

Eliciting Information in Intelligence Interviews Through Priming:  
An Examination of Underlying Mechanisms

*David Amon Neequaye, September 2018*

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Supervised by Prof. Aldert Vrij, Dr. Sharon Leal, and Dr. Zarah Vernham

## GENERAL ABSTRACT

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An emerging body of research in human intelligence interviewing suggests that subtle influence tactics, such as priming, could be used to increase informants' disclosure of sensitive information. However, the mechanisms that elicit such subtle influences on disclosure are not fully understood. To contribute to this field of research, the present thesis sought to map out when and how priming tactics impact information disclosure. The work was based on a synthesis of current theoretical perspectives that generally explain how primes affect behavior. It was proposed that priming helpfulness motivations would facilitate information disclosure because previous research findings have indicated that activating individuals' helpfulness motivations increase their cooperation in various domains. In seven experiments (and two pilot tests) consisting of 1, 347 participants, the underlying mechanisms of helpfulness priming and the processes that elicit the potential influence of helpfulness priming on disclosure were examined. The first part of the thesis (i.e., **Part 1**), which included five experiments, investigated the theoretical proposition that behavioral assimilation to helpfulness priming occurs because a helpfulness prime increases cognitive accessibility to helpfulness-related content, which in turn mediates the impact of the prime on helping behavior (Experiments 1, 2, 3, 4, and 5). In addition, the role of the potential moderators, perspective taking (Experiments 1 and 2) and suitability affordances (Experiment 5), was investigated. The results indicated that helpfulness priming reliably increases helpfulness accessibility. However, no main effects of priming on behavior, nor interactions between priming and any of the moderators, emerged. Mediation analyses results were consistent with the hypothesis that helpfulness priming indirectly increases helping behavior by heightening helpfulness accessibility, but only in two of the five experiments, where participants subjectively perceived more suitable or relevant affordance to enact helpfulness. Taken together, the results of Part I suggested that variability in helpfulness accessibility and suitable affordances may promote the enactment of helping behavior. These findings were extended to an intelligence interview context (**Part 2: Experiments 6 and 7**) to explore the underlying mechanisms that engender the potential influence of helpfulness priming on information disclosure. Participants assumed the role of an informant with information about an upcoming mock terror attack. Subsequently, an interviewer solicited information about the attack using an interview style that displayed

either high (helpfulness-focused) or low (control) fit with helpfulness. Before the interview, in a seemingly unrelated experiment, half of the participants were primed with helpfulness-related content and the other half were not primed. After the priming, the cognitive helpfulness accessibility of all the participants was assessed. **Experiment 6** explored the proposition that a helpfulness-focused interview style, which draws on interviewees' primed helpfulness accessibility, would function as a high-suitability affordance and thus promote disclosure. Unexpectedly, the results revealed that the helpfulness-focused interview style decreased disclosure when helpfulness accessibility was low. **Experiment 7**, which drew on the findings of Experiment 6, examined the theoretical proposition that consistency between interviewees' primed helpfulness dispositions and an interviewer's (helpfulness-focused) interpersonal approach when soliciting information would facilitate disclosure. Providing some support for the proposition, the results indicated that helpfulness priming increased disclosure when the helpfulness-focused approach was used but not when the control approach was used. In all, regarding the underlying processes of information elicitation using priming tactics, this thesis suggests that implementing an interview style that does not match an interviewee's primed dispositions could counteract the goal of increasing disclosure. The findings also hint at the possibility that an interview approach that complements an interviewee's primed dispositions may work in concert with the previous priming to increase disclosure.

*Keywords:* disclosure, helpfulness, human intelligence gathering, investigative interviewing, priming

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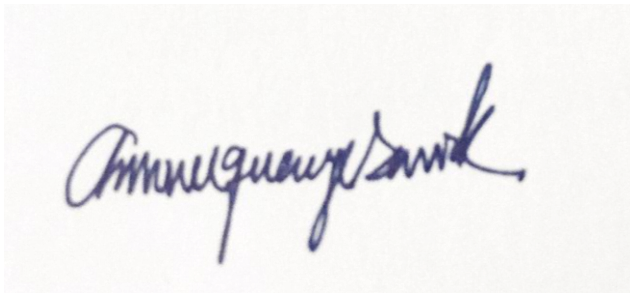
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## DECLARATION

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Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

David Amon Neequaye

A handwritten signature in blue ink, reading "Amon Neequaye David", written in a cursive style.

WORD COUNT = 51, 015 words

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## ABBREVIATIONS

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ANOVA: Analysis of variance

GBP: Great Britain Pound

HUMINT: Human Intelligence

SEK: Swedish Krona

UNHRC: United Nations Human Rights Council

UNICEF: United Nations International Children's Emergency Fund

USD: United States Dollar



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## DISSEMINATION

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### Conference Presentations

The 12<sup>th</sup> meeting of The Nordic network for research on psychology and law, Uppsala, Sweden: September 23-24, 2016: *Inducing disclosure through Priming: Exploring Subtle Persuasion Tactics in HUMINT Interviewing.*

The 27th conference of the European Association of Psychology and Law, Mechelen, Belgium: May 28-31, 2017: *Streamlining Disclosure in Investigative Interviewing: The Joint Influence of Priming and Motivational Interviewing.*

The 60th Research Seminar of The Scandinavian Research Council for Criminology (NSfK), Helsinki, Finland: May 14-16, 2018: *Facilitating Information Disclosure in Intelligence Interviews: The Case of Subtle Influence.*

The 28th conference of the European Association of Psychology and Law, Turku, Finland: June 26-29, 2018: *The Joint Influence of Helpfulness Priming and Interpersonal approach in Facilitating Disclosure.*

The 28th conference of the European Association of Psychology and Law, Turku, Finland: June 26-29, 2018: *Subtle Influence Tactics do not Infringe on Semi-cooperative Interviewees' Autonomy: A Supporting Argument.*

### Publications

Neequaye, D. A., Ask, K., Granhag, P. A., & Vrij, A. (2018). *Priming Prosocial Behavior: An Examination of Underlying Mechanisms.* Manuscript.

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Neequaye, D. A., Ask, K., Granhag, P. A., & Vrij, A. (in press). Facilitating Information Gathering in Intelligence Contexts: The Joint Influence of Helpfulness Priming and a helpfulness-focused interpersonal approach. *Journal of Investigative Psychology and Offender Profiling.*

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## CHAPTER 1: GENERAL INTRODUCTION

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Gathering information about potential security threats (e.g., terror attacks) is an important aspect of improving security, since law enforcement agencies could use such information to prevent those threats from becoming reality (Brandon, 2011). Human intelligence (HUMINT) interviewing, which involves eliciting information from human sources in investigative interviews, is one of the means whereby security agencies gather information about potential threats. Typically, however, human sources who possess vital information pertaining to such threats have divided loyalties (Herbig, 2008). For example, consider a scenario involving a captured terror cell member who possesses information about an imminent terror attack planned by her/his comrades. In that light, a HUMINT interviewer is tasked with eliciting information about the attack. In this example, let us assume that there is a possibility for leniency with regard to an inevitable prison sentence, if the captured cell member provides credible information about the attack. Thus, to gain leniency on their prison sentence, the interviewee (i.e., the captured cell member) intends to be semi-cooperative and economize their information disclosure during the interview. This information management strategy could be implemented by the interviewee to partially satisfy the interviewer's information objectives and gain the sentence leniency while protecting her/his comrades.

Such scenarios where interviewees have competing motivations to disclose and withhold information are common in HUMINT settings (e.g., Soufan, 2011). Thus, to maximize the likelihood that an interviewee would disclose rather than withhold information, the interviewer has to implement an interview strategy that utilizes the interviewee's intrinsic disclosure motivations and channel them toward information disclosure (e.g., Soufan, 2011). The general aim of this thesis, in that regard, was to investigate the possibility of eliciting information in a HUMINT interview by harnessing an interviewee's intrinsic disclosure motivations.

### Objectives and Research Questions

An emerging body of research suggests that temporarily increasing the mental accessibility—or priming—of certain traits and concepts that motivate an interviewee to share information, indeed, affords a HUMINT interviewer the opportunity to utilize an interviewee's internal motivations to disclose information. Dawson, Hartwig, and Brimbal (2015) reported that priming a secure attachment, which is a trait characterized by a positive view of oneself and others, in a HUMINT interview context, may promote primed interviewees' information disclosure. Similarly, the findings of Davis, Soref, Villalobos, and Mikulincer (2016) suggest that priming attachment security (and self-affirmation) facilitates disclosures of sensitive information. Dawson, Hartwig, Brimbal, and Denisenkov's (2017) research also indicated that priming the concept of openness using spacious (vs. small) interview rooms may lead primed interviewees to be more forthcoming with information. These findings—though preliminary—are promising, and they have expanded current insights into possible priming influences on information disclosure. Nonetheless, the mechanisms that elicit such priming effects on information disclosure are not fully understood. The present thesis explores whether an interviewee's internal prosocial motivation—helpfulness—can be harnessed through priming to facilitate information

disclosure in a HUMINT interview. To contribute to this emerging field, this thesis addresses two novel objectives: (a) This thesis investigates the underlying mechanisms of helpfulness priming; that is, what are the processes that lead individuals who are primed with helpfulness-related content to increase their enactment of helping behavior? (Part 1; Experiments 1 to 5). (b) This thesis draws on the underlying mechanisms of helpfulness priming to examine when and how priming (helpfulness) influences information disclosure (Part 2; Experiments 6 and 7). Identifying the specific processes (and conditions) that influence primed interviewees' information disclosure is important because such knowledge affords practitioners the opportunity to tailor and implement priming tactics efficiently.

I have structured this thesis as follows: First, I discuss the origins of helpfulness tendencies and the link between helpfulness and cooperation in intelligence interviews. Afterward, I examine the potential utility of helpfulness priming as a tool to increase disclosure. Next, I provide a brief overview of the evolution of priming research in social psychology and discuss current theoretical explanations of priming. Based on a synthesis of the current theories, I generate implications regarding the underlying mechanisms of helpfulness priming and the implementation of helpfulness priming as a tool to elicit information. In the subsequent section, I discuss the extant body of HUMINT interviewing research and highlight the potential contributions of priming. Next, I summarize the empirical research of this thesis that examines specific hypotheses about the underlying mechanisms of helpfulness priming and its applications in HUMINT contexts. In the final section, I discuss the theoretical and applied implications of the findings. Furthermore, the major limitations of the thesis, directions for future research, and ethical considerations are discussed.

### **The Link between Helpfulness, Cooperation, and Information Disclosure**

Helpfulness—the act of offering beneficial assistance to another—is assumed to preexist in most individuals' goal repertoire. According to Bierhoff (2002), the concept of helpfulness includes all forms of interpersonal support (e.g., prosocial behavior and altruism). Scholars have offered various theories to explain the origins of helpfulness tendencies (for comprehensive reviews, see Penner, Dovidio, Piliavin, & Schroeder, 2005; Schroeder & Graziano, 2015). Some schools of thought posit an evolutionary basis to account for the existence of helpfulness; they argue that early humans who assisted one another in times of need—for example, parents catering for a defenseless child—ensured their collective survival and passed on such tendencies to subsequent generations (Barrett, Dunbar, & Lycett, 2002; Tomasello & Vaish, 2013). Others have proposed that socialization factors such as culture (Feygina & Henry, 2015) and parenting styles (Eisenberg, Fabes, Guthrie, & Reiser, 2000) contribute to the development of helpfulness tendencies. It has been noted that individuals learn to be helpful by complying with prosocial cultural norms (Gurven, Zanolini, & Schniter, 2008) and/or parental instruction (Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000) that promote helpful behaviors. Some research findings also suggest that certain dispositional factors are positively related to helpfulness. For example, it has been found that the Agreeableness and Empathy personality constructs are linked to helpfulness (Graziano, Habashi, Sheese, & Tobin, 2007).

### **The Arousal: Cost-Reward Model and Information Management**

Schroeder and Graziano (2015) note that the arousal: cost-reward model (Piliavin, Dovidio, Gaertner, & Clark, 1981; Dovidio, Piliavin, Gaertner, Schroeder, & Clark, 1991) is the most comprehensive theory to explain the mechanisms that contribute to the enactment of helping behavior (for other theories, see Batson, 2011; Cialdini et al., 1987). The arousal: cost-reward model posits that a given situation, which requires an individual to offer beneficial assistance to another, induces an aversive arousal state that individuals are typically motivated to alleviate. To this end, a cost-benefit analysis is performed to determine whether to offer such help—to eliminate the aversive arousal state—or not. The cost-benefit analysis includes two components, which are the costs of (a) helping and (b) not helping. Costs of helping refer to the resources (e.g., safety or time) that the helper is likely to expend when help is offered. Conversely, the aversive arousal state persists and becomes the cost of not helping (e.g., consequent guilt experienced) if the individual does not provide any beneficial assistance. The model theorizes that the interaction between the perceived costs of helping and the perceived costs of not helping may produce one of the following outcomes: (1) Low costs of helping combined with high costs of not helping lead to a high likelihood of intervention. (2) When both costs of helping and not helping are low, the model predicts that helping interventions would vary widely depending on situational norms. (3) High costs of helping combined with high costs of not helping lead individuals to help indirectly. (4) Potential helpers are least likely to intervene when the cost of helping is high and the cost of not helping is low. Finally, the model posits that individuals usually opt for an outcome that simultaneously minimizes their net cost of helping and alleviates the aversive arousal state (for in-depth discussions, see Bierhoff, 2002; Schroeder & Graziano, 2015).

Although the arousal: cost-reward model was primarily developed to elucidate the processes of helping behavior in emergencies, the model has been extended successfully to explain helping in non-emergency scenarios (e.g., Erlandsson, Jungstrand, & Västfjäll, 2016; Fritzsche, Finkelstein & Penner, 2000; Lindenmeier, 2008). The model possibly accounts for the beneficial assistance (e.g., sharing useful information) that semi-cooperative interviewees may provide to interviewers in the context of an intelligence interview. As mentioned earlier, semi-cooperative interviewees typically have divided loyalties such that they are motivated to share some information to partially satisfy the interviewer's information objectives while protecting certain significant others and/or organizations. Thus, the semi-cooperative interviewees' information management dilemma resembles a scenario in which helping the interviewer by sharing useful information bears a high cost of helping—potentially betraying a significant other—and a high cost of not helping; for example, forfeiting a possible benefit of cooperating, such as sentence leniency. Under this scenario, the assumptions of the arousal: cost-reward model predict that the potential helper—the interviewee—is likely to help the interviewer indirectly; for example, by being semi-cooperative. In line with the model, extant findings indicate that semi-cooperative interviewees usually choose to offer such indirect assistance by economizing their disclosure and sharing some but not all of the information at their disposal (Herbig, 2008; Oleszkiewicz, 2016; Soufan, 2011).

## Cooperation, Helpfulness Priming, and Information Disclosure

As alluded to above, and relevant to the objectives of this thesis, it has been proposed that helping behavior and cooperation are inextricably linked because both phenomena increase others' positive outcomes (Grzelak & Derlega, 1982; Harcourt, 1991). In support of this assumption, helpfulness tendencies have been found to increase individuals' cooperation in social dilemmas (Van Lange, 1999; Capraro, Smyth, Mylona, & Niblo, 2014).

In HUMINT contexts, such cooperation where individuals offer beneficial assistance to another, beyond self-interest, fits neatly with the interviewers' task of soliciting sensitive information. An interviewee can demonstrate their helpfulness motivations by cooperatively sharing reliable information with the interviewer. Indeed, an interviewee's cooperation is akin to information disclosure in intelligence contexts (Hartwig, Meissner, & Semel, 2014). Thus, the link between helpfulness and cooperation could be useful to the goal of increasing disclosure in a HUMINT interview by harnessing an interviewee's helpfulness motivations and channeling them toward aiding an interviewer's information-elicitation objectives.

It is widely accepted that dispositional factors (e.g., agreeableness) are important determinants of helpfulness (e.g., McClintock & Allison, 1989; De Dreu & Van Lange, 1995; Van Lange, Bekkers, Schuyt, & Van Vugt, 2007). Some schools of thought have proposed, however, that contextual variables interplay with individuals' dispositions in the causation of helpful behaviors (Penner, Fritzsche, Craiger, & Freifeld, 1995; Bierhoff, 2002; Graziano et al., 2007). Pertinent to the aims of this thesis, empirical evidence indicates that an array of contextual cues—specifically, priming influences—can facilitate individuals' likelihood to be helpful (Fitzsimons & Bargh, 2003; van Baaren, Holland, Kawakami, & van Knippenberg, 2004; Maio, Pakizeh, Cheung, & Rees, 2009). Importantly, it has been found that helpfulness priming (Arieli, Grant, & Sagiv, 2014, Study 2) and priming individuals to think positively about helpfulness (Capraro et al., 2014, Study 3) enhances cooperation. These research findings, described below, suggest that helpfulness priming may be utilized to activate interviewees' helpfulness motivations, thereby increasing their inclinations toward cooperation and consequently information disclosure.

Arieli et al. (2014, Study 2) implemented four exercises to prime helpfulness in their research. First, participants read a scientific prose emphasizing the personal benefits of helpfulness values. Next, they completed a checklist about their experiences over the past month. The checklist was, however, rigged to consist of helpful actions only (e.g., offering useful advice). Subsequently, the participants wrote about a personal experience describing an instance when they had been helpful. Finally, they wrote a persuasive essay espousing the importance of helpfulness. For each of the exercises described above, participants in the control condition engaged in a corresponding exercise neutral to helpfulness. The results indicated that significantly more of the participants who received the helpfulness (vs. control) prime volunteered to undertake community work with real-world volunteer organizations ( $d = 0.64$ ).

In another study, Capraro et al. (2014, Study 3) examined the influence of helpfulness (vs. unhelpfulness) priming on cooperation. Helpfulness was primed using a writing task in which participants were instructed to write a paragraph describing a time when either acting benevolently led to a positive outcome or when acting malevolently led to a negative outcome. Conversely, unhelpfulness was primed by instructing participants to write a

paragraph describing a time when either acting benevolently led to a negative outcome or when acting malevolently led to a positive outcome. Participants first received the helpfulness (vs. unhelpfulness) prime. Next, cooperation was measured using a standard prisoner's dilemma game. In all, the results indicated that participants who received the helpfulness (vs. unhelpfulness) prime cooperated to a higher extent.

### **An Overview of Priming Research**

Priming is generally defined as temporarily increasing the mental accessibility of meaningful concepts to influence thought and behavior in a prime-consistent manner. Importantly, priming effects are reported to occur outside individuals' conscious awareness (Dijksterhuis & Bargh, 2001; Dijksterhuis & Strick, 2016). Historical accounts on the origins of priming suggest that Karl Lashley was the first to contemplate the concept of priming and its potential role in the performance of behaviors (Bargh, 2014; Friesen & Cresswell, 2015). Lashley (1951) theorized that when one intends to enact a behavior, the sequence of the intended action is readied, or primed, in order to produce the behavior effortlessly (see also Rosenbaum, Cohen, Jax, Weiss, & Van Der Wel, 2007). Bargh (2014) argues that Lashley's theorizing about readying mental representations for intended actions engendered the idea of priming in experimental social psychology. However, the seminal work of Higgins, Rholes, and Jones (1977) set the stage for current priming research, demonstrating that exposure to certain personality trait concepts influenced participants' subsequent impressions of an ambiguous target person (see also Srull & Wyer, 1979).

In Higgins et al.'s (1977) study, participants were first primed with either positive (e.g., adventurous) or negative (e.g., reckless) trait terms. Next, in a seemingly unrelated study, participants read ambiguous descriptions about some behaviors of a target person called Donald. The results indicated that participants' impressions of Donald were consistent with the previously primed traits. That is, those participants who had been primed with the positive traits formed more positive impressions of Donald than those primed with the negative traits. Critically, awareness assessments in Higgins et al.'s (1977) research showed that participants were not aware that the earlier trait priming study had influenced their impressions of Donald.

Several experimental works after Higgins et al. (1977) have demonstrated that beyond thoughts (e.g., impressions of an ambiguous target), meaningful primes could influence observable behavior outside of awareness (see Bargh, 2006 for an overview). It is worth noting, however, that some schools of thought have questioned the reliability of priming effects because recent attempts to replicate some of the influential priming research have failed (e.g., Harris, Coburn, Rohrer, & Pashler, 2013). The most prominent example of such priming research is a pioneering study by Bargh, Chen, and Burrows (1996), which revealed assimilative effects of semantic priming on participants' behavior. Bargh and colleagues primed the concepts of rudeness (vs. politeness [Experiment 1]) and the elderly stereotype (Experiment 2), using scrambled-sentence tasks that contained the respective primes. The findings showed that primed participants exhibited overt behaviors that were consistent with the concepts that had been primed. In Experiment 1, those participants who had been exposed to the rudeness primes interrupted the experimenter more frequently than those primed with the concept of politeness did. In the second experiment, participants



exposed to the elderly stereotype primes (vs. control) walked more slowly, down a hallway, when exiting the experiment, than the control group who received no prime did.

Another influential study by Dijksterhuis and Van Knippenberg (1998) demonstrated complex effects of meaningful primes on behavior. Using an imagination task that required participants to think about and list the attributes of a typical professor (or secretary), Dijksterhuis and Van Knippenberg (1998) primed some participants (or not [i.e., control group]) with the concept of intelligence. In an ostensibly unrelated experiment where intelligent behavior was measured with a general knowledge scale, the results indicated that the intelligence prime, indeed, enhanced primed (vs. control) participants' performance. In a further examination, Dijksterhuis and Van Knippenberg (1998) compared the effect of the previously mentioned intelligence priming to priming the concept of stupidity. Stupidity was primed by asking participants to imagine and list synonyms related to soccer hooligans—an exemplar that Dijksterhuis and Van Knippenberg (1998) argue embodies stupidity. Consistent with the hypothesis, the participants who had imagined the soccer hooligans performed worse on the general knowledge test than those participants who had imagined a typical professor.

To explain the seemingly automatic influence of primes on overt behavior, Dijksterhuis and Bargh (2001) proposed that perception and behavior are directly linked—a phenomenon referred to as the perception-behavior link (see also Carpenter, 1893 on ideomotor action). The perception-behavior link is drawn from an evolutionary standpoint; that is, perception engenders behavior naturally because, in humans, perceptual abilities and the resultant functions developed because our ancestors adapted to their environment by responding (i.e., behaving) to what they perceived (Aarts, Gollwitzer, & Hassin, 2004; Dijksterhuis & Bargh, 2001). Furthermore, empirical research has established a neurological link between perception and action. For instance, a review by Pulvermüller (2005) indicated that action words activate regions of the brain that generate the corresponding motor actions. In that light, Dijksterhuis and Bargh, (2001) conclude that perceiving socially meaningful and actionable information (e.g., traits and stereotypes) activates one's mental readiness to act, which could lead to enacting behaviors that are relevant to the perceived social stimuli; one example being the previously discussed influence of the elderly stereotype prime on participants' walking speed. It is noted, however, that human behavior is flexible, such that perceiving social stimuli does not exact unfettered influence on behavior because the perception-behavior link can be inhibited. For example, an individual could refrain from enacting a primed behavior because engaging in the behavior would be ultimately detrimental (Bargh & Ferguson, 2000) or in conflict (Macrae & Johnston, 1998) with current goals and thus undesirable.

As mentioned earlier, replication failures of some prominent priming research have recently fueled skepticism about the reliability of priming effects (e.g., Harris et al., 2013). A direct replication of Bargh et al.'s (1996) study by Doyen, Klein, Pichon, and Cleeremans (2012) failed to obtain the elderly stereotype priming effect on walking speed. Furthermore, Shanks et al. (2013) conducted a series of experiments to replicate and probe the conditions under which the previously discussed intelligence priming effect (i.e., Dijksterhuis & Van Knippenberg, 1998) may be obtained; none of their attempts were successful (see also O'Donnell et al., 2018).

Based on the several priming replication failures, some schools of thought have debated the role of unconscious processes (i.e., the perception-behavior link) in decision-making (Newell & Shanks, 2014). Apart from the reproducibility concerns, Newell and Shanks (2014) argue that procedures (e.g., funneled debriefing) often employed to assess participant awareness of the priming process and/or the intended purpose of the primed content have been inadequate. Specifically, they note that that funneled debriefing procedures lack the required sensitivity to fully uncover participant awareness in the priming process. According to Newell and Shanks (2014), such methodological flaws inflate the explanatory power of unconscious processes in decision-making and ignore the relevant role of conscious thought. They propose that awareness checks in priming research should be reliable (unaffected by demand characteristics), relevant (relevant to target behavior), immediate (soon enough in order to avoid forgetting or interference), and sensitive (administered under the best conditions for retrieval).

### **Current Theoretical Perspectives of Priming**

New theoretical perspectives have emerged from the debate about the reliability of priming. These theories generally depart from the perception-behavior link and offer nuanced alternative explanations to delineate when and how priming occurs. I have categorized the theories under two broad themes: the construct accessibility and the situation-based themes.

**The construct accessibility theme.** Theoretical perspectives under the construct accessibility theme largely theorize that prime stimuli increase cognitive accessibility to the primed content, which in turn promotes cognitive and behavioral assimilation. Increased primed construct accessibility is essential for assimilative priming effects because previous research indicates that individuals are likely to draw on readily accessible concepts when making decisions (See Mussweiler & Strack, 1999; Tversky & Kahneman, 1973, 1974). Thus, construct accessibility theories suggest that increased prime construct accessibility mediates the influence of priming on a target behavior. Theories that I have categorized under the construct accessibility theme include the relevance of a representation (ROAR) framework (Eitam & Higgins, 2010; Higgins & Eitam, 2014), the active-self account (Wheeler, Demarree, & Petty, 2007, 2014), and the constraint satisfaction and interactive competition model (Schröder & Thagard, 2013, 2014).

***The relevance of a representation (ROAR) framework.*** The ROAR framework posits that increased primed construct accessibility influences thought and behavior in a prime-congruent manner only when the primed content is motivationally relevant (Eitam & Higgins, 2010; Higgins & Eitam, 2014). Eitam and Higgins (2010) theorize that individuals are able to determine the motivational relevance of accessible primed content quickly enough for such motivational relevance judgments to influence the likelihood that the accessible primed content will influence behavior. To support this assumption, they draw on neurological research (e.g., Junghofer, Bradley, Elbert, & Lang, 2001; Schendan, Ganis, & Kutas, 1998), which indicates that the human brain discriminates rapidly between valenced and neutral items. Thus, the strength of the primed content's relevance determines the extent to which it influences the appropriate cognitive systems (e.g., goal pursuit) that drive judgments and behavior. Some priming research has demonstrated the importance of motivational relevance; for instance, Custers and Aarts (2007) found that when the goal to

socialize had been primed, individuals who highly valued socializing spent more time pursuing socializing goals than those who valued socializing to a lesser extent. In another study, Karremans, Stroebe, and Claus (2006) demonstrated the impact of motivational relevance in priming physical needs. They found that participants preferred a drink brand that was previously primed only when the primed participants were thirsty.

***The active-self account.*** Wheeler et al. (2007, 2014) propose that increased primed construct accessibility influences behavior by activating existent prime-related self-concepts or introducing new prime-related content into an individual's current self-representation. The tenets of the active-self account are based on evidence, which suggests that individuals' self-concepts (unconsciously) guide their behavior (Hull, Slone, Meteyer, & Matthews, 2002) and that such self-concepts are malleable (DeSteno & Salovey, 1997; McConnell, 2011). Hence, increased primed construct accessibility induces a self-prime overlap, which then drives assimilation to a prime. It has been suggested that one way to induce the self-prime overlap (i.e., moderate the link between the self and primed content) is to engage in perspective taking (Wheeler et al., 2007). That is, taking the first-person perspective, compared to the third-person perspective, during a priming episode may enhance accessibility to the primed content and assimilation of the consequent self-prime overlap on behavior. Previous research lends some support to this assertion. Wheeler, Jarvis, and Petty (2001) found that participants who spontaneously wrote essays about an African American from a first-person perspective (i.e., self-prime overlap), compared to those who wrote from a third-person perspective and those who wrote about a Caucasian, assimilated more to the characteristics of the negative African American stereotype of underachievement (see also Davis, Conklin, Smith, & Luce, 1996).

