

Running head: Disclosure drive

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Disclosure drive: Understanding when people disclose private information

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Word count: 2469 (max for Psych Science report is 2500)

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Abstract

To understand when and why people divulge personal information, one must understand how two (often competing) motives operate: the desire to disclose, and the desire for privacy. To illustrate this point, we show that manipulating the salience of information revelation has profoundly different effects on disclosure, depending on the relative activation of the drive to disclose versus the drive to protect one's privacy. Experiment 1 illustrates that when disclosure drive is activated, increasing the salience of revelation increases disclosure. In Experiment 2, we activate different relative mixes of the two motives and show that when the privacy motivation is dominant, increasing the salience of information revelation tends to decrease divulgence, but when disclosure drive is the dominant motivation, salience has the opposite effect on disclosure.

People seem to be driven to disclose personal information. On social networking web sites for example, people routinely and voluntarily broadcast sensitive information – from suggestive photographs to home addresses. In turn, these sites have spawned new ‘micro-blogging’ technologies (i.e. twitter) that offer even more opportunities for impulsive (over)sharing, enabling individuals to broadcast running commentaries on their lives. One website called “Too much information (TMI) on Twitter,” reproduces ‘tweets,’ (i.e. postings), in which people have made highly personal confessions, such as “sneaking off to the bathroom to take naked pics to send to Mr. Crush,” and “Since when should I be ashamed of doing blow?”

Yet, people also seem to have an inherent desire to protect their privacy – perhaps more so now than ever before, given the ubiquity of new technologies that have made privacy intrusions increasingly common. In numerous polls, people report being extremely concerned about their privacy (Westin, 1991), and people regularly take measures to protect it – from protecting their email with passwords to drawing the blinds when undressing. Privacy-preserving services such as identity theft protection are profitable, and consumers are willing to pay a premium to buy sensitive merchandise (such as vibrators and condoms) from web sites that offer greater privacy protection (Tsai, Egelman, Cranor, & Acquisti, 2007). This suggests that many people are willing to incur real costs to protect their privacy. In the extreme, the desire for privacy may even lead individuals to put their lives in harm’s way – an attempt to flee an unrelenting paparazzi may have literally driven Princess Diana to her death.

In this paper, we propose that people have two (often competing) motives: the desire to divulge, and the desire for privacy, and argue that to understand variation in information revelation across situations, one must understand how both motives operate. We propose that most people at different times and in different situations experience each motivation, and,

indeed, sometimes both simultaneously. For example, a newly pregnant woman might have the urge to divulge the pregnancy, but at the same time she may wish to keep it private for the first three months (until the risk of miscarriage is significantly reduced).

Despite the apparent interplay between these two motives in every day life, as Joinson & Paine (2007) aptly note, the connection between privacy and self-disclosure is not well understood. In fact, privacy has received scant attention by psychologists, despite Ellen Berscheid's observation some thirty years ago that "the development of theory and research directly focused upon privacy will enrich even well-established areas of social psychological inquiry" (Berscheid, 1977).

Not surprisingly then, the privacy and self-disclosure literatures have developed largely in isolation from each other.² On the one hand, the privacy literature has tended to assume that when it comes to information sharing, people's dominant motive is to conceal data unless there is a benefit otherwise. This research has therefore tended to focus on people's perceptions of the costs of revealing information, and is concentrated in the disciplines of economics, information systems, and marketing (Andrade, Kaltcheva, & Weitz, 2002; Hoffman, Novak, & Peralta, 1999; Posner, 1978). On the other hand, the self-disclosure literature has tended to focus on the consequences of revealing information (Kelly & McKillop, 1996), and has documented a variety of psychological and health benefits of doing so (Kelly & McKillop, 1996; Laurenceau, Barrett, & Pietromonaco, 1998; McKenna, Green, & Gleason, 2002; Pennebaker, 1995; Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Petrie, Booth, Pennebaker, Davison, & Thomas, 1995; Reis & Shaver, 1988), paying little heed to disclosers' concerns about privacy, and remaining largely silent on the conditions under which people disclose in the first place.

² One notable exception is Derlega and Chaikin's 1977 proposal that the literatures could be integrated by conceptualizing self-disclosure as a "form of boundary adjustment in the maintenance of privacy" (p. 102).

