the null model, model 1 showed a significant improvement in model. We found that liking towards X was different from zero ($M = 4.95$, $SE = .04$, $p < .001$). We also found a

significant effect for time in decreasing in liking towards X ($Est_{time} = -.08, t = -18.21, p < .001$). In other words, for a one unit increase in time, or for every subsequent vignette read, participants reported liking X less.

Next, we fit the discontinuous growth model (i.e., model 2) by estimating fixed and random effects for the pre-transition slope (vignettes 1-4), the transition (i.e., the immediate change between the pre-transition vignettes and the post-transition vignettes), and the post-transition slope (e.g., vignettes 5-11). As seen in Table 3, fitting the discontinuous growth model was a significant improvement of the model compared to the model 1. Figure B displays the depenetration discontinuous growth model across the sample. Table 4 shows the parameters for Model 2. The intercept shows that liking for X was different from zero ($M = 4.98, SE = .03, p < .001$). The preslope was significant ($Est_{pre} = -.07, t = -5.32, p < .001$), showing that participants' liking for X significantly decreased with time. The transition was significant and positive ($Est_{trans} = .12, t = 4.83, p < .001$), indicating that on average, participants reported an increase in liking after reading the transition vignette. Our results also indicated the postslope was significant ($Est_{post} = -.04, t = -2.55, p = .011$), showing that when controlling for the initial trajectory of the preslope, the postslope had a unique contribution to the rate of change across vignettes. The rate of change in the postslope is significantly different from the preslope, whereby the rate at which liking decreased was greater in the post-slope vignettes compared to the pre-slope vignettes. Lastly, the model estimated random effects for each of the parameters. We found a fair amount of variation in each of the parameters (Preslope $SD = .29$; Transition $SD = .27$; Postslope $SD = .30$), indicating that the rate of

change in liking differed between participants. Our residual random effect ($SD = .56$) estimates the amount of variability unaccounted for.

In our final model (model 3), we allowed each of the parameters to be freely estimated by condition. This allowed for direct comparisons of each parameter against one another by condition, so that we could ascertain whether the decreases in relationship intimacy (i.e., the rate of change in liking) differed by condition. Allowing the parameters to be freely estimated by condition led to a significant improvement of the model (Table 3). Table 5 shows the parameters for each condition's transition and postslope. Figure C fits the discontinuous growth model such that each condition has its own respective transition point and postslope.

Depenetration by Condition

Transitions

We found a significant difference in the transition point between the non-depenetration condition ($Est. = .30, SE = .05$) and the no contact ($Est. = -.21, SE = .06; M_{dif.} = .52, t = 6.72, p < .001$), surface ($Est. = .06, SE = .05; M_{dif.} = .24, t = 3.17, p = .02$), and gradual negative ($Est. = -.08, SE = .05; M_{dif.} = .38, t = 5.09, p < .001$) conditions. Each of these conditions showed a lower transition, indicating an immediate decrease in liking compared to the non-depenetration condition. There was no difference between the non-depenetration condition and the gradual positive ($Est. = .27, SE = .05; M_{dif.} = .03, t = .46, n.s.$) and gradual neutral ($Est. = .31, SE = .05; M_{dif.} = -.01, t = -.14, n.s.$) conditions.

The transition point in the gradual positive condition was significantly different from the no contact ($M_{dif.} = .48, t = 6.39, p < .001$) and gradual negative ($M_{dif.} = .35, t = 4.73, p < .001$) conditions, such that the transition in the gradual positive condition indicated an increase in liking, whereas the latter conditions showed a decrease in liking. There was no difference between gradual positive and gradual neutral condition ($M_{dif.} = .05, t = .81, n.s.$). The difference in transition between the gradual positive condition and surface condition approached significance ($M_{dif.} = .21, t = 2.77, p = .06$) and was following a trend that the transition was higher for the gradual positive condition.

The transition point in the gradual negative condition differed significantly from the gradual neutral condition ($M_{dif.} = -.39, t = -5.31, p < .001$), but not the surface nor no contact conditions. On average, the transition point was lower for the gradual negative condition compared to the gradual neutral condition. The transition point in the gradual neutral condition significantly differed from the surface ($M_{dif.} = .25, t = 3.36, p = .010$) and no contact ($M_{dif.} = .53, t = 6.95, p < .001$) conditions, such that the liking transition point was greater in the gradual neutral condition compared to the other conditions.

Lastly, the liking transition point for the surface condition was greater than the no contact condition ($M_{dif.} = .28, t = 3.63, p = .003$).

Postslopes

Pairwise comparisons were conducted to compare the post-slopes for each condition. Figures F and G display the condition postslopes by depenetration rate and valence respectively. The postslope in the non-depenetration condition ($Est. = -.01, SE =$

.02) significantly differed from the postslopes in the no contact ($Est. = -.10, SE = .02; M_{dif} = .08, t = 4.33, p < .001$), and surface ($Est. = -.07, SE = .02; M_{dif} = .06, t = 3.11, p = .02$) conditions. The rate of change in the non-depenetration condition was slower compared to both of these conditions. To put it another way, the non-depenetration condition were slower to dislike X in the vignettes overtime compared to the participants in the surface and no contact conditions. No other differences were found between the non-depenetration condition and the gradual positive ($Est. = .01, SE = .02; M_{dif} = -.02, t = -1.28, n.s.$), gradual negative ($Est. = -.05, SE = .02; M_{dif} = .04, t = 1.97, n.s.$), and gradual neutral ($Est. = -.003, SE = .02; M_{dif} = -.01, t = -.48, n.s.$) conditions.

Next, we observed the gradual positive condition. Participants in the gradual positive condition significantly differed from the no contact ($M_{dif} = .11, t = 5.69, p < .001$), surface ($M_{dif} = .08, t = 4.47, p < .001$), and gradual negative ($M_{dif} = .06, t = 3.31, p = .012$) conditions. Participants in the gradual positive condition had a slower rate of change compared to each of these conditions. We did not find a significant difference in postslopes between the gradual positive and gradual neutral condition ($M_{dif} = .02, t = .81, n.s.$).

Next, we observed the gradual negative condition. We found no significant differences in postslope for the gradual neutral ($M_{dif} = -.05, t = -2.49, n.s.$), surface ($M_{dif} = .02, t = 1.17, n.s.$), and no contact ($M_{dif} = .05, t = 2.44, n.s.$) conditions compared to the gradual negative condition. In other words, the rate of change (e.g., ratings of liking across the vignettes) for this condition did not significantly differ from the listed conditions.

Next, we observed the gradual neutral condition. Participants in the gradual neutral condition significantly differed from the no contact ($M_{dif} = .09, t = 4.87, p < .001$), and surface ($M_{dif} = .07, t = 3.64, p = .003$), conditions postslopes. In other words, the rate of change in the neutral condition was slower compared to the no contact and surface conditions.

Lastly, we compared the surface condition to the no contact condition. Participants' surface condition did not differ from participants in the no contact ($M_{dif} = .02, t = 1.29, n.s.$) condition in their postslopes.

To test hypothesis 5, we ran a one-way ANOVA to compare liking scores in vignette 11 across conditions. Table 9 shows the means and standard deviations. Results indicated significant differences amongst the conditions $F(5,814) = 19.53, p < .001$. Participants in the non-depenetration condition ($M = 4.38, SD = 1.24$) reported higher liking compared to the no contact ($M = 3.26, SD = 1.43; p < .001$), surface ($M = 3.81, SD = 1.32; p = .004$), and gradual negative ($M = 3.79, SD = 1.38; p = .002$) conditions, and no difference compared to the gradual positive ($M = 4.42, SD = 1.19; n.s.$) and gradual neutral ($M = 4.52, SD = ; n.s.$) conditions. Participants in the gradual positive condition also reported on average higher liking than the no contact ($p < .001$), surface ($p = .001$), and gradual negative ($p < .001$) conditions, but no difference compared to the gradual neutral condition ($n.s.$). Average liking ratings in the gradual negative condition were significantly greater than the no contact condition ($p = .009$), and significantly lower than the gradual neutral condition ($p < .001$), and not significantly different from the surface condition ($n.s.$). For the gradual neutral condition, liking ratings were significantly

greater than the no contact ($p < .001$) and surface ($p < .001$) conditions. Lastly, liking ratings in the surface condition was significantly greater than the no contact condition ($p = .007$).

Liking Discontinuous Growth Model: Reconnection

In order to observe the effects that depenetration can have on reconnection, we reran the previous model with new specifications. First, we fit a time model (i.e., model 1) like prior. Table 6 shows that model 1 was a significant improvement of the model over the null model. The intercept showed participants liking for X was different from zero ($M = 4.60$, $SE = .04$, $p < .001$) on average and participants liking ratings of X decreased overtime ($Est.time = -.04$, $t = -11.27$, $p < .001$). Next, we fit a discontinuous growth model and estimated fixed and random effects for the new pre-transition slope (vignettes 5-11), the transition (e.g., the immediate change between the pre-transition vignettes and the post-transition vignettes) and the post-transition slope (e.g., vignettes 12-14). As seen in Table 6, fitting the discontinuous growth model was a significant improvement of the model. Figure D displays the reconnection discontinuous growth model across the sample. All estimates for model 2 can be found in Table 7. The intercept shows that, on average, liking for X was still higher than zero ($M = 4.72$, $SE = .04$, $p < .001$). The preslope was significant ($Est.pre = -.10$, $t = -17.90$, $p < .001$). Participants' liking for X decreased with time (i.e., decreased after each vignette). The transition was significant and negative ($Est.trans = -.34$, $t = -12.58$, $p < .001$). In other words, participants on average reported a decrease in liking immediately once reading the reconnection vignettes. Our results also indicated the postslope was significant ($Est.post = .31$, $t = 18.89$,

$p < .001$). This means that the postslope accounted for a unique amount of variance in the rate of change when controlling for the effect of the pre-slope. In fact, the slope changes from a decrease to an increase during the reconnection vignettes. Lastly, the model estimated random effects for each of the parameters. We found a substantial amount of variation in each of the parameters (e.g., preslope $SD = .10$, transition $SD = .31$, and postslope $SD = .26$). Meaning that participants' transitions and rates of change varied significantly from the averages. Our residual random effect ($SD = .56$) estimates the amount of variance unaccounted for.