***The constraint satisfaction and interactive competition model.*** This model draws on classic theories, which posit that individuals naturally strive for psychological consistency (e.g., Festinger, 1957; Osgood & Tannenbaum, 1955). In that light, Schröder and Thagard (2013) theorize that increased primed construct accessibility biases individuals' interpretations of the different aspects of a situation to become a prime-consistent amalgamation. Consequently, the biased interpretation leads the primed individual to enact behaviors suggested by the prime. The constraint satisfaction model is based on the principle that primed content typically embodies affective meanings, which are linked to behavioral tendencies that stem from entrenched socialization within cultures (Schröder & Thagard, 2013). Crucially, Schröder and Thagard (2013) maintain that the brain can process affective meanings and their corresponding, culturally endorsed, behavioral responses without conscious intentions. Thus, increased primed construct accessibility produces prime-congruent behaviors because individuals strive to be consistent with the affective meanings carried by primes (see also Heise, 2007; Klatzky & Creswell, 2014).

***The situation-based theme.*** The theories I have grouped under the situation-based theme explicitly include an additional element beyond construct accessibility to explain how priming occurs. They note that the behaviors allowed by a specific situation—situational affordances—determine when and how increased primed construct accessibility will mediate the influence of priming on behavior. These theories include the situated inference model (Loersch & Payne, 2011, 2014) and the theory of situated conceptualization (Barsalou, 2016).

***The situated inference model.*** In line with the construct accessibility theories, the situated inference model posits that primes do not influence behavior directly as posited by the perception-behavior link (i.e., Dijksterhuis & Bargh, 2001). Instead, Loersch and Payne (2011) propose that exposure to a prime stimulus generally increases primed construct accessibility. Subsequently, the accessible primed content—when misattributed as internally generated—then becomes a heuristic that mediates the influence of the prime stimulus on behavior. This assumption aligns with the previously mentioned active-self account, which proposes that heightened construct accessibility induces a self-prime overlap. Critically, however, the situated inference model stipulates that affordances that promote the enactment of a primed behavior facilitate assimilation to the primed content (Loersch & Payne, 2011).

Consistent with such theorizing, Macrae and Johnston (1998) found that participants who had received a helpfulness prime exhibited greater helpfulness in situations that encouraged (vs. discouraged) the enactment of helpfulness. Their research indicated that the primed participants picked up more functioning pens (i.e., enabling situational cue) in aid of an experimental confederate, who had dropped the pens, than participants who had not been primed. However, when the pens were leaking (i.e., inhibitory situational cue), the helpfulness priming effect was eliminated. In a second experiment, participants primed with helpfulness helped an experimental confederate by picking up more pens than those participants who were not primed. Nonetheless, when participants were led to believe that they were running late (i.e., inhibitory cue) for a second experiment, the helpfulness priming effect was eliminated. The helpfulness priming effect was maintained when participants were under the impression that they were on time (i.e., enabling cue) for the second experiment. A medium-sized interaction effect between priming and situational affordance was observed in both experiments ( $d = 0.59$  and  $d = 0.51$  respectively; see also Cesario, Plaks, Hagiwara, Navarrete, & Higgins, 2010).

***The theory of situated conceptualization.*** Barsalou (2016) offers an account similar to the situated inference model to explain priming. He argues that *situated conceptualizations* are behavioral scripts specific to certain situations, which result from consistent social interactions. Over time, situated conceptualizations become a collection of heuristics that guide future behavior in similar situations. Thus, increased accessibility to primed content, in situations that match a situated conceptualization (i.e., high- [vs. low-] suitability affordances), may trigger established behavioral scripts that will guide behavior (Barsalou, 2016).

## Summary and Implications

The theories categorized under the construct accessibility theme emphasize that increased construct accessibility drives priming effects. The situation-based models, on the other hand, extend the postulates of the construct accessibility theme by explicitly noting that primed individuals need suitable affordances to exhibit assimilation to the primed content. Taken together, the extant theories suggest that interventions aimed at activating helpfulness motivations to stimulate helping behavior must increase accessibility to helpfulness-related content and provide a high-suitability affordance in which helpfulness can be demonstrated (see Macrae & Johnston, 1998). These requirements are essential because increased prime construct accessibility assimilatively mediates the influence of a prime on a target behavior more strongly in high- (vs. low-) suitability affordances.

It is possible to extend the aforementioned implications to the HUMINT interview context and the overall objectives of this thesis. That is, in examining the possibility of facilitating information disclosure by priming interviewees' helpfulness motivations and delineating the underlying mechanisms thereof, (a) the implemented priming procedure must increase interviewees' cognitive accessibility to helpfulness-related content and (b) the interviewer must present the interviewee with a high-suitability interview context to exhibit their primed helpfulness motivations by sharing information.

### **An Overview of Human Intelligence Interviewing Research**

According to Granhag, Cancino Montecinos, and Oleszkiewicz (2015), HUMINT interviewing is best defined as an information-gathering process that is nested in the human interaction between a primary collector (i.e., the interviewer[s]) and a primary source (i.e., the interviewee[s]) of information (see also Justice, Bhatt, Brandon, & Kleinman, 2010; Evans, Meissner, Brandon, Russano, & Kleinman, 2010). Generally, the purpose of a HUMINT interview is to secure information that can be used to bolster national security and/or further national interests (Evans et al., 2010). Thus, the objective of the interview could consist of, or encompass, eliciting information about past, present, and future events. Hartwig, Meissner, and Semel (2014) note that HUMINT interviews are characteristically more complex compared to investigative interviews conducted in criminal settings because the information objectives of a HUMINT interview could be prospective and/or retrospective. As an example, the aim of an intelligence interview could range from soliciting information about established terrorist networks to uncovering plans about an upcoming attack. The main objective of criminal investigative interviews, on the other hand, typically center on eliciting information about isolated past crimes only (Redlich, 2007; Evans et al., 2010; Hartwig et al., 2014). Consequently, psychology researchers have examined investigative interviews in the criminal context more widely than HUMINT interviews. For instance, the antecedents of true and false confessions (Kassin & Gudjonsson, 2004; Lassiter & Meissner, 2010), deception detection (Vrij, 2008), and eyewitness identifications (Wells, Memon, & Penrod, 2006) in criminal interviews have been investigated in depth.

### **The High-Value Detainee Interrogation Group and Intelligence Research**

A historical account by Meissner, Surmon-Böhr, Oleszkiewicz, and Alison (2017; see also Hartwig et al., 2014) traces the genesis of psychological research on HUMINT interviewing to former United States president, Barack Obama's signing of Executive Order 13491 in 2009 and the creation of the High-Value Detainee Interrogation Group (henceforth referred to as HIG) in 2010. One of the HIG's mandates is to develop ethical, effective, and scientifically valid intelligence interview methods, in light of the post 9/11 enhanced interrogation failures (Meissner et al., 2017). Hence, the HIG has funded the majority of the burgeoning psychological research, which is specifically aimed at scientifically examining HUMINT interviewing. The following discussion delves into the emerging intelligence interviewing research.

**Information-gathering approaches.** Evans et al. (2013) developed an experimental paradigm to mimic an intelligence interview context. In the experimental setup, a source first witnessed an elaborate transgression committed by a confederate. Afterward, an interviewer

interviewed the source about the transgression. The study examined whether an information-gathering (vs. accusatory) interview approach would yield higher interviewee information disclosure. Meissner et al. (2014) note that information-gathering interview approaches employ exploratory open-ended questions and rapport to elicit information. Conversely, accusatory methods are guilt presumptive and implement confirmatory questions that aim to obtain confessions. Evans et al.'s (2013) hypothesis was informed by previous criminal interview research, which indicates that information-gathering (vs. accusatory) interview approaches generate higher numbers of true confessions and fewer false confessions (Meissner, Redlich, Bhatt, & Brandon, 2012; Meissner et al., 2014). True (vs. false) confessions in criminal contexts comprise authentic information and thus are analogous to reliable information in a HUMINT interview. As Evans et al. (2013) predicted, and in line with the extant research, the findings showed that in an intelligence interview, an information-gathering approach leads to more relevant information disclosure than an accusatory approach.

In another study using Evans et al.'s (2013) experimental setup, Evans et al. (2014) investigated the efficacy of some interview approaches outlined in the U.S. Army Field Manual 2–22.3 (“Human Intelligence Collector Operations,” 2006). The Army Field Manual was officially approved to regulate HUMINT interviews in accordance with President Obama’s Executive Order 13491 in 2009 (Brandon, 2011). Evans et al. (2014) categorize the interview approaches recommended in the field manual into four themes—Direct, Emotional (i.e., Positive and Negative), Incentive-based, and Other questioning approaches. Evans and colleagues examined the comparative utility of the Direct, the Positive-emotional, and the Negative-emotional approaches. Evans et al. (2014) note that the Positive-emotional approach comprises questions directed at alleviating interviewee anxiety and resistance while facilitating rapport. The Negative-emotional approach, on the other hand, constitutes a questioning style that rouses interviewee anxiety and reactions. As indicated in the Army Field Manual, the Direct Approach, which advocates asking direct questions, is most commonly used in intelligence interviews and, thus, was implemented as a comparison condition by Evans et al. (2014).

It was predicted that Positive-emotional approaches would lead to the most information disclosure. This hypothesis was based on research that suggests positive (vs. negative) moods (which are likely to be stimulated by Positive-emotional questioning) increase cooperation (see Hertel, Neuhof, Theuer, & Kerr, 2010). The prediction received some support; Evans et al. (2014) found that although the Positive- and Negative-emotional approaches yielded similar amounts of disclosed information, the Positive-emotional approach included an added benefit. That is, the Positive-emotional approach enhanced information disclosure by boosting a cooperative atmosphere. Furthermore, the Positive- (vs. Negative-) emotional approach reduced interviewee anxiety.

**The Scharff technique.** Another strand of intelligence interviewing research has recently developed and examined the efficacy of a novel interview technique that specifically facilitates information disclosure—the Scharff technique. The Scharff technique was developed through a scientific conceptualization of some interview tactics that were employed by Hanns Scharff in WWII (Granhag et al., 2013). Scharff (1907-1992) was a German Luftwaffe intelligence interviewer and he is famed for his exceptional information extraction abilities (Toliver, 1997). Scharff’s overall interview framework consisted of five

tactics that he implemented, in concert, to neutralize interviewees' counter-interrogation strategies (Granhag, 2010). Counter-interrogation strategies are resistance efforts interviewees usually adopt to appear cooperative and credible (see Granhag, Hartwig, Mac Giolla, & Clemens, 2015). The tactics Scharff used included (a) being friendly, (b) not pressing for information, (c) establishing the illusion of being versed with pertinent information by presenting available evidence in a coherent storyline, (d) presenting claims to be confirmed or disconfirmed rather than asking direct questions, and (e) downplaying the relevance of new information an interviewee provides. An extensive discussion outlining the significance of the various components that constitute the Scharff technique is available for interested readers (see Oleszkiewicz, 2016).

In the first empirical test of the Scharff technique, Granhag et al. (2013) designed a new experimental paradigm to include certain important aspects of a HUMINT interview context. Participants took on the role of a police informant (i.e., a source) with some information about an upcoming mock terrorist attack. An interviewer then attempted to elicit information about the attack using either the Scharff technique, open questions, or specific questions. Critically, to mirror typical sources in intelligence interviews, participants were instructed manage their information disclosure. That is, not reveal too much or too little information. The results indicated that the Scharff technique did not elicit significantly more information compared to the comparison techniques. Nonetheless, participants interviewed using the Scharff technique found it more difficult to decipher the interviewer's information objectives and were more likely to underestimate the amount of information they objectively disclosed. The authors argued that, in all, the findings are promising for the operational value of the Scharff technique because masking information objectives and interviewees' underestimation of the amount of objectively elicited information are important aspects of effective HUMINT interviewing (see also, Justice et al., 2010).

Further studies have refined the Scharff technique and compared it to the Direct Approach, which is a widely used questioning technique (recommended by the U.S. Army Field Manual) that combines specific and open-ended questions to elicit information (Redlich, Kelly, & Miller, 2011). The results from these studies indicate that, compared to the Direct Approach, the Scharff technique elicits more new information, conceals an interviewer's information objectives better, and leads interviewees to underestimate their objective amount of information disclosure (e.g., Granhag, Oleszkiewicz, Strömwall, & Kleinman, 2015; May, Granhag, & Oleszkiewicz, 2014; Oleszkiewicz, Granhag, & Cancino Montecinos, 2014; Oleszkiewicz, Granhag, & Kleinman, 2014). Additionally, the Scharff technique has been taught successfully to practitioners in the HUMINT field (Oleszkiewicz, Granhag, & Kleinman, 2017). In light of these findings, Vrij and Granhag (2014) have reiterated that the Scharff technique's operational effectiveness is reassuring, though the body of work examining the technique is in its infancy.

### **Integrating Priming in Intelligence Interviews**

As was mentioned in the Introduction, some recent research has begun to explore whether priming disclosure-related motivations facilitate interviewees' information disclosure. This line of research is comparable to those that have examined the Scharff technique, since the main objective is also to develop interview tactics that specifically facilitate disclosure. Dawson et al. (2015) and Dawson et al.'s (2017) investigations showed that priming a secure attachment and the concept of openness may, respectively, promote

disclosure about an imminent mock terror attack. Pertinently, both pieces of research, similar to those discussed previously, examined these priming influences on information disclosure in an intelligence interview setting. The findings (i.e., Dawson et al., 2015; Dawson et al., 2017) indicate that it is possible to facilitate interviewees' disclosures of sensitive information through priming, which presents essential benefits to the developing field of intelligence interviewing research and, importantly, practice.

Two of the core Scharff technique tactics require the interviewer to establish the illusion that they are versed with substantial information and then proceed to elicit unknown information by presenting claims to be confirmed or disconfirmed. Thus, to implement the Scharff technique successfully, interviewers need some prior information about the topic of investigation. Granhag et al. (2013) note that the Scharff technique is better suited for later stages in the intelligence gathering process when some, but not all, of the needed information is available. Priming tactics, on the other hand, do not require extensive prior information in order to be applied. Consider a scenario where an interviewer uncovers a snippet of information, inadvertently disclosed by the interviewee, which might be worth exploring. In such instances, the interviewer could prime a disclosure motivation and harness the interviewee's primed motivations toward information disclosure. A primed motivation can be harnessed in an interview when the interviewer employs an interview approach that draws on the primed motivation. Hence, priming tactics, compared to the Scharff technique, can be implemented when there is little to no prior information about a subject of interest. Consequently, priming could be used as an opening tactic to elicit some information on a subject. Later, interview strategies like the Scharff technique, which require such prior information, can then be executed. In that regard, another potential benefit of priming in the HUMINT context is that it can serve as an addition, to ease the usage of interview strategies that require prior evidence.



## CHAPTER 2: SUMMARY OF EMPIRICAL STUDIES

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### Overview

The body of work exploring the potential utility of priming in intelligence interviews is still in infancy. As mentioned previously, the emerging research suggests that priming could facilitate information disclosure. However, a closer inspection of a couple of these studies reveals mixed and/or inconclusive results. Dawson et al. (2015) found a small effect suggesting that priming a secure attachment may lead primed (vs. control) participants to disclose more information. However, the effect was not statistically significant by conventional standards and thus the experiment's replicability is unclear. Furthermore, the research of Dawson et al. (2017) demonstrated that priming the concept of openness promotes information disclosure. Nonetheless, the underlying mechanisms of this effect are still unknown because the research did not provide any evidence that increased cognitive accessibility to the openness construct gave rise to the observed behavioral assimilation to the openness prime, as current theories of priming would predict. Hence, in line with its main objectives, this thesis aimed to expand on the previous research in the following ways: (a) examine the influence of priming an intrinsic motivation (i.e., helpfulness), which most individuals typically possess, on disclosure in an intelligence interview, and (b) elucidate the mechanisms that underlie the influence of priming on disclosure.

I have noted earlier that recent discussions about the reliability of priming effects have led various schools of thought to propose nuanced theories that explain the occurrence of priming. Thus, this thesis first examined the underlying mechanisms of prosocial (i.e., helpfulness) priming (Part 1; Experiments 1, 2, 3, 4, and 5). Drawing on the findings from Part 1, Part 2 (Experiments 6 and 7) explored when and how helpfulness priming influences information disclosure in an intelligence interview. Experiment 6 explored the proposition that a helpfulness-focused interview style, which draws on interviewees' primed cognitive helpfulness accessibility, would function as a high-suitability affordance and thus promote disclosure. To expand on Experiment 6, Experiment 7, in addition to the role of construct accessibility, investigated the theoretical proposition that consistency between interviewees' primed dispositions (i.e., helpfulness) and an interviewer's (helpfulness-focused) interpersonal approach when soliciting information would facilitate disclosure. The following discussion delves into the details of the seven experiments and Table 1 provides an overview.

Table 1  
*Overview of The Experiments Constituting this Thesis*

Experiment	Method	<i>N</i>	<i>k</i>	Independent variables	Dependent variables*
1	Experimental online study	193	4	2 (Priming: helpfulness vs. control) × 2 (Perspective taking: first-person vs. third-person)	Intended future helping behavior
2	Laboratory experiment	100	4	2 (Priming: helpfulness vs. control) × 2 (Perspective taking: first-person vs. third-person)	Intended future helping behavior
3	Experimental online study	86	2	Priming (helpfulness vs. control)	Helping behavior (Donations to a charity)
4	Experimental online study	192	2	Priming (helpfulness vs. control)	Helping behavior (Donations to a charity)
5	Laboratory experiment	91	4	2 (Priming: helpfulness vs. control) × 2 (Situational affordance: high vs. low)	Helping behavior (Donations to a charity)
6	Laboratory experiment	115	4	2 (Priming: helpfulness vs. control) × 2 (Interview style: helpfulness-focused vs. control)	Amount of information disclosed
7	Laboratory experiment	116	4	2 (Priming: helpfulness vs. control) × 2 (Interview style: helpfulness-focused vs. control)	Amount of information disclosed

Note. *N* = participants, *k* = conditions.

\*Helpfulness accessibility was implemented as a mediator variable in all the studies.

### Part 1: Examining the Mechanisms of Helpfulness Priming

The experiments here investigated the underlying mechanisms proposed by contemporary priming theories to explain when and how helpfulness priming effects occur. The current theories suggest that behavioral assimilation to helpfulness priming occurs because the helpfulness prime increases cognitive accessibility to helpfulness-related content, which in turn mediates the impact of the helpfulness prime on helping behavior when the primed individual is presented ample opportunity to enact helping behaviors. The various experiments included here examined this theoretical proposition in order to shed

light on the underlying mechanisms of helpfulness priming. In all, participants' cognitive accessibility to helpfulness (or a topic relatively neutral to helpfulness) was primed using a directed imagination and writing task. The priming manipulations were designed by drawing on previous helpfulness priming studies that have employed directed thought tasks and recall of autobiographical memories to prime helpfulness (e.g., Arieli et al., 2014, Capraro et al., 2014; Experiment 3, Fitzsimons & Bargh, 2003; Experiment 1). Next, we assessed helpfulness accessibility using an implicit measure. Finally, participants' inclination toward enacting helping behavior was assessed. Experiment 1 and 2 examined the joint influence of helpfulness priming and perspective taking on intended future helping behavior. As noted previously, tenets of the active-self (Wheeler et al., 2007) and situated inference model (Loersch & Payne, 2011) suggest that a self-prime overlap, which can be induced through perspective taking, may enhance behavioral assimilation to a prime. Thus, to investigate its role, perspective taking was manipulated by having participants engage in the imagination and writing task either from a first-person or third-person perspective. Experiment 3 and 4 investigated the impact of helpfulness priming on willingness to donate to a charity. Experiment 5 examined the joint influence of helpfulness priming and a high- (vs. low-) suitability affordance on willingness to donate to a charity.

We predicted that participants primed with the helpfulness-related content (vs. the neutral topic) would exhibit more helping behavior and helping behavior intentions (Hypothesis 1). In addition, we hypothesized that perspective taking would moderate the main effect of priming on helping behavior intentions, expecting that those participants who took the first-person (vs. third-person) perspective during the priming would exhibit more helping behavior intentions (Hypothesis 2). Specifically, we expected that those participants who took the first-person (vs. third-person) perspective during the priming would exhibit more helping behavior intentions. Furthermore, we anticipated that situational affordance would moderate the relationship between helpfulness priming and helping behavior such that the priming effect would be stronger in the high- (vs. low-) suitability condition (Hypothesis 3). Finally, in line with the theoretical assumption that construct accessibility mediates the effect of priming on behavior, we predicted that helpfulness accessibility would mediate the helpfulness priming effect on helpfulness (Hypothesis 4). It is worth noting that the experiments here are the first to explicitly examine the mediating role of helpfulness accessibility in helpfulness priming effects. In light of this novel attempt, we used a measurement of mediator approach because according to Pirlott and MacKinnon (2016) measurement of mediator designs provide evidence of the causal influence of an independent variable on both a mediator and a dependent variable in a single experiment.

## Experiment 1 and 2

### Experiment 1

#### Overview

The aim of this experiment was to examine the joint influence of helpfulness priming and perspective taking on intended future helping behavior. Thus, Hypotheses 1, 2, and 4 were examined.

#### Method

**Participants and design.** The sample consisted of 193 participants (95 females) with an average age of 34.49 years ( $SD = 9.87$ ) years. A sensitivity analysis indicates that a sample

of this size provides an 80% power to detect an effect of  $d = .40$  at the .05 significance level. Based on previous research examining prosocial priming effects using similar methods (e.g., Arieli et al., 2014, Experiment 2 [ $d = .64$ ], Fitzsimons & Bargh, 2003; Experiment 1 [ $d = 1.37$ ]), it is reasonable to expect an effect size of  $d = .67$  or higher. All participants were recruited via Amazon MTurk using as selection criterion an approval rating of 95% or higher. This study was guised as an experiment to examine the effects of reflection on creative storytelling and word generation. We used a 2 (priming: helpfulness vs. control)  $\times$  2 (perspective taking: first-person vs. third-person) between-groups design. Random assignment produced a distribution of between 45 and 53 participants in each cell of the design.

### **Procedure and Materials**

We instructed potential participants to participate in the experiment only if they had access to a computer and a workspace with no distractions. Additionally, we urged participants not to use mobile devices (e.g., phones, tablets) in place of a computer. Participants received 4 USD as compensation. A couple of studies have indicated that prior experimenter belief influences participants' behaviors in priming experiments (e.g., Doyen, Klein, Pichon, & Cleeremans, 2012; Gilder & Heerey, 2018). Thus, this and the remainder of the studies in this research were fully computerized to ensure that the procedures were double-blind throughout.

**Independent variables.** Consistent with the guise that the experiment was to examine the effects of reflection on creative writing, we devised a reflection and storytelling task to manipulate participants' helpfulness construct accessibility. Participants were told that the reflection task was to prepare them for the writing task. We allotted a maximum of five minutes for reflection: a mandatory two and half minutes, and an optional two and half minutes if necessary. Additionally, we designed the reflection and storytelling tasks to be completed from either a first- or third-person point of view

Participants in the *helpfulness priming* conditions were instructed to think about, and visualize a time when they had been helpful (*first-person perspective*) or to think about a helpful person (*third-person perspective*). After reflecting, they were presented with an incomplete story prompt to complete to a full story. We instructed participants to generate three scenarios that maintained the plot of the incomplete story prompt. The story prompt commenced the story with either the participant (*first-person perspective*) or another person (*third-person perspective*) as a protagonist about to help an old man in need. Participants in the *control priming* conditions first reflected on a neutral topic; their morning routine (*first-person perspective*) or a typical student's morning routine (*third-person perspective*). They then completed an incomplete description of their morning routine (*first-person perspective*) or a typical student's morning routine (*third-person perspective*). See Appendix A1 for the priming material.

Extensive assessments of awareness of the priming manipulation's influence were conducted following Newell and Shanks's (2014) recommendations in all the experiments. Overall, reported awareness did not influence the nature of the main results. Analyses including the awareness variable are presented in Appendix A6.

**Dependent variables.**

**Word fragment/stem task.** To assess helpfulness construct accessibility, we created a word fragment/stem task. The word fragment/stem task consisted of 40 words in total; 20 target words of which could be completed to form words related to helping behavior and 20 neutral words. We designed the task such that both target and neutral words could be completed with a diverse range of words. Participants had a maximum time allocation of 10 seconds to complete each word. We implemented this time cap to minimize participants' amount of deliberation as they completed the words. Following Koopman, Howe, Johnson, Tan, and Chang's (2013) recommendations, word-fragments had specific letters missing and word stems had initial letter prompts with open-ended completion. Participants input their word of choice in a textbox below each word fragment. We restricted the number of letters that could be typed into each textbox to match the maximum number of letters for each word fragment. A score of one (1) was assigned to responses where a word-fragment was completed with a word related to helping behavior and zero (0) when completed with an unrelated word (See Appendix A3).

**Self-reported helpfulness intentions.** We modeled self-reported helpfulness intentions, which was guised as a personality measure, on Philippe Rushton, Chrisjohn, and Fekken's (1981) Self-Reported Altruism Scale. Participants were to indicate, on a visual analog scale (0 to 100%), the likelihood that they were going to engage in each of 20 helpfulness actions (e.g., hold an elevator, hold the door open for a stranger) within the next year. Scores were aggregated to an index by averaging ratings of individual items; higher scores indicated stronger intentions to engage in helping behavior. The internal consistency of the self-report items was excellent ( $\alpha = .93$ ).

**Social desirability.** We included three items from Stöber's (2001) Social Desirability Scale (e.g., "I always accept others' opinions, even when they don't agree with my own") in order to control for tendencies to respond in a socially desirable way. We administered the scale in a true-false format. We scored one point for a true response and zero points for a false response and summed the scores across the three items (0 = minimal social desirability, 3 = maximal social desirability). High scores indicated high social desirability. There was no significant difference between the helpfulness and control priming conditions in socially desirable responding,  $t(191) = -0.57$ ,  $p = .564$ ,  $d = 0.08$  (see Table 2). The social desirability measure was intended as a potential covariate when testing the influence of the independent variables on self-reported helpfulness intentions.

## Results and Discussion

We used Hayes' (2015) SPSS PROCESS macro to test our hypotheses. The PROCESS macro produces estimates of proposed mediation and moderation effects with 95% bias-corrected confidence intervals (BCa CI) using the bootstrapping method (See Preacher et al., 2007; Hayes, 2015). This has the advantage, over an ANOVA, of making no assumptions about the shape of a sample distribution and is therefore robust against any irregularities in the sample distribution (See Hayes, 2013, p.105-107). Correlation analysis indicated that social desirability was significantly positively related to self-reported helpfulness intentions,  $r = .18$ ,  $p = .012$ , 95% CI [.04, .32], and was thus included as a covariate in the following analyses.

**Moderation analyses.** We examined the effects of priming, perspective taking, and their interaction on self-reported helpfulness intentions in a moderation analyses with 5,000

bootstrapped samples. Following Hayes's (2013, p. 277) recommendations on procedures to conduct moderated regression analysis equivalent to a  $2 \times 2$  factorial ANOVA, we effect-coded the priming [and perspective taking] variable before the analyses ( $-0.5 =$  control priming [third-person perspective],  $0.5 =$  helpfulness priming [first-person perspective]). Group descriptives are presented in Table 2.

The main effects of priming,  $b = 0.06$ ,  $SE = 0.60$ ,  $p = .916$ , and perspective taking,  $b = 0.69$ ,  $SE = 0.60$ ,  $p = .251$ , on self-reported helpfulness behavioral intentions were not significant. The former means that Hypothesis 1 did not receive support. Furthermore, the predicted interaction between priming and perspective taking was also not significant,  $b = 0.50$ ,  $SE = 1.20$ ,  $p = .678$ . Thus, failing to support Hypothesis 2, there was no significant difference between the first- and third-person perspectives with regard to the effect of priming on helpfulness.