Although these literatures have improved our understanding of privacy on the one hand, and self-disclosure on the other, since they have developed largely independently of each other, neither is equipped to identify the conditions under which people disclose or withhold information. Indeed, privacy researchers are still baffled at how even highly specific attitudes toward privacy do not predict behavior (Norberg, Horne, & Horne, 2007; Spiekermann, Grossklags, & Berendt, 2001); similarly, instruments designed to measure a person's desire to disclose generally fail to predict actual disclosure behavior (Himmelstein & Kimbrough, 1963; Jourard & Lasakow, 1958).

In two studies, we show that manipulating the salience of information revelation has profoundly different effects on disclosure, depending on the relative activation of the drive to disclose versus to protect one's privacy. Experiment 1 shows that the impact of revelation salience on disclosure depends on the strength of disclosure drive – specifically, that when disclosure drive is activated, increasing the salience of revelation increases disclosure. In Experiment 2, we activate different relative mixes of the two desires and show that when the privacy motive is dominant, increasing the salience of information revelation tends to decrease divulgence, whereas when disclosure drive is the dominant motivation, salience has the opposite effect on disclosure.

Our dual motive account therefore predicts a disordinal interaction between revelation salience and drive activation, a prediction distinct from Alter & Oppenheimer's (2009) finding that fluency (or, in other words, metacognitive ease) promotes disclosure. The low salience conditions could be considered disfluent relative to the high salience conditions; fluency would predict a main effect such that people divulge more in the latter condition, irrespective of which drive is dominant.

EXPERIMENT 1

Experiment 1 was a 2x2 between-subjects design in which we manipulated disclosure salience (high vs. low) and disclosure drive (weak vs. strong). We predicted an interaction such that making disclosure salient should facilitate divulgence when the drive to disclose is strong; by contrast, when this drive is relatively weak, making disclosure salient should, if anything, cue privacy concern, causing participants to disclose less. In the latter case, we predicted participants to divulge more when disclosure is less salient.

Method

Procedure

498 participants were recruited through an online platform hosted by Amazon.com (Med age=31; 71.1% female; 71.7% Caucasian, 17.1% Asian, 4.9% African American, 3.5% Hispanic). In exchange for participation, they received a small fixed payment (5 cents) and were entered into a cash lottery (\$50). Participants were first asked to supply their email address. Next, they were asked whether they would like to be emailed the results of the survey (although the way in which they were asked this question was manipulated, as described below). Participants were then asked a series of demographic questions. Finally, they were asked “What is the most unethical thing you have ever done?” A text box appeared immediately below the question, into which participants typed their response.

Manipulations

Disclosure drive. In the *weak* drive condition, participants were asked whether they would “like to receive this survey’s results via email.” In the *strong* drive condition, participants were told that “We have psychologists on hand who will send you personalized feedback on what your responses say about you.” They were then asked whether they would “like to be emailed these results.” Subjects were emailed the results if they had requested them. The email addresses were then destroyed, although we kept a record of whether each subject had provided an email address.

Disclosure salience. We manipulated disclosure salience by modifying the format of the text that participants typed into the textbox to answer the question. In the covert condition, the font was small, thin, and light blue (sample); in the overt condition, the font was large, bold, and black (sample).

Measure

Disclosure. We developed a 5-point scale designed to measure participants’ disclosures in response to the question (Table 1). This approach – of assessing disclosure through content analysis – is common in the disclosure literature (Altman, 1975; A. Joinson, 2001; A. N. Joinson & Paine, 2007; Margulis, 2003). Two research assistants blind to the conditions and hypotheses of the study independently rated the admissions. Inter-rater reliability was .88. Disagreements were resolved by a third rater.

Results

There were no significant differences between conditions in any of the demographic variables. 74.8% of participants provided an email address, and there were no significant differences between conditions in propensity to give an email address. This was as expected, since the request to supply one's email address occurred prior to the disclosure drive manipulation.