In our final reconnection model (i.e., model 3), we allowed each of the parameters to be freely estimated by condition. Table 6 shows the comparison of the previous model to the condition model. Allowing the parameters to be freely estimated by condition was a significant improvement of the model. Table 8 details the transitions and postslopes per condition. Figure E shows the transitions and postslopes for the reconnection model. Pair-wise comparisons were made between the conditions transition and post-slope estimates to observe how the previous depenetration vignettes affected participants liking of X if they reconnect.

Reconnection by Condition

Transitions

We found a significant difference in the transition point between the non-depenetration condition ($Est. = -.06$, $SE = .07$) reported a significantly different transition compared to participants in the surface ($Est. = -.36$, $SE = .07$; $M_{dif.} = .31$, $t = 3.30$, $p =$

.01), gradual negative ($Est. = -.57, SE = .06; M_{dif.} = .51, t = 5.56, p < .001$), gradual neutral ($Est. = -.39, SE = .06; M_{dif.} = .34, t = 3.65, p = .004$), and gradual positive ($Est. = -.48, SE = .06; M_{dif.} = .43, t = 4.62, p < .001$) conditions. Each of these conditions experienced a lower transition, indicating an immediate decrease in liking, whereas the non-depenetration condition had a smaller transition decrease by comparison. The transition point in the non-depenetration condition was not significantly different from the no contact condition ($Est. = -.22, SE = .07; M_{dif.} = .17, t = 1.78, n.s.$).

The transition point in the gradual positive condition was not different from the no contact ($M_{dif.} = -.26, t = -2.75, p = .06$), surface ($M_{dif.} = -.12, t = -.30, n.s.$), gradual negative ($M_{dif.} = .09, t = .98, n.s.$), and gradual neutral ($M_{dif.} = -.08, t = -.96, n.s.$) conditions.

The transition point in the gradual negative condition differed significantly from the no contact condition ($M_{dif.} = -.35, t = -3.70, p = .003$). On average, the transition point was lower for the no contact condition compared to the gradual negative condition. The transition point in the gradual negative condition was not different compared to the gradual neutral ($M_{dif.} = -.18, t = -1.93, n.s.$) and surface ($M_{dif.} = -.21, t = -2.26, n.s.$) conditions.

The transition point in the gradual neutral condition was not different from and the surface ($M_{dif.} = -.03, t = -.34, n.s.$) or no contact ($M_{dif.} = -.17, t = -1.81, n.s.$) conditions. Lastly, no differences were found between the surface and no contact conditions ($M_{dif.} = -.14, t = -1.47, n.s.$).

Postslopes

Pairwise comparisons were conducted to compare the post-slopes for each condition. The postslope in the non-depenetration condition ($Est. = -.01, SE = .05$) significantly differed from the postslopes in the no contact ($Est. = .53, SE = .04; M_{dif.} = -.55, t = 10.49, p < .001$), surface ($Est. = .43, SE = .04; M_{dif.} = -.46, t = 8.90, p = .02$), gradual neutral ($Est. = .23, SE = .04; M_{dif.} = -.25, t = 4.90, p < .001$), gradual negative ($Est. = .47, SE = .04; M_{dif.} = -.50, t = 9.69, p < .001$) and gradual positive ($Est. = .25, SE = .04; M_{dif.} = -.27, t = 5.30, p < .001$) conditions. All conditions had a greater postslope compared to the non-depenetration condition. In order to interpret this, it is important to consider that the other conditions got vignettes to facilitate reconnection, whereas the non-depenetration condition had static vignettes of the same intimate information.

Postslopes in the gradual positive condition significantly differed from the no contact ($M_{dif.} = -.28, t = -5.33, p < .001$), surface ($M_{dif.} = -.19, t = -3.64, p = .003$), and gradual negative ($M_{dif.} = -.23, t = -4.41, p < .001$) conditions. The postslope in the gradual positive condition did not differ from the gradual neutral ($M_{dif.} = .02, t = .39, n.s.$) condition. Participants in the gradual positive condition had a lower rate of change compared to each of these conditions. Meaning that their liking ratings over the reconnection vignettes did not increase liking as quickly as the other conditions, which reported much higher liking on average.

Postslopes in the gradual negative condition significantly difference from participants in the gradual neutral condition ($M_{dif.} = .25, t = 4.78, p < .001$) but did not differ from the surface ($M_{dif.} = .04, t = .76, n.s.$) and no contact ($M_{dif.} = -.05, t = -1.01,$

n.s.) conditions. Liking ratings increased faster in the gradual negative condition compared to the gradual neutral condition.

Postslopes in the gradual neutral condition significantly differed from the no contact ($M_{dif.} = -.21, t = -4.01, p < .001$), and surface ($M_{dif.} = -.30, t = -5.68, p < .001$), conditions postslopes. In other words, the gradual neutral condition had a slower rate of change compared to the other listed condition. Liking growth increased rapidly in the surface and no contact conditions. Lastly, we compared the surface and no contact condition; to which we did not find a significant difference ($M_{dif.} = -.09, t = -1.74, n.s.$).

Lastly, we ran one-way ANOVA to observe liking in vignette 14 to test the second part of hypothesis 5. Table 9 shows the mean and standard deviations of liking ratings for the end of the manipulation vignettes. We found significant differences amongst the conditions $F(5,750) = 6.33, p < .001$. Participants in the non-depenetration condition ($M = 4.05, SD = 1.35$) reported lower liking compared to the gradual positive ($M = 4.68, SD = 1.10; p < .001$), and gradual neutral conditions ($M = 4.71, SD = 1.18; p < .001$). No significant differences were found for the non-depenetration condition and the gradual negative ($M = 4.37, SD = 1.28$), surface ($M = 4.42, SD = 1.24$), and no contact ($M = 4.11, SD = 1.19$) conditions. Participants in the gradual positive condition also reported higher liking on average compared to the no contact ($p < .001$) condition only. When examining the gradual negative condition, we found no significant differences. For the gradual neutral condition, liking ratings were higher compared to the no contact ($p = .002$) condition only. Finally, we compared the surface and no contact conditions and found no significant differences.

CHAPTER FOUR

DISCUSSION

The present study sought to examine how depenetration processes may affect perceptions within a relationship by disclosing decreasingly intimate information. Additionally, our purpose was to examine the effects that depenetration may have on a relationship if an individual attempts to become closer once again. We accomplished this through a novel study design, designed to model depenetration processes. Our hypotheses were partially supported. We found distinct effects for the depenetration process, demonstrating immediate changes in perception and adjustments that participants made over the course of the vignettes, supporting hypotheses 1 and 2. Hypotheses 3 and 4, however, were not supported and our results showed effects opposite to our intuitions.

Hypothesis 1 was partially supported by our finding that liking was affected immediately following the initial penetration vignettes. Each condition demonstrated differences between their transition slopes. Greater amounts of depenetration (e.g., the no contact and surface conditions) resulted in larger decreases in liking. By comparison, the gradual positive and gradual neutral conditions resulted in increases in liking immediately. The gradual negative condition displayed a contradictory association compared to the gradual positive and gradual neutral conditions. This could indicate that the valence is important for immediate reactions to disclosed information (Klein & O'Brien, 2016; Taylor & Belgrave, 1986). Negatively valenced self-disclosures may show similar asymmetries in change perception literature, especially with our inclusion of a neutral valence condition. The gradual neutral and positive conditions showed no

significant differences, which may further demonstrate that negatively valence information is reacted to differently than even information with no clear valence for immediate reactions. Despite sharing the same topics, and decreasing topic intimacy at the same pace, participants reported a lower liking comparatively. Overall, the transition points showed how different conditions reacted initially to experiencing depenetration. The conditions differences demonstrated that increased severity in depenetration led to immediate decreases in liking.

Hypothesis 2 was also partially supported. We found that as the rate of depenetration increased (e.g., manipulated by the conditions), changes occurred in individuals' perceptions of liking. These results demonstrated that the information being shared not only plays a role in the penetration process (e.g., increasing in liking as the previous SPT model suggests) but that sharing less intimate information over time may result in less perceived intimacy. The gradual positive and neutral conditions demonstrated less severe decreases overtime, comparable to the non-depenetration condition in which the information remained highly intimate. The surface condition was a seeming middle ground of the depenetration conditions, with it being a greater slope compared to the non-depenetration, positive, and neutral gradual depenetration conditions. The no contact condition demonstrates that the lack of opportunities to interact, in and of itself, can be an indicator of decreased intimacy in the relationship. Despite this, lacking self-disclosure within the relationship is not a prerequisite because lacking in intimate self-disclosure may come with its own harms. Once again, there was significant variation in these postslopes, meaning that although individuals experienced

the same point where the change occurred, participants may have selectively decided how much of their own perceptions should change to adjust to the new information presented.

Beyond just the rate of depenetration, we again saw effects for valence. Despite the same information being provided as in the gradual positive and neutral conditions, the postslope in the gradual negative condition was of a similar magnitude to the surface condition. Previous literature has shown that change perceptions are affected by valence (Klein & O'Brien, 2016; O'Brien & Klein, 2017). Our results here show that when the valence of the information was negative, there were differences that contrast against positively valenced information. This is despite the rate of information delivery being the same. What is less clear is where the negativity of information affects change thresholds. For example, does “negative” information affect the salience of the information, thereby making people more sensitive to the depenetration? Perhaps the negative information affects the perceived value of a friendship, which erodes contact behaviors. Although exploratory, further attention should be given to information’s valence along with the intimacy of said information when considering depenetration processes. The postslopes demonstrate that participants may be able to detect changes in the intimacy of the relationship through conversational tendencies. The changes in their perceptions, in part, were due to the changes in the information presented to the participants.

The gradual positive, gradual neutral, and non-depenetration conditions did not differ in their postslopes. Differences were expected given that in the gradual conditions the information changed in intimacy. Somehow, these participants responded slower, despite the gradual trend of sharing less intimate information overtime. There could be an

effect where the depenetration is not being detected in these conditions, or at least not with the same sensitivity as some of the other conditions we observed. The information valence could have inhibited the ability to perceive the changing information intimacy. By inhibiting these perceptions, it could make reactions harsher when relationships abruptly end; because the talking behaviors are perceived as normal; making relationships abruptly ending even more unexpected. Therefore, flexible thresholds may be important considerations because understanding which aspect of the threshold has changed may help understand *where* to improve relationships. According to threshold theory, there are several domains to disruptive costs. Which disruptive cost these results encapsulate is undetermined as of this study. Does talking less signal less perceived value, or does it undermine the individuals perceived capabilities of working it out if it gets to a point? Other behaviors may be of increasing interest for future studies.