**Mediation analysis.** To examine the predicted indirect effect (through helpfulness construct accessibility; Hypothesis 4) of priming on helping behavior, we ran a mediation analysis with 5,000 bootstrapped samples. The mediation analysis was conducted despite the previous null findings, as Hayes (2013, p.168) has argued that the estimate of an indirect effect should be based on a formal test of mediation not on individual tests of the direct effects of the main predictor and the proposed mediator. Perspective taking was excluded in this analysis because the main effect of perspective taking, as well as the interaction effects between priming and perspective taking on helpfulness construct accessibility and self-reported helping intentions did not achieve significance<sup>1</sup> (See Appendix A6 for endnotes). Before running the analysis, we dummy coded the priming variable ( $0 =$  control priming,  $1 =$  helpfulness priming) and helpfulness construct accessibility was maintained in its original metric. The effect of priming on helpfulness construct accessibility was positive and significant,  $b = 0.87$ ,  $SE = 0.38$ ,  $p = .021$ . Participants in the helpfulness priming group completed the word fragments/stems with more words related to helpfulness behavior than did participants in the control priming group, indicating an increased accessibility to helpfulness constructs. Helpfulness construct accessibility did not, however, significantly predict self-reported helpfulness intentions,  $b = 0.10$ ,  $SE = 0.12$ ,  $p = .398$ . Moreover, we did not observe the proposed mediation effect predicted in Hypothesis 4; the indirect effect of helpfulness priming, via helpfulness construct accessibility, on helpfulness behavioral intentions was not statistically significant,  $b = 0.09$ , 95% BCa CI  $[-0.07, 0.39]$ .

Further inspection of verbal responses to the awareness check probes revealed that participants' perceptions of their ability to carry out a specific helpfulness act (e.g., they cannot donate blood), or the probability of a given scenario occurring within the next year, may provide potential explanations for the null results observed in this study. If participants were constrained by feasibility or probability considerations, there may not have been sufficient leeway in the measure for helpfulness priming to influence self-reported helpfulness intentions.

## Experiment 2

### Method

Experiment 2 was a direct replication of Experiment 1 in a Swedish sample. We recruited participants via a university participant pool. The experiment was conducted in the

lab as opposed to the online version in Experiment 1. We used back-translation procedures recommended by Brislin (1986) to ensure equivalence between materials used in Experiments 1 and 2.

**Participants and design.** One hundred participants with an average age of 26.67 years ( $SD = 8.32$ ) participated in the study (77 females). A sensitivity analysis indicates that a sample of this size provides a 80% power to detect an effect of  $d = .57$  at the .05 significance level. The same design used in Experiment 1 was used. Participants were randomly assigned to one of four groups in a 2 (priming: helpfulness vs. control)  $\times$  2 (perspective taking: first person vs. third person) between-groups design, with 25 participants per group.

**Measures and procedure.** The same experimental manipulations, dependent measures<sup>2</sup> (with slight modifications, see Appendix A1), and procedure protocols used in Experiment 1 were used in this experiment. We tested participants individually, in workspace cubicles, at a computer laboratory. Participants received a lottery ticket worth 60SEK (~ 7 USD) as compensation.

**Social desirability.** There was no significant difference between helpfulness and control conditions on social desirability:  $t(98) = -0.53$ ,  $p = .598$ ,  $d = 0.13$ .

## Results and Discussion

We analyzed the data using the same analysis strategy used in Experiment 1. Correlation analysis indicated that the relationship between social desirability and self-reported intentions to engage in helping behavior was not significant,  $r = .08$ ,  $p = .412$ , 95% CI [-.12, .28]. For consistency with Experiment 1, however, social desirability was included as a covariate in the following analyses. Group means and descriptives for each condition in the analyses are reported in Table 2.

**Moderation analyses.** A moderation analysis, predicting self-reported helping behavioral intentions, showed no significant main effect of priming ( $b = -0.47$ ,  $SE = 0.55$ ,  $p = .393$ ) or perspective taking ( $b = -0.70$ ,  $SE = 0.55$ ,  $p = .207$ ). The former finding means that Hypothesis 1 did not receive support. The predicted Priming  $\times$  Perspective Taking interaction effect was not significant,  $b = 0.74$ ,  $SE = 1.11$ ,  $p = .509$ . Thus, failing to support Hypothesis 2, the effect of priming on helping behavioral intentions did not differ between participants who took the first-person and third-person perspective during priming.

**Mediation analysis.** A mediation indicated that the effect of priming on helpfulness construct accessibility was significant,  $b = 1.37$ ,  $SE = 0.39$ ,  $p = .001$ . However, helpfulness construct accessibility did not significantly predict self-reported intentions to engage in helping behavior,  $b = 0.26$ ,  $SE = 0.14$ ,  $p = .066$ . As can be inferred from the group means in Table 2, the helpfulness priming failed to increase participants' self-reported helping intentions directly. Nevertheless, the indirect effect of priming on helping behavioral intentions, via helpfulness construct accessibility, achieved statistical significance,  $b = 0.36$ , 95% BCa CI [0.01, 0.93]. This indicates that helpfulness priming boosted self-reported helpfulness intentions by increasing helpfulness construct accessibility. Thus, Hypothesis 4 was supported. Hayes (2013, p. 168-170) has noted that a null total main effect does not preclude the existence of significant indirect effects because a total main effect is the sum of

the direct and all of the possible, positive and negative, indirect effects that link an independent variable to a dependent variable. Hence, it is possible that helpfulness construct accessibility particularly mediates the effect of priming on helpfulness positively even though all of the mechanisms that link helpfulness priming to helping behavior sum up to something near zero (see also MacKinnon, 2008; Rucker, Preacher, Tormala, & Petty, 2011).

Table 2  
*Group Means of Dependent Measures for the American (Experiment 1) and the Swedish (Experiment 2) Samples*

Measure	Helpfulness priming		Control priming	
	First-person perspective	Third-person perspective	First-person perspective	Third-person perspective
Experiment 1				
Helpfulness construct accessibility <sup>a</sup>	6.87 (3.11) [6.01, 7.64]	6.53 (2.69) [5.77, 7.30]	6.04 (2.29) [5.31, 6.77]	5.63 (2.36) [4.92, 6.33]
Helpfulness intentions <sup>b</sup>	11.22 (3.91) [9.99, 12.46]	10.25 (4.72) [9.02, 11.49]	10.69 (4.04) [9.52, 11.86]	10.53 (4.10) [9.39, 11.67]
Social desirability <sup>c</sup>	2.07 (1.01) [1.74, 2.40]	2.02 (1.12) [1.69, 2.35]	1.74 (1.18) [1.43, 2.05]	2.15 (1.15) [1.85, 2.46]
Experiment 2				
Helpfulness construct accessibility <sup>a</sup>	6.04 (2.13) [5.27, 6.82]	5.36 (1.91) [4.59, 6.14]	4.16 (1.72) [3.39, 4.94]	4.56 (2.02) [3.79, 5.34]
Helpfulness intentions <sup>b</sup>	10.87 (2.84) [9.78, 11.96]	11.26 (2.54) [10.17, 12.35]	11.01 (3.23) [9.92, 12.10]	12.01 (2.30) [10.92, 13.10]
Social desirability <sup>c</sup>	1.84 (1.03) [1.46, 2.22]	2.04 (0.98) [1.66, 2.41]	1.96 (0.84) [1.58, 2.34]	1.72 (0.94) [1.34, 2.10]

*Note.* Values in parentheses represent standard deviations. Values in square brackets represent 95% CI  
<sup>a</sup>Possible range: 0 (minimal accessibility) to 20 (maximal accessibility). <sup>b</sup>Possible range: 0 (minimal intentions) to 100 (maximal intentions). <sup>c</sup>Possible range: 0 (minimal social desirability) to 3 (maximal social desirability).



## Experiments 3 and 4

### Overview

These experiments were designed in response to the null findings and potential weaknesses of the helping behavior intentions measure employed in Experiment 1 and 2. First, the priming manipulation was revised to activate a goal to enact helping behavior in addition to increasing helpfulness accessibility. Lai et al.'s (2016) results indicate that procedures that activate goals produce significant changes in implicit bias or increase construct accessibility. Moreover, Liberman, Förster, and Friedman (2007) assert that goal-priming effects involve post-attainment decrements in motivation. The modified priming manipulation aimed to reduce such post-attainment decrease in motivation. During the priming phase, participants were instructed to focus more on their internal state *right before* engaging in a helpful action, rather than write about already completed actions. We examined the main effect of priming on helping behavior (Hypothesis 1) and the mediation effect of helpfulness accessibility (Hypothesis 4).

We also created a new dependent measure—donations to a charity—to assess the helpfulness priming effect. Here, we ensured that all participants were capable of demonstrating helpfulness by measuring donations to the UNHRC from participants' compensation. Thus, the new measure eliminated potential feasibility and probability constraints. Furthermore, since donations were solicited from participants' compensation, helping behavior in Experiment 3 and 4 had real consequences for participants' resources; this aspect is similar to real-world helpfulness. Finally, in contrast to Experiment 1 and 2, the manipulation of perspective taking was not included in Experiment 3 and 4. Instead, the priming procedure required all participants to assume the first-person perspective.

Both experiments were fully computerized and administered online. We recruited samples from the United States of America (Experiment 3) and Sweden (Experiment 4).

### Experiment 3

#### Method

**Participants and design.** All participants were recruited among US citizens via Amazon MTurk using as selection criterion an approval rating of 95% or higher. The sample consisted of 193 participants (102 females) with an average age of 35.46 years ( $SD = 8.86$ ). A sensitivity analysis indicates that a sample of this size provides an 80% power to detect an effect of  $d = .40$  at the .05 significance level. One participant was excluded from the analyses because they did not adhere to the instructions. Experiment 3 was disguised as an examination of individual differences in language use and communication. We used a simple between-subject (helpfulness vs. control priming) design in this study. Random assignment of participants resulted in a fairly equal distribution between the helpfulness priming condition ( $n = 94$ ) and the control priming condition ( $n = 98$ ). Participants received 2 USD as compensation.

#### Procedure and Materials

**Priming manipulation.** We devised a new reflection and writing task similar to what we used in Experiment 1. Consistent with the cover story, participants were told they would be presenting certain guided thoughts in writing. Participants in the *helpfulness priming* condition were instructed to think about and visualize a time when they had been helpful and to focus specifically on how they felt right before engaging in the helpful behavior. After reflecting, they were to present their reflections in writing. Correspondingly, participants in the *control* condition first reflected on a neutral topic: their morning routine. After reflection, they too presented their reflections in writing. We allotted a maximum of five minutes for reflection and writing: a mandatory two and half minutes, and an optional two and half minutes if necessary. (See Appendix A2)

### **Dependent variables.**

**Word fragment/stem task.** We tested participants with the same word completion tasks we used in Experiment 1 but with slight modifications. Unlike in Experiment 1, participants could type their preferred word into the textbox below a word fragment without having to click into the textbox. Additionally, there were no restrictions on the number of letters that could be entered. We maintained the same scoring procedure as in Experiment 1.

**Donations to charity.** Our new dependent measure to evaluate helping behavior was the total amount a participant donated, from each of five possible lottery earnings to a specified organization; the United Nations Human Rights Commission (UNHRC). Participants were asked to indicate the amount they were willing to donate for each possible lottery earning. The responses were recorded using a scale ranging from 0 USD to the maximum earning in each lottery, in increments of 1 USD. For the purposes of bolstering participants' belief in the authenticity of the lottery, we informed participants at the outset of the experiment that they would be entered in a lottery draw. We told participants that they could win one of the five amounts as additional compensation for participating in the experiment (120, 100, 70, 50, or 20 USD). However, participants did not know from the start that we would solicit donations to the UNHRC later in the experiment. After participants indicated their preferred donations, we asked participants to rate, on an 11-point scale, the extent to which they believed they had a real chance of winning any of the lottery amounts (0 = *did not believe at all*, 10 = *believed completely*). No significant differences were found between the helpfulness and control priming conditions  $t(190) = -0.91, p = .363, d = 0.13$ . Mean ratings, presented in Table 3, suggest participants were moderately positive about winning the lottery. In addition, we asked participants to rate, on an 11-point scale, the extent to which they considered donating to the UNHRC important (0 = *not important at all*, 10 = *extremely important*; see Table 3). There were no significant differences between the helpfulness and control priming conditions  $t(190) = -0.76, p = .447, d = 0.11$ . The subjective importance of donating measure was intended as a potential covariate, in addition to social desirability, in the analysis of the effect of priming on donations. When the experiment was complete, participants were fully debriefed and informed that, in truth, there was no lottery. We then explained why such a deception was necessary.

**Social desirability.** We included three social desirability items, from Stöber's (2001) Social Desirability Scale, in addition to the three items used in Experiment 1, administered in the same format as Experiment 1. We did not observe a significant difference between the helpfulness and control priming conditions in socially desirable responding,  $t(190) = -0.79, p = .428, d = 0.11$  (see Table 3).

## Results and Discussion

We examined the focal hypotheses using Hayes' (2015) SPSS PROCESS macro (model 4). In all the analyses, the helpfulness construct accessibility and the subjective importance of donating to the UNHRC variables were maintained in their original metric and the priming variable was dummy coded (0 = control priming, 1 = helpfulness priming). Group means for all variables in the analysis are reported in Table 3. Social desirability and belief in chances of winning the advertised lottery were included as covariates in the analysis. Covariate analyses indicated no significant relationships between social desirability and helpfulness construct accessibility,  $b = -0.13$ ,  $SE = 0.11$ ,  $p = .252$ , or helping behavior (i.e., the total amount donated to the UNHRC),  $b = 2.67$ ,  $SE = 2.34$ ,  $p = .254$ . Subjective importance of donating was not related to construct accessibility,  $b = -0.08$ ,  $SE = 0.06$ ,  $p = .157$ , but was a strong positive predictor of the total amount donated,  $b = 11.52$ ,  $SE = 1.22$ ,  $p < .001$ .

The previous finding that helpfulness priming increases helpfulness construct accessibility was replicated. The effect of priming on helpfulness construct accessibility was positive and significant,  $b = 1.06$ ,  $SE = 0.37$ ,  $p = .004$ . The relationship between helpfulness construct accessibility and helping behavior was not significant,  $b = -1.72$ ,  $SE = 1.54$ ,  $p = .265$ . Moreover, the total effect of priming on helping behavior was not significant,  $b = 5.42$ ,  $SE = 7.68$ ,  $p = .482$ . Thus, the priming manipulation did not have a significant direct impact on helping behavior, failing to support Hypothesis 1. Results based on 5,000 bootstrapped samples showed that the indirect effect of helpfulness priming on donations, via helpfulness construct accessibility, was not statistically significant,  $b = -1.82$ , 95% BCa CI [-6.54, .85]. Hence, Hypothesis 4 was not supported.

## Experiment 4

Experiment 4 was a direct replication of Experiment 3 but conducted with a Swedish sample.

### Method

**Participants and design.** Eighty-six participants with an average age of 27.70 years ( $SD = 7.38$ ) participated in this study (62 females; one participant did not state their gender). A sensitivity analysis indicates that a sample of this size provides a 80% power to detect an effect of  $d = .61$  at the .05 significance level. The same design used in Experiment 3 was used. Participants were randomly assigned to the helpfulness ( $n = 42$ ) or control ( $n = 44$ ) priming condition.

**Measures and procedure.** We used the same priming task, dependent measures, and procedure protocols used in Experiment 2 in this experiment. Participants received a lottery ticket worth 60SEK (~ 7 USD).

**Word fragment/stem task.** The same list of words used in Experiment 1 was used and we administered the task in the same manner as Experiment 2.

**Donations to charity.** We told participants that, from the lottery, they could possibly win one of the five amounts (400, 300, 200, 100, or 50 SEK) as additional compensation for participating in the experiment. Participants were asked to indicate the amount they were willing to donate, for each possible lottery earning, in case they won any of the lottery amounts, on a scale ranging from 0 SEK to the maximum possible earning (in increments of 1 SEK). There was no significant difference between the helpfulness and control priming conditions regarding participants' ratings of the extent to which they believed they had a real chance of winning any of the lotteries  $t(84) = -0.09, p = .931, d = 0.02$  (see Table 3). Subjective ratings of the importance of donating to the UNHRC indicated no significant differences between the helpfulness and control priming conditions,  $t(84) = 1.60, p = .115, d = 0.35$  (see Table 3).

**Social desirability.** There was no significant difference between the helpfulness and control priming conditions in socially desirable responding,  $t(84) = -0.09, p = .925, d = 0.02$ .

## Results and Discussion

We employed the same analysis strategy used in Experiment 3. Covariate analyses indicated no relationship between social desirability and helpfulness construct accessibility,  $b = -0.03, SE = 0.14, p = .855$ , or helping behavior,  $b = -18.51, SE = 21.10, p = .383$ . Subjective importance of donating did not significantly predict helpfulness construct accessibility,  $b = -.01, SE = 0.08, p = .902$ , but showed a strong positive relationship with donations,  $b = 84.93, SE = 11.77, p < .001$ .

The effect of priming on helpfulness construct accessibility was again significant,  $b = 1.00, SE = 0.45, p = .030$ . This finding replicates the previous finding that helpfulness priming increases helpfulness construct accessibility. Moreover, the relationship between helpfulness construct accessibility and the total amount donated was positive but not quite significant,  $b = 32.21, SE = 16.19, p = .050$ . However, the total effect of priming on donations was not significant,  $b = -39.50, SE = 66.52, p = .554$ . Thus, despite a significant increase in helpfulness construct accessibility, the effect of helpfulness priming did not directly influence the size of donations offered by participants. Hence, Hypothesis 1 did not receive support. However, the indirect effect of helpfulness priming on donations, via helpfulness construct accessibility, was statistically significant,  $b = 31.72, 95\% \text{ BCa CI } [2.85, 88.79]$ . Thus, Hypothesis 4 was supported. This finding indicates that helpfulness priming indirectly influenced donations by increasing helpfulness construct accessibility.

Table 3  
*Group Means of Dependent Measures for the American (Experiment 3) and the Swedish (Experiment 4) Samples*

Measure	Experiment 3		Experiment 4	
	Control priming	Helpfulness priming	Control priming	Helpfulness priming
Helpfulness construct accessibility <sup>a</sup>	6.21 (2.58) [5.71, 6.72]	7.22 (2.49) [6.71, 7.74]	4.37 (1.64) [3.76, 4.97]	5.36 (2.34) [4.74, 5.97]
Total amount donated <sup>b</sup>	46.37 (58.20) [33.23, 59.50]	56.52 (73.12) [43.10, 69.93]	534.13 (393.82) [419.82, 648.45]	413.45 (367.73) [296.45, 530.46]
Social desirability <sup>c</sup>	3.33 (1.72) [2.99, 3.67]	3.32 (1.72) [3.18, 4.92]	3.16 (1.55) [2.70, 3.62]	3.20 (1.54) [2.72, 3.66]
Perceived chances of winning lottery <sup>d</sup>	4.19 (3.38) [3.47, 4.92]	4.67 (3.86) [3.93, 5.41]	2.50 (2.66) [1.74, 3.26]	2.55 (2.39) [1.77, 3.32]
Subjective importance of donating <sup>e</sup>	3.66 (3.27) [3.01, 4.31]	4.02 (3.25) [3.36, 4.68]	6.00 (2.77) [5.19, 6.83]	5.05 (2.77) [4.20, 5.90]

*Note.* Values in parentheses represent standard deviations. Values in square brackets represent 95% CI  
<sup>a</sup>Possible range: 0 (minimal accessibility) to 20 (maximal accessibility). <sup>b</sup>Possible range: 0 USD to 360 USD in Experiment 3; 0 SEK to 1050 SEK in Experiment 4. <sup>c</sup>Possible range: 0 (minimal social desirability) to 6 (maximal social desirability). <sup>d</sup>Possible range: 0 (minimal belief) to 10 (maximal belief). <sup>e</sup>Possible range: 0 (minimal importance) to 10 (maximal importance).

## Experiment 5

### Overview

So far, Experiment 1 indicated that helpfulness priming effects may be stifled by low suitability affordances. Furthermore, Experiments 2 and 4 indicated that construct accessibility mediates the influence on priming on behavior. In Experiment 5, we manipulated priming and situational affordances (i.e., high vs. low suitability) orthogonally, and assessed the moderating role of situational affordance. In all, Hypotheses 1 (i.e., the main effect of priming on behavior), 3 (i.e., the moderating role of situational affordance), and 4 (i.e., the mediation effect of construct accessibility) were examined.

The helping behavior measure in this experiment was altered slightly because even though in Experiments 3 and 4 participants seemed vested in their choices of donation we did not assess belief in the authenticity of the lottery. It is possible that some participants could have viewed the lottery as hypothetical. Therefore, in Experiment 5, we assessed helping behavior using donations from a real lottery.

### Method

**Participants and Design.** Ninety-one<sup>3</sup> undergraduate students and community members (69 females) with an average age of 20.09 years ( $SD = 4.56$  years) participated in this study. A sensitivity analysis indicates that a sample of this size provides a 65% power to detect an effect of  $d = .50$  and 80% power to detect an effect of  $d = .58$  at the .05

significance level. Based on previous research examining helpfulness priming effects using similar methods (i.e., Macrae & Johnston, 1998, Experiment 1 [ $d = .59$ ], Experiment 2 [ $d = .51$ ]), it is reasonable to expect an effect size of  $d = .51$  or higher. Participants were recruited from the United Kingdom (via a university participant pool). We used a 2 (priming: helpfulness vs. control)  $\times$  2 (situational affordance: high vs. low suitability) between-groups design in this experiment. Random assignment produced a distribution of between 21 and 25 participants in each cell of the design.

**Procedure and Materials.** We used identical priming manipulation used in Experiment 3. However, similar to the priming procedure in Experiment 1, the reflection and writing tasks were separated. The same word fragment/stem task, and procedure protocols in Experiment 3 were maintained after the priming task. This experiment was conducted at a computer laboratory and each participant was tested in a workspace cubicle. Undergraduate students received one credit point as compensation; community members were individuals who responded to email advertisements and volunteered to participate.

**Donation and situational affordances.** At the outset of the experiment, all participants were informed that they will be entered in a 100 GBP (~ 121 USD) lottery draw as part of the compensation for participating in the experiment. We told participants that one person would be drawn at random to receive the 100 GBP. Similar to Experiments 2 and 3, they were unaware that donations would be solicited later in the experiment. We assessed helping behavior by soliciting a donation, to be given to The United Nations Children's Fund (UNICEF), from the possible 100 GBP lottery earning. In order to examine the effect of situational affordances on helping behavior, participants were presented one of two situations when we solicited donations for UNICEF. Participants, in both situations, were told that our goal was to raise 1,000 GBP (~1,212 USD). A higher need for donations was induced in the high suitability condition by telling participants that we had raised only 400 GBP. In the low suitability condition, however, we created a lesser need to donate to our collection by informing participants that we had already raised all of the intended 1,000 GBP (See Appendix A5). A pilot test ( $N = 81$ ) indicated that participants exposed to the high, in contrast to the low, suitability affordance were more likely donate to UNICEF ( $d = 0.54$ ). Analyses of these data are presented in Appendix A6.

Donations were recorded using a scale ranging from 0 to 100 GBP, in increments of 1 GBP. Participants also provided ratings, on 11-point continuous scales (0-10) of (a) the extent to which they believed the advertised lottery was authentic (0 = *did not believe at all*, 10 = *believed completely*); (b) the extent to which they believed they had a real chance of winning the lottery (0 = *did not believe at all*, 10 = *believed completely*); and (c) subjective importance of donating to UNICEF (0 = *not important at all*, 10 = *extremely important*).

## Results and Discussion

We used Hayes' (2015) SPSS PROCESS macro in all our analyses. The main effects of priming, situational affordance, and the Priming  $\times$  Situational Affordance interaction were not statistically significant with regard to belief in the authenticity of the lottery, chances of winning the lottery, and subjective importance of donating, all  $ps > .05$ . Mean scores of both ratings suggest that participants were positive about the authenticity of the lottery and their chances of winning (see Table 4).

**Moderation analysis.** We examined the effects of priming, situational affordance, and their interaction on helping behavior (i.e., donations) in a moderation analyses with 5,000 bootstrapped samples using Hayes' (2015) SPSS PROCESS macro (model 1). The priming [and situational affordance] variable was effect coded (-0.5 = control priming [low suitability], 0.5 = helpfulness priming [high suitability]) before analysis. We controlled for social desirability and subjective importance of donating in the analyses. Covariate analysis indicated that social desirability was not significantly related to the size of donations ( $b = 2.82$ ,  $SE = 2.09$ ,  $p = .182$ ) but subjective importance of donating strongly predicted donations,  $b = 7.19$ ,  $SE = 1.01$ ,  $p < .001$

The main effect of priming was not significant,  $b = -2.31$ ,  $SE = 5.20$ ,  $p = .657$ . This fails to support the prediction of Hypothesis 1. The main effect of situational affordance was also not significant,  $b = -5.83$ ,  $SE = 5.14$ ,  $p = .260$ . The interaction between priming and situational affordance also did not achieve statistical significance,  $b = -16.59$ ,  $SE = 10.24$ ,  $p = .109$ . Thus, Hypothesis 3 was not supported.

**Mediation analysis.** We examined the indirect effect on priming on donation in a mediation analysis with 5,000 bootstrapped samples (PROCESS model 4). Situational affordance was excluded in this analysis because the main effect of situational affordance and the interaction effect between priming and situational affordance did not achieve significance<sup>4</sup>. Before running the analysis, the priming variable was dummy coded (0 = control priming, 1 = helpfulness priming). Helpfulness construct accessibility was maintained in its original metric. We controlled for the effect of social desirability and subjective importance of donating.

The previous finding that helpfulness priming increases helpfulness construct accessibility was not replicated,  $b = 0.82$ ,  $SE = 0.51$ ,  $p = .108$ . The relationship between helpfulness construct accessibility and helping behavior was not significant,  $b = -1.40$ ,  $SE = 1.11$ ,  $p = .210$ . Furthermore, the total effect of priming on helping behavior was not significant,  $b = -1.72$ ,  $SE = 5.30$ ,  $p = .747$ . Finally, the indirect effect of helpfulness priming on donations, via helpfulness construct accessibility, was not statistically significant,  $b = -1.15$ , 95% BCa CI [-5.57, .26]. Hence, Hypothesis 4 was not supported.

### Cross-Experimental Meta-analysis

It is possible that some of the studies in this research (e.g., Experiment 5) were potentially underpowered to detect effect sizes typically observed in the prosocial (i.e. helpfulness) priming literature (i.e., the main effect of helpfulness priming). Since the combined results of the five studies provide a more reliable estimate of the helpfulness priming main effect than the individual studies, we conducted a cross-experimental meta-analysis to estimate the overall helpfulness (vs. control) priming effect. The module 'MAJOR' for the JAMOV statistical software (version 0.8.1.7) was used for the analysis. Each experiment represented a unit of analysis. We used the between-groups data from the helpfulness (vs. control) priming conditions and the dependent variable was the amount the amount of helping behavior as assessed using the helping behavior and behavioral intentions measures. A random effects model produced an overall helpfulness priming effect size of Hedges'  $g = 0.00$  (positive values indicating an effect in the predicted direction), 95% CI [-0.17, 0.17]. These results indicate that the helpfulness (vs. control) priming, as

operationalized in the current research, has little or no impact on helping behavior, and that the observed null findings are unlikely to be a result of insufficient power.