As hypothesized, the interaction between disclosure drive and disclosure salience was significant ($F(1, 488)=4.78$, $p_{\text{rep}}=.91$) (Figure 1). There was a simple effect of the disclosure salience manipulation at the strong level of the disclosure drive manipulation ($M_{\text{low salience}}=2.05$, $M_{\text{high salience}}=2.39$, $t(246)=2.13$, $p_{\text{rep}}=.90$, $\eta^2=.27$), but not for the weak disclosure drive level ($M_{\text{low salience}}=2.26$, $M_{\text{high salience}}=2.11$, $t(242)=1.0$, $p_{\text{rep}}=.62$). Although not our dependent measure of interest, word count – a measure plausibly related to self-disclosure – was correlated with the disclosure measure ($r=.31$, $p_{\text{rep}}>.95$); however, there was a high degree of between-person variability ($sd=10.6$ words).

EXPERIMENT 2

In Experiment 1, the salience of information revelation had a different effect on disclosure, depending on the strength of disclosure drive. In Experiment 2, we bring the other motive – the desire for privacy – into the mix by showing that the salience of information revelation has opposite effects on disclosure depending on the relative activation of the drive to disclose versus the desire for privacy. Experiment 2 was a 2x2 between-subjects design in which

we manipulated the salience of disclosure (high vs. low) and the dominant motive (disclosure vs. privacy). The method was the same as Experiment 1, except for the following modifications.

Before the focal question, “what is the most unethical thing you have ever done?” we asked participants to “list a time you did something when you were unsure whether or not it was unethical.” We included this question to control for individual differences in verbosity, given its high between-person variance and significant correlation with disclosure depth seen in Experiment 1.

Motive manipulation. We manipulated the dominant motive (disclosure vs. privacy) by altering the look and feel of the survey. In the disclosure drive condition, the survey was called “How BAD r U?” and featured a cartoon-devil logo and red, comic sans-serif font. In the condition in which the desire to protect one’s privacy was emphasized, the survey was called the “Carnegie Mellon University Survey of Ethical Standards.” Perceptions about the potential recipients of the disclosed information were held constant by informing all participants on the welcome page (which appeared before random assignment) that the survey was being conducted by researchers at Carnegie Mellon.

To keep the objective benefits of disclosure constant, participants were not given the opportunity to receive personalized results, and therefore were not asked for their email addresses.³

³ Giving participants feedback may have introduced asymmetries in the perceived benefits of disclosure. For example, subjects may have anticipated that the ‘personalized results’ would take the tone of the survey, with participants in the how bad condition anticipating the results to be fun and entertaining relative to those in the CMU standards condition.

Privacy concern. Following completion of the open-ended dependent measures, participants completed a 4-item, 5-point scale designed to measure concern for privacy. Participants rated the extent to which, as they completed the survey, they were concerned about: “incriminating myself,” “whether my answers would truly be private,” “who might have access to my answers,” and “whether the survey was truly anonymous.”

Participants. There were 471 participants (M age=32.4years, sd =11.0; Med age=29 years) 58.2% female; 64.8% Caucasian, 20.2% Asian, 4.7% African American, 4.0% Hispanic).

Results

Disclosure. Inter-rater reliability was .89. As hypothesized, the interaction between the disclosure salience and motive manipulations was significant ($F(1, 400)=3.99$, $p_{rep}=.88$), when controlling for verbosity (p_{rep} for the covariate was .93). As in Experiment 1, there was a simple effect of disclosure salience among participants in the disclosure drive condition: participants in the disclosure drive condition disclosed more when information revelation was made salient, relative to when it was not ($M_{lowsalience}=2.72$, $sd=1.06$, $M_{highsalience}=2.35$, $sd=1.22$; $F(1, 215)=5.76$, $p_{rep}=.93$, $\eta^2=.32$). There was no simple effect of disclosure salience when the motive to protect one’s privacy was made dominant, although the means were in the predicted, opposite, direction (Figure 2).

Privacy concern. The scale was reliable (Cronbach’s $\alpha=.92$); privacy concern was consistent with disclosure, albeit not statistically significantly so ($F(1, 415)=2.18$, $p_{rep}=.78$). If anything, high disclosure salience decreased privacy concern among participants in the disclosure drive

condition ($M_{\text{low salience}}=11.7$ vs. $M_{\text{high salience}}=11.0$), whereas it increased privacy concern when the motive for privacy was made dominant ($M_{\text{low salience}}=11.2$ vs. $M_{\text{high salience}}=11.9$).

CONCLUSION

In two studies, we have shown that when the drive to disclose is made dominant, increasing the salience of information revelation facilitates disclosure whereas decreasing the salience suppresses revelation. The opposite effect occurs when the desire for privacy protection is made salient.