Hypotheses 3 and 4 were not supported. The results here seem to suggest the opposite of what we assumed; individuals in the harsher depenetration conditions had lower average transition reactions relative to participants in the lighter depenetration conditions. In the same vein, the reconnection postslopes suggest that participants experiencing harsher forms of depenetration exhibited greater growth rates in liking perceptions compared to those experiencing lighter depenetration. Individuals who experienced depenetration earlier could have habituated to the effects and could not like the individual any *less* than they already did. Conversely, in the conditions where liking was relatively high, the transition here was sudden and ended with sharing less information. Participants also rated liking X more in conditions with lighter depenetration

meaning there was more to lose in their evaluations of the individual; hence liking ratings plummeting. By the same merit, conditions in which liking were relatively low gave participants more room for liking to increase compared to individuals who already had higher liking. Therefore, floor and ceiling effects on the amount of liking individuals toward the individual X may be present. The increases in liking perceptions help to capture but do not fully explain why this is occurring. There may be alternative explanation such as participants perceiving “forgiving” X in the vignettes, which led to liking them more. Despite the greater changes in liking perceptions, we see in Table 9, that by the end of the vignettes liking is at its lowest for conditions with harsher depenetration rates (e.g., the no contact and surface). Although the changes in liking perception tell us that conditions with more depenetration experienced greater rates of liking perception growth, this may be a function of how much room there is to grow in the first place. In any case, we can still see that depenetration left the relationships at different points on average by condition. Albeit these differences were few and not compelling enough to demonstrate depenetration’s effects on reconnection.

The reconnection postslopes complicate some of the previously mentioned theories. Flexible threshold theory posits that change thresholds are dictated by several factors. In essence, depenetration should have caused issues with reconnection if it affected dimensions such as the value, willingness, or ability to be with this person. In the reconnection transitions, we saw something that may support these ideas: the immediate reactions observed in the transitions were harsher for conditions such as the gradual positive and neutral conditions where the loss of intimacy in vignette 11 may have been

more sudden, or unexpected compared to the no contact and surface conditions.

However, we did not see this same result in the growth rates. This may indicate that the initial depenetration caused decreases in liking but did not inhibit the ability to reconnect with individual X. Perhaps sharing less intimate information is not costly enough for lasting relationship damage and may not inhibit reconnection efforts. People may have been more tolerant towards fluctuations in talking behaviors and may require more intense transgressions to make reconnection more difficult. Likewise, talking alone may not be enough to consider a change has occurred. For instance, talking behaviors may be one item in a list of behaviors people may consider when making decisions. In our case, people who did not react right away, or tolerated the depenetration more, could have required more information before making their decision. The results stand to say that although depenetration may cause ground to be lost in the relationship, that intimacy can be regained to some degree.

Limitations and Future Directions

The study at hand had several limitations. The vignettes presented to participants were in a fixed order by condition in order to manipulate the decay of intimacy in the relationship. This is a methodological departure from other social penetration literature, where randomization is typical. This fixed order may introduce ordering effects. Future studies may benefit from the incorporating different vignettes or presenting topics that are similarly intimate at different points when replicating this study. Likewise, the vignettes presented here were novel and could be tweaked in future studies to find how robust these effects are.

Our outcome variable was liking perceptions, but these are not the same as actual behavior. In many cases, people's perceptions may differ from their actual behaviors when it comes to change perception. Future studies may want to observe actual behaviors. Taking this thought further, these internal perceptions could also be an important factor for predicting behavior. There may be other behaviors that are unaccounted for, such as social behaviors (e.g., willingness to invite to social activities), or unconscious ones (e.g., going to someone else with your problems first before X) which could be important considerations for future studies. The last limitation of our outcome is in regard to the one-item scale we used. While some studies are able to show that one item assessments can be beneficial (Geisen et al., 2025) using multiple items that get at one construct is standard. Future studies should use multidimensional scales while also balancing participant fatigue.

The present study was an online survey, which may affect the ways in which the results generalize to actual relationships. Future testing should employ longitudinal designs such as diary experiments. This method could reveal how fluctuations in the intimacy of information shared present themselves and how individuals respond in said circumstances. Another limitation of this study is the lack of ability to allow for reciprocation. Previous studies employed in-person designs to allow for conversations between individuals. Contrary to the in-person method, which is often employed in self-disclosure literature, the present study used sequences of vignettes. This approach did not allow participants to talk organically with the person in the vignettes, meaning there may be other nuances about intimacy which cannot be captured by using vignettes. For

example, the conversation may start as low intimacy, but through prodding, it may increase in intimacy. How attempts to increase intimacy are met, or thwarted, could affect perceptions of depenetration.

Our pre-manipulation vignettes were able to show that as information was shared, liking increased, which corroborates previous literature (Collins & Miller, 1994). This is true at least for vignettes 1 and 2. Vignettes 3 and 4, on the contrary, showed a decline. This may be due to conflicting results in the literature, which suggest that sharing more too quickly can affect liking reports (Savicki, 1972). Although our intentions were to gradually disclose the information, the presentation of the vignettes could have shared core-level topics earlier than participants would have preferred. It is hard to know if including more vignettes about the intimate phases would have made the transition smoother. Interactions such as these may have to occur over an actual period of time (e.g., knowing someone for one week to a month versus one sitting in an online survey) before high intimacy topics becomes appropriate and well-received. X talking about their problems with alcohol may have also been off-putting for participants due to the high intimacy. Both reasons are plausible for explaining why reactions started to decrease early. However, due to relatively high liking, we were confident that we could still observe depenetration processes because, on average, participants liked the individual in the vignettes. The mean levels of liking indicated average ratings of “somewhat liking X” by vignette 4. Additionally, the model controls for previous trends when observing changes in the slope, meaning the effects observed are the unique changes in the slope during the post-transition vignettes.

In each of our conditions we saw a general decrease overtime. This decrease was true even in conditions where it was unintended such as the non-depenetration condition. Ideally, intimacy should have stayed high and stationary. In hindsight, it stayed higher on average in this condition compared to some, but the question about why liking decreased overtime remains. There could be unintended effects being captured outside of depenetration alone. For instance, individuals may be adjusting their responses overtime as they “settle” into a relationship. At first, it may be novel and exciting to make a friend, whereas once you know all there is to know, or settle into a routine, then liking ratings may have equalized or adjusted into more realistic levels; reflected by the decreases we observed. Another explanation may entail the sudden shift between the core topics in vignette 3 and 4 compared to vignettes 5-11. The change from the core topics to lesser topics across all conditions could have interpreted as X distancing themselves from the participant, which could have led to decreased liking perceptions. There is also the chance that participants had other feelings during the course of the experiment that they could not express, including boredom, or disliking of the individual in the vignettes that were unrelated to the depenetration. Future studies should attempt to account for alternative explanations such as these. Additionally, our sample largely consisted of college students, with low diversity, which may also impact the extent to which our findings apply to the broader population.

Discontinuous growth models provide a unique opportunity for group-level tipping points research. The present study assumed standard tipping points for each condition. Our analysis focused solely on trends in group thinking, or group-level tipping

points. While this method revealed crucial trends, individual-level tipping points were not the main focus and were not represented apart from the random effects. In other words, it is highly probable that participants tipped at different stages of the experimental manipulation, rather than the assumed and pre-determined tipping points. The absence of this information poses a gap in knowledge about change thresholds on an individual level. Future studies could benefit from capturing the within participant transition points and allowing for the slopes to be generated per participant, and then we could therefore compare post slopes from participants who had earlier and later transition points; and compare growth rates for those who react “too soon” or “too late”.

Our model estimated the linear effects of depenetration. However, these models can also calculate curvilinear associations. These curvilinear effects were outside of the scope of the original thesis. Future studies should consider the curvilinear effects that are present in the data. Likewise, other correlates in the data such as personality, demographics, and life experience may act as moderators to these effects which are not currently implemented in this model. Future studies should further explore the effects of depenetration as understanding these individual differences may also explain what factors may heighten or halt reactions to information sharing behaviors within relationships. Additionally, our manipulation included specific elements of a relationship over a limited amount of time. In other friendships that have more time, commitment, and other circumstantial factors that built the relationship. Therefore, these effects should be considered akin to the stranger research previous studies have done. Further studies are needed to look at depenetration processes within active friendships in which existing

factors such as relationship length, and commitment, are likely to cause variations in the response to depenetration.

O'Brien's flexible threshold theory (2024) may make interesting contributions because ultimately, individuals will have to detect when the information that is being shared is being purposefully less intimate. Once that is determined, individuals can then decide when to like them less which we found in this case. But that when may be different for each individual. For example, relationships where intimacy is higher may exhibit more reciprocation (Sprecher et al., 2013) or less (Derlega et al., 1976). In other words, how much reciprocation is required may be subjective and based on each specific relationship. The previous research findings conflict as to whether a certain amount of reciprocation is necessary for relationship maintenance; however, both can be true. Some friendships may, on average, require more or less reciprocation than. Depending on individual values, the types of conversations covered may also be an important consideration (e.g., talking about highly intimate information often). Building future studies upon individual maintenance needs within a relationship may help understand sensitivity to depenetration.

Implications

Several practical applications lie in this body of research. Understanding depenetration processes in the context of interpersonal relationships is important to understanding interpersonal relationships themselves. Expanding our understanding of self-disclosure through its reverse process may reveal important information regarding the limits to the norm of reciprocity within friendships. Likewise, knowing how

depenetration affects the relationship between individuals is valuable insight, especially since those who have the hardest time talking about these intimate details may inadvertently be pushing people away. The interpretation of these signals from the receivers is important as well to see how they respond and how they may even attempt to encourage self-disclosure.