Table 4  
*Group Means of Measures in Experiment 5*

Measure	Control priming		Helpfulness priming	
	Low-suitability	High-suitability	Low-suitability	High-suitability
Helpfulness construct accessibility <sup>a</sup>	6.13 (2.40) [5.16, 7.09]	6.05 (2.52) [5.02, 7.08]	6.81 (2.34) [5.78, 7.84]	6.88 (2.28) [5.93, 7.82]
Total amount donated <sup>b</sup>	34.79 (32.32) [22.36, 47.22]	41.19 (32.52) [27.90, 54.48]	49.62 (32.63) [36.33, 62.91]	35.44 (29.37) [23.26, 47.62]
Social desirability <sup>c</sup>	4.17 (1.02) [3.66, 4.67]	3.91 (1.51) [3.36, 4.45]	4.19 (1.37) [3.65, 4.73]	4.04 (1.10) [3.54, 4.53]
Subjective importance of donating <sup>d</sup>	5.21 (2.84) [4.16, 6.25]	5.86 (2.80) [4.74, 6.98]	6.43 (2.58) [5.31, 7.55]	6.48 (2.06) [5.46, 7.51]
Perceived chances of winning lottery <sup>e</sup>	4.71 (2.68) [3.61, 5.80]	4.76 (3.33) [3.59, 5.93]	3.19 (2.25) [2.02, 4.36]	4.12 (2.47) [3.05, 5.19]
Perceived authenticity of lottery <sup>f</sup>	6.42 (2.32) [5.32, 7.52]	6.48 (3.20) [5.30, 7.65]	5.52 (2.94) [4.35, 6.70]	6.92 (2.40) [5.84, 8.00]

*Note.* Values in parentheses represent standard deviations. Values in square brackets represent 95% CI  
<sup>a</sup>Possible range: 0 (minimal accessibility) to 20 (maximal accessibility). <sup>b</sup>Possible range: 0 GBP to 100 GBP.  
<sup>c</sup>Possible range: 0 (minimal social desirability) to 6 (maximal social desirability). <sup>d</sup>Possible range: 0 (minimal importance) to 10 (maximal importance). <sup>e</sup>Possible range: 0 (minimal belief) to 10 (maximal belief). <sup>f</sup>Possible range: 0 (minimal belief) to 10 (maximal belief).

### General Discussion of the Mechanisms of Helpfulness Priming

Drawing on current theories of priming, our main objective in this research was to examine mechanisms that drive helpfulness priming effects. Overall, consistent with construct-accessibility based (Eitam & Higgins, 2010; Wheeler et al., 2014; Schröder & Thagard, 2014) and situation-based (Loersch & Payne, 2014; Barsalou, 2016) models, our experiments indicated that participants primed with helping behavior experienced higher helpfulness construct accessibility, compared to participants who received the relatively neutral prime. Failing to support the majority of the focal hypotheses, however, there was no evidence of a total main effect of helpfulness priming on helping behavior in any of the experiments. Interestingly, recent research examining behavioral effects of money priming similarly found that money priming manipulations reliably activate the concept of money



but did not influence subsequent behavioral dependent measures (Caruso, Shapira, & Landy, 2017).

Moreover, in Experiments 1 and 2, perspective taking did not moderate the influence of priming on behavior as proposed by the active-self account (Wheeler et al., 2014). In Experiments 3, 4 and 5, all participants took the first-person perspective during priming; again, we did not observe a significant assimilation to the prime on target behavior. Furthermore, the proposition by situation-based models (Loersch & Payne, 2014; Barsalou, 2016) that priming could have a differential influence on behavior because of high (vs. low) suitability affordance generally did not receive support. Comments from participants in Experiments 1 and 2 suggested that the self-report measure of helpfulness intentions did not provide adequate situational affordance to demonstrate helping behavior, even if one wanted to exhibit helping behavior. In Experiments 3 and 4, we eliminated this shortcoming by ensuring that all participants who were willing to act in a helpful manner could do so. Still, the total main effect of priming was not significant. Experiment 5, where we manipulated priming and situational affordances orthogonally, revealed no systematic interactions.

Beyond the total main effect of priming on helping behavior, we examined the mediating role of construct accessibility proposed by the current theories. The data revealed mixed results. Nonetheless, consistent with extant theorizing the results suggest that variability in construct accessibility is an important driver of priming effects. Helpfulness priming increased helping behavior indirectly through construct accessibility in two experiments. When variation in construct accessibility was modestly associated with behavior (Experiments 2 and 4), priming had an indirect influence on behavior through construct accessibility. As mentioned previously (see discussion of Experiment 2), it is possible that helpfulness construct accessibility particularly mediates the effect of priming on helping behavior positively, even though the overall effect of priming, which may include a host of suppressors and moderators, on behavior is close to zero (see Wheeler & DeMarree, 2009, on multiple mechanisms of prime to behavior effects). Priming had neither direct nor indirect effects on behavior in the experiments where variations in construct accessibility displayed weak to no association with behavior (i.e., Experiments 1, 2, and 5).

Retrospective reports, from awareness checks (see Appendix A6), after we assessed helpfulness construct accessibility indicated that, for some participants, changes in construct accessibility did not occur outside of awareness. This is to be expected since the priming procedure in this research was upfront and required deliberation. However, it is possible that hindsight bias (Nisbett & Wilson, 1977) and inference from awareness assessment instructions (Ericsson & Simon, 1980) contributed to such awareness reports. Our data are, therefore, unable to fully decipher the roles of automaticity and deliberation in the effects of priming on assimilative changes in construct accessibility.

It is possible that the word-fragment completion task, where all participants self-generated helpfulness related (and neutral) words could have inadvertently primed helping behavior among those in the control group. Mussweiler and Neumann (2000) have demonstrated that such self-generating procedures are more likely to induce misattribution of resultant construct accessibility as internally generated compared to external and effortful priming. We acknowledge this limitation and note that such contamination effects may have particularly obscured our efforts to disentangle how perspective taking induces self-prime overlap through perspective taking (Experiments 1 and 2). That notwithstanding, Bargh,

Bond, Lombardi, and Tota (1986) have found that different sources of construct accessibility can influence behavior additively. Furthermore, Higgins and Brendl (1995) have found that when a primed construct is applicable in a given affordance, sufficiently higher construct accessibility can yield stronger assimilative judgments in spite of awareness of the priming event. Since participants in the helpfulness priming group self-generated more helpfulness words compared to the control group, one would expect that both sources of construct accessibility (i.e., external priming manipulation and self-generated words) would combine additively for a larger effect in the helpfulness priming group. Moreover, reported awareness of the possible influence of the priming manipulation, which could have led primed participants to contrast their behavior away from the prime (i.e., Mussweiler & Neumann 2000), did not influence the nature of the results. Future research should explore measures of construct accessibility and/or manipulation of mediator research designs (see Pirlott & Mackinnon, 2016) that assess the impact of priming while having little possibility of contaminating total main effects of priming on behavior. This would be particularly insightful in expounding the mechanisms of priming effects.

Samples characteristics and inadequate affordances may account for cases where construct accessibility was not associated with helping behavior. Generally, awareness reports in Experiment 1 suggested that feasibility concerns about the enactment of some helpfulness actions may have watered down the possible influences of construct accessibility as observed in Experiment 2. We suspect that the nature of the different samples could explain this pattern. In Experiment 1 we recruited Amazon MTurk workers, many of whose income depends on completing many experiments; hence, they may have a tendency to prefer tasks that require little time and effort as possible. Thus, they may have been more prone to discarding the possibility of enacting any of the listed helpfulness actions that were slightly demanding compared to participants in Experiment 2 who were volunteers tested at a laboratory. In Experiment 3 and 4, participants in the American sample (Experiment 3) indicated lower subjective importance of donating than did Swedish participants (Experiment 4); see Table 4. This hints at the possibility that, overall, the American participants did not consider donating to UNHRC as important as their Swedish counterparts did. Hence, the invitation to donate could have provided more suitable affordances for Swedish participants. The helpfulness prime seemingly had significant indirect effect influence on helping behavior, through helpfulness construct accessibility, only when participants perceived a suitable (Experiment 2) or relevant (Experiment 4) affordance to enact helping behavior. Taken together, these findings provide some support to situation-based models, which posit that, beyond changes in construct accessibility, assimilative priming effects are more likely to occur in suitable situations.

The pilot test for Experiment 5 indicated that participants in the high (vs. low) suitability condition were more likely to donate in a hypothetical scenario. However, in the main study where we solicited actual donations, this finding did not replicate. Moreover, the predicted interaction effect between priming and situational affordance was not observed in the main study. One possible explanation for this inconsistency could be that indicating how likely one is to offer one's resources is not as evocative and cognitively arousing as actually parting with one's resources. Thus, in the pilot study, we suspect that participants in the high (vs. low) suitability condition may have overstated their generosity because no real resource consequences were involved. We acknowledge that these null findings may also be due to limited power of the analyses, given the small sample in each cell of the experimental design. It should be noted, however, that the means in the critical cells were in the opposite direction

to what was predicted (i.e., for helpfulness primed participants, donations were larger in the low [vs. high] suitability condition). This speaks against the possibility that limited power is responsible for our failure to confirm our predictions.

## **Conclusions**

In this research, we aimed to shed light on the underlying mechanisms of helpfulness priming effects by drawing on extant theoretical accounts that explain the occurrence of priming. The results provide useful information regarding the importance of variability in helpfulness construct accessibility and suitable affordances in predicting helping behavior. In terms of basic priming effects, however, there was little support for our predictions. Across five experiments, we failed to observe any direct effect of our priming manipulation on behavioral responses, indicating that behavioral priming effects, as operationalized and measured in the current research, are likely to be weak or nonexistent. This is an important contribution to the cumulative evidence on the topic, and is important to consider in future estimations of the true underlying effect size (e.g., meta-analyses). The current work provides initial steps toward uncovering the nature, and the reliability, of behavioral priming effects. We hope this study will inspire similar research that aims to replicate, and expand on, our findings directly and conceptually.

## **Part 2: How Priming Works in Intelligence Interviews**

### **Experiment 6**

#### **Overview**

The findings of Part 1 were extended to a HUMINT interview context to examine when and how helpfulness priming influences information disclosure. We theorized that a helpfulness-focused interview style, which draws on helpfulness accessibility, affords a high-suitability affordance that may facilitate the helpfulness priming effect. The main objective of Experiment 6 was to investigate this proposition (see Appendix B1 for an extended report of the current experiment). Participants were invited to prepare for an interview, assuming the role of a police informant with some information about an upcoming terror attack. Subsequently, they were interviewed about the attack using either a helpfulness-focused or control interview style. These served as proxies for high and low-suitability affordances respectively. Prior to the interview, in a seemingly unrelated experiment, we primed and assessed participants' cognitive accessibility to helpfulness. The control group engaged in a similar task that was relatively neutral to the helpfulness prime.

We hypothesized that participants in the helpfulness (vs. control) priming condition would disclose more information (Hypothesis 1). In addition, we predicted an interaction between the helpfulness (vs. control) prime and helpfulness-focused (vs. control) interview style whereby the helpfulness priming effect would produce a stronger assimilative effect on disclosure when combined with the helpfulness-focused interview style (Hypothesis 2). Finally, we predicted a conditional mediation effect expecting that the mediation effect of helpfulness accessibility would be stronger in the helpfulness-focused (vs. control) condition (Hypothesis 3). Figure 1 depicts the proposed conditional mediation.

## Method

**Participants and design.** The sample consisted of 115 Swedish university students and community members (84 women,  $M_{\text{age}} = 28.88$  years). A sensitivity analysis indicates that a sample of this size provides a 75% power to detect an effect of  $d = .50$  and an 80% power to detect an effect of  $d = .52$  at the .05 significance level. Based on previous research examining helpfulness priming effects using similar methods (i.e., Macrae & Johnston, 1998, Experiment 1 [ $d = .59$ ], Experiment 2 [ $d = .51$ ]), it is reasonable to expect an effect size of  $d = .51$  or higher.

A 2 (priming: helpfulness vs. control)  $\times$  2 (interview style: helpfulness-focused vs. control) between-groups design was used. Random assignment produced a distribution of between 28 and 33 participants in each cell of the design. Participants were compensated with a movie ticket worth 90 SEK (~ 10 USD). Descriptive statistics for all dependent measures are reported in Table 6.

## Procedure and Materials

The experimental procedure consisted of four phases, which were guised to appear as two independent experiments in order not to give the working hypotheses away. In the alleged first experiment, we told participants that a range of interview techniques was being examined. In the second experiment, which contained the priming manipulation, we told participants that we were exploring individual differences in language use and communication.

**Phase 1 (Background and planning).** We used the same background and planning materials as designed by Oleszkiewicz et al. (2014). Each participant prepared for an interview, assuming the role of a police informant with some information about an impending terror attack. To prepare for the interview, participants were provided with a booklet that contained incomplete information about a mock terror plot by a left-wing extremist group. We presented the information in a coherent storyline consisting of 37 distinct units of information. Participants received the following instructions (with an incentive) to fulfill the informant role: (a) not to provide too little information (since assisting the police was necessary to be granted free passage out of the country); and (b) not to provide too much information (because participants were to imagine having strong ties to the extremist group). These instructions embody the tenets of the previously discussed arousal cost-reward model (Doviado et al., 1991) because they induce costs—associated with providing too much or too little information—that mimic a real-world instance. That is, in the current informant role, providing too much information bears the cost of potentially betraying trusted comrades (viz., imagined strong ties to the extremist group). On the other hand, providing too little information bears the cost of losing the desired benefit (viz., free passage out of the country). Indeed, these instructions have been shown to successfully induce competing motivations to disclose and to withhold information, thereby leading participants to economize their disclosure such that they share some but not all the information at their disposal (e.g., Oleszkiewicz, 2016; Oleszkiewicz, Granhag, & Kleinman, 2017).

**Phase 2 (Priming).** When participants indicated completion of Phase 1, they were invited to complete the supposed second experiment. We told participants that because the police-contact was going to conduct the interview a couple of minutes later, they could save

time by completing the second experiment while they waited. No participant objected to this. The priming phase was fully computerized and we used the same procedure protocols and materials as used in Experiment 4 to administer the helpfulness (vs. control) prime as well as assess helpfulness accessibility.

**Phase 3 (The interview).** Participants were interviewed via an audio Skype call approximately three minutes after the priming and were permitted to fabricate information and lie. The interviews were recorded for data analysis. During the interview, they were allowed to access the notes they had prepared in Phase 1. We implemented this feature to eliminate potential memory confounds.

The interview protocols were scripted and consisted of three thematically similar non-directive and open-ended questions. In each interview condition, the interviewer opened with an introduction, then asked for details about the attack. Next, the interviewer requested additional and omitted information respectively. Two interviewers were trained to conduct the interviews and were instructed to follow the interview protocols strictly without any improvisation.

Despite the similar internal structure of the interview protocols, the specific questions were phrased differently. In the helpfulness-consistent interview condition, the questions were phrased to exude high fit with helpfulness concerns. Thus, the interviewer's introduction was sympathetic and emphasized the interviewee's autonomy in deciding what information to share. Previous research indicates that an empathic understanding of the requester's needs (Small & Simonsohn, 2008) and an emphasis on autonomy (Weinstein & Ryan, 2010) encourage people to enact helpful behaviors. Additionally, the helpfulness-focused interview style questions were worded to make it readily apparent to the interviewee that helpfulness can be exhibited by sharing reliable information (e.g. "We hope you can *help* us by providing details about the plans for the upcoming attack..."). Conversely, the phrasing of the questions in the control interview condition was relatively neutral to helpfulness. The interviewer took a business-like approach and the questions were straightforward and direct (e.g. "You can start by telling us what you know about this attack"). Each interview was transcribed verbatim and coded for the number of information units disclosed. Information that was disclosed more than once was counted as one unit of information.

Table 5  
*Interview Protocols Used in Experiment 6*

Interview Protocols	
Helpfulness-focused	Control
<b>Introduction and first question</b>	
Yes, hello, this is Kim from the police. I called to talk to you about the planned bomb attack.	Yes, hello, this is Kim was from the police. I called to talk to you about the planned bomb attack.
Are you okay?	Are you okay?
Okay, shall we go over to what we are going to talk about?	Okay, shall we go over to what we are going to talk about?
First, I want to emphasize that I understand that you are in a difficult situation. At the same time, you do understand that we cannot allow this deed to be executed. Therefore, I want to begin by explaining what I want to achieve with this conversation. I believe in collaborations and will not put any pressure on you, but will let you decide what information you can give me. Therefore, I will only ask a few open questions. When you feel you cannot give anything more, we will end the conversation. We hope you can <i>help us</i> by providing details about the plans for the upcoming attack. Please tell me what you know about this attack.	I have a few questions that I want you to answer. You can begin by telling us details about the upcoming attack.
<b>Second question</b>	
Thanks, that was <i>helpful</i> . I feel that this cooperation can really <i>help us</i> understand more about the attack. It would be really <i>helpful</i> if you had something more you could add.	Thanks, is there anything more you can tell us? Perhaps you remembered something more?
<b>Third question</b>	
As I mentioned earlier, I want you to know what you can expect when you talk to me, and I feel that we have something good going on here. So, before we finish this interview, is there any additional information that you can <i>help us</i> with? You might have just remembered something more?	So, before we conclude, is there any more information you can add for our investigation? If there is anything else you can remember.
<b>Closing line</b>	
Thank you for taking the time. The interview is now over.	
Note: Interview protocols are translated from Swedish	

**Phase 4 (Post-interview questions).** After the interview, each participant completed a computerized post-interview questionnaire. The questionnaire included extensive reliability checks to ensure consistency between participants' subjective and actual information disclosure (see Appendix B1 for analyses of reliability and consistency checks). Furthermore, we conducted an awareness assessment of the priming influence on disclosure (see Appendix B1). As none of the participants indicated awareness of the priming influence, the awareness data was not analyzed any further. Importantly, however, the participants provided a retrospective rating of the extent to which they were motivated to help the interviewer by sharing information (0 = *not motivated at all*, 10 = *very motivated*). This measure was included for exploratory analysis.

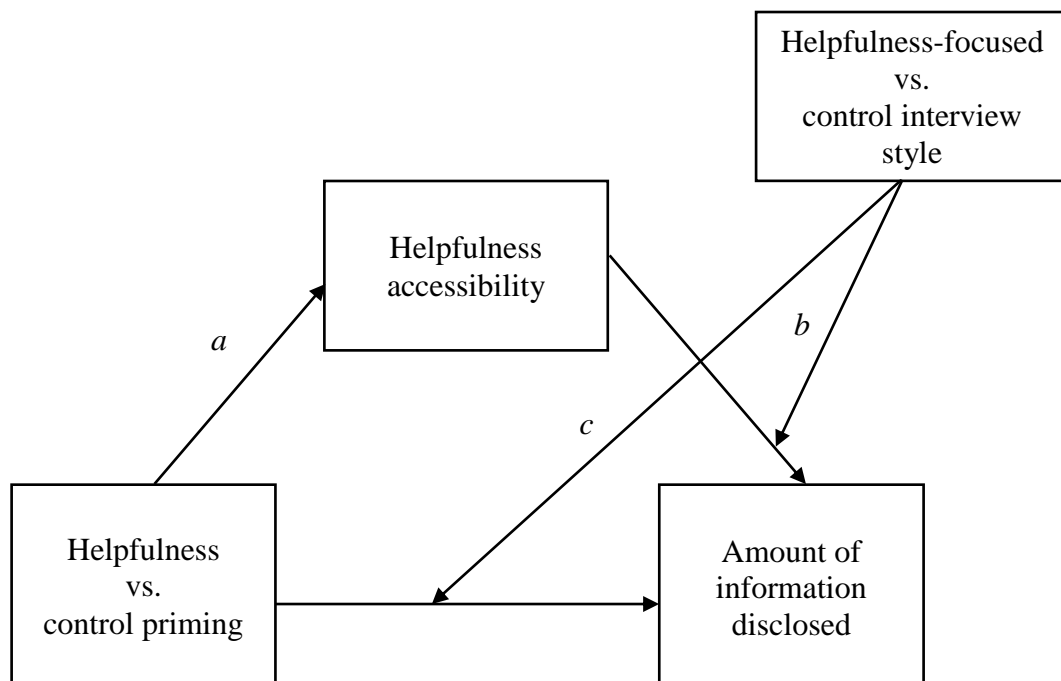
**Coding of interviews.** All interviews were transcribed verbatim. Each transcript was coded for the number of information units disclosed (range: 0–37). When a piece of information was disclosed more than once, it was counted as one unit of information. Incorrect and/or fabricated information was counted but not included in the quantity measure. Thirty-eight (33%) of the transcribed interviews were randomly selected and coded separately by two coders. Reliability analysis indicated that inter-rater reliability was excellent (Cohen's  $\kappa = 0.91$ ). The assistants discussed and settled minor disagreements for the thirty-eight transcripts after reliability analysis. One of the coders coded the remaining 67% of transcripts.

## Results and Discussion

We first examined the main effect of priming and the Priming  $\times$  Interview Style interaction on the amount of information disclosed in a moderation analysis (see Table 6 for descriptives). Following Hayes's (2013, p. 277) suggestion, condition variables were effect coded before the analyses (-0.5 = control priming, 0.5 = helpfulness priming; -0.5 = control interview, 0.5 = helpfulness-focused interview). The main effects of priming ( $b = -0.56$ ,  $SE = 0.69$ ,  $p = .414$ , 95% BCa CI [-1.92, 0.80]) and interview style ( $b = -0.50$ ,  $SE = 0.69$ ,  $p = .461$ , 95% BCa CI [-1.87, 0.85]) on information disclosed were not statistically significant. The former indicates that participants who received the helpfulness (vs. control) prime did not disclose significantly more units of information. Hence, Hypothesis 1 was not supported. Moreover, the interaction between priming and interview style was not significant,  $b = -1.40$ ,  $SE = 1.37$ ,  $p = .311$ , 95% BCa CI [-4.12, 1.32]. Thus, Hypothesis 2, which predicted that the helpfulness (vs. control) prime would produce a stronger assimilative effect on disclosure when combined with the helpfulness-focused (vs. control) interview style did not receive support.

We conducted a conditional mediation analysis, allowing the helpfulness-focused (vs. control) interview style variable to moderate the helpfulness accessibility- and helpfulness (vs. control) prime- to disclosure links, in order to examine Hypothesis 3. The mediation analysis was conducted despite the previous null findings because it has been argued that indirect effects should be estimated based on a formal mediation test rather on tests of individual paths in the proposed mediation model. Hayes (2013, p. 168-170) has posited that a null total main effect does not prevent the existence of a significant mediation effect. This is because a total main effect is an aggregate of the direct effect and all of the possible, positive and negative, indirect effects that connect an independent variable to a dependent variable.

On a descriptive level, the participants who received the helpfulness (vs. control) prime displayed higher levels of helpfulness accessibility (path *a* in Figure 1),  $b = 0.66$ ,  $SE = 0.37$ ,  $p = .075$ , 95% BCa CI [-0.07, 1.39]. As observed in the previous moderation analysis the Priming  $\times$  Interview Style interaction was not significant (path *c*),  $b = -1.96$ ,  $SE = 1.37$ ,  $p = .156$ , 95% BCa CI [-4.69, 0.76]. However, the Helpfulness Accessibility  $\times$  Interview Style interaction was statistically significant (path *b*),  $b = 0.78$ ,  $SE = 0.34$ ,  $p = .027$ , 95% BCa CI [0.09, 1.47]. The decomposed interaction (i.e., conditional effects analyses) revealed that at low levels of helpfulness accessibility (-1 *SD*), the helpfulness-focused (vs. control) interview style had a significantly negative effect on disclosure,  $b = -1.91$ ,  $SE = 0.96$ ,  $p = .048$ , 95% BCa CI [-3.80, -0.01]. This indicates that the helpfulness-focused interview style, which drew on helpfulness accessibility, decreased disclosure when such helpfulness accessibility was lacking. Though the effect of the helpfulness-focused (vs. control) interview style was positive at high levels of helpfulness accessibility (+1 *SD*), the effect was not statistically significant,  $b = 0.91$ ,  $SE = 0.97$ ,  $p = .350$ , 95% BCa CI [-1.01, 2.82]. Figure 2 illustrates the full interaction.



*Figure 1.* A conceptual model of the conditional mediation illustrating the relationships between priming, interview style, amount of information disclosed, and helpfulness accessibility



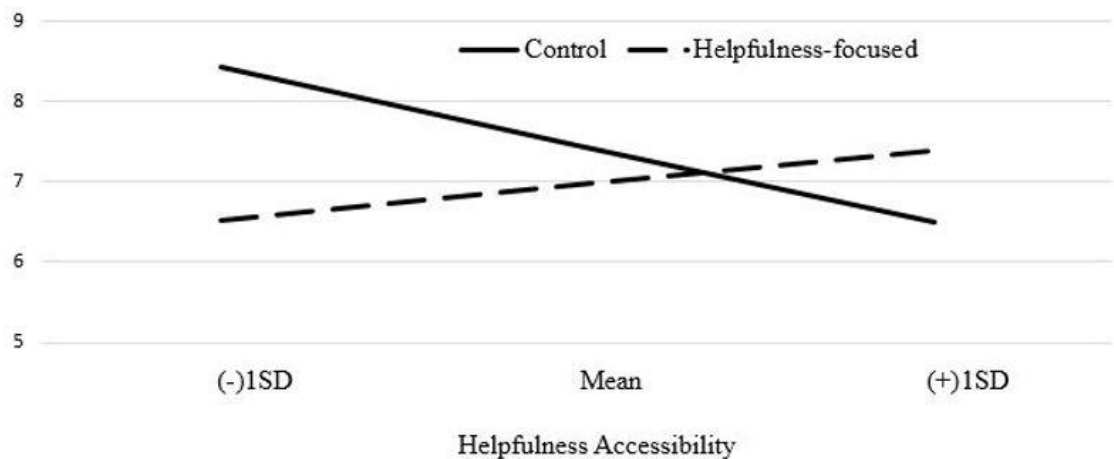


Figure 2. Information disclosed as a function of helpfulness accessibility (M, [+/- 1SD]) and interview style (Helpfulness-focused vs. Control).

Regarding mediations, the helpfulness (vs. control) prime had a significant negative indirect effect, through helpfulness accessibility, on disclosure in the control interview style condition,  $b = -0.34$ , 95% BCa CI [-1.03, -0.01]. Thus, these data suggest that the helpfulness prime reduced disclosure by increasing helpfulness accessibility when participants were interviewed using the control interview style. This finding should, however, be interpreted with caution. Since the helpfulness (vs. control) prime did not significantly increase helpfulness accessibility by conventional standards, interviewees' variation in helpfulness accessibility may have been due also to more stable preexisting sources (e.g. helpfulness values). The mediation effect of helpfulness accessibility was positive but not statistically significant among participants who were interviewed using the helpfulness-focused style,  $b = 0.16$ , 95% BCa CI [-0.17, 0.82]. Hence, in all, Hypothesis 3 received partial support.

Exploratory analysis on participants' helpfulness motivation self-reports indicated that helpfulness motivation scores were positively and significantly correlated to disclosure,  $r = .29$ ,  $p = .002$ , 95% CI [0.12, 0.45]. The main effects of priming ( $b = 0.03$ ,  $SE = 0.38$ ,  $p = .933$ , 95% BCa CI [-0.71, 0.77]) and interview style ( $b = 0.32$ ,  $SE = 0.38$ ,  $p = .393$ , 95% BCa CI [-0.42, 1.06]) on participants' helpfulness motivations were not statistically significant. Moreover, the interaction between priming and interview style was not significant at the .05 level,  $b = 1.41$ ,  $SE = 0.75$ ,  $p = .063$ , 95% BCa CI [-0.08, 2.89]. However, a significant Helpfulness Accessibility  $\times$  Interview Approach interaction,  $b = 0.40$ ,  $SE = 0.19$ ,  $p = .036$ , 95% BCa CI [0.03, 0.77], indicated that when helpfulness accessibility was high (+1 *SD*), the helpfulness-focused (vs. control) interview style boosted participants' motivations to be helpful to the interviewer by disclosing information,  $b = 1.16$ ,  $SE = 0.53$ ,  $p = .031$ , 95% BCa CI [0.11, 2.20]. The effect of the helpfulness-focused (vs. control) interview style on helpfulness motivations was not statistically significant at low levels of helpfulness accessibility (-1 *SD*),  $b = -0.43$ ,  $SE = 0.53$ ,  $p = .416$ , 95% BCa CI [-1.47, 0.61].

In summary, the findings of Experiment 6 suggests that when accessibility to a primed motivation is lacking, using an interview style that seeks to draw on the primed motivation could counteract the goal of increasing disclosure. The previously discussed

proposition that a helpfulness-focused interview style, which draws on helpfulness accessibility, would serve as a high-suitability affordance and thus enhance—not counteract—the assimilative effect of the helpfulness prime on disclosure cannot fully account for the findings. The proposition, which was deduced from current priming theories, largely informed the design of Experiment 6. However, the proposition would not have predicted (a) the observed negative effect of the helpfulness-focused interview style when helpfulness accessibility was lacking and (b) the negative mediation effect of helpfulness accessibility among participants interviewed using the control interview style. We, hence, speculated that interpersonal dynamics between the interviewer and interviewee, in addition to the priming effect may have been at play. Thus, we drew on principles of the interpersonal octagon (Birtchnell, 1994), which considers such interpersonal dynamics, to explain the findings fully.