It is worth noting that our results cannot be explained by other factors found to influence self-disclosure, such as reciprocity (Altman, 1975; A. Joinson, 2001; Jourard, 1971; Laurenceau et al., 1998; Moon, 2000), since the experiment did not involve participants' interaction. Nor can they be explained by fluency, and specifically by recent research showing that the fluency can promote disclosure (Alter & Oppenheimer, 2009). In the present studies, the font of the input text in the low disclosure salience conditions could be considered disfluent relative to that of the high disclosure salience conditions (in which the font was large, black, and bold). The fluency account would predict a main effect of disclosure salience, such that participants in the low salience condition would be expected to disclose less, *regardless* of the relative activation of the two drives. Instead, in two studies, we found disordinal interactions, such that the effect of salience depended entirely on the disclosure drive manipulation. It could be that the effect of the

motive for privacy versus self-disclosure on information revelation is so strong that it overrides other, more subtle predictors, such as fluency.

It is also worth noting that our results are incompatible with a cost benefit explanation to privacy and self-disclosure, which is a prevailing view in both the privacy and self-disclosure literatures (Derlega, Metts, Petronio, & Margulis, 1993; A. N. Joinson & Paine, 2007; Laudon, 1996; Petronio, 2000; Rosenfeld, 2000; Stigler, 1980). For example, In Experiment 1, one could argue that the disclosure drive manipulation was confounded: those in the ‘high’ disclosure drive condition, because they stood to get very personalized feedback, had greater benefit to disclosure, relative to those in the ‘low’ disclosure drive condition.

However, this perspective cannot account for the interaction between the disclosure drive and disclosure salience manipulations – in particular, it cannot account for why subjects in the high disclosure drive/low salience condition disclosed less than those in the low disclosure drive/high salience condition. In other words, the cost benefit explanation would predict main effects, not the observed interaction.

In Experiment 2, moreover, we kept the objective costs and benefits of disclosure the same across conditions, by keeping constant participants’ perceptions about the identity of the recipients of the disclosed information (i.e. researchers at CMU) and by removing the option of receiving personalized results. Although one could argue that the how bad condition was associated with greater (intangible) disclosure benefits, such as feeling ‘cool’ for having admitted to engaging in the behaviors, this explanation cannot, again, account for the observed interaction.

In conclusion, this research suggests that when it comes to self-disclosure, people have conflicting desires – the desire to protect their privacy, and the desire to disclose – and that the

relative activation of these desires can moderate the effect of seemingly (and in this case, normatively) irrelevant factors on self-disclosure.

Table 1: Depth of disclosure scale

Rating	Label	Definition	Example
0	A non-admission	Person left the question blank or wrote something that was not an admission.	“Sorry, I don't confess online!!!!!!!!!!”
1	Benign	Legal and no harm to others or self.	“I dropped a pickle on the floor : I ate it anyway.”
2	Somewhat bad	Legal, harm to others (and possibly also self), but fairly easy monetary or psychological recovery.	“Lying” “Ditched a friend because she w popular enough when I was in 7th grade.”
3	Bad	Legal or Illegal, harm to others (and possibly also self), not easy monetary or psychological recovery.	“in my school project work I had copied entire paragraphs from my friend's dissertation.” “Cheated on my boyfriend.”
4	Very bad	Illegal, a lot of harm to others (and possibly also self), not easy or impossible monetary or psychological recovery.	“embezzled money at work.” “I shot the dog of the man that li next door to me.”

Note: downgrade by 1 point if the act was performed when the person was under 18 – i.e. when the reasonable scheme of right/wrong was not fully developed.