How individuals respond to disclosure, both in penetrative and depenetrative processes, is important for understanding relationship maintenance. While our design focused on friendships, these effects may explain other phenomena such as parental estrangement in families, relationship dissolution in romantic relationships, or other similarly intimate relationships individuals may have. Aiding in the understanding of interpersonal communication is vital, especially in instances of individuals struggling with mental health. Other examples of information that may be too difficult to share (e.g. traumatic life events, sexual abuse, etc.) may also benefit from a depenetration perspective. Each of the prior examples are relatively intimate pieces of information which each carry their own concerns about negative evaluation from peers, which may motivate an individual to share less.

In the modern day, communication has changed drastically. The internet has allowed for instantaneous messaging from vast distances. These changes in communication, and communication norms, may have changed the perceptions of what types of communication are required for relationship maintenance. For example, infrequent text conversations may be enough for some individuals, whereas others may want to call over the phone more. Due to how instantaneous messaging can be, there are

some perceptions about responding “too late” or being “dry” in one’s messages.

Depenetration research has an interesting opportunity to observe how conventions of self-disclosure and relationship maintenance have changed as communication technologies advanced. Biases with our own perceptions may become increasingly important because prior experiences could cloud the judgement of future interactions. For example, if people are used to talking every single day, but then go on to talk every weekday. These changes, while to some could be considered minor, may be enough of a change for individuals to be concerned about changes within the relationship through their perception. Fluctuations are bound to occur in some relationships and understanding how perceptions can be improved may help individuals understand their own biases for how they interpret information especially in an environment where communication is faster than previous years.

Relationships fading with time can be a natural occurrence and detecting this phenomenon through depenetration is important. Understanding how people can detect these signals of change for a relationship can either help individuals repair the existing relationship or separate on amicable terms. Detecting depenetration earlier may be a practical way of avoiding sunk cost fallacies. In a relationship, even if someone else is not as invested, we may make attempts to stay connected with the other person. However, without knowing the other person’s current intentions, we may be investing in a relationship the other person no longer values. These instances of depenetration do not always have to be nefarious. Individuals may have changing lives which demand their attention in ways in which they neglect their relationships with friend and family. These

signals, despite different intentions, may be treated equally depending on how the individual is perceived. In more extreme cases, individual's misperception of these signals may affect those who are in the most need. Individuals who are reluctant to share information due to previous experiences of negative reactions, or a general reluctance to share highly intimate information may come across as decreasing the relational intimacy. In all cases, distinguishing between accurate and successful responding is important. For example, an individual may successfully act What this study shows is that decreases in intimacy can negatively affect the relationship.

Within clinical settings there may be a need to educate individuals on the difference between accurately responding and successfully responding to signals of change. Individuals can successfully change their perceptions, and yet it may not be accurate to the situation. In instances of someone becoming reserved due to mental health issues, an individual may *successfully* react by cutting off communication. But can this response be considered accurate? Much like previous signal research, the goal is to separate noise from signal. Future interventions within multiple areas may benefit from understanding how individuals may change their perceptions in inconstant environment so that they may not only successfully respond but make accurate perception changes as well.

Not all depenetration signals are equal and may vary on intentions. Some may be silent cries for help, while others are genuine signals of disinterest which require mutual withdrawal. Understanding how these processes are perceived can shape interventions which may help individuals to move on in cases where a relationship failing, or to

continue to offer support in individuals who are closed off. Being able to discriminate between these signals better will make for better relationships and maximize the likelihood of proper relational investment. Our study also shows interesting results for the reconnection process. Despite the changes to the relationship, individuals were able to grow to like X again. In other words, for those who are sharing less or closing themselves off there is a chance at reconnection. Understanding the processes of depenetration, a potential cause of relationship dissolution, can help to make targeted interventions which may facilitate reconnection. Likewise, intervention or not, these results may be encouraging for individuals going through hardships and are questioning whether or not they can reach out to a previous friend of theirs.

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Table 1: Dummy Coding for Depenetration and Reconnection Models

	Preslope 1	Transition 1	Postslope 1	Preslope 2	Transition 2	Postslope 2
Vignette 1	0	0	0	X	X	X
Vignette 2	1	0	0	X	X	X
Vignette 3	2	0	0	X	X	X
Vignette 4	3	0	0	X	X	X
Vignette 5	4	0	0	0	0	0
Vignette 6	5	1	0	1	0	0
Vignette 7	6	1	1	2	0	0
Vignette 8	7	1	2	3	0	0
Vignette 9	8	1	3	4	0	0
Vignette 10	9	1	4	5	0	0
Vignette 11	10	1	5	6	0	0
Vignette 12	X	X	X	7	1	0
Vignette 13	X	X	X	8	1	1
Vignette 14	X	X	X	9	1	2

Note: Preslope, Transition, and Postslope 1 are for the depenetration model (Vignettes 1-11), whereas preslope, transition, and postslope 2 are for the reconnection model (Vignettes 5-14). X's indicate that a vignette was excluded from dummy coding in order to distinguish between the depenetration and reconnection segments.

Table 2: Liking at an observational level

	Liking	Mean Liking by Condition	
Vignette 5 ($M = 4.66$ $SD = 1.15$)	3 = Somewhat dislike: 82 2 = Dislike: 29 1 = Very much dislike: 11	Non-Dep. ($M = 4.82$, $SD = .93$) G. Negative ($M = 4.48$, $SD = 1.25$) Surface ($M = 4.63$, $SD = 1.09$)	G. Positive ($M = 4.80$, $SD = 1.16$) G. Neutral ($M = 5.02$, $SD = 1.06$) No Contact ($M = 4.18$, $SD = 1.21$)
Vignette 6 ($M = 4.64$ $SD = 1.17$)	3 = Somewhat dislike: 34 2 = Dislike: 13 1 = Very much dislike: 5	Non-Dep. ($M = 4.78$, $SD = .94$) G. Negative ($M = 4.59$, $SD = 1.20$) Surface ($M = 4.58$, $SD = 1.16$)	G. Positive ($M = 4.89$, $SD = 1.12$) G. Neutral ($M = 5.00$, $SD = 1.08$) No Contact ($M = 3.97$, $SD = 1.25$)
Vignette 7 ($M = 4.56$ $SD = 1.21$)	3 = Somewhat dislike: 25 2 = Dislike: 14 1 = Very much dislike: 6	Non-Dep. ($M = 4.78$, $SD = .96$) G. Negative ($M = 4.40$, $SD = 1.29$) Surface ($M = 4.42$, $SD = 1.19$)	G. Positive ($M = 4.93$, $SD = 1.06$) G. Neutral ($M = 5.05$, $SD = 1.02$) No Contact ($M = 3.74$, $SD = 1.27$)
Vignette 8 ($M = 4.50$ $SD = 1.30$)	3 = Somewhat dislike: 32 2 = Dislike: 17 1 = Very much dislike: 11	Non-Dep. ($M = 4.70$, $SD = 1.03$) G. Negative ($M = 4.24$, $SD = 1.35$) Surface ($M = 4.28$, $SD = 1.31$)	G. Positive ($M = 4.96$, $SD = 1.05$) G. Neutral ($M = 5.14$, $SD = 1.03$) No Contact ($M = 3.57$, $SD = 1.34$)
Vignette 9 ($M = 4.41$ $SD = 1.31$)	3 = Somewhat dislike: 23 2 = Dislike: 15 1 = Very much dislike: 4	Non-Dep. ($M = 4.56$, $SD = 1.10$) G. Negative ($M = 4.23$, $SD = 1.39$) Surface ($M = 4.15$, $SD = 1.27$)	G. Positive ($M = 4.92$, $SD = 1.03$) G. Neutral ($M = 5.07$, $SD = 1.03$) No Contact ($M = 3.45$, $SD = 1.31$)
Vignette 10 ($M = 4.29$ $SD = 1.36$)	3 = Somewhat dislike: 23 2 = Dislike: 22 1 = Very much dislike: 6	Non-Dep. ($M = 4.48$, $SD = 1.23$) G. Negative ($M = 4.13$, $SD = 1.44$) Surface ($M = 4.04$, $SD = 1.32$)	G. Positive ($M = 4.79$, $SD = 1.10$) G. Neutral ($M = 4.88$, $SD = 1.11$) No Contact ($M = 3.35$, $SD = 1.37$)
Vignette 11 ($M = 4.04$ $SD = 1.35$)	3 = Somewhat dislike: 49 2 = Dislike: 26 1 = Very much dislike: 6	Non-Dep. ($M = 4.38$, $SD = 1.24$) G. Negative ($M = 3.79$, $SD = 1.38$) Surface ($M = 3.81$, $SD = 1.32$)	G. Positive ($M = 4.42$, $SD = 1.19$) G. Neutral ($M = 4.52$, $SD = 1.12$) No Contact ($M = 3.26$, $SD = 1.43$)
Total	3 = Somewhat dislike: 268 2 = Dislike: 136 1 = Very much dislike: 49	Non-Dep. ($N = 132$) G. Negative ($N = 141$) Surface ($N = 138$)	G. Positive ($N = 143$) G. Neutral ($N = 140$) No Contact ($N = 131$)

Note: G. = Gradual, Dep. = Depenetration

Table 3 Depenetration Model Fit Statistics

Depenetration	Model	df	AIC	BIC	logLik	Comparison	L.Ratio	Sig.
Null	0	3	22898.21	22919.53	-11446.10	—	—	—
Time	1	5	17974.26	18009.80	-8982.13	0 vs. 1	4927.95	<.001
Time + Trans + Postslope	2	16	17413.19	17526.93	-8690.59	1 vs. 2	583.07	<.001
Time + Trans * Con. + Postslope * Con.	3	31	17223.15	17443.52	-8580.58	2 vs. 3	220.03	<.001

Note: Model 2 for each outcome includes the discontinuous growth model parameters, and model 3 estimates these coefficients per condition

Table 4: Depenetration Model Estimates

Depenetration	<i>b</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Sig.
Intercept	4.98	.03	8205	163.90	< .001
Preslope1	-.07	.01	8205	-5.32	< .001
Trans1	.12	.02	8205	4.83	< .001
Postslope1	-.04	.01	8205	-2.55	.01