Birtchnell (1994) posited that when pursuing a goal that requires interpersonal interaction with another individual, using an interpersonal style that considers the other individual's state of mind and/or needs is more likely to be constructive (i.e., adaptive) than a relating style that does not consider the others' state of mind (i.e., maladaptive). Hence, in terms of interpersonal relating, it is possible that among participants experiencing low helpfulness accessibility, the helpfulness-focused interview style functioned maladaptively—to the relating goal of increasing disclosure—because it was inconsiderate of interviewees' current low helpfulness accessibility.

Table 6  
*Group Means of Dependent Measures in Experiment 6*

Measure	Control priming		Helpfulness priming	
	Control Interview	Helpfulness-focused Interview	Control Interview	Helpfulness-focused Interview
Helpfulness accessibility <sup>a</sup>	4.50 (2.03) [3.76, 5.25]	4.93 (2.31) [4.15, 5.64]	5.36 (1.91) [4.58, 6.15]	5.39 (1.66) [4.71, 6.08]
Information disclosed <sup>b</sup>	7.46 (3.17) [6.09, 8.84]	7.66 (4.47) [6.20, 8.95]	7.60 (4.10) [6.15, 9.06]	6.39 (2.81) [5.13, 7.66]
Helpfulness motivation <sup>c</sup>	5.07 (2.02) [4.32, 5.82]	4.69 (1.87) [3.96, 5.47]	4.40 (2.08) [3.60, 5.20]	5.42 (2.03) [4.73, 6.12]
Perceived information disclosed <sup>d</sup>	4.21 (1.64) [3.62, 4.81]	3.59 (1.45) [3.11, 4.31]	3.80 (1.83) [3.17, 4.43]	3.68 (1.58) [3.12, 4.22]
Perceived specific information disclosed for clarity <sup>b</sup>	8.64 (4.54) [7.09, 10.19]	8.21 (3.85) [6.70, 9.80]	8.96 (4.76) [7.32, 10.60]	7.88 (3.39) [6.45, 9.31]
Interviewer's prior information <sup>b</sup>	3.93 (6.38) [2.19, 5.67]	3.03 (4.09) [1.01, 4.49]	3.48 (4.32) [1.64, 5.33]	2.24 (3.68) [0.64, 3.85]
Incorrect and fabricated details <sup>b</sup>	0.14 (0.36) [-0.02, 0.31]	0.07 (0.26) [-0.09, 0.24]	0.36 (0.64) [0.19, 0.53]	0.15 (0.44) [0.00, 0.30]

*Note.* Values in parentheses represent standard deviations. Values in square brackets represent 95% CI  
<sup>a</sup>Possible range: 0 (minimal accessibility) to 20 (maximal accessibility). <sup>b</sup>Possible range: 0 (no information) to 37 (all information). <sup>c</sup>Possible range: 0 (no motivation) to 10 (maximal motivation).  
<sup>d</sup>Possible range: 0 (no information) to 10 (maximal information).

## Experiment 7

### Overview

Drawing on the findings in Experiment 6, Experiment 7 examined the proposition that consistency between an interviewee's primed helpfulness dispositions and an interviewer's interpersonal approach when eliciting information would facilitate disclosure (see Appendix B2 for an extended report of the current experiment). We aimed to increase the ecological validity in this study by expanding the interview protocols previously used in Experiment 7 to now include probing follow-up questions. In addition, the potential influences of interviewees' interview experiences (e.g., autonomy and trust) and their perceptions about the interviewer were explored.

Participants took on the role of a police informant with information about an upcoming terrorist attack. Subsequently an interviewer solicited information about the attack using either a helpfulness-focused or a control interpersonal approach; these served as proxies for high and low-suitability affordances respectively. We primed participants' helpfulness motivations and assessed helpfulness accessibility, in an ostensibly unrelated experiment, before the interview. We predicted that participants primed with the helpfulness related content (vs. control) would disclose more information (Hypothesis 1). Additionally, we predicted an interaction whereby the effect of the helpfulness (vs. control) prime would be stronger when combined with the helpfulness-focused (vs. control) interpersonal approach (Hypothesis 2). Finally, we predicted a conditional mediation effect expecting that the mediation effect of helpfulness accessibility would be stronger in the helpfulness-focused (vs. control) interpersonal condition (Hypothesis 3). The experimental procedure consisted of five phases, which were guised to appear as two independent experiments.

## Method

**Participants and design.** The sample consisted of 116 Swedish university students and community members participated in the experiment (93 women,  $M_{\text{age}} = 29.91$  years). A sensitivity analysis indicates that a sample of this size provides a 75% power to detect an effect of  $d = .50$  and an 80% power to detect an effect of  $d = .52$  at the .05 significance level. Based on previous research examining helpfulness priming effects using similar methods (i.e., Macrae & Johnston, 1998, Experiment 1 [ $d = .59$ ], Experiment 2 [ $d = .51$ ]), it is reasonable to expect an effect size of  $d = .51$  or higher.

The participants were randomly assigned to one of four groups in a 2 (priming: helpfulness vs. control)  $\times$  2 (interpersonal approach: helpfulness-focused vs. control) between subjects design. Random assignment resulted in a distribution of between 27 and 30 participants in each cell of the design. Each participant received a gift card worth 100SEK (~11.5USD) as compensation. The full procedure consisted of five phases that we guised to appear as two independent experiments in order to conceal the working hypotheses. The cover stories were the same as what we used in Experiment 6.

## Procedure and Materials

**Phase 1 (Helpfulness values).** We assessed participants' dispositional orientation toward helpfulness using a shortened version of the Schwartz's Value Survey (SVS) designed by Lindeman and Verkasalo (2005). The survey contained ten motivationally distinct values (e.g., self-direction, universalism) and participants were to indicate the importance of each of the values as personal life-guiding principles, using a 9-point scale Likert scale (0 = *opposed to my principles*, 1 = *Not important*, 4 = *important*, 9 = *of supreme importance*). Helpfulness values, which was most relevant to the objectives of this study was included as a potential covariate when testing the influence of the independent variables on disclosure. The survey was computerized and sent to participants via a web link prior to arrival at the laboratory for the main experiment.

**Phase 2 (Background and planning).** Similar to Phase 1 of Experiment 6, participants were invited to prepare for an interview, assuming the role of a police informant with some information about an upcoming terror attack. We used the same background and planning materials, designed by Oleszkiewicz et al. (2014), as used in Experiment 6. A pilot test ( $N = 373$ ) indicated that all the 37 distinct pieces of information in the background and

planning material were considered to be substantially relevant to a police investigation. Participants were incentivized to economize their disclosure in order to induce competing motivations to disclose and withhold information (i.e., arousal cost-reward model).

**Phase 3 (Priming).** After completion of Phase 2, we primed and assessed participants' cognitive accessibility to helpfulness related content, using the same materials and procedure protocols as used in Experiment 4 (i.e., guided imagination and writing task as well as word-fragment task). The priming materials are reported in Appendix A2.

**Phase 4 (The interview).** Similar to Experiment 6, each participant was interviewed about three minutes after the priming and we implemented the same procedure protocols. However, unlike Experiment 6, the scripted interview protocols consisted of three thematically similar directive open-ended questions that solicited specific details about the attack (see Table 7). Each interview condition opened with an introduction and request for details about the members of the terrorist group planning the attack. The next question, which included four sub-questions, solicited information about the specific plans for the attack. We implemented this feature to probe the responses about the specific plans for the attack. Finally, the interviewer requested additional information and closed the interview after the informant responded.

Just like in Experiment 6, the specific questions in the helpfulness-focused and control interpersonal approach conditions were phrased differently. In line with helpfulness concerns, the interviewer's introduction in helpfulness-focused condition was empathetic and emphasized the informant's autonomy. Furthermore, the wording of each question displayed high-fit with helpfulness. In contrast, the interviewer in the control interpersonal approach condition took a stoic approach and asked straightforward direct questions.

We trained a female interviewer (using practice trials) to conduct all the interviews. To ensure internal validity, she was instructed to follow the interview protocols strictly and not to improvise. Inspection of the recorded interviews indicated that she adhered to the script throughout all the interviews and did not improvise. The interviewer was blind to the priming condition of the participant.

Table 7  
Interview Protocols Used in Experiment 7

Helpfulness-focused	Interview Protocols	Control
<b>Introduction and first question</b>		
<p>Yes, hello, this is Kim was from the police. I called to talk to you about the planned bomb attack.</p>	<p>Yes, hello, this is Kim was from the police. I called to talk to you about the planned bomb attack.</p>	
<p>Are you okay?</p>	<p>Are you okay?</p>	
<p>Okay, shall we go over to what we are going to talk about? First, I want to emphasize that I understand that you are in a difficult situation. At the same time, you do understand that we cannot allow this deed to be executed. Therefore, I want to begin by explaining what I want to achieve with this conversation. I believe in collaborations and will not put any pressure on you, but will let you decide what information you can give me. Therefore, I will only ask a few open, but specific questions. When you feel you cannot give anything more, we will end the conversation. I hope you can <i>help</i> me by telling me more about the upcoming attack. Please tell me about the members of the group who are planning the attack.</p>	<p>Okay, shall we go over to what we are going to talk about? I have a few open, but specific questions that I want you to answer. You can begin by telling me details about the upcoming attack: Please tell me about the members of the group who are planning the attack.</p>	
<b>Second question</b>		
<p>Thank you, that was <i>helpful</i>. I feel that this cooperation can really <i>help</i> me to understand more about the attack. It would be really <i>valuable</i> to me if you could tell me about the area where the group has chosen to perform the attack.</p>	<p>Thank you. Could tell me about the area where the group has chosen to perform the attack?</p>	
<b>Follow up questions:</b>	<b>Follow up questions:</b>	
<ul style="list-style-type: none"> <li>• Could you <i>help</i> me with information about where the bomb will be placed?</li> <li>• Information about the date on which the attack will take place will also be <i>valuable</i> for my investigation. Do you have any information about the date of the attack?</li> <li>• Could you <i>help</i> me with information regarding when and how the bomb will be delivered?</li> <li>• Do you have any information about when and how the bomb will be triggered? This will also <i>help</i> my investigation.</li> </ul>	<ul style="list-style-type: none"> <li>• Could you give me information about where the bomb will be placed?</li> <li>• Do you have any information about the date of the attack?</li> <li>• Could you give me information regarding when and how the bomb will be delivered?</li> <li>• Do you have any information about when and how the bomb will be triggered?</li> </ul>	
<b>Third question</b>		
<p>As I mentioned initially, I want you to know what you can expect when you talk to me, and I feel that we have something good going on here. So, before we finish this interview, is there any additional information that you can <i>help</i> me with? Perhaps something I haven't asked that will be <i>good</i> for me to know?</p>	<p>So, before we finish this interview, is there any additional information you can give? Perhaps some information I have not asked about?</p>	
<b>Closing line</b>		
Thank you for taking the time. The interview is now over.		

*Note:* Interview protocols are translated from Swedish

**Phase 5 (Post-interview questions).** Each participant completed a computerized post-interview questionnaire after the interview and was instructed to answer truthfully. The questions were the same as the ones (i.e., reliability checks, as well as helpfulness motivation and awareness assessments) used in Phase 4 of Experiment 6 (see Appendix B2 for the full analyses of reliability and consistency checks). In addition, participants provided two separate ratings of the extent to which the interviewer's interpersonal approach matched (0 = *did not match my expectations at all*, 10 = *matched my expectations completely*) and mismatched (0 = *did not mismatch my expectations at all*, 10 = *mismatched my expectations completely*) their expectations. The ratings were aggregated to an average to create an expectancy confirmation score for each participant. Next followed three items about participants' subjective interview experiences; these were the extent to which they felt (a) autonomy in choosing what information to disclose, (b) trust in the interviewer, and (c) at ease during the interview. The ratings were provided on a 7-point scale (1 = *do not agree at all*, 7 = *agree completely*). Finally, participants indicated their perceptions of the interviewer using 7-point Likert scales. We included perceptions about the interviewer's sympathy (-3 = *not sympathetic at all*, 3 = *very sympathetic*), friendliness (-3 = *not friendly at all*, 3 = *very friendly*), and interpersonal warmth (-3 = *not warm at all*, 3 = *very warm*), which were aggregated to create an interviewer likeability index.

**Coding procedure for interviews.** Each interview was transcribed verbatim. All transcripts were coded for the quantity of information disclosed (range: 0–37). Repeated information was marked as one unit of information only. Incorrect and/or fabricated information was counted but not included in the quantity measure because its occurrence was extremely low. Thirty percent of the transcribed interviews were randomly selected and coded separately by two coders who were blind to the purpose of the experiment. Reliability analysis indicated that inter-rater reliability was very good,  $\kappa = 0.89$ ,  $SE = 0.02$ , 95% CI [.85, .92]. The assistants discussed and settled minor disagreements after reliability analysis. One of the coders coded the remaining 70% of transcripts.

## Results and Discussion

We analyzed the data using the same analyses strategy as in Experiment 6. Overall, the analysis including the helpfulness values variable did not influence the nature of the results.

The main effects of priming,  $b = 1.03$ ,  $SE = 0.74$ ,  $p = .165$ , 95% BCa CI [-0.42, 2.51], and interview approach,  $b = 0.19$ ,  $SE = 0.74$ ,  $p = .795$ , 95% BCa CI [-1.24, 1.69], on the amount of information disclosed were not statistically significant. The former indicates that participants primed with the helpfulness content did not disclose significantly more information as predicted. Thus, Hypothesis 1 did not receive support. The Priming  $\times$  Interview Approach interaction was not significant by conventional standards,  $b = 2.57$ ,  $SE = 1.49$ ,  $p = .083$ , 95% BCa CI [-0.31, 5.49]. However, a conditional effects analysis to examine the interaction in detail revealed that participants who received the helpfulness (vs. control) prime disclosed significantly more information when the helpfulness focused approach was used,  $b = 2.31$ ,  $SE = 1.11$ ,  $p = .036$ , 95% BCa CI [0.14, 4.44]. The helpfulness priming effect on information disclosure was not significant when the control approach was used,  $b = -0.26$ ,  $SE = 0.99$ ,  $p = .792$ , 95% BCa CI [-2.16, 1.69]. Hence, Hypothesis 2 received

some support. Figure 3 illustrates the interaction and descriptive statistics are reported in Table 8.

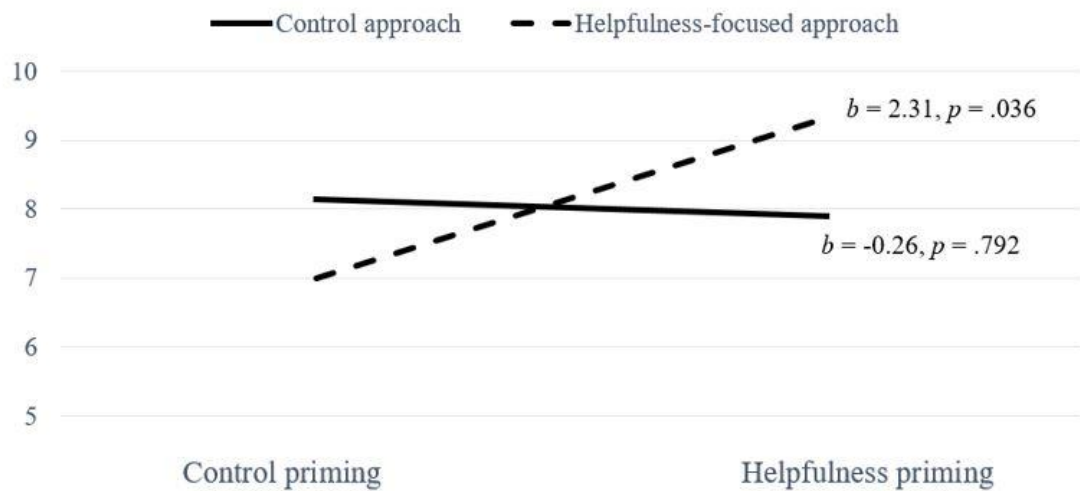


Figure 3. Information disclosed as a function of helpfulness priming and interpersonal approach.

Finally, the conditional mediation analyses revealed no significant mediation effects. Failing to support Hypothesis 3, the indirect effect of priming, through helpfulness accessibility was neither significant among participants who were interviewed using the helpfulness-focused ( $b = -0.01$ , 95% BCa CI [-0.41, 0.28]) nor control approach ( $b = -0.03$ , 95% BCa CI [-0.45, 0.10]).

### Exploratory Analyses

**Helpfulness motivations.** The correlation between helpfulness motivation and information disclosure was positive and significant,  $r = .29, p = .002$ , 95% CI [0.11, 0.45]. The main effect of priming on helpfulness motivations was not significant,  $b = 0.39, SE = 0.35, p = .271$ , 95% BCa CI [-0.30, 1.07]. Nevertheless, the main effect of interview approach was significant,  $b = 0.86, SE = 0.35, p = .014$ , 95% BCa CI [0.18, 1.55]. This indicates that participants interviewed using the helpfulness-focused (vs. control) approach reported higher helpfulness motivations. The Priming  $\times$  Interview Approach interaction was, however, not significant ( $b = 0.70, SE = 0.70, p = .318$ , 95% BCa CI [-0.67, 2.07]). The interaction between helpfulness accessibility and interview approach was significant,  $b = 0.41, SE = 0.19, p = .028$ , 95% BCa CI [0.06, 0.78]. Conditional effects analyses revealed that at high levels of helpfulness accessibility (+1SD), the effect of the helpfulness-focused (vs. control) approach was positive and significant,  $b = 1.61, SE = 0.50, p = .002$ , 95% BCa CI [0.62, 2.61]. The effect of the helpfulness-focused (vs. control) approach at low levels of helpfulness accessibility (-1SD) was not significant,  $b = 0.07, SE = 0.50, p = .877$ , 95% BCa CI [-0.91, 1.06]. This shows that for participants who experienced high levels of helpfulness



accessibility, the helpfulness-focused (vs. control) approach boosted helpfulness motivation self-reports.

**Expectancy confirmation.** Perceived expectancy confirmation was positively and significantly correlated to information disclosure,  $r = .18, p = .025, 95\% \text{ CI } [0.03, 1.00]$ . The main effects of priming ( $b = -0.30, SE = 0.41, p = .459, 95\% \text{ BCa CI } [-1.10, 0.55]$ ) and interview approach ( $b = 0.03, SE = 0.41, p = .936, 95\% \text{ BCa CI } [-0.77, 0.82]$ ) as well as their interaction ( $b = 1.31, SE = 0.84, p = .117, 95\% \text{ BCa CI } [-0.26, 2.89]$ ) were not significant. The Helpfulness Accessibility  $\times$  Interview Approach interaction was not significant,  $b = 0.03, SE = 0.24, p = .907, 95\% \text{ BCa CI } [-0.46, 0.48]$ .

### **Interview perceptions**

Regarding participants' interview perceptions, participants in the helpfulness-focused approach condition rated the interviewer as more likable than their counterparts in the control approach condition did,  $t(114) = 4.87, p < .001, d = 0.91, 95\% \text{ CI } [0.52, 1.29]$ . Also, participants who were interviewed using helpfulness-focused (vs. control) approach reported the feeling more trust in the interviewer ( $t(114) = 3.88, p < .001, d = 0.72, 95\% \text{ CI } [0.35, 1.10]$ ), more at ease during the interview ( $t(114) = 2.14, p = .039, d = 0.40, 95\% \text{ CI } [0.03, 0.77]$ ), and perceived a higher level of autonomy in deciding what information to disclose ( $t(114) = 1.16, p = .249, d = 0.22, 95\% \text{ CI } [-0.15, 0.58]$ ). Descriptive statistics are reported in Table 9.

In summary, the findings of Experiment 7 provided some support for the theoretical proposition that consistency between an interviewee's primed (helpfulness) dispositions and an interviewer's (helpfulness-focused) interpersonal approach, when soliciting information, could facilitate disclosure. Specifically, the full Priming  $\times$  Interview Approach moderation analysis suggested that helpfulness priming and a helpfulness-focused interpersonal approach may work symbiotically to facilitate disclosure. Additionally, even though participants in the helpfulness-focused (vs. control) approach condition reported more positive perceptions of the interviewer, the helpfulness-focused interpersonal approach promoted information disclosure only when helpfulness had been primed.

Table 8  
*Group Means of Dependent Measures in Experiment 7*

Measure	Control Approach		Helpfulness-focused Approach	
	Control Priming	Helpfulness priming	Control Priming	Helpfulness priming
Helpfulness accessibility <sup>a</sup>	5.69 (1.95) [5.00, 6.37]	5.50 (2.13) [4.14, 5.56]	4.85 (1.83) [4.83, 6.18]	5.80 (1.50) [5.12, 6.48]
Information disclosed <sup>b</sup>	8.14(4.26) [6.66, 9.62]	7.90 (3.28) [5.47, 8.54]	7.00 (3.63) [6.44, 9.36]	9.33 (4.74) [7.88, 10.79]
Perceived specific information disclosed for clarity <sup>b</sup>	9.48 (4.22) [8.02, 10.94]	9.17 (3.00) [7.49, 10.51]	9.00 (3.68) [7.73, 10.60]	10.33 (4.73) [8.90, 11.77]
Perceived information disclosed <sup>c</sup>	4.28 (1.96) [3.68, 4.87]	3.90 (1.32) [3.64, 4.88]	4.26 (1.66) [3.32, 4.48]	4.87 (1.48) [4.28, 5.45]
Helpfulness motivation <sup>c</sup>	4.76 (1.94) [4.05, 5.46]	4.80 (2.04) [4.52, 5.99]	5.26 (1.79) [4.11, 5.49]	6.00 (1.88) [5.31, 6.69]
Expectancy confirmation <sup>c</sup>	6.02 (2.74) [5.17, 6.86]	5.01 (2.27) [4.24, 5.89]	5.37 (1.82) [4.49, 6.25]	5.73 (2.24) [4.90, 6.57]
Helpfulness values <sup>d</sup>	7.52 (1.38) [6.98, 8.06]	8.03 (1.40) [7.03, 8.16]	7.59 (1.47) [7.50, 8.58]	7.80 (1.63) [7.27, 8.33]

*Note.* Values in parentheses represent standard deviations. Values in square brackets represent 95% CI

<sup>a</sup>Possible range: 0 to 20. <sup>b</sup>Possible range: 0 to 37. <sup>c</sup>Possible range: 0 to 10. <sup>d</sup>Possible range: 1 to 9.

Table 9  
*Group Means of Interviewer Perceptions*

Measure	Control Approach	Helpfulness-focused Approach
Autonomy	5.29 (1.80) [4.86, 5.72]	5.65 (1.54) [5.21, 6.09]
Trust	3.31 (1.65) [2.86, 3.74]	4.54 (1.78) [4.09, 4.99]
At ease	3.66 (1.86) [3.20, 4.12]	4.36 (1.14) [3.90, 4.84]
Interviewer likeability	4.22 (0.96) [3.96, 4.49]	5.15 (1.10) [4.88, 5.42]

*Note.* Values in parentheses represent standard deviations. Values in square brackets represent 95% CI. Possible range for all measures is 1 to 7.

## CHAPTER 3: GENERAL DISCUSSION

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The objective of this thesis was to examine the possibility of eliciting information through priming and delineate the underlying processes thereof. Helpfulness motivation was primed as a means to facilitate disclosure based on previous research findings indicating that helpfulness motivation positively predicts cooperation (e.g., Van Lange, 1999), and cooperation fits neatly with the interviewer's task of soliciting information. This project commenced right around the start of the debate about the reliability of priming effects (e.g., Newell & Shanks, 2014). Thus, to conduct a well-informed application of priming in intelligence interview contexts, the underlying processes of helpfulness priming were first examined. The findings were then extended to an intelligence interview to address when and how (helpfulness) priming influences information disclosure.

### **The Underlying Mechanisms of Helpfulness Priming**

Part 1, which consisted of five main experiments and a pilot test, was dedicated to investigating the processes that elicit helpfulness priming effects. From a synthesis of current priming theories, it was deduced that assimilative helpfulness priming effects result from the interplay between increased cognitive accessibility to helpfulness and suitability affordances that promote the enactment of helping behavior.

The results of experiments in Part 1 indicated that the helpfulness priming reliably increased cognitive helpfulness accessibility. However, unlike previous research (e.g., Arieli et al., 2014; Fitzsimons & Bargh, 2003, Macrae & Johnston, 1999), the total effect of the helpfulness prime on helping behavior was not significant in any of the five experiments. Recent research by Caruso, Shapira, and Landy (2017) has similarly found that money primes reliably activated cognitive accessibility to the concept of money but did not impact any subsequent dependent measure. Furthermore, the potential moderators, perspective taking and situational affordance, did not moderate the link between helpfulness priming and helping behavior.

The indirect effect of the helpfulness prime, through helpfulness accessibility, on helping behavior, was also examined. Overall, the examination revealed mixed results. Only two of the five experiments (i.e., Experiments 2 and 4) indicated significant mediation effects of helpfulness accessibility. The results of those experiments suggested that when helpfulness accessibility was positively associated with helping behavior, the data were consistent with the hypothesis that helpfulness priming indirectly increases helping behavior by increasing helpfulness accessibility. One possible explanation to account for the indirect helpfulness priming effect, in the absence of a total helpfulness priming effect is that, perhaps, helpfulness accessibility positively mediates the helpfulness priming effect. Thus, it is possible that helpfulness priming indirectly increases helping behavior, through helpfulness accessibility, even though the sum of all the mechanisms (i.e., total effect) that link helpfulness priming to helping behavior is zero. These mechanisms may include an array of suppressors and moderators. Wheeler and DeMaree (2009) have proposed that a total priming effect usually consists of multiple mechanisms.

## Theoretical Implications

Taken together, and in line with the theories categorized under the construct accessibility (Eitam & Higgins, 2010; Wheeler et al., 2014; Schröder & Thagard, 2014) and situation-based (Loersch & Payne, 2011; Barsalou, 2016) themes, the experiments in Part 1 suggest that priming reliably increases cognitive accessibility to the primed construct. Retrospective reports, from the awareness probes, indicated that some participants may have noticed the priming influence on their increased primed construct accessibility. This is to be expected, since the delivery of the prime, in all of the experiments, was upfront and effortful. Nonetheless, it is likely that hindsight bias (Nisbett & Wilson, 1977) and retrospective inference, caused by the awareness assessment instructions (Ericsson & Simon, 1980), played a role in such awareness reports. Thus, Part 1 was unable to fully elucidate the extent to which priming automatically produces assimilative changes in construct accessibility. Failing to support all the previously discussed priming theories, however, there was no evidence of a total priming effect on behavior, in any of the experiments, in spite of the significant increase in construct accessibility. In addition, the proposition put forth by the active-self account (Wheeler et al., 2007; 2014), that taking the first-person perspective during a priming episode is likely to enhance the assimilative priming effect by inducing a self-prime overlap, generally did not receive support. Perspective taking did not moderate the priming effect in the first experiment when tested. In the remaining experiments (i.e., Experiments 2 and 3), all participants took the first-person perspective during priming; again, a significant assimilation to the prime on target behavior was not observed.

The moderating role of suitability affordance, as proposed by the situation-based theme (Loersch & Payne, 2011; Barsalou, 2016) and demonstrated by Macrae and Johnston's research, also did not receive support in the critical experiment (i.e., Experiment 3). Perhaps, in the suitability affordance pilot test, participants in the high-suitability affordance condition may have overstated their generosity because the helping scenario was hypothetical. Hence, it is possible that in the main experiment, which featured a consequential helping scenario, the high-suitability manipulation was not evocative enough to elicit higher donations.