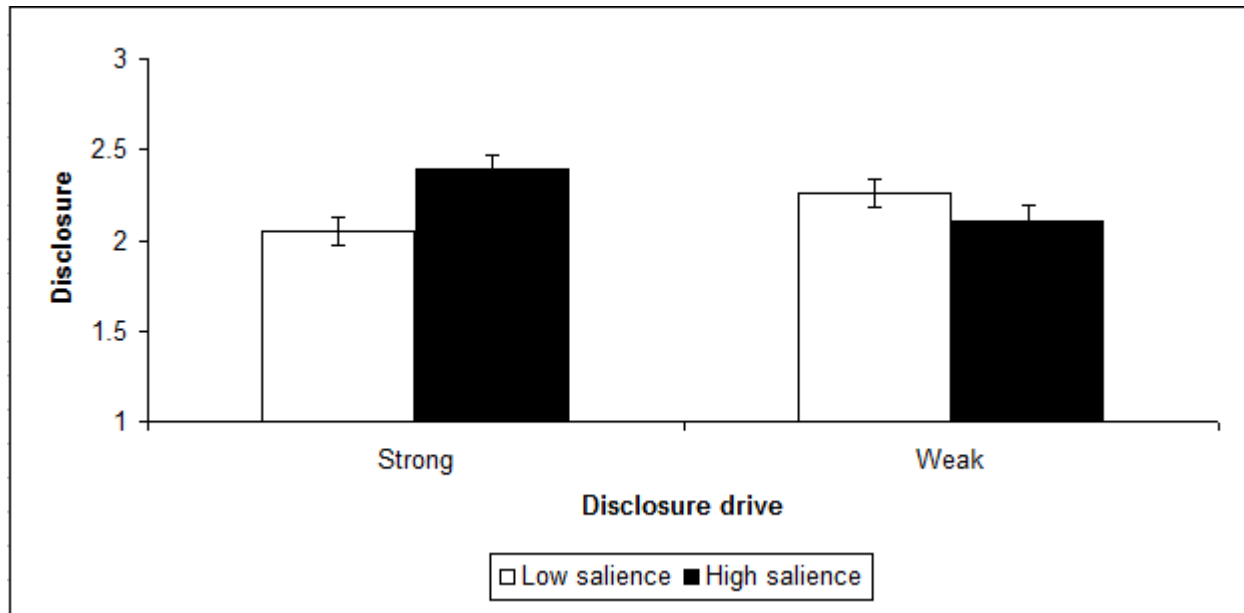


Figure 1

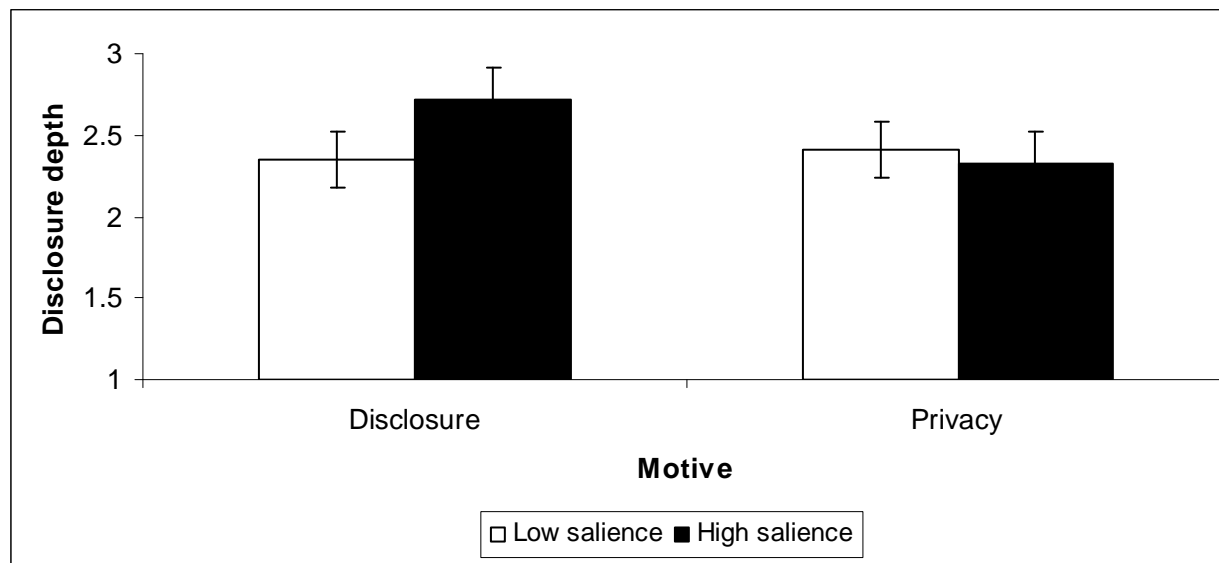


Figure 2

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