Table 5: Depenetration Model Estimates by Condition

Condition Transition & Postslope Parameters	<i>Est.</i>	<i>SE</i>	<i>df</i>	CI[95%]
Non-depenetration				
Transition1	.30	.05	8195	[.20,.41]
Postslope1	-.01	.02	8195	[-.05,.02]
Gradual Positive				
Transition1	.27	.05	8195	[.17,.37]
Postslope1	.01	.02	8195	[-.03,.05]
Gradual Negative				
Transition1	-.08	.05	8195	[-.18,.02]
Postslope1	-.05	.02	8195	[-.09,-.01]
Gradual Neutral				
Transition1	.31	.05	8195	[.21,.42]
Postslope1	-.00	.02	8195	[-.04,.03]
Surface				
Transition1	.06	.05	8195	[-.05,.17]
Postslope1	-.07	.02	8195	[-.11,-.03]
No Contact				
Transition1	-.21	.06	8195	[-.32,-.10]
Postslope1	-.10	.02	8195	[-.14,-.06]

Table 6: Reconnection Model Fit Statistics

Reconnection	Model	df	AIC	BIC	logLik	Comparison	L.Ratio	Sig.
Null	0	3	18079.42	18100.41	-9036.71	—	—	—
Time	1	7	14814.65	14863.64	-7400.33	0 vs. 1	3272.77	<.001
Time + Trans + Postslope	2	16	14320.12	14432.10	-7144.06	1 vs. 2	512.53	<.001
Time* Con. + Trans * Con. + Postslope * Con.	3	36	14072.86	14324.81	-7000.43	2 vs. 3	287.27	<.001

Note: Model 2 for each outcome includes the discontinuous growth model parameters, and model 3 estimates these coefficients per condition

Table 7: Reconnection Model Estimates

	<i>b</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Sig.
Reconnection					
Intercept	4.72	.04	7264	117.42	< .001
Preslope2	-.10	.01	7264	-17.90	< .001
Trans2	-.34	.03	7264	-12.58	< .001
Postslope2	.31	.02	7264	18.89	< .001

Table 8: Reconnection Model Estimates by Condition

Condition Transition & Postslope Parameters	<i>Est.</i>	<i>SE</i>	<i>df</i>	CI[95%]
Non-depenetration				
Transition2	-.06	.07	7249	[-.19,.07]
Postslope2	-.02	.04	7249	[-.10,.05]
Gradual Positive				
Transition2	-.48	.06	7249	[-.61,-.36]
Postslope2	.25	.04	7249	[.18,.32]
Gradual Negative				
Transition2	-.57	.06	7249	[-.70,-.44]
Postslope2	.47	.04	7249	[.40,.54]
Gradual Neutral				
Transition2	-.39	.06	7249	[-.52,-.27]
Postslope2	.23	.04	7249	[.16,.30]
Surface				
Transition2	-.36	.07	7249	[-.49,-.23]
Postslope2	.43	.04	7249	[.36,.51]
No Contact				
Transition2	-.22	.07	7249	[-.36,-.09]
Postslope2	.53	.04	7249	[.45,.60]

Table 9: Mean Liking at the End of Depenetration and Reconnection

	Depenetration Model Vignette 11 (end of Postslope 1)	Reconnection Model Vignette 14 (End of Postslope 2)
Non-depenetration	$M = 4.38, SD = 1.24$	$M = 4.05, SD = 1.35$
Gradual Positive	$M = 4.42, SD = 1.19$	$M = 4.68, SD = 1.10$
Gradual Negative	$M = 3.79, SD = 1.38$	$M = 4.37, SD = 1.28$
Gradual Neutral	$M = 4.52, SD = 1.12$	$M = 4.71, SD = 1.18$
Surface	$M = 3.81, SD = 1.32$	$M = 4.42, SD = 1.24$
No Contact	$M = 3.26, SD = 1.43$	$M = 4.11, SD = 1.19$

Figure A

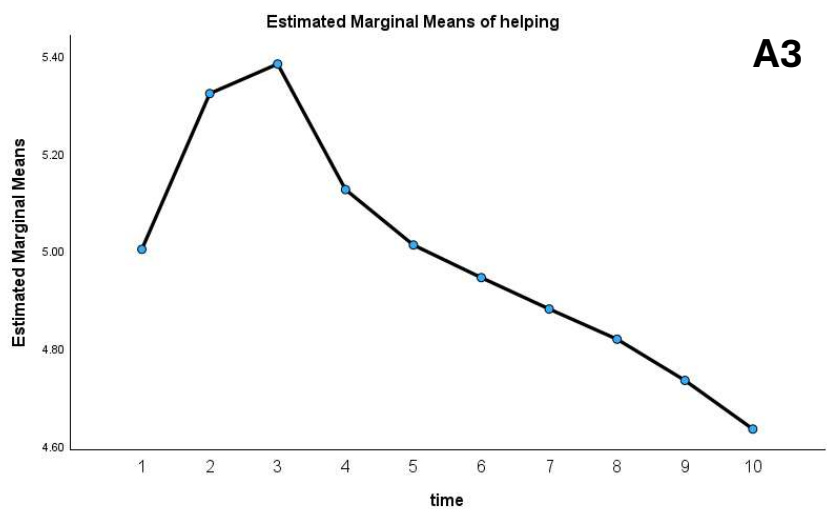
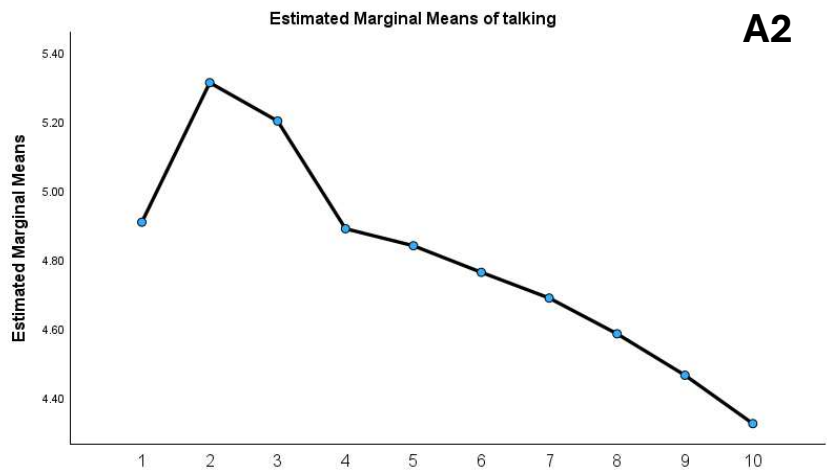
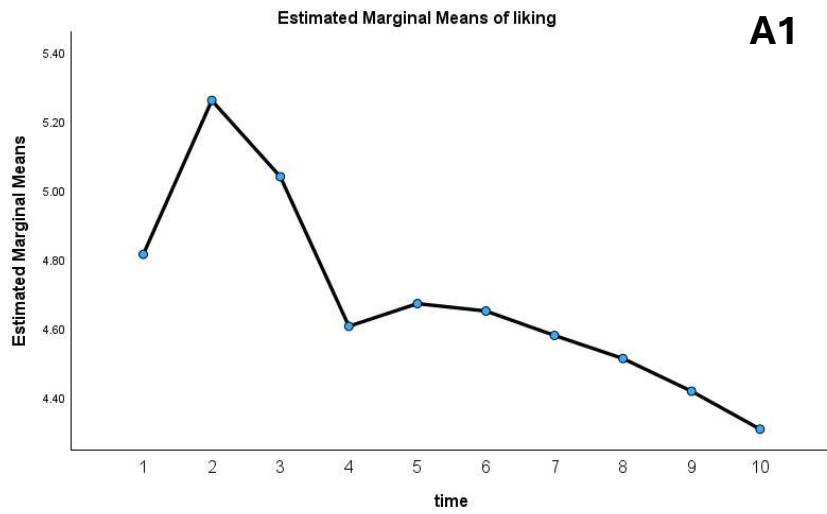