In all, the mediation effect analyses provided some support for situation-based models, which posit that assimilative priming effects are most likely to occur in situational affordances that encourage the enactment of the primed behavior (Loersch & Payne, 2011; Barsalou, 2016). In the two experiments where priming had an indirect assimilative effect on the target behavior, participants seemed to perceive a more feasible (i.e., Experiment 2) or relevant (i.e., Experiment 4) suitability affordance than in the three experiments where priming had neither direct nor indirect influence on behavior (i.e., Experiments 3 to 5). Furthermore, in general support of the current theoretical perspectives of priming, the mediation results suggest that variability in construct accessibility is an important predictor of priming effects. That is, the indirect effect of priming achieved significance only in the experiments where construct accessibility was positively associated with the target behavior. In the cases where construct accessibility displayed weak to no association with behavior, neither direct nor indirect priming effects emerged.

## When and How Helpfulness Priming Influences Information Disclosure

Based on the findings of Part 1, Experiment 6 examined the proposition that when helpfulness has been primed, a helpfulness-focused interview style, which draws on the previously primed helpfulness motivation, would function as a high-suitability affordance and enhance the priming effect on disclosure. The majority of the hypotheses in Experiment 6I did not receive support. That is, participants who were primed with the helpfulness-related content did not disclose significantly more information than their unprimed counterparts did. In addition, there was no differential effect of the helpfulness prime when the helpfulness-focused, nor control interview, was used. Unexpectedly, however, it was discovered that among participants who exhibited low levels of helpfulness accessibility, the helpfulness-focused interview style decreased disclosure. The current theoretical perspectives of priming, on which Experiment 6 was based, could not fully account for the results. The priming theories would have predicted an increase in disclosure when there was consistency between helpfulness accessibility (i.e., predisposition) and interview style, but not the observed decrease in disclosure when there was a mismatch. Birtchnell's (1994) theory about interpersonal relating (i.e., the interpersonal octagon) was employed, in addition to the priming theories, to fully explain the finding.

Birtchnell (1994) proposed that adaptive (i.e., constructive) and maladaptive (i.e., unconstructive) relating styles revolve around eight octants. Most relevant to the findings of Experiment 6 are the vertical octants, which indicate relating styles that signal dominance (i.e., upperness) or submission (i.e., lowerness). It was speculated that, in terms of the interpersonal octagon, the helpfulness-focused interview style may have signaled submissiveness on the side of the interviewer and positioned the interviewee to assume dominance with regard to providing information (e.g., "We hope you can *help us* by providing details about the plans for the upcoming attack"). It was proposed that at low levels of helpfulness accessibility, the helpfulness-focused interview style may have functioned maladaptively (i.e., low-suitability affordance). That is, the helpfulness-focused interview style counteracted the relating goal of increasing disclosure because it consistently sought help from interviewees who were least predisposed to be helpful. Possibly, signaling the interviewee to be helpful and inviting them to assume a dominant relating position (i.e., provide information), when in fact helpfulness is sparsely accessible, may have been a maladaptive approach. Indeed, Alison, Alison, Noone, Elntib, and Christiansen (2013) have found that interviewees disclosed less information when interviewers displayed even minimal amounts of maladaptive interpersonal behaviors during an interview.

The findings of Experiment 6 inspired Experiment 7, which examined the theoretical proposition that consistency between helpfulness priming and a helpfulness-focused interpersonal approach would facilitate information disclosure. Specifically, it was proposed that when helpfulness priming predisposes the interviewee toward helpfulness (i.e., cooperation), employing a high-suitability affordance in the form of a helpfulness-focused interpersonal approach would promote disclosure. Overall, the proposal received some support. The results indicated that the helpfulness-focused interpersonal approach led primed participants to disclose significantly more information than their unprimed counterparts did. The participants interviewed using the helpfulness-focused approach rated the interviewer as more likable and reported higher levels of trust in the interviewer than the participants interviewed using the control approach did. Nonetheless, the helpfulness-focused approach increased disclosure only when helpfulness had been primed.

It is worth noting that the effects observed in Experiments 6 and 7 were small by conventional standards. However, these effect sizes are similar to previous research that has examined priming influences in intelligence interviews (e.g., Dawson et al., 2015; Dawson, et al., 2017). That notwithstanding, any amount of information loss or gain could be damaging or highly beneficial in intelligence contexts. Thus, these small effects still have the potential to produce important impacts in the real world (see Lakens, 2013).

### **Applied Implications**

Taken together, Part 2 provides some useful practical implications regarding information elicitation through priming. First, the studies revealed no evidence that priming had a direct and/or independent influence on information disclosure. Instead, Experiment 7 suggested that a priming influence and a complementary interpersonal approach may work synergistically to increase disclosure in an intelligence interview. Interpersonal relating is an essential aspect of intelligence interviewing because intelligence interviewing typically involves some level of interpersonal interaction between an interviewer and an interviewee (Granhag et al., 2015). Birtchnell (1994) noted that in order to achieve a relating goal (i.e., information disclosure), it is important to implement an interpersonal approach that is considerate of the other relator's current state of mind and/or needs. Since priming predisposes the interviewee toward behaving consistently with the primed motivation, an interview style that embodies an interpersonal approach that encourages the enactment of the primed motivation is most likely to maximize the utility of the prime (i.e., disclosure), as observed in Experiment 7.

Dawson et al. (2015) have cautioned interviewers to be wary of inadvertently priming certain concepts since such primes may influence disclosure decisions. Experiment 6 lends indirect support to such a caution. The findings of Experiment 6 indicated that implementing a prime-focused interpersonal approach (i.e., interview style), which draws on the primed motivation, when the interviewee is not effectively predisposed to the primed motivation, could counteract the goal of increasing information disclosure. Thus, it would be advantageous for interviewers who plan to harness potential benefits of combining a prime and a complementary interpersonal approach (as discussed above) to tailor their priming tactics to fit a specific disclosure-related characteristic of the interview, in order to effectively predispose the interviewee to the motivation of interest.

### **Limitations and Future Directions**

There is an important limitation in this thesis that is worth highlighting. The assessment of helpfulness accessibility, using a word fragment completion task, was identical throughout all the studies. During the word completions, all participants self-generated helpfulness-related (and relatively neutral) words. Mussweiler and Neumann (2000) posit that such self-generating priming procedures are more likely to induce misattribution of the source the priming influence as self- rather than prime-generated. Consequently, a self-generated prime is more likely to induce assimilation to the prime than external and effortful priming. Two experiments reported by Mussweiler and Neumann (2000) supported this assertion. It was found that participants who self-generated primes

assimilated their judgments to the prime and the participants who received the external primes contrasted their judgments away from the prime (see also Hayes & Schimel, 2018). It is possible that in the studies presented in this thesis, the participants in the control groups were inadvertently primed with helpfulness-related content by generating helpfulness-related words. Thus, the total effect of the helpfulness (vs. control) prime on helping behavior and information disclosed may have been obscured. In addition, the self-generation process of the helpfulness accessibility measure may have induced a high self-prime overlap in both first- and third-person perspective conditions. Hence, eliminating the possibility of disentangling the potential role of perspective taking in inducing the self-prime overlap (i.e., Part 1, Experiment 1 and 2).

I acknowledge the limitation discussed above. That notwithstanding, it was deduced from previous research that different sources of construct accessibility can influence behavior additively. For example, Higgins and Brendl (1995) have found that if a primed construct is applicable in an affordance, sufficiently higher accessibility to the prime can yield stronger assimilative judgments in spite of awareness of the priming event (see also Bargh, Bond, Lombardi, & Tota, 1986). In the individual studies, participants who received the helpfulness prime generally self-generated more helpfulness-related words than their counterparts in the control condition did. Additionally, all participants took the first-person perspective during priming in the majority of the experiments (i.e., Experiment 3 to 7). Hence, it was expected that both sources of helpfulness accessibility (i.e., external priming manipulation and self-generated words) would combine additively to produce a larger effect in the helpfulness priming conditions. Moreover, reported awareness of the possible influence of the priming manipulation, which could have led primed participants to contrast their behavior away from the prime (i.e., Mussweiler & Neumann 2000), did not influence the nature of the results in Part 1. In fact, no significant contrast effects emerged in any of the studies. Furthermore, as no participants reported awareness of the priming manipulation's influence in Experiment 6, and only two participants in Experiment 7 reported awareness, it is reasonable to assume that the intended effect of the helpfulness prime was not apparent to participants in Experiment 6 or Experiment 7. It is also worth noting that the awareness reports were retrospective. Thus, the awareness probe instructions could have triggered participants to infer the priming manipulation's ostensible influence on their behavior.

The body of work examining the potential usefulness of priming in HUMINT contexts is in the nascent stages, and the specific processes that elicit the influence of priming on disclosure were relatively unknown when this project (i.e., this thesis) commenced. Current priming theories suggested that variability in primed construct accessibility is a critical component in the manifestation of priming effects. Thus, an explicit examination of the role of construct accessibility was necessary. Unfortunately, the assessment of construct accessibility in this thesis suffered from the shortcomings discussed in the preceding paragraph. Future research would benefit from implementing assessments of construct accessibility that are able to elucidate how priming influences disclosure without accidentally priming control groups. This is indeed a challenging task, since other possible measures of construct accessibility (e.g., the lexical decision task) also have the potential to expose control groups to the primed construct. Pirlott and MacKinnon (2016) have proposed some alternative manipulation-of-mediator research-design approaches to experimental mediation that may be useful in providing insights about the mediating role of construct accessibility in the relationship between priming and information disclosure. One such

approach is the *double randomization design*, in which a first experiment is dedicated to investigating the effect of an independent variable on both a mediating and a dependent variable to allow a clear estimation of any causal influence. Afterward, a second experiment is implemented where participants are randomly assigned to different levels of the mediating variable determined by how the previous independent variable influenced the mediator in the first experiment. Pirlott and MacKinnon (2015) note that if the different levels of the mediator significantly influence the dependent variable in the second experiment, then there is evidence to support an indirect effect of the independent variable on the dependent variable, through the mediator (see also Spencer, Zanna, & Fong, 2005).

Another limitation of this thesis pertains to the use of Skype interviews and the scripted nature of the interview protocols used in Experiment 6 and 7. These features are not typical of real-world, face-to-face intelligence interviews. Hence, the external validity of Experiment 6 and Experiment 7 is reduced. Ideally, an interviewer in an actual intelligence interview would probably probe the responses of the interviewee further and be more sensitive to nuanced reactions. However, the purpose of the thesis was to investigate underlying mechanisms. In that regard, the scripted interview protocols and Skype interviews were deliberately employed to ensure interviewer equivalence across the interview conditions and maximize internal validity. Future research that aims to increase external validity would benefit from implementing semi-structured interview protocols, which embody the relevant prime-focused interpersonal approach. Using semi-structured interview protocols opens up the possibility for researchers to undertake additional relevant investigations, such as the effect of the interplay between a prime and its complementary interpersonal approach on interviewer-interviewee interpersonal dynamics. For instance, elements of the Observing Rapport-Based Interpersonal Techniques (ORBIT; Alison, Alison, Elntib & Noone, 2012) coding framework, which assess (mal)adaptive interaction patterns between an interviewer and interviewee, could be implemented to further explore whether (in)consistency between a prime and a (dissonant)complementary interpersonal approach, indeed elicits (mal)adaptive interviewee behavior. These recommendations may help researchers capture more nuanced insights and advance knowledge about subtle influences in intelligence interviews.

The extant research examining priming influences in intelligence interviews has found weak and preliminary results in support of priming. Similarly, the findings of this thesis are preliminary. It is possible that the various studies in this emerging body of research—including those in this thesis—have been underpowered because of the complex nature of potential priming effects in intelligence interviews. I acknowledge the limitation that the null findings of the interview studies (i.e., Experiment 6 and Experiment 7) could have been due to low power. However, the design of the interview studies, in part, were conceptually based on Macrae and Johnston's (1998) research, which has demonstrated a consistent medium-sized Helpfulness Priming  $\times$  Situational Affordance interaction effect on helping behavior ( $d = .59$  and  $.51$ ). Sensitivity analyses suggested that the interview studies were adequately powered to detect a medium-sized interaction effect. The findings of this thesis hint at the possibility that in an intelligence interview, a priming tactic elicits additional interpersonal influences, which may facilitate or inhibit the effect of the priming tactic on information disclosure. As discussed, the extent of symbiosis between the priming tactic and an interviewer's interpersonal approach, when soliciting information, potentially contributes to the conduciveness of the priming influence to facilitating disclosure. Thus, in light of the potential benefits of priming, high-powered replications and theoretical



extensions of the current findings are needed to fully uncover the nuanced interplay between priming and interpersonal dynamics in an intelligence interview.

### **Priming Tactics and Interviewee Autonomy: An Ethical Analysis**

In line with previous research (e.g., Dawson et al., 2015; Dawson et al., 2017), the findings of this thesis suggest that the use of priming tactics in HUMINT interviews could have a subtle influence on interviewees' disclosure. Critics may argue that interviewees' lack of awareness of the intended purpose of priming influences on their disclosure raises concerns about the extent to which such subtle influence tactics amount to morally problematic infringements on interviewees' autonomy; that is, freely deciding the specific type and amount of information to share. Indeed, Aarts and van Den Bos (2011) have found that individuals' beliefs in their ability to cause a preferred action and the corresponding outcome are particularly strong when unconscious priming of the action outcome engenders experiences of self-agency, when the primed outcome occurs. Put simply, primes that mentally activate action outcomes, before an individual actually performs the action and perceives the resultant outcome, lead individuals to erroneously assume that their behavior was self- rather than prime-generated (Aarts & van den Bos, 2011). In that light, one may argue that priming a disclosure motivation to increase interviewees' disclosure could give the interviewee a false sense of self-agency and lead the interviewee to make a decision (i.e., disclose more information) outside of their actual will and reason. I use the phrase *will and reason* to denote behaviors an actor performs due to a self-generated motive.

Hartwig, Luke, and Skerker (2016) have noted that individuals' autonomy—the ability to make independent decisions without interference—are inextricably linked with their human rights. Thus, in the wake of calls for ethically defensible interview tactics (e.g., Fallon, 2014), apprehensions about the potential for priming tactics to grossly violate interviewees' rights, by unjustifiably infringing on their autonomy, are not unfounded. Nevertheless, the inherent limitations of priming effects, as well as the ethos and purpose of priming tactics in the intelligence interview context, show that using priming as a tool to facilitate disclosure does not necessarily infringe on interviewees' autonomy. The following discussion, which draws on Di Nucci's (2012) contentions about the impact of priming on free will, outlines a supporting argument. The propositions therein are not meant to be exhaustive. Instead, the reflections are intended to stimulate a discussion about the ethics of implementing subtle influence tactics to elicit information. It is also worth noting that I have focused solely on the impact of priming tactics on autonomy in intelligence interview contexts. The interested reader should see Skerker (2010) for a thorough discussion about the morality of interrogation (i.e., investigative interviewing).

Di Nucci (2012) has argued that priming influences are only efficacious within the will and reason of the primed individual. That is, the body of work on priming does not suggest that when individuals are under a priming influence it is impossible for them to perform behaviors that are not congruent with the prime. In fact, proponents of priming have maintained that primes do not have an unbridled influence on behavior (e.g., Dijksterhuis & Bargh, 2001). As noted in the earlier discussion about the origins and theoretical perspectives of priming, the influence of a prime can be inhibited when the primed individual perceives disincentives associated with the primed suggestion and/or when the primed suggestion is incompatible with the individual's current goals. These propositions have been

supported empirically; in their experiment, Macrae and Jonhnston (1998) found that when helpfulness had been primed, participants enacted more helping behavior than their unprimed counterparts did, by picking up more pens in aid of an experimental confederate who had dropped the pens. Critically, however, the helpfulness priming effect manifested only when the primed participants perceived that there was enough time to offer their help. The helpfulness priming effect was eliminated when the primed participants perceived that they were running late for another experiment. These findings are also in line with propositions of the previously mentioned situation-based theme of priming effects (Loersch & Payne, 2011; Barsalou, 2016), which posit that the occurrence of a priming effect is moderated by the behaviors allowed in a particular situation. These findings, thus, indicate that primes do not limit individuals' executive control over their decisions and behaviors (but, see Bargh, 2008). In that regard, it is unwarranted to conclude that priming tactics are overly manipulative such that implementing priming as a tool to elicit information totally nullifies the interviewee's self-agency in determining whether to share or completely withhold information.

As mentioned in the Introduction, in intelligence interview contexts, human sources who possess vital information are typically motivated to both disclose and withhold information (Herbig, 2008). Hence, such interviewees are usually semi-cooperative and implement information management strategies to satisfy their personal objective of appearing cooperative by providing some information to partially sate the interviewer's information objectives. The purpose of priming in the intelligence interview is to harness the disclosure motivations of such semi-cooperative interviewees in order to increase their disclosure. Since priming effects are inhibited by disincentives and conflicting goals, it is unlikely that priming tactics could lead interviewees who have decided not to share any information at all (i.e., fully uncooperative) to disclose information because such disclosure would not be within their will and reason to be uncooperative. It is possible that such interviewees would provide completely deceptive information in order to seem cooperative. Such an outcome indicates that the interviewee has contrasted their behavior away from the prime, which would demonstrate that no assimilative priming effect has occurred.

It can be argued that showing that primed individuals have control over their behaviors still leaves unanswered the question of intentionality because priming effects are often reported to occur outside of individuals' awareness (Di Nucci, 2012). According to classic philosophical conceptions of intentional action (e.g., Davidson, 1963), an individual has performed an action intentionally if that individual has a favorable attitude toward said action and believes that performing the action would fulfill that favorable attitude. Thus, intentional action has occurred when a favorable attitude and the belief leads the individual to perform the action. In that light, Di Nucci (2012) argues that if the behaviors of control groups (in priming experiments) that resemble the targeted primed behavior are considered to be intentional, then the behaviors of primed participants ought to be intentional as well. The following illustration is modeled after a similar example offered by Di Nucci (2012). Considering Experiment 6 and Experiment 7 of this thesis, it is uncontroversial to assume that the information units disclosed by participants in the control condition, who were interviewed using the control interview approach, were disclosed intentionally. If so, then it ought to be granted that helpfulness-priming participants, who were interviewed using the helpfulness-focused approach, must have also shared their information units intentionally.

To mimic the mindset and behavior of a typical semi-cooperative interviewee, recall that as part of their role-taking instructions, participants were incentivized to economize their disclosure. That is, (a) not to provide too little information (since assisting the police was necessary to be granted free passage out of the country), and (b) not to provide too much information (because participants were to imagine having strong ties to the extremist group). Under the assumptions of the previously discussed arousal: cost-reward model of helping behavior (Piliavin et al., 1981; Dovidio et al., 1991), the most likely course of action for the interviewee to fulfill the information management dilemma is to help indirectly by sharing at least some information. Thus, in their role-taking persona, all participants had some favorable attitude toward disclosing information and believed that sharing at least some information would positively serve the favorable attitude (i.e., being a semi-cooperative informant). Hence, if the control participants disclosed their units of information intentionally to fulfill the semi-cooperative informant role, then so did the helpfulness priming participants. This is because priming effects are one of many antecedents that play a role in influencing behavior (e.g., Friesen & Cresswell, 2015, Klatzky & Creswell, 2014; Wheeler & DeMarree, 2009). Thus, the combined effect of the helpfulness priming and the helpfulness-focused interview approach is one of the numerous causal factors—not the primary (i.e., rational) factor—that led such participants to disclose the units of information they did (see Davidson, 1963 on rational and causal explanations). Indeed, the priming effects observed in the individual studies did not account for much of the variance in primed participants' disclosure. The interested reader should see Lumer (2017) for a more in-depth discussion on automatic behavior and intentionality.

To conclude, I concur with Di Nucci's (2011) proposal that priming effects are only efficacious in scenarios in which multiple options equally satisfy an actor's goals and the actor is not compelled to choose a particular option. In that regard, I propose that priming tactics do not amount to a gross moral violation of interviewees' autonomy because such tactics are intended to specifically increase semi-cooperative—not uncooperative—interviewees' disclosure. Since semi-cooperative interviewees are typically motivated to both disclose and withhold information, an intelligence interview in such instances become a case where any amount of information the interviewee discloses rationally and equally satisfies their objective to be semi-cooperative. Thus, whatever amount of information a semi-cooperative interviewee shares due to the influence of a prime and a prime-focused interview approach is still within their will and reason.

### **Concluding Remarks**

To contribute to the emerging body of work examining priming influences in intelligence interviews, the present thesis sought to map out the underlying mechanisms that elicit the impact of priming tactics on information disclosure. The work was based on a synthesis and empirical examination of current theoretical perspectives that explain how primes affect individuals' behavior. In all, the findings indicated that priming tactics can have some subtle influence on disclosure. Specifically, it was found that when a disclosure motivation has been primed, soliciting information using a complementary interpersonal approach that draws on the primed motivation could facilitate the interviewee's disclosure. It was also discovered that implementing such a prime-focused interview approach when the interviewee is not sufficiently predisposed to the primed motivation could counteract the goal of increasing disclosure. This work provides initial empirical evidence about when and

how priming tactics may facilitate and possibly discourage disclosure. Adding to the emerging body of research on priming in intelligence interviewing, this thesis highlights the importance of implementing prime-focused interview approaches to harness interviewees' primed motivations. Furthermore, this work has laid the foundation for future research to examine how various primed motivations work in tandem with their complementary interview approaches to influence disclosure.

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## APPENDICES AND MANUSCRIPTS

### FORM UPR16

#### Research Ethics Review Checklist

Please include this completed form as an appendix to your thesis (see the [Research Degrees Operational Handbook](#) for more information)



<b>Postgraduate Research Student (PGRS) Information</b>		<b>Student ID:</b>	669578
<b>PGRS Name:</b>	David Amon Neequaye		
<b>Department:</b>	Psychology	<b>First Supervisor:</b>	Prof. Aldert Vrij
<b>Start Date:</b> (or progression date for Prof Doc students)	September, 2015		
<b>Study Mode and Route:</b>	Part-time <input type="checkbox"/>	MPhil <input type="checkbox"/>	MD <input type="checkbox"/>
	Full-time <input checked="" type="checkbox"/>	PhD <input checked="" type="checkbox"/>	Professional Doctorate <input type="checkbox"/>

<b>Title of Thesis:</b>	Eliciting Information in Intelligence Interviews Through Priming: An examination of underlying mechanisms
<b>Thesis Word Count:</b> (excluding ancillary data)	~29, 050

If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University's Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study

Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).

#### UKRIO Finished Research Checklist:

(If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: <http://www.ukrio.org/what-we-do/code-of-practice-for-research/>)

a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
b) Have all contributions to knowledge been acknowledged?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
c) Have you complied with all agreements relating to intellectual property, publication and authorship?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
d) Has your research data been retained in a secure and accessible form and will it remain so for the required duration?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
e) Does your research comply with all legal, ethical, and contractual requirements?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

#### Candidate Statement:

I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)

<b>Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):</b>	Approved in Gothenburg University
---	-----------------------------------

If you have *not* submitted your work for ethical review, and/or you have answered 'No' to one or more of questions a) to e), please explain below why this is so:

This Ph.D. project is part of the Erasmus Mundus Joint Doctorate programme. The candidate's Home university is Gothenburg University and Portsmouth University is his host University. In that light, the research included in the current thesis were conducted mainly in Gothenburg University, Sweden. Thus, the Regional Ethical Review Board in Gothenburg provided approval for the studies.

UPR16 – April 2018

<b>Signed (PGRS):</b>		<b>Date:</b> 10 <sup>th</sup> September, 2018
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## PSYKOLOGISKA INSTITUTIONEN

Gothenburg, Sweden, September 7, 2018

To whom it may concern,

This letter concerns the seven experiments included the doctoral thesis of David Amon Neequaye - Erasmus Mundus Joint Doctorate in Legal Psychology programme. David's Home University is University of Gothenburg, and University of Portsmouth is his Host University.

Thesis title: Eliciting information in intelligence interviews through priming: An examination of underlying mechanisms

The experiments in the thesis mainly examined priming influences in human intelligence interviewing. We have been running studies that explore strategies in investigative interviewing at the Psychology Department of the University of Gothenburg for 15 years (40+ individual studies), using similar experimental setups. The Regional Ethical Review Board has explicitly and repeatedly informed us that we do not have to run investigative interviewing projects (using previously approved paradigms) via them. For those occasions where we submitted an ethics application for a single study, they have just returned with the response "We have received your application, but this study is not necessary to run through the Ethics Board."

You may contact me if you have further concerns.

Sincerely,

A handwritten signature in blue ink, appearing to be "Pär-Anders Granhag", written over a light blue oval background.

Pär-Anders Granhag, PhD  
Professor of Psychology  
Director of the unit Criminal, Legal & Investigative Psychology (CLIP)





*Regionala etikprövningsnämnden i Göteborg*

Sida 1 av 1

**Projektansvarig:**  
Pär-Anders Granhag  
Göteborgs universitet  
Psykologiska institutionen  
Box 500  
405 30 Göteborg

**Dnr:**  
812-12

Exp. 2012-12-12

**Forskningshuvudman:** Göteborgs universitet

**Närvarande:**

Olle Holmstedt, *ordförande*  
Lars Sandman, *vetenskaplig sekreterare, jävig ärende 883-12*

**Ledamöter med vetenskaplig kompetens:**

Dennis Beach  
Elisabeth Björk Brämberg, *jävig ärende 882-12*  
Sally Boyd  
Bengt Brülde  
Claes Corlin, *vetenskaplig sekreterare ärende 883-12*  
Kerstin Grundén  
Anna-Karin Kollind  
Jesper Lundgren, *jävig ärende 801-12*  
Bibbi Ringsby Jansson

**Ledamöter som företräder allmänna intressen:**

Erling Alriksson  
Lisbeth Ekman  
Bengt Fernström  
Marianne Henningsson  
Pia-Lotta Ranmalm Lagerlöf

**Projekttitel:** Scharff-tekniken: Att bekräfta eller dementera viktig information

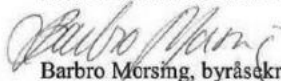
**Beslutsprotokoll från sammanträde med Regionala etikprövningsnämnden i Göteborg, Avdelningen för övrig forskning, den 10 december 2012**

*Föredragande: Bengt Brülde*

**Rådgivande yttrande**

Etikprövningsnämnden finner att studien inte omfattas av etikprövningslagen och avger följande rådgivande yttrande. Ansökan tillstyrks.

Att denna avskrift i transumt överensstämmer med originalet intygar:

  
Barbro Morsing, byråsekreterare



## Appendix A

### Priming Material for Part 1

#### A1. Experiment 1 and 2

##### 1. Reflection

###### a. First-person perspective

###### i. Helpfulness

Please think about a time you have been helpful. A time you've gone out of your way to help someone with your resources. Now, take a moment to visualize that time. How did you feel? What was it like helping someone? Think about yourself in that situation again right now.

###### ii. Neutral

Please think about your typical morning routine. What do you normally do as part of your preparations for the day?

###### b. Third-person perspective

###### i. Helpfulness

Please think about a helpful person (Not yourself. This other person could be someone you know or do not know); someone who goes out of their way to help others with their resources. Now, take a moment to visualize that person. How do you think they feel when helping? What do you think it is like for them, when they help someone? Think about them in a helpful situation again right now.

###### ii. Neutral

Please think about a student's typical morning routine. What normally forms part of preparations for a student's day?

##### 2. Story-telling instructions

Now, complete the following story with (3) interesting and believable scenarios that maintain the plot of story. Your story should **be three paragraphs long at most, one paragraph for each scenario**. Kindly note that you are **NOT** to report your personal experiences. Use your experience as a guide in creating scenarios to complete the story.

##### 3. Story prompt

###### a. First-person perspective

###### i. Helpfulness

I was driving my car, when I saw an old man, stranded on the side of the road. I noticed that the old man needed help. So, I stopped my car next to him and got out. I smiled, while I was approaching him...

###### ii. Neutral

The time I wake up usually depends on my schedule for the day. However, I try to wake up as early as I can...

**b. Third-person perspective****i. Helpfulness**

A man was driving his car, when he saw an old man, stranded on the side of the road. He noticed that the old man needed help. So, he stopped his car next to him and got out. He smiled, while he was approaching him...

**ii. Neutral**

The time a typical student wakes up depends on their schedule for the day. However, most students try to wake up as early as they can...

**A2. Experiments 3, 4, and 5****1. Helpfulness priming**

Think about a time you wanted to offer your help to someone and/or something (e.g. a person, an animal, an organisation etc.). Now take a moment to visualize that time as vividly as possible. Think about how you were feeling and what you were thinking about **RIGHT BEFORE** offering your help. Think of yourself in that situation again right now.

**2. Neutral priming**

Think about your regular morning routine. What do you do as part of your preparations for the day? Now take a moment to visualize your routine as vividly as possible.

**3. Writing prompt**

Present your reflections in the text box below.

### Appendix A3. Target Words to Assess Helpfulness Construct Accessibility

#### List of words (English)

##### Prosocial related words

1. ASSIST/ASSERT: **ASS** \_ \_ **T**
2. KIND/KING: **KI** \_ \_
3. CARE/CARD: **C** \_ **R** \_
4. SHARE/SHAVE: **SH A** \_ **E**
5. GENEROUS/GENERATE: **GENER** \_ \_ \_
6. RESCUE/RESIDE: **RES** \_ \_ **E**
7. ENCOURAGE/ ENCOUNTER: **ENCO** \_ \_ \_ \_ \_
8. AID/AIM: **AI** \_
9. CONTRIBUTE/CONTRADICT: **CONT** \_ \_ \_ \_ \_
10. CONSIDERATE/CONFABULATE: **CON** \_ \_ \_ \_ \_ **ATE**
11. HELP/HEAP: **H** \_ \_ **P**
12. GIVE/GLEE: **G** \_ \_ **E**
13. SUPPORT/SUPPOSE: **SUPP** \_ \_ \_
14. SYMPATHY/SYMPHONY: **SYMP** \_ \_ \_ **Y**
15. GIFT/GIST: **GI** \_ **T**
16. COMFORT/COMPETE: **COM** \_ \_ \_ \_
17. OFFER/OFFAL: **OFF** \_ \_
18. COMPASSION/COMPREHEND: **COMP** \_ \_ \_ \_ \_
19. DONATE/DOABLE: **DO** \_ \_ \_ **E**
20. FRIENDLY/FRICTION: **FRI** \_ \_ \_ \_ \_

##### Neutral Words

1. WORD/WOOD: **W** \_ \_ **D**
2. RAIN/RUIN: **R** \_ **I N**
3. VERGE/VERSE: **VER** \_ \_
4. RUN/RUGS: **R** \_ \_ **S**
5. INSIDE/INSURE: **INS** \_ \_ **E**
6. ADMIT/ADORE: **AD** \_ \_ \_
7. HINT/HUNT: **H** \_ **NT**
8. LIFE/LOSE: **L** \_ \_ **E**
9. BEHIND/BEHAVE: **BEH** \_ \_ \_ \_

10. GRAPE/GROPE: **GR \_ PE**
11. HATE/HAVE: **H \_ \_ E**
12. BLIND/BLOND: **BL \_ ND**
13. TELL/TALL: **TA \_ \_**
14. FACE/FATE **F \_ \_ E**
15. BROAD/BRAVE: **BR \_ \_ \_**
16. CONTROL/CENTRAL: **C \_ NTR \_ L**
17. SPEAK/SPELL: **SPE \_ \_ \_**
18. LET/LOT: **L \_ T**
19. HAND/HEAD: **H \_ \_ D**
20. GROUP/GROPE: **GR \_ \_ \_**

### List of words (Swedish)

#### Helpfulness related words

- |  |  |
|--|--|
| 1. B _ STÅ ( <b>BISTÅ</b> /BESTÅ)          | <b>Assist (v.)</b> / remain (v.)                     |
| 2. STÖ _ _ A ( <b>STÖDJA</b> /STÖRTA)      | <b>Support (v.)</b> / crash (v.)                     |
| 3. G _ N _ A ( <b>GYNNA</b> /GUNGA)        | <b>Benefit (v.)</b> / swing (v.)                     |
| 4. FRÄ _ _ A ( <b>FRÄMJJA</b> /FRÄCKA)     | <b>Aid (v.)</b> / cheeky (adj.)                      |
| 5. G _ ( <b>GE</b> /GÅ)                    | <b>Give (v.)</b> / walk (v.)                         |
| 6. D _ _ ERA ( <b>DONERA</b> /DATERA)      | <b>Donate (v.)</b> / date (v.) as in specify in time |
| 7. S _ Ä _ KA ( <b>SKÄNKKA</b> /SLÄCKA)    | <b>Give (v.)</b> / put out (v.) e.g., a fire         |
| 8. TR _ _ TA ( <b>TRÖSTA</b> /TRÖTTA)      | <b>Comfort (v.)</b> / tired (adj.)                   |
| 9. GENER _ _ ( <b>GENERÖS</b> /GENERAD)    | <b>Generous (adj.)</b> / embarrassed (adj.)          |
| 10. V _ NLIG ( <b>VÄNLIG</b> /VANLIG)      | <b>Friendly (adj.)</b> / common (adj.)               |
| 11. _ DEL ( <b>ÄDEL</b> /IDEL)             | <b>Gentle (adj.)</b> / sheer (adj.)                  |
| 12. S _ _ LL ( <b>SNÄLL</b> /SKALL)        | <b>Kind (adj.)</b> / shall (v.)                      |
| 13. OMTA _ _ _ ( <b>OMTANKE</b> /OMTALAD)  | <b>Care (n.)</b> / renowned (adj.)                   |
| 14. SYMP _ _ _ ( <b>SYMPATI</b> /SYMPTOM)  | <b>Sympathy (n.)</b> / symptom (n.)                  |
| 15. GO _ _ ET ( <b>GODHET</b> /GOLVET)     | <b>Benevolence (n.)</b> / the floor (n.)             |
| 16. _ UPP _ _ T ( <b>SUPPORT</b> /GUPPIGT) | <b>Support (n.)</b> / bumpy (adj.)                   |
| 17. ST _ D ( <b>STÖD</b> /STAD)            | <b>Support (n.)</b> / town (n.)                      |
| 18. OMS _ _ _ ( <b>OMSORG</b> /OMSLAG)     | <b>Care (n.)</b> / cover (n.)                        |
| 19. GÅ _ A ( <b>GÅVA</b> /GÅTA)            | <b>Gift (n.)</b> / riddle (n.)                       |

20. H \_ N \_ \_ N (**HÄNSYN/HANDEN**)      **Consideration (n.)** / the hand (n.)

### Neutral words

1. O \_ D (**ORD/OND**)      **Word (n.)** /Evil (adj.)
2. SI \_ A (**SIDA/SILA**)      **Side (n.)** /Filter (v.)
3. TI \_ TA (**TITTA/TILTA**)      **Look (v.)** /Tilt (v.)
4. P \_ AT \_ (**PLATS/PRATA**)      **Place (n.)** /Talk (v.)
5. H \_ ND (**HAND/HUND**)      **Hand (n.)** /Dog (n.)
6. A \_ \_ RA (**ANDRA/AGERA**)      **Other (adj.)** /Act (v.)
7. \_ \_ \_ TI (**INUTI/PARTI**)      **Inside (adv.)** /Party (n.) as in politics
8. HÄ \_ (**HÄR/HÄL**)      **Here (adv.)** / Heel (n.)
9. \_ \_ \_ \_ ISKOR (**MÄNNISKOR/GUMMISKOR**)      **People (n.)** /Rubber shoes (n.)
10. GR \_ P \_ (**GRUPP/GRIPA**)      **Group (n.)** /Seize (n.)
11. \_ \_ \_ ETAG (**FÖRETAG/ANDETAG**)      **Company (n.)** / Breath (n.)
12. ST \_ (**STÅ/STO**)      **Stand (v.)** /Mare (n.)
13. \_ \_ AG (**DRAG/SVAG**)      **Pull (n.)** /Weak (adj.)
14. \_ ÄN \_ ELSE (**HÄNDELSE/FÄNGELSE**)      **Event (n.)** /Prison (n.)
15. B \_ \_ D (**BILD/BAND**)      **Picture (n.)** / Band (n.) as in playing music
16. \_ LAN \_ ERA (**PLANTERA/FLANKERA**)      **Plant (v.)** /Flank (v.)
17. \_ OLV (**GOLV/KOLV**)      **Floor (n.)** /Piston (n.)
18. L \_ \_ D (**LJUD/LAND**)      **Sound (n.)** /Country (n.)
19. GLA \_ (**GLAS/GLAD**)      **Glass (n.)** /Happy (adj.)
20. S \_ EN (**STEN/SKEN**)      **Rock (n.)** /Light (n.) as in light in the sky

#### **Appendix A4. Donation Measure Used in Experiment 3 and 4**

1. As you were informed earlier, as part of compensation for participating in this research, you (and all other participants in this research) will be entered in a lottery draw. You may win ONE of either of the following amounts; (*American sample: \$120, \$100, \$70, \$50, \$20; Swedish sample: 400SEK, 300SEK, 200SEK, 100SEK, 50SEK*)

We would also like to mention that we're taking up collection for the United Nations Human Rights Council (UNHRC). The UNHRC is a United Nations inter-governmental body responsible for promoting and protecting human rights around the world.

If you will like to donate some of your compensation to the fund just in case you win any of the amounts above, please select the amount you wish to donate from the options provided.

## **Appendix A5. Donation and Situational Affordance Measure Used in Experiment 5**

1. As you were informed earlier, as part of compensation for participating in this research, you (and all other participants in this research) will be entered in a lottery draw. You may win £100
2. We would also like to mention that we're taking up collection for the United Nations International Children's Emergency Fund (UNICEF). UNICEF is a United Nations body responsible for helping disadvantaged children around the world. Also, UNICEF helps to promote and protect children's rights around the world. UNICEF receives no financial support from the United Nations and relies on voluntary contributions from individuals and businesses for their work.

### **Low suitability affordance**

Our goal is to raise £1000 and we have achieved this goal. WE HAVE ALREADY RAISED £1000. However, if you would still like to donate some of your compensation to the UNICEF collection, in case you win, kindly indicate the amount you wish to donate on the next page.

### **High suitability affordance**

Our goal is to raise £1000. SO FAR WE HAVE RAISED £400. If you would like to donate some of your compensation to the UNICEF collection, in case you win the £100, kindly indicate the amount you wish to donate on the next page.

## Appendix A7. Supplemental Analyses for Part I

### Ethnic characteristics of American Sample

**Experiment 1.** One hundred and fifty-two participants identified as Caucasian, 14 identified as Hispanic, 14 identified as Asian-American, six identified as African-American, three identified as European two identified as Native American, and two identified as multi-ethnic.

**Experiment 2.** One hundred and forty-seven identified as Caucasian, 20 identified as African-American, 12 identified as Asian-American, 11 identified as Hispanic, two identified as European, and one identified as Native American.

### Awareness Assessments

Recent discussions on the role of unconscious influences in priming have called for rigorous assessments of awareness. Awareness here refers to whether participants recognized the priming or activation process and/or its intended purpose. Newell and Shanks (2014) have recommended four criteria that priming or stereotype activation studies must meet in order to fully uncover participant awareness in the decision-making process. They propose that awareness checks should be reliable (unaffected by demand characteristics), relevant (relevant to target behavior), immediate (soon enough in order to avoid forgetting or interference), and sensitive (administered under the best conditions for retrieval). We implemented procedures to meet these requirements.

Immediately after the word fragment/stem completion and the self-reported helpfulness intentions task, respectively, we assessed awareness of the intended purpose of the priming task. We believe this meets the “immediacy” criterion to the largest possible extent, because assessing awareness concurrently with our dependent measures would have unduly influenced participants’ responses. We assessed awareness using a multiple-choice question with three response options—*yes*, *not sure*, and *no*: “Think critically for a moment. Do you think anything influenced how you completed the word fragment/stem task?”. This meets both the “reliability” and “relevance” criteria: We facilitated unbiased responses by asking participants to think critically before responding. Furthermore, we made sure that the awareness checks were relevant to the target behavior by specifying the dependent measures directly. Participants who responded “yes” or “not sure” were asked to describe whatever influence they perceived: “Can you briefly describe this influence; whatever you think it is?”. We met the “sensitivity” criterion by asking both “yes” and “not sure” responders to describe the influence they had perceived. Finally, we asked participants to rate, on an eleven-point bipolar continuous scale, the extent to which they had been aware of the influence as they completed the tasks (0 = *not aware*, 10 = *fully aware*).

We coded responses from the primed groups into four categories, in order to examine awareness of the helpfulness priming manipulation and any possible influence awareness may have had on the dependent measures. The *no influence* category consisted of participants who reported no influence at all. The *unrelated* category consisted of participants who reported an influence that was unrelated to the priming manipulation (e.g., “I suspect that the letters given influenced my word choices”, “What kind of person I am and what I’ve done in the past. For example, if I’ve engaged in any such action in the past”). The *related but unspecific* category consisted of participants who reported an influence related to helping behavior but did not mention the priming manipulation



specifically (e.g., “I noticed I chose a few words that went along with being helpful”). The *direct hit* category consisted of participants who reported that priming manipulation may or may not have influenced their responses (e.g., “I think the stories I wrote before influenced the words”, “Writing about helping others might make me more likely to help in the future”). We collapsed the no influence and unrelated categories into one category—misses—and the related but unspecific and direct hit categories into one category—hits.

**Experiment 1.** Thirty participants (33.3%) in the helpfulness priming condition reported having been influenced by the priming manipulation when completing the word fragment task. Their ratings indicated a relatively high awareness of the priming influence ( $M = 5.97$ ,  $SD = 3.20$ ). Yet, we found no significant correlation between the ratings of awareness and the tendency to complete word fragments with words related to helping behavior  $r(29) = -.05$ ,  $p = .798$ . With regard to self-reported helpfulness intentions, only 12 participants (13.3%) reported having been influenced by the helpfulness priming. Among those indicating awareness, however, ratings indicated a relatively high level of awareness ( $M = 5.92$ ,  $SD = 3.50$ ). The correlation between ratings of awareness and self-reported intentions to engage in helping behavior was pronounced, but did not achieve statistical significance,  $r(11) = .47$ ,  $p = .125$  (possibly due to limited power).

We then assessed whether priming influenced self-reported helpfulness intentions differentially based on an overall influence of awareness of an external helpfulness influence (i.e., priming manipulation and word-fragment completion task). A moderation analysis including all participants was conducted for this assessment. The awareness [and priming] variable was effect coded before conducting the analysis ( $-0.5 =$  no awareness [control priming],  $0.5 =$  awareness [helpfulness priming]). One participant in the control priming group indicated that the overall study swayed them toward being charitable and was added to the awareness group. No significant main effects of awareness ( $b = -0.38$ ,  $SE = 2.16$ ,  $p = .862$ ) or priming ( $b = 0.73$ ,  $SE = 2.16$ ,  $p = .737$ ) emerged. Moreover, the interaction between priming and awareness was not significant,  $b = 1.54$ ,  $SE = 4.32$ ,  $p = .722$ .

**Experiment 2.** We used the same analysis strategy as in Experiment 1 to examine awareness assessments in this study. Twenty-one (42.0%) participants in the helpfulness priming condition reported having been influenced by a theme of helpfulness while completing the word fragment task. Retrospective ratings of awareness indicated a high awareness of the priming influence ( $M = 7.05$ ,  $SD = 2.22$ ). But we found no significant correlation between ratings of awareness and the tendency to complete word fragments with words related to helping behavior,  $r(20) = -.04$ ,  $p = .853$ . Regarding self-reported helpfulness intentions, only four (8.0%) of the helpfulness primed participants reported having been influenced by the helpfulness priming. Ratings of awareness indicated a low awareness of the priming influence ( $M = 2.75$ ,  $SD = 2.36$ ).

We then assessed the overall influence of awareness of an external helpfulness influence on self-reported helpfulness intentions. No participant in the control priming group indicated a helpfulness influence related to the priming manipulation or word fragment task. The main effects of awareness ( $b = 1.54$ ,  $SE = 1.45$ ,  $p = .289$ ) or priming ( $b = -1.84$ ,  $SE = 1.45$ ,  $p = .207$ ) was not significant. Moreover, the interaction between priming and awareness was not significant,  $b = -2.77$ ,  $SE = 2.90$ ,  $p = .341$ .

**Experiment 3.** We implemented the same awareness checks and coded responses in the same manner as we did in the previous experiments. Twenty-six participants (27.4%) in the helpfulness priming condition reported having been influenced by either a theme of helpfulness or the priming manipulation during the word fragment task. Retrospective ratings of awareness indicated a relatively high awareness of the priming influence ( $M =$

5.19,  $SD = 3.27$ ) among those participants. We found no correlation between ratings of awareness and tendency to complete word fragments with words related to helping behavior  $r(25) = .05, p = .819$ . Five participants (5.3%) in the helpfulness priming condition reported awareness of being influenced by either a theme of helpfulness or the priming manipulation when we solicited donations. Those participants reported a high rating of awareness ( $M = 6.07, SD = 3.79$ ).

We assessed the overall influence of awareness of an external helpfulness influence on helpfulness behavior using the same analysis strategy as Experiments 1 and 2. Two participants in the control priming group indicated a helpfulness influence related to the word fragment task and thus were included in the awareness group. The main effect of awareness ( $b = 48.36, SE = 24.60, p = .051$ ) achieved marginal significance. This indicates that participants indicating awareness of offered higher donations. However, the main effect of priming ( $b = -31.91, SE = 24.60, p = .196$ ) and the interaction between priming and awareness were not significant, by conventional standards,  $b = -84.25, SE = 49.19, p = .088$ . Furthermore, conditional effects of priming on donations were not significant at either level of awareness (no awareness:  $b = 10.21, SE = 10.44, p = .329$ ; awareness:  $b = -74.04, SE = 48.07, p = .125$ ).

**Experiment 4.** Thirteen participants (31.0%) in the helpfulness priming condition reported being influenced by either a theme of helpfulness or the priming manipulation during the word fragment task. Retrospective ratings of awareness indicated high awareness of the priming influence ( $M = 6.85, SD = 2.15$ ) among those participants. We found no correlation between ratings of awareness and tendency to complete word fragments with words related to helpfulness behavior  $r(12) = .31, p = .552$ . Six participants (14.3%) reported awareness of the helpfulness priming when we solicited donations for the UNHRC. Their ratings of awareness of was generally high ( $M = 7.83, SD = 1.94$ ).

Overall assessment of the influence of awareness of an external helpfulness influence on helpfulness behavior was conducted. One participant in the control priming group indicated a helpfulness influence related to the word fragment task and thus were included in the awareness group. The main effects of awareness ( $b = -101.71, SE = 204.43, p = .620$ ) and priming ( $b = -13.86, SE = 204.44, p = .946$ ) were not significant. The interaction between priming and awareness did not achieve significance,  $b = 234.80, SE = 408.87, p = .567$ .

**Experiment 5.** Thirty-five percent (16/46) of participants who received the helpfulness prime reported an influence of helpfulness during the word fragment task. Subsequent awareness ratings indicated high awareness of the priming influence ( $M = 6.06, SD = 2.27$ ). The correlation between awareness and tendency to complete word fragments with words related to helpfulness behavior was positive and significant,  $r(15) = .51, p = .046$ . This indicates that awareness of the helpfulness prime's influence was positively associated with tendencies to complete word fragments with helpfulness related words. Twenty percent (9/46) of primed participants reported awareness of the helpfulness prime when we solicited donations for UNICEF. Their ratings of awareness of was high ( $M = 5.78, SD = 2.64$ ).

We assessed the overall influence of awareness of an external helpfulness influence on helping behavior using the same analysis strategy as Experiments 1 through 4. No participants in the control priming group indicated a helpfulness influence related to the word fragment task. The main effect of awareness ( $b = 38.61, SE = 15.82, p = .017$ ) was significant. This indicates that participants indicating awareness of the priming manipulation offered more donations compared to those who did not indicate awareness.

The main effect of priming ( $b = -25.38$ ,  $SE = 15.82$ ,  $p = .112$ ) and the interaction between priming and awareness,  $b = -50.04$ ,  $SE = 31.64$ ,  $p = .117$ , however, were not significant.

### **Pilot Test of Situational Affordance Manipulation**

We recruited 82 participants, 48 males and 34 females, with an average age of 36.95 years ( $SD = 10.51$  years), via Amazon Mturk, to pilot test the situational affordance manipulation. A simple between-groups design (high suitability vs. low suitability) was used in the pilot test. We first asked participants to imagine that they had resources to donate to a charitable organization (i.e., UNICEF). Next, participants were randomly assigned to the high suitability ( $n = 41$ ) or low suitability ( $n = 40$ ) affordance.

All participants then gave three separate ratings on 11-point (0-10) bipolar continuous scales: (a) their overall likelihood of donating to UNICEF (0 = *not likely at all*, 10 = *very likely*); (b) the influence of the amount already raised in their likelihood to donate rating (0 = *not influential at all*, 10 = *very influential*); and (c) the influence of UNICEF, as a charitable organization, in their likelihood to donate rating (0 = *not influential at all*, 10 = *very influential*). One participant was excluded from the analysis because they failed to answer a test question designed to ensure that the experimental instructions were adhered to.

An independent samples  $t$ -test,  $t(79) = 2.43$ ,  $p = .017$ ,  $d = 0.54$ , indicated that participants exposed to the high suitability affordance ( $M = 5.93$ ,  $SD = 3.40$ ) were more likely donate to UNICEF than those exposed to the low suitability affordance ( $M = 4.23$ ,  $SD = 2.88$ ). However, there was no significant difference between groups on ratings of the influence of the amount already raised on the likelihood to donate,  $t(79) = -0.51$ ,  $p = .613$ ,  $d = -0.12$ . Taken together, these findings suggest that participants underestimated the influence of the situational affordance on their likelihood to donate. Finally, no significant difference regarding the specific influence of UNICEF as a charitable organization on likelihood to donate emerged,  $t(79) = 1.29$ ,  $p = .201$ ,  $d = 0.29$ .

### **Endnotes of Part I**

<sup>1</sup>We ran a conditional mediation analysis, using Hayes's PROCESS macro for SPSS (model 59) with 5,000 bootstrapped samples, allowing perspective taking to moderate all paths in the mediation model. Significant indirect effects did not emerge at either levels of perspective taking.

<sup>2</sup>Compared with Experiment 1, we excluded one item ("give a stranger a lift in my car") from the *self-reported prosocial intentions* scale because the sample consisted mainly of students, most of whom do not own a car. Internal consistency was good ( $\alpha = .80$ ).

<sup>3</sup>Prospective participants were invited to participate, in the study, over a four-month period. Data collection was ended in the fifth month because response rate was consistently at 0%.

<sup>4</sup>We ran a conditional mediation analysis, using Hayes's PROCESS macro for SPSS (model 15) with 5,000 bootstrapped samples, allowing situational affordance to moderate the construct accessibility- and priming- behavior paths. Significant indirect effects did not emerge at either levels of situational affordance.

## **Appendix B**

Appendix B1 and B2 includes the manuscripts of the accepted word versions of Experiments 6 and 7. Here, the interested reader can find an extended version (with supplemental analyses) of each experiment .

## **Appendix B1. Experiment 6**

### Eliciting Information in Intelligence Contexts: The Joint Influence of Helpfulness Priming and Interview Style

#### Author Note

David Amon Neequaye, Department of Psychology, University of Gothenburg and Department of Psychology, University of Portsmouth; Karl Ask and Pär Anders Granhag, Department of Psychology, University of Gothenburg; Aldert Vrij, Department of Psychology, University of Portsmouth.

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Correspondence to: David Amon Neequaye, Department of Psychology, University of Gothenburg. Box 500, 405 30 Gothenburg, Sweden; Email: david.neequaye@psy.gu.se

### Abstract

This study investigated the influence of helpfulness priming on information disclosure. Participants ( $N = 115$ ) assumed the role of an informant with information about an impending terrorist attack. Subsequently, an interviewer solicited information about the attack using an interview protocol that displayed either high (helpfulness-focused) or low (control) fit with helpfulness. Before the interview, in an ostensibly unrelated experiment, priming of participants' helpfulness was performed and we assessed cognitive helpfulness accessibility. Priming and interview style did not, individually or in combination, significantly influence information disclosure. However, follow-up analyses showed that the helpfulness-focused interview style was counterproductive—decreasing information disclosure—when interviewees' helpfulness accessibility was low. This research suggests that interview styles that do not match the interviewees' temporary (e.g., primed) or chronic (e.g., personal values) level of helpfulness motivation are potentially maladaptive and may counteract the goal of increasing information disclosure.

*Keywords:* construct accessibility, disclosure, helpfulness, prime-focused interviewing, priming

## Eliciting Information in Intelligence Contexts: The Joint Influence of Helpfulness Priming and Interview Style

Extant research has shown that investigative interviewing benefits from strategic interviewing tactics that bolster an interviewer's attempts to elicit reliable information from an interviewee. Strategic interview techniques (e.g., the Scharff technique: Oleszkiewicz, 2016) usually depend on case evidence to formulate tactics that enhance information elicitation. In circumstances with scant case evidence, such tactics may be inadequate. Recent research in human intelligence interviewing (Dawson, Hartwig, & Brimbal, 2015; Dawson, Hartwig, Brimbal, & Denisenkov, 2017) has begun to explore priming of concepts that facilitate disclosure as a subtle persuasion tactic to educe information. Because priming does not rely on case evidence, it could be a useful alternative to strategic interview techniques, or an addition to the interviewer's toolkit, when there is little to no case evidence. Moreover, by activating traits or concepts that motivate the interviewee to disclose information willingly, priming affords the interviewer an opportunity to harness the interviewee's internal motivations to share information. In this research, we investigated whether priming a commonly possessed internal prosocial motivation—helpfulness—would facilitate information disclosure in an intelligence interview.

### **Current Theoretical Perspectives of Prime-to-Behavior Effects**

The idea that priming—incidental activation of meaningful concepts—has an automatic and assimilative influence on thought and behavior has sparked debate recently (e.g., Newell & Shanks, 2014). However, discussions on the reliability of priming have birthed nuanced theoretical perspectives that explain the mechanisms of priming. Current

theoretical perspectives depart from the theory of ideomotor action (Dijksterhuis & Bargh, 2001), which posits an automatic link between ideation about a concept and action.

Loersch and Payne (2014) propose the *situated inference model* to explain how priming effects occur. The model proposes that exposure to a prime first increases mental accessibility to the primed concept—the readiness and ease with which a concept comes to mind (for purposes of making judgments and decisions). Accessibility to a concept is vital because individuals are likely to draw on readily accessible concepts when making decisions instead of searching their memory exhaustively (Tversky & Kahneman, 1974). Loersch and Payne (2014) further propose that accessibility resulting from a prime is then misattributed as being self-generated rather than externally generated. Subsequently, the primed content influences the target behavior because the accessible primed content is used as a heuristic (i.e., a mental shortcut) to determine an appropriate behavior for the current situation. However, such a priming influence is most likely to occur in situations that offer high (vs. low) suitability affordances (i.e., opportunities to perform the target behavior; Loersch & Payne, 2014).

In exploring the possibility of eliciting information through helpfulness priming, we deduce from the situated inference model that (a) the priming procedure must increase the cognitive accessibility of helpfulness-related constructs and (b) the primed interviewee must be presented ample opportunity (i.e., a suitable situation) to exhibit helpfulness by disclosing information.

### **The Link Between Helpfulness and Information Disclosure**

Social values research has shown that one's dispositional orientation toward prosociality predicts helpful behaviors such as cooperation (Van Lange, 1999). Further studies have also revealed that priming such internal orientations to be helpful promotes willingness to offer beneficial assistance to others (Arieli, Grant, & Sagiv, 2014; Macrae & Johnston, 1998). The link between helpfulness and cooperation is particularly useful and



exploitable in an intelligence interview. Rousing an interviewee's internal desire to be helpful fits neatly with an interviewer's task of soliciting information; the interviewee can exhibit helpfulness by cooperatively providing the interviewer with reliable information.