Figure B

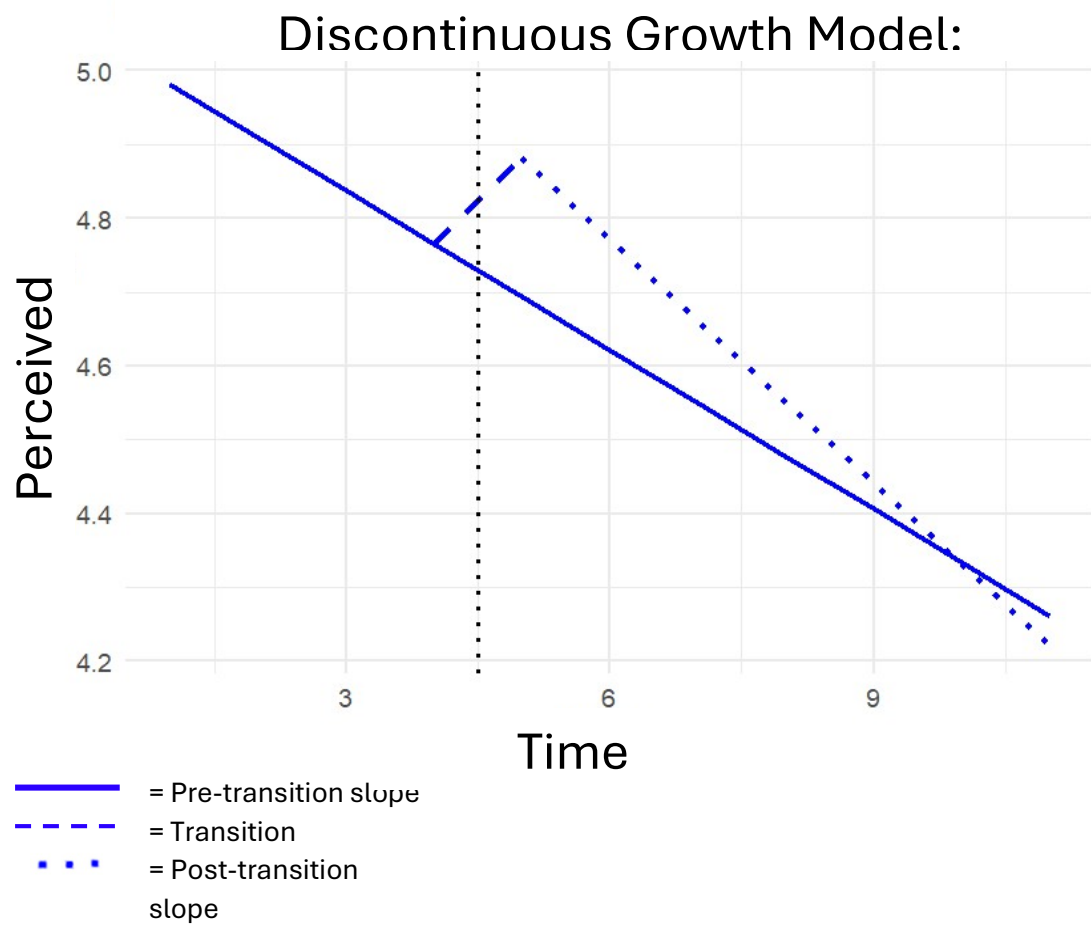


Figure C

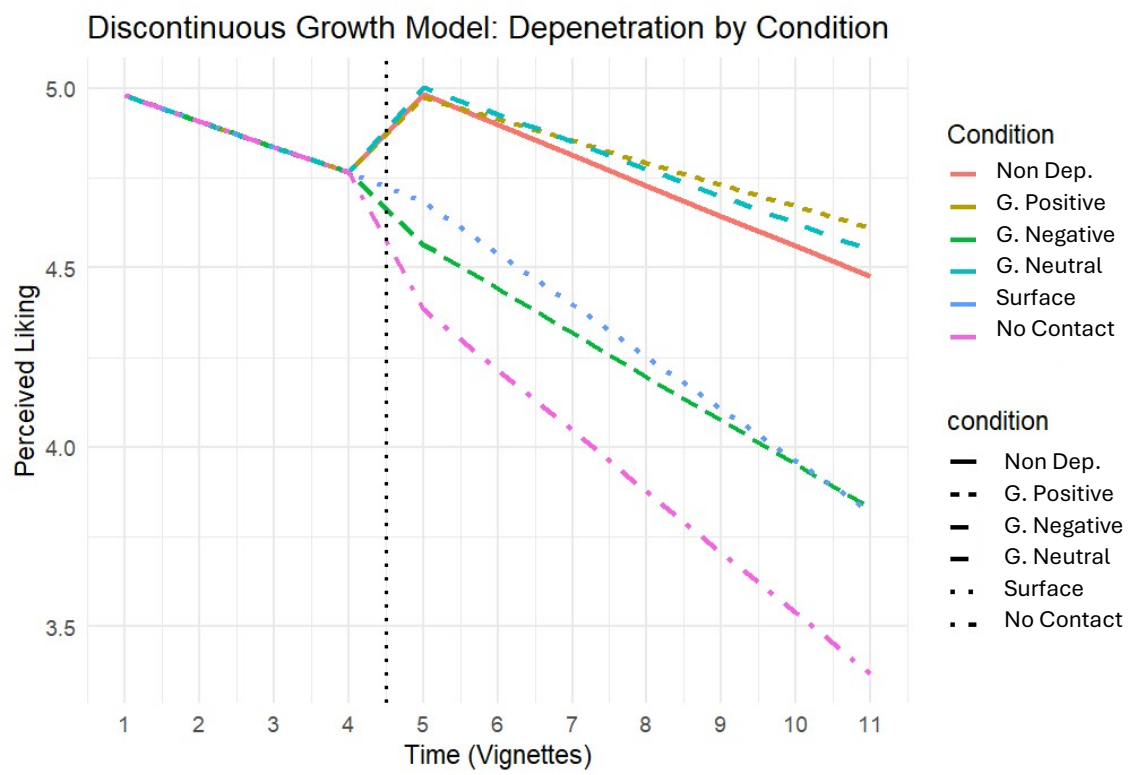


Figure D

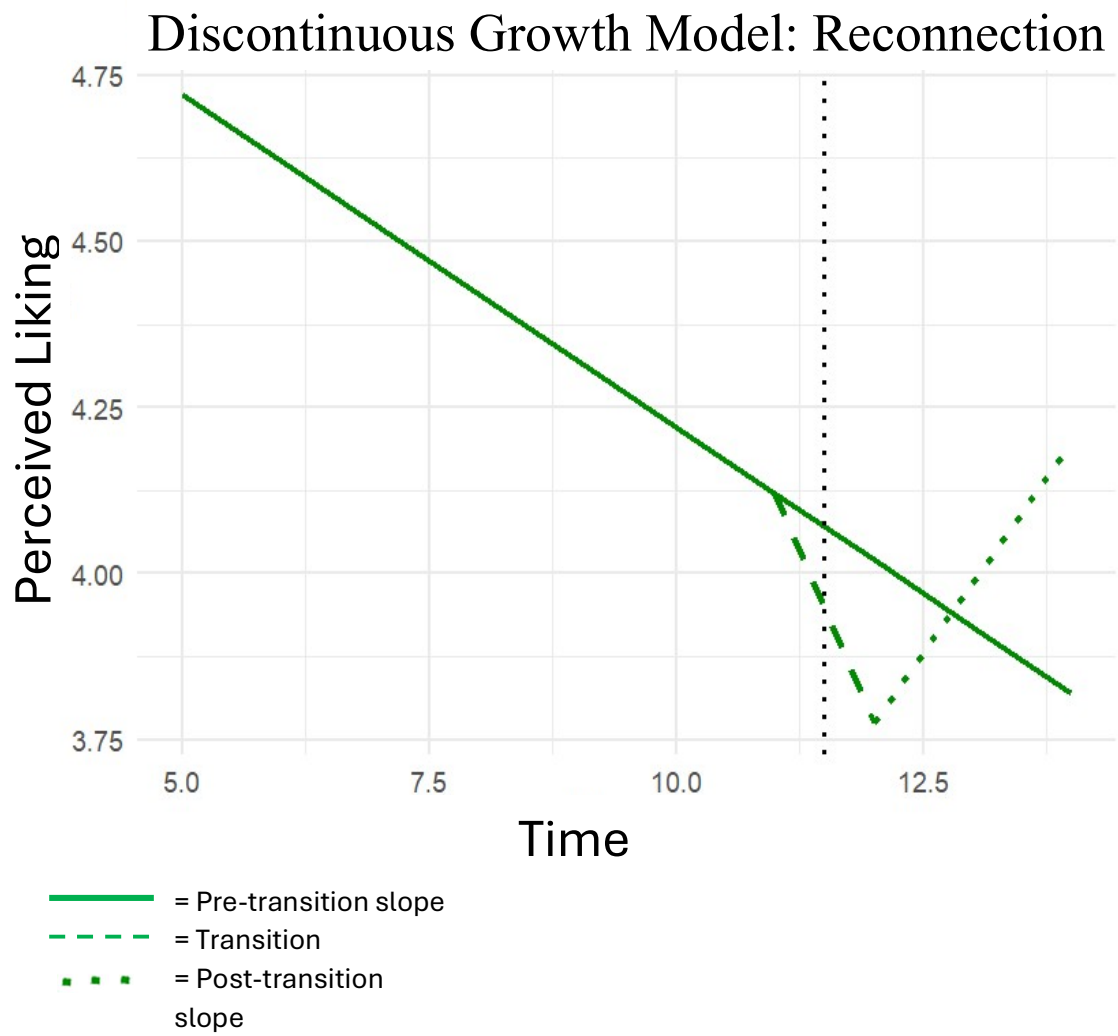


Figure E

Reconnection by Condition

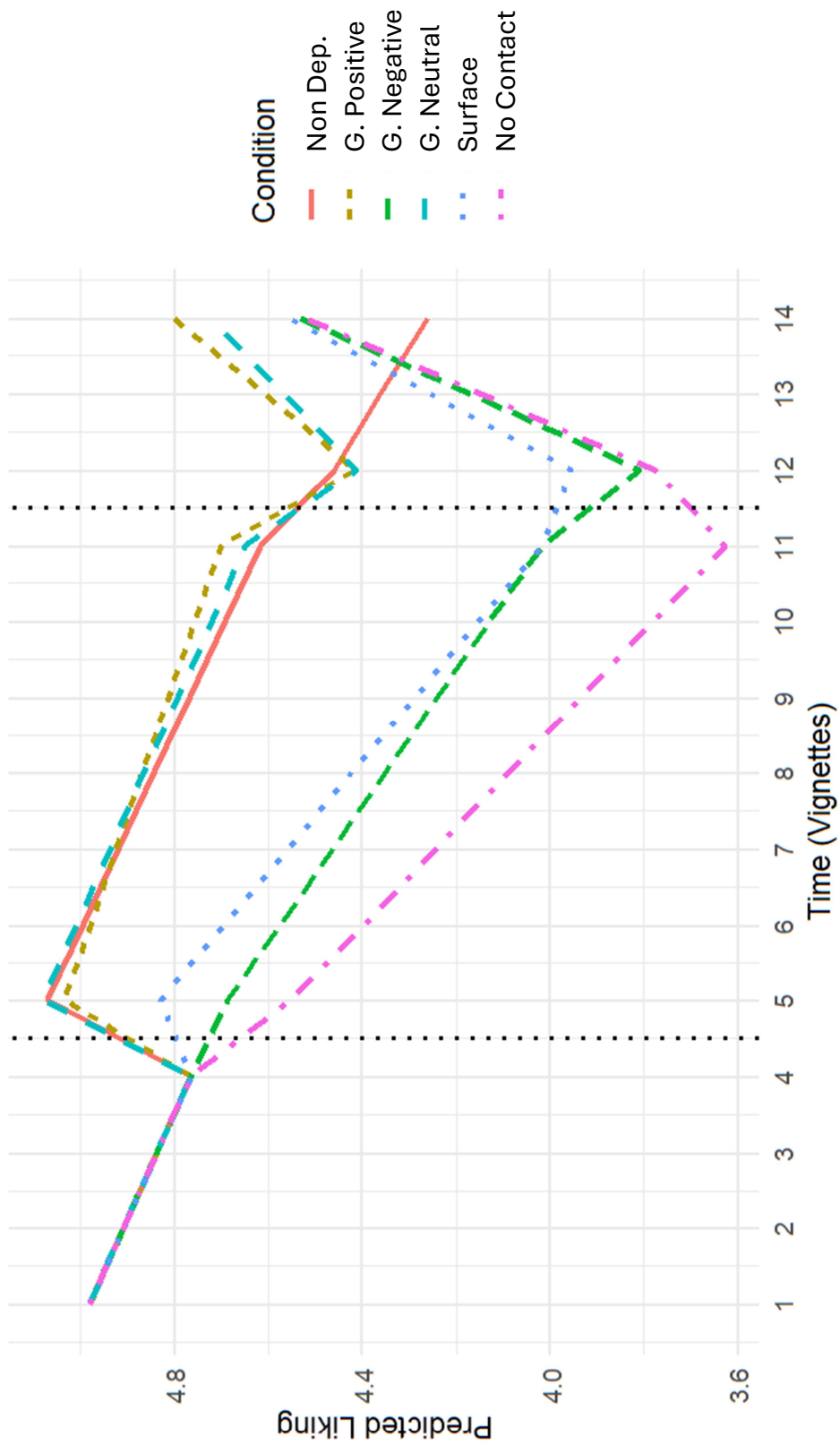


Figure F: Depenetration by Rate of Depenetration

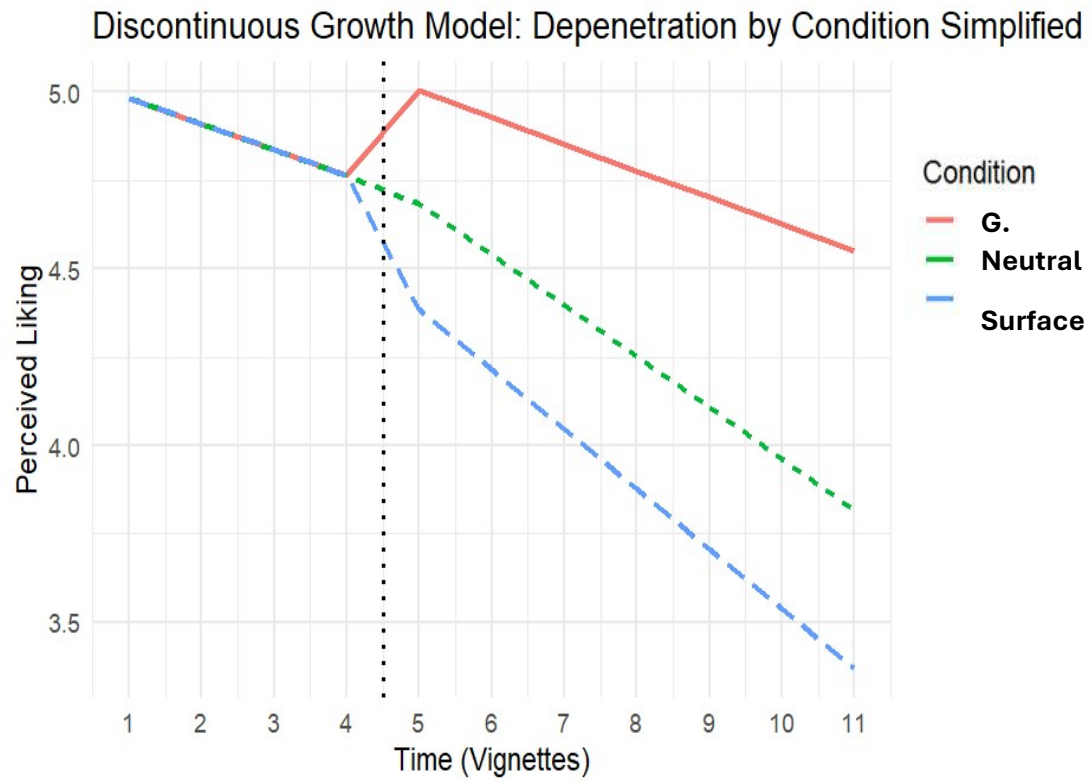
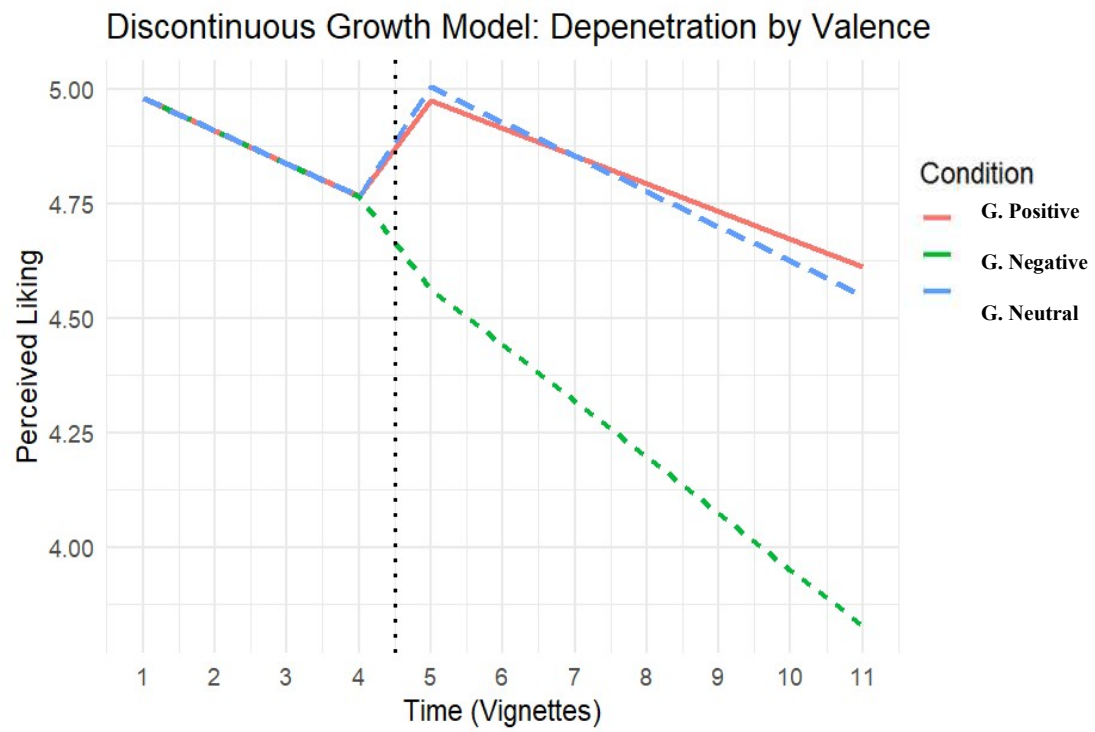


Figure G: Depenetration by Valence



Appendices

Appendix A: Experimental Manipulation Vignettes

Experiment Instructions: For this next section you will be reading a series of vignettes about a fellow college student referred to as "X". Please read each of them thoroughly. After reading them you will be answering a series of questions regarding your attitudes towards X please select the statement that best describes your current attitude towards X after reading each vignette	
Vignette 1	X is a college student attending your university. Both of you are of the same gender, and around the same age. You take some classes with them and eventually begin to talk to one another. Overtime the two of you share your likes and interests. Both of you like the same kinds of music, tv shows, and you're both even the same major in college. They share common interests with you.
Vignette 2	Overtime, as the two of you grow closer together you both begin to share some more serious topics with one another. Both of you share the problems that you have been having with individuals in your lives, including bosses at work, relationship and family issues, and professors at school. You are both comfortable with sharing about your personal beliefs about the world without a fear of judgement.
Vignette 3	Further along you both begin to share even more information about one another: information that has not been shared with anyone else. X shares problems that they have been recently experiencing with alcohol. They have been consuming more and more recently and are worried that they have developed a problem. X is not quite sure what to do, but they feel confident in telling you this information. They say that they will try to seek help from a therapist or physician once they know whether or not it is an actual problem. Afterall, X has classes and exams and does not want to go to the doctor's if that means taking time away from assignments, studying, and campus activities. X asks you to reassure them that you won't tell anyone else. It is very important to them and they do not want anyone else to know about it except you.
Vignette 4	One week later X comes to you again about their alcohol problem. The night before they drank too much and were late to class on the day of an exam. They continue to elaborate on their drinking problems to you.

	Non-Dep.	Gradual Positive	Gradual Negative	Gradual Neutral	Surface	No Contact
Vignette 5	One week later X tells you about their family.	One week later X and you talk again about how they miss their family.	One week later X and you talk again about how they dislike their family.	One week later X tells you about their family.	One week later X talks to you about the weather.	One week later you and X have not talked much.
Vignette 6	One week later X talks about their professor.	One week later X shared their opinions about a professor they like.	One week later X shared their opinions about a professor they did not like.	One week later X talks about their professor.	One week later X discusses parking on campus.	One week later you and X have not talked much.
Vignette 7	One week later X talks about how they have a new boss at work.	One week later X talks about how satisfied they are with their boss at work.	One week later X talks about how annoyed they are with their boss at work.	One week later X talks about how they have a new boss at work.	One week later X talks to you about the weather.	One week later you and X have not talked much.
Vignette 8	One week later X tells you about their family again.	One week later X talks about a new song they like.	One week later X rants about a new song they dislike.	One week later X talks about a new song that recently came out.	One week later X discusses parking on campus.	One week later you and X have not talked much.
Vignette 9	One week later X talks about their	One week later X shares how lucky they were	One week later X complains about	One week later X talks about the	One week later X talks to you about	One week later you and X have not

	professor again.	to get a parking spot on campus today.	parking on campus.	parking on campus.	the weather.	talked much.
Vignette 10	One week later X talks about their boss at work again.	One week later X discusses how they like the current weather with you.	One week later X discusses how they dislike the current weather with you.	One week later X discusses the weather.	One week later X discusses parking on campus.	One week later you and X have not talked much.
Vignette 11	One week later X tells you about their family again.	One week later you and X have not talked much.				
Vignette 12	One week later X talks about their professor again.	One week later you over hear from classmates X missed class again because of their drinking.				
Vignette 13	One week later X talks about their boss at work again.	One week later and X approaches you again and tries to start up a conversation. They tell you about how they have been lately, and how they are still struggling with their problem. However, they want to talk about other things and the two of you start talking about your likes and interests, including music, clothes, games, tv shows, celebrities, etc.				
Vignette 14	One week later X tells you about their family again.	One week later both talk about previously discussed topics regarding people in your lives. Both of you share the problems that you have been having with individuals including bosses at work, relationships, family issues, and professors at school.				

Note: Each condition experienced the same scenario in vignettes 1-4. However, the manipulation vignettes (i.e., vignettes 5-10) differed based on the condition participants were assigned to. Vignettes 11-14 were the same for all participants except for condition 1: the non-depenetration condition.

Appendix B: Interpersonal Reactions

How much do you like X?

1 = I do not like X at all	2 = I like X very little	3 = I like X somewhat	4 = I like X moderately	5 = I like X quite a bit	6 = I like X a lot
-------------------------------	-----------------------------	--------------------------	----------------------------	-----------------------------	-----------------------

How likely are you to continue talking with X over the next week?

1 = I would not talk to X at all	2 = I would most likely not talk to X	3 = I am somewhat likely to talk to X	4 = I probably would talk to X	5 = I would most likely talk to X	6 = I would definitely talk to X
--	--	--	---	---	--

How willing are you to help X over the next week if X needs help?

1 = I would not help X at all	2 = I would most likely not help X	3 = I am somewhat likely to help X	4 = I would probably help X	5 = I am most likely going to help X	6 = I would definitely help X
-------------------------------------	--	---	-----------------------------------	---	-------------------------------------

Appendix C: Syntax for Discontinuous Growth Models

```
library(foreign)
```

```
library(nlme)
```

```
sdd <- read.spss("SDD Thesis Final Project - Longways2.sav", to.data.frame = TRUE,  
use.data.labels = FALSE)
```

```
##### SUGGESTION
```

```
# Subset to complete cases for all model variables
```

```
sdd_sub <- na.omit(sdd[, c("like", "preslope1", "id")])
```

```
# Fit both models on this subset
```

```
sub.sdd.null.like <- lme(like ~ 1,  
                        random = ~ 1 | id,  
                        data = sdd_sub,  
                        method = "ML",  
                        control = list(opt = "optim"))  
summary(sub.sdd.null.like)
```

```
sub.sdd.time.like <- lme(like ~ 1 + preslope1,  
                        random = ~ 1 | id,  
                        data = sdd_sub,  
                        method = "ML",  
                        control = list(opt = "optim"),  
                        correlation = corAR1())
```

```

# Now the anova will work
anova(sub.sdd.null.like, sub.sdd.time.like)

##### Null Models #####

sdd.null.like <-lme(like~1,
                  random = ~ 1|id,
                  data=sdd,
                  method="ML",
                  na.action=na.omit,
                  control=list(opt="optim"))
summary(sdd.null.like)

VarCorr(sdd.null.like)
ICClike = 0.9672506 / (0.9672506 + 0.5930646)
print(ICClike)
### 61.99% between subjects differences

##### Time Models #####

sdd.time.like <-lme(like~1 + preslope1,
                  random = ~ 1|id,
                  data=sdd,
                  method="ML",
                  na.action=na.omit,
                  control=list(opt="optim"),

```

```

correlation=corAR1())
summary(sdd.time.like)
anova(sdd.null.like,sdd.time.like)

##### Discontinuous Models 1 #####
sdd.disc.like <-lme(like~1 + preslope1 + trans1 + postslope1,
  random = ~ 1 + preslope1 + trans1 + postslope1|id,
  data=sdd,
  method="ML",
  na.action=na.omit,
  control=list(opt="optim"),
  correlation=corAR1())
summary(sdd.disc.like)
anova(sdd.time.like,sdd.disc.like)

##### Suggestions #####

install.packages("emmeans")
library(emmeans)
sdd$Condition <- factor(sdd$Condition)
sdd$Condition <- relevel(sdd$Condition, ref = 6)

##### Condition Models #####
##### LIKING

gsdd.disc.like <-lme(like~1 + preslope1 + trans1*Condition + postslope1*Condition,
  random = ~ 1 + preslope1 + trans1 + postslope1|id,

```

```
data=sdd,  
method="ML",  
na.action=na.omit,  
control=list(opt="optim"),  
correlation=corAR1())  
summary(gsdd.disc.like)
```

```
anova(sdd.disc.like,gsdd.disc.like)
```

```
plot(gsdd.disc.like)
```

```
intercepts <- emmeans(gsdd.disc.like, ~ Condition)  
summary(intercepts)  
contrast(intercepts, method = "pairwise")
```

```
emmeans(gsdd.disc.like, ~ preslope1 | Condition)  
emmeans(gsdd.disc.like, ~ trans1 | Condition)  
emmeans(gsdd.disc.like, ~ postslope1 | Condition)
```

```
likepreslope1_emm1 <- emtrends(gsdd.disc.like, var = "preslope1", specs = "Condition")  
summary(likepreslope1_emm1)
```

```
liketrans1_emm1 <- emtrends(gsdd.disc.like, var = "trans1", specs = "Condition")  
summary(liketrans1_emm1)
```

```

likepostslope1_emm1 <- emtrends(gsdd.disc.like, var = "postslope1", specs =
"Condition")

summary(likepostslope1_emm1)

contrast(likepreslope1_emm1, method = "pairwise")
contrast(liketrans1_emm1, method = "pairwise")
contrast(likepostslope1_emm1, method = "pairwise")

liketrans1_emmtrend <- emtrends(gsdd.disc.like, var = "trans1", specs = "Condition")
likepostslope1_emmtrend <- emtrends(gsdd.disc.like, var = "postslope1", specs =
"Condition")

summary(liketrans1_emmtrend)
summary(likepostslope1_emmtrend)

##### Part 2 #####

##### LIKING 2
sdd_sub2 <- na.omit(sdd[, c("like", "preslope2", "id")])

# Fit both models on this subset
sub.sdd.null.like2 <- lme(like ~ 1,
      random = ~ 1 | id,
      data = sdd_sub2,
      method = "ML",
      control = list(opt = "optim"))
summary(sub.sdd.null.like2)

```

```
sub.sdd.time.like2 <- lme(like ~ 1 + preslope2,
  random = ~ 1 + preslope2 | id,
  data = sdd_sub2,
  method = "ML",
  control = list(opt = "optim"),
  correlation = corAR1())
```

```
anova(sub.sdd.null.like2,sub.sdd.time.like2)
```

```
##### Time
```

```
sdd.time.like2 <-lme(like~1 + preslope2,
  random = ~ 1 + preslope2|id,
  data=sdd,
  method="ML",
  na.action=na.omit,
  control=list(opt="optim"),
  correlation=corAR1())
```

```
summary(sdd.time.like2)
```

```
##### Discontinuous Models 2 #####
```

```
##### Discontinuous growth models
```

```
sdd.disc.like2 <-lme(like~1 + preslope2 + trans2 + postslope2,
  random = ~ 1 + preslope2 + trans2 + postslope2|id,
```

```

data=sdd,
method="ML",
na.action=na.omit,
control=list(opt="optim"),
correlation=corAR1())
summary(sdd.disc.like2)

```

```

anova(sdd.time.like2,sdd.disc.like2)

```

```

##### Conditions #

```

```

gsdd.disc.like2 <-lme(like~1 + preslope2 * Condition + trans2 * Condition + postslope2
* Condition,

```

```

random = ~ 1 + preslope2 + trans2 + postslope2|id,

```

```

data=sdd,

```

```

method="ML",

```

```

na.action=na.omit,

```

```

control=list(opt="optim"),

```

```

correlation=corAR1())

```

```

summary(gsdd.disc.like2)

```

```

anova(sdd.disc.like2,gsdd.disc.like2)

```

```

intercepts2 <- emmeans(gsdd.disc.like2, ~ Condition)

```

```

summary(intercepts2)

```

```

contrast(intercepts2, method = "pairwise")

```

```

emmeans(gsdd.disc.like2, ~ preslope2 | Condition)
emmeans(gsdd.disc.like2, ~ trans2 | Condition)
emmeans(gsdd.disc.like2, ~ postslope2 | Condition)
contrast(intercepts, method = "pairwise")

likepreslope2_emm1 <- emtrends(gsdd.disc.like2, var = "preslope2", specs =
"Condition")
summary(likepreslope2_emm1)
liketrans2_emm1 <- emtrends(gsdd.disc.like2, var = "trans2", specs = "Condition")
summary(liketrans2_emm1)

likepostslope2_emm1 <- emtrends(gsdd.disc.like2, var = "postslope2", specs =
"Condition")
summary(likepostslope2_emm1)

contrast(likepreslope2_emm1, method = "pairwise")
contrast(liketrans2_emm1, method = "pairwise")
contrast(likepostslope2_emm1, method = "pairwise")

likepreslope2_emmtrend <- emtrends(gsdd.disc.like2, var = "preslope2", specs =
"Condition")
liketrans2_emmtrend <- emtrends(gsdd.disc.talk2, var = "trans2", specs = "Condition")
likepostslope2_emmtrend <- emtrends(gsdd.disc.talk2, var = "postslope2", specs =
"Condition")

summary(talktrans2_emmtrend)
summary(talkpostslope2_emmtrend)

```

Appendix D: IRB Approval Letter



Institutional Review Board

Date: February 28, 2024

Study #: IRB-FY2024-192

Study Title: Self-Disclosure Depenetration Processes

Submission Type: Initial

IRB Decision: Exempt

Research Team:

Paxton Hicks

Kanako Taku

Based on applicable federal regulations, the above referenced study has been determined to be Exempt, with the following categories:

Category 2.(ii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or

Letter and Consent Document:

This letter along with the IRB approved (date-stamped) consent document can be found in Cayuse in the Submission Details page under Letters and Attachments, respectively. Please make sure to use the most recent IRB approved version of the consent form in consenting participants.

Permission from Research Sites:

Please note the following:

- This IRB exemption determination letter means that this research has met one or more of the federal criteria for exemption per 45 CFR 46.104- Exempt Research.
- Before the research is initiated, permission to conduct research at a given site must be obtained from all research locations listed in the IRB submission. You must keep copies of all such permission letters for your files.
- It is the responsibility of each researcher to follow all applicable policies and procedures of any outside institution where the research will be conducted.

Modifications:

Any changes to this exempt project must be reviewed by the IRB prior to initiation by submitting a MODIFICATION request. Do not collect data while the changes are being reviewed. Data collected during this time cannot be used in research.

Record Retention:

Exempt projects will be retained by the IRB office for three years after the last action on the project.

You are approved to start the research. Please retain a copy of this notification for your records.

If you have any questions, please contact the IRB office.

Thank you.

The Oakland University IRB