A couple of previous studies have addressed the usefulness of priming in intelligence interviews, with mixed and/or inconclusive results. First, the results of Dawson et al. (2015) suggested that priming a secure attachment in an intelligence interview may promote information disclosure. However, the reported effects were not statistically significant and their replicability thus remains unclear. Second, Dawson et al. (2017) found that priming the concept of openness lead interviewees to be more forthcoming with information. However, because no evidence was provided that the effect was a result of increased cognitive accessibility to the openness construct, the underlying mechanisms remain unknown. The current research expands on the previous studies (a) by priming an intrinsic motivation (helpfulness) assumed to preexist in most individuals' goal repertoire, and (b) by examining the mechanisms that give rise to the influence of priming on information disclosure.

### **The Present Research**

In the present study, participants were invited to prepare for an interview, assuming the role of a police informant who possesses information about an impending terrorist plot. Before the interview, in an ostensibly unrelated study, we primed the helpfulness motivation of half of the participants (controls received no helpfulness-related priming) and the cognitive accessibility to helpfulness-related content was assessed. Subsequently, participants were interviewed about the terrorist plot. We predicted that participants primed with helpfulness would disclose more information in the interview than control participants (Hypothesis 1).

**Interview styles as situational affordances.** As discussed previously, it has been proposed that situational affordances drive the manifestation of priming effects; that is,

high (vs. low) suitability affordances are more likely to promote behavioral assimilation to primed concepts (Loersch & Payne, 2014). We thus propose that a prime-focused interview style, which draws on the primed content, is more likely to enhance information elicitation compared to an interview style unrelated to the prime, because the former offers more suitable situational affordances. Hence, we implemented two interview protocols that served as proxies for high and low suitability affordances; a helpfulness-focused and a control interview protocol. The helpfulness-focused protocol was designed to establish a link between helpfulness and information disclosure by making it readily apparent to the interviewee that helpfulness can be exhibited by sharing reliable information. Moreover, in line with exuding high fit with helpfulness, the helpfulness-focused protocol opened with an expression of empathy and emphasis of the interviewee's autonomy. Previous research indicates that an empathic understanding of the requester's needs (Small & Simonsohn, 2008) and an emphasis on autonomy (Weinstein & Ryan, 2010) encourage people to enact helpful behaviors. The control interview protocol, on the other hand, consisted of straightforward and direct questions. We predicted an interaction between priming and interview style. Specifically, we expected that the effect of helpfulness priming would be stronger when combined with the helpfulness-focused (vs. control) interview style (Hypothesis 2).

Finally, based on the theoretical proposition that construct accessibility mediates behavioral priming effects, we expected that helpfulness accessibility would mediate the impact of helpfulness priming on information disclosure. Put simply, we hypothesized that helpfulness priming will increase disclosure by increasing helpfulness accessibility (i.e., the ease with which helpfulness comes to mind). However, because the priming effect was expected to be moderated by interview style (see above), we predicted a conditional mediation effect; the mediating role of accessibility would be stronger in the helpfulness-

focused (vs. control) interview condition (Hypothesis 3). Figure 1 illustrates the proposed conditional mediation.

## Method

### Participants and Design

One hundred and twenty participants, consisting of community members (41.7%) and university students (58.3%), with an average age of 28.88 years ( $SD = 10.21$ ) participated in the study. The sample comprised 84 females. We used a 2 (priming: helpfulness vs. control)  $\times$  2 (interview style: helpfulness-focused vs. control) between-groups design. Random assignment produced a distribution of between 28 and 33 participants in each cell of the design. Participants were compensated with a movie ticket worth 90 SEK (~ 10 USD). Five participants were excluded from the analyses because of a high discrepancy ( $> 10$  information units) between their subjective and actual information disclosure (see Phase 4 below). Such discrepancy possibly reflects confusion between intended and actual information disclosure. The final sample thus consisted of 115 participants. A sensitivity analysis indicates that a sample of this size provides a 75% power to detect an effect of  $d = .50$  at the .05 significance level. Based on previous research, examining the interaction between helpfulness priming and situational affordances on helpfulness (i.e., Macrae & Johnston, 1998) and the influence of helpfulness priming on helpfulness values (Arieli et al., 2014, Experiment 1), it is reasonable to expect an effect size of  $d = .50$  or higher.

### Procedure and Materials

The procedures in this study were disguised to appear as two independent studies in order not to give the experimental hypotheses away. Participants were informed that they would be participating in two separate studies. In the first study, we told participants that we examined the efficacy of a range of interview techniques. In the second study,

containing the priming manipulation, participants were told that we explored individual differences in language use and communication.

**Phase 1: Background and planning.** In this study, we used the same background and planning materials as designed by Oleszkiewicz, Granhag, and Cancino Montecinos (2014). All participants were instructed to assume the role of a police informant with some information about an impending terrorist attack. Participants were provided with a booklet containing incomplete information about a terrorist plot by a left-wing extremist group. The information was presented in a coherent storyline consisting of 37 distinct pieces of information. To prevent floor and ceiling effects, participants were told to economize with the information during the interview using the instructions of Oleszkiewicz et al. (2014): They must (a) not provide too little information (assisting the police was necessary to be granted free passage out of the country), and (b) not provide too much information (since participants were to imagine having strong ties to the extremist group). These instructions have been shown to successfully induce competing motivations to disclose and to withhold information (see Oleszkiewicz, 2016). Following Oleszkiewicz et al. (2014), we offered participants the possibility of earning an extra movie ticket if they economized information effectively. In truth, however, all participants received a single movie ticket. Participants were allowed to provide untruthful information during the interview.

**Phase 2: Priming.** After participants indicated completion of Phase 1, they were invited to complete the alleged second study: Because the police-contact was going to conduct the interview a little while later, completing the second study while they waited would save time. No participant objected to this. The priming phase was computerized.

Consistent with the guise that this alleged experiment was to examine individual differences in language and communication, we told participants that they would be writing down certain guided thoughts. Those in the *helpfulness* condition were instructed to think about and visualize a time when they had been helpful. As part of the reflection

and visualization exercise, we instructed participants to focus on their internal state right *before* they had offered their help, instead of writing about the already completed action. Liberman, Förster, and Friedman (2007) posit that post-attainment decrements in motivation impact goal-priming effects. Thus, instructing participants to focus on their precipitating internal state was to mitigate such post-attainment decrease in helpfulness motivation. Correspondingly, participants in the *control* condition reflected on a neutral topic: their morning routine. We instructed participants to reflect on their regular morning routine and visualize their usual preparations to commence each day. Next, participants presented their reflections. In both conditions, a total of five minutes was apportioned for reflection and writing: mandatory two and half minutes and optional two and half minutes if necessary. We inspected participants' written reflections to ensure that they had adhered to the instructions. All participants in the helpfulness condition, indeed, wrote about their internal states before various instances where they had offered help. All participants in the control condition wrote about morning routines that were relatively neutral to helpful behaviors<sup>1</sup>.

After the priming, we assessed helpfulness accessibility with an implicit measure—a word-fragment/stem completion task. All participants completed the same task and had a maximum of 10 seconds to complete each word-fragment. The ten-second time cap was implemented to prevent extensive deliberation during the word completions. The word-fragments included words that had either specific letters missing or incomplete word stems. In all, the word-fragment/stem completion material consisted of 40 word-fragments, 20 of which could be completed to form words related to helpfulness, and 20 of which were neutral with regard to helpfulness. Both helpfulness-related and neutral word-fragments could be completed with a diverse range of words. We presented a single word at a time and participants had to input their word of choice in a text box below each word fragment. A score of one point was assigned when a word-fragment was completed with a

word related to helpfulness and zero when completed with an unrelated word. Higher scores thus indicated stronger helpfulness accessibility. See supplemental material for priming instructions and list of word-fragments.

**Phase 3: The Interview.** All participants were interviewed approximately three minutes after priming and were allowed to consult notes they had prepared in Phase 1 during the interview<sup>2</sup>. There was no need for any participant to memorize the background information; we implemented this to eliminate potentially confounding memory effects. The interviewer initiated contact with the participant via an audio Skype call. Each interview was recorded for the purposes of data analysis. The length of individual interviews ranged from 140 to 554 seconds. An independent-samples *t*-test showed that the average helpfulness-focused interview ( $M = 317.37$ ,  $SD = 78.03$ ) lasted significantly longer than the average control interview ( $M = 264.91$ ,  $SD = 100.01$ ),  $t(113) = 3.10$ ,  $p = .003$ ,  $d = 0.59$ , 95% CI [.22, .67]. A possible contribution to this difference was the length of the introduction and questions used in the helpfulness-focused interview. The appendix contains the full interview protocols

***Helpfulness-focused interview.*** The interviewer began the interview with an introduction, noted the purpose of the call, and empathized with the informant's dilemma. Next, the interviewer pointed out that s/he could not let the attack happen. Furthermore, S/he emphasized the interviewee's autonomy in deciding what information to share. After the introduction, the interviewer asked three non-directive open-ended questions. Each question contained a cue that suggested that helpfulness could be demonstrated by disclosing information. The first question solicited details about the terrorist plot: "We hope you can *help us* by providing details about the plans for the upcoming attack...". The next question requested additional information about the attack. The final question probed for further information that the interviewee may have omitted. The interviewer ended the interview after the third question.

***Control interview.*** In this condition, the interviewer took a matter-of-fact and direct approach. There were no cues for the informant to make a connection between helpfulness and information disclosure. The interviewer introduced her-/himself, explained the nature of the interview, informed the informant about the purpose of the call, and asked three non-directive open-ended questions. The first question requested for details about plans for the attack: “You can start by telling us what you know about this attack”. When the informant finished speaking, the interviewer asked the next question, which solicited additional information. Finally, the interviewer probed for omitted information and ended the interview afterward.

***Interviewers.*** We trained two interviewers, a female and a male, to conduct the interviews. The two interview protocols were evenly distributed between the interviewers. Additionally, both interviewers were instructed to follow the interview protocols strictly. None of the interviewers improvised in any of the interviews. Both interviewers were blind to the priming condition of the participant.

**Phase 4: Post-Interview Questionnaires.** After the interview, each participant completed a post-interview questionnaire on a computer. All participants were informed that they had now completed the role-taking part of the study, and were to answer the questionnaire truthfully.

First, we provided two separate but identical checklists with all the 37 units of information that were in the background and planning information. In the first checklist, we instructed participants to mark the specific information they had revealed to the interviewer. This measure was intended as a reliability check for consistency with the actual information that was disclosed. In the second checklist, participants were to mark the information they believed the interviewer was likely to have had prior to the interview. This measure was implemented to examine whether participants’ perceptions of the interviewer’s prior information was influenced by the interview protocols.

Next, we presented a series of statements to be rated on separate 11-point continuous scales (0-10). Participants provided a retrospective rating of how much information they perceived to have disclosed to the interviewer (0 = *no information*, 10 = *all of the information*). We implemented this measure to examine whether participants perceived qualitative differences in the amount of information they disclosed (analyses of these data are presented in the supplemental material). Participants then rated the extent to which they were motivated to be helpful to the interviewer by disclosing information during the interview (0 = *not motivated at all*, 10 = *very motivated*). Some additional variables were included for exploratory purposes and their analyses are presented in the supplemental material.

***Coding of interviews.*** All interviews were transcribed verbatim. Each transcript was coded for the number of information units disclosed (range: 0–37). When a piece of information was disclosed more than once, it was counted as one unit of information. Incorrect and/or fabricated information was counted but not included in the quantity measure. Thirty-eight (33%) of the transcribed interviews were randomly selected and coded separately by two coders. Reliability analysis indicated that inter-rater reliability was excellent (Cohen’s  $\kappa = 0.91$ ). The assistants discussed and settled minor disagreements for the thirty-eight transcripts after reliability analysis. One of the coders coded the remaining 67% of transcripts.

## **Results**

### **Main Analyses**

We tested our focal predictions using Hayes’s (2013) PROCESS macro for SPSS, which generates estimates of parameters with 95% bias-corrected confidence intervals (BCa CI) using the bootstrapping method. The bootstrapping method generates more accurate estimates than the normal theory approach when the characteristics of a statistic over repeated sampling are relatively unknown (Hayes, 2013). Such uncertainty exists in



the current setting as, to our knowledge, this research is the first to explicitly examine (a) the interaction between priming and prime-focused interviewing on information disclosure and (b) the mediating role of construct accessibility in such priming effects. In addition, we implemented bootstrapping procedures in light of the reduced power of the final sample size. The bootstrapping method is relatively more useful and provides more accurate effect estimates than the normal theory approach in smaller samples (Hayes, 2013; Wood, 2005). Moreover, the bootstrapping statistical procedure makes no assumptions about the shape of a sample distribution and is therefore robust against any irregularities in the sample distribution (See Hayes, 2013, p.105).

**Moderation analyses.** We first examined the main effect of priming and the Priming  $\times$  Interview Style interaction on the amount of information disclosed in a moderation analysis (PROCESS model 1) with 5,000 bootstrapped samples. Following Hayes's (2013, p. 277) suggestion, condition variables were effect coded before the analyses (-0.5 = control priming, 0.5 = helpfulness priming; -0.5 = control interview, 0.5 = helpfulness-focused interview). The main effects of priming ( $b = -0.56$ ,  $SE = 0.69$ ,  $p = .414$ , 95% BCa CI [-1.92, 0.80]) and interview style ( $b = -0.50$ ,  $SE = 0.69$ ,  $p = .461$ , 95% BCa CI [-1.87, 0.85]) were not significant. The former shows that Hypothesis 1 did not receive support, as priming helpfulness did not have a significant direct influence on the amount of information disclosed. In addition, the interaction between priming and interview style was not significant,  $b = -1.40$ ,  $SE = 1.37$ ,  $p = .311$ , 95% BCa CI [-4.12, 1.32]. Hence, Hypothesis 2 was not supported. Descriptive statistics are reported in Table 1.

**Mediation analysis.** We conducted a conditional mediation analysis with 5,000 bootstrapped samples (PROCESS model 15) to examine Hypothesis 3. The mediation analysis was conducted despite the previous null findings because it has been argued that indirect effects should be estimated based on a formal mediation test rather on tests of

individual paths in the proposed mediation model. Hayes (2013, p. 168-170) has posited that a null total main effect does not prevent the existence of a significant mediation effect. This is because a total main effect is an aggregate of the direct effect and all of the possible, positive and negative, indirect effects that connect an independent variable to a dependent variable (see also Rucker, Preacher, Tormala, & Petty, 2011). Indeed, scholars have proposed that priming effects typically consist of multiple mechanisms (Wheeler & DeMarree, 2009)

The priming [and interview style] variable was dummy coded (0 = control priming [control interview], 1 = helpfulness priming [helpfulness-focused interview]) before the analysis. Helpfulness accessibility was maintained in its original metric. Path labels in the following results correspond to the naming convention used in Figure 1.

The effect of priming on helpfulness accessibility (path *a* in Figure 1) was not statistically significant by conventional standards,  $b = 0.66$ ,  $SE = 0.37$ ,  $p = .075$ , 95% BCa CI [-0.07, 1.39]. Consistent with the previous moderation analyses, the interaction between priming and interview style (*c*) was not significant,  $b = -1.96$ ,  $SE = 1.37$ ,  $p = .156$ , 95% BCa CI [-4.69, 0.76]. The Helpfulness Accessibility  $\times$  Interview Style interaction (*b*) was, however, significant,  $b = 0.78$ ,  $SE = 0.34$ ,  $p = .027$ , 95% BCa CI [0.09, 1.47]. Conditional effects analyses revealed that at low levels of helpfulness accessibility (-1 *SD*) the helpfulness-focused (vs. control) interview style had a negative effect on information disclosure,  $b = -1.91$ ,  $SE = 0.96$ ,  $p = .048$ , 95% BCa CI [-3.80, -0.01]. The effect of the helpfulness-focused (vs. control) interview style at high levels of helpfulness accessibility (+1 *SD*) was positive, but the effect was not statistically significant,  $b = 0.91$ ,  $SE = 0.97$ ,  $p = .350$ , 95% BCa CI [-1.01, 2.82]. Figure 2 depicts the full interaction.

The indirect effect of helpfulness priming, via helpfulness accessibility, on total information disclosed was negative and statistically significant among participants who were interviewed using the control interview style,  $b = -0.34$ , 95% BCa CI [-1.03, -0.01].

This finding indicates that an increased helpfulness accessibility following the helpfulness priming was associated with a reduced amount of disclosed information when participants were interviewed using the control interview protocol. Among participants interviewed with the helpfulness-focused interview style, the indirect effect of priming through helpfulness accessibility was positive but not significant,  $b = 0.16$ , 95% BCa CI [-0.17, 0.82].

Taken together, the results of the mediation analysis were only partially consistent with Hypothesis 3. The predicted positive indirect effect of helpfulness priming, via helpfulness accessibility, on information disclosure was not statistically significant for participants interviewed using a prime-consistent (i.e., helpfulness-focused) interview style. Instead, the indirect effect was significantly negative for participants interviewed using a prime-inconsistent (i.e., control) interview style. Thus, whereas the relative direction of the indirect effects were as expected (i.e., more positive when the prime and the interview style matched), only the negative indirect effect in the mismatching scenario differed significantly from zero. As indicated by the Helpfulness Accessibility  $\times$  Interview Style interaction, this appears to be due mainly to the negative effect of failing to interview participants with high helpfulness accessibility with a helpfulness-focused interview style.

### **Exploratory Analyses**

We explored the effects of priming, interview style, and their interaction, as well as the Helpfulness Accessibility  $\times$  Interview Style interaction, on helpfulness motivation self-reports. Both moderation analyses were conducted with 5,000 bootstrapped samples.

Overall, helpfulness motivation was positively and significantly correlated to information disclosure,  $r = .29$ ,  $p = .002$ , 95% CI [0.12, 0.45]. The main effects of priming ( $b = 0.03$ ,  $SE = 0.38$ ,  $p = .933$ , 95% BCa CI [-0.71, 0.77]) and interview style ( $b = 0.32$ ,  $SE = 0.38$ ,  $p = .393$ , 95% BCa CI [-0.42, 1.06]) on participants' motivation to be helpful were not statistically significant. Moreover, the interaction between priming and interview style was

not significant at the .05 level,  $b = 1.41$ ,  $SE = 0.75$ ,  $p = .063$ , 95% BCa CI [-0.08, 2.89].

However, the Helpfulness Accessibility  $\times$  Interview Style interaction was significant,  $b = 0.40$ ,  $SE = 0.19$ ,  $p = .036$ , 95% BCa CI [0.03, 0.77]. Conditional effects analyses showed that at high levels of helpfulness accessibility (+1  $SD$ ), the effect of the helpfulness-focused (vs. control) interview style was positive and significant,  $b = 1.16$ ,  $SE = 0.53$ ,  $p = .031$ , 95% BCa CI [0.11, 2.20]. Conversely, though not statistically significant, at low levels of helpfulness accessibility (-1  $SD$ ) the helpfulness-focused (vs. control) interview style had a negative but not significant effect,  $b = -0.43$ ,  $SE = 0.53$ ,  $p = .416$ , 95% BCa CI [-1.47, 0.61].

### Discussion

Overall, our findings did not show a direct influence of helpfulness priming, interview style, or their interaction on information disclosure. However, helpfulness priming had a negative indirect effect on information disclosed, through helpfulness accessibility, when participants were interviewed using the control interview style. Moreover, the helpfulness-focused interview style had a negative impact on information disclosure when the interviewees' helpfulness accessibility was low. The situated inference model (Loersch & Payne, 2014), which chiefly informed the design of this study, cannot fully account for the findings. The model would have predicted increased information disclosure when helpfulness accessibility and interview style matched, but not a negative influence when there was a mismatch. Hence, in the following discussion, we will draw on tenets of the interpersonal octagon (Birtchnell, 1994), which takes into account the interviewer–interviewee interpersonal dynamics thereby elucidating the unpredicted priming influences observed in this study.

At the heart of Birtchnell's (1994) interpersonal octagon is the proposition that one can employ either a constructive (adaptive) or unconstructive (maladaptive) interpersonal approach when pursuing a goal that requires interaction with another individual. For

instance, in the case of a conflict between two individuals, the aggrieved person can *adaptively* communicate their grievances with a specific and clear message that highlights the root cause of their anger, or communicate their grievance *maladaptively* by slandering the other individual. Adaptive and maladaptive relating varies around eight octants, the most relevant of which indicate relating styles that signal dominance (i.e., upperness) or submission (i.e., lowerness).

In terms of interpersonal relating styles, the helpfulness-focused interview style may have signaled submissiveness on behalf of the interviewer and invited the interviewee to assume dominance (e.g., “We hope you can *help us* by providing details about the plans for the upcoming attack”). We suggest that for participants with low levels of helpfulness accessibility, the helpfulness-focused interview protocol may have functioned maladaptively; that is, inviting the interviewee to assume dominance (i.e., cooperate and provide information, cf. Birtchnell, 1994, p. 517) when their helpfulness was at best sparsely accessible may have been counterproductive. In fact, such interviewees may have perceived the helpfulness-focused interview style as needy and insecure. Birtchnell (1994) notes that an insecure and forced (i.e., egocentric) interpersonal approach, which does not consider the current state of the other relator, is likely to elicit resistance. In the arena of investigative interviewing, Alison, Alison, Noone, Elntib, and Christiansen (2013) have found that even minimal displays of maladaptive interpersonal behavior by interviewers reduced information disclosure by interviewees. Possibly, there are subtle distinctions between adaptive empathetic approaches (Alison et al., 2013) and maladaptive submissive approaches (observed in the current research) that are currently not fully understood. Future research is needed to explore these distinctions.

In contrast, among those interviewed with the control interview protocol, helpfulness priming negatively influenced information disclosure, seemingly mediated by increased helpfulness accessibility. In terms of the interpersonal octagon, the control

interview protocol can be categorized under the dominance interpersonal approach. Here, the interviewer assumed dominance by setting the agenda and asking straightforward questions (e.g., “You can start by telling us what you know about this attack”). Thus, it is possible that primed interviewees, who experienced increased helpfulness accessibility and were predisposed to help the interviewer by providing information, perceived such a dominant approach as maladaptive (i.e., overly dominating, rigid, and demanding). This suggests that activating construct accessibility through priming may hamper information disclosure when the interview protocol is not adapted to the primed construct. The latter finding should, however, be interpreted with caution. Since the effect of priming on helpfulness accessibility was not statistically significant by conventional standards, interviewees’ variation in helpfulness accessibility may have been due also to more stable, preexisting sources (e.g. prosocial values), which may have given rise to perceptions of the interview style as adaptive or maladaptive.

Alison et al. (2013) have called on investigative interviewers to be versatile in their interpersonal approach, instead of using a predetermined ‘technique’. The scripted nature of the interview protocols used in this research is not typical of actual intelligence interviewing, and we acknowledge that this limits the external validity of this work. Ideally, an interviewer in real-life would probably be more sensitive to the reactions of the interviewee, follow up on responses, and ask probing questions. However, the scripted and non-directive questions were implemented deliberately in order to ensure internal validity and interviewer equivalence across conditions. Nonetheless, future studies examining the interaction between priming and directive prime-focused follow-up questions as well as semi-structured interview protocols would advance insights on subtle influences on disclosure in intelligence interviews.

### **Limitations**

There is an important limitation in the present research that it is worth highlighting. The assessment of helpfulness accessibility (i.e., word-fragment completion task) where all participants self-generated helpfulness-related (and neutral) words could have accidentally primed helpfulness among those in the control priming condition. We acknowledge this limitation and note that such contamination effects may have particularly obscured our efforts to examine the main effect of the helpfulness (vs. control) priming on information disclosure. Nevertheless, previous research have found that different sources of construct accessibility can influence behavior additively (Bargh, Bond, Lombardi, & Tota, 1986; Higgins and Brendl, 1995). As participants in the helpfulness priming condition self-generated more helpfulness-related words compared to the control group we expected that both sources of helpfulness accessibility (i.e., priming manipulation and self-generated words) would combine additively for a larger main effect of the helpfulness priming<sup>3</sup>. Future research should employ measures of construct accessibility that assess the impact of priming with little possibility of contaminating the main effect of priming on information disclosure. It is also worth noting that no participant expressed awareness of the intended influence of the priming manipulation or a connection between the alleged separate experiments. Hence, it is unlikely that awareness of the priming influence played a role in the current findings.

It is important to acknowledge that the possibility to prime helpfulness in certain populations—for example, extremist terrorists—is unknown. However, to our knowledge, there is no conclusive evidence that terrorists are, indeed, extremely resistant to influence. On the contrary, Dalgaard-Nielsen (2013) has proposed that subtle influence strategies may be used to reduce extremists' resistance to persuasion. Moreover, intelligence interviewees could range from hardline terrorists to ordinary individuals (which our sample represents to a degree) who may possess potentially useful information (e.g., about gang activity). Thus, even if terrorists were, in general, resistant to helpfulness priming, valuable improvements

in information gain could be achieved by priming ordinary individuals without a terrorist ideology. Additionally, some evidence suggests that the typical intelligence interviewee is motivated to share at least some information (Herbig, 2008; Soufan, 2011). Hence, such interviewees are usually semi-cooperative and have some vested interests in offering some beneficial assistance (i.e., motivated to be helpful) to an interviewer. In that light, it is reasonable to predict that such helpfulness motivations may be increased through helpfulness priming.

### **Implications**

As mentioned earlier, previous research has found that priming disclosure-related motivations may promote information disclosure in intelligence interviews (e.g., Dawson et al., 2015; Dawson et al., 2017). This research, however, suggests that under certain conditions priming tactics could be potentially counterproductive to the goal of increasing disclosure. Specifically, results in this study call for interviewers to be especially cautious about implementing an interview approach that aims to draw on an interviewees' temporary (e.g., primed) or chronic (e.g., personal values) dispositions. Our findings suggest that such an attempt, when the interviewee is not sufficiently predisposed to the motivation of interest (e.g., when construct accessibility is low), may be detrimental. Indeed, the emerging research examining priming influences in intelligence interviews is still in infancy. Thus, further high-powered replications and theoretical extensions (e.g., using semi-structured interviews) of the current findings are needed to fully uncover the nuanced interplay between priming and interpersonal dynamics in an intelligence interview. These would contribute toward accurately determining the potential utility of priming in real-world interviews.

### **Conclusions**

This work revealed no evidence that helpfulness priming and helpfulness-focused interviewing jointly influence information disclosure in a straightforward manner. The



study, however, provides initial empirical evidence regarding when and how activating a commonly possessed motivation—helpfulness—may discourage information disclosure.

The results show that interviewing with a helpfulness-focused interview style, which draws on helpfulness accessibility, could be a maladaptive interpersonal approach to eliciting information when helpfulness accessibility is lacking.

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## Endnotes

<sup>1</sup>We conducted extensive awareness assessments of the priming manipulation's influence on information disclosure following Newell and Shanks's (2014) recommendations. No participant indicated awareness of the priming influence.

<sup>2</sup> It should be noted that the interviews were conducted in Swedish. Thus, the descriptions of the interview protocols are estimated English translations. All the questions were structurally open-ended in the Swedish language. Moreover, inspection of individual interviews reflected forethought in all of the responses. No participant responded to any of the questions by saying just "yes" or "no".

<sup>3</sup>The priming manipulation and the word-fragment task we used in this study has successfully distinguished helpfulness accessibility levels between helpfulness and control priming conditions in previous experiments. Thus, random sampling variability may have contributed to the observed null effect of the priming manipulation on helpfulness accessibility.

## Appendix

### Interview Protocols

#### Helpfulness-focused Interview

**Introduction and first question.** Yes, hello, this is Kim was from the police. I called to talk to you about the planned bomb attack. Are you okay?

Okay, shall we go over to what we are going to talk about?

First, I want to emphasize that I understand that you are in a difficult situation. At the same time, you do understand that we cannot allow this deed to be executed. Therefore, I want to begin by explaining what I want to achieve with this conversation. I believe in collaborations and will not put any pressure on you, but will let you decide what information you can give me. Therefore, I will only ask a few open questions. When you feel you cannot give anything more, we will end the conversation. We hope you can *help us* by providing details about the plans for the upcoming attack. Please tell me what you know about this attack.

**Second question.** Thanks, that was *helpful*. I feel that this cooperation can really *help us* understand more about the attack. It would be really *helpful* if you had something more you could add.

**Third question.** As I mentioned earlier, I want you to know what you can expect when you talk to me, and I feel that we have something good going on here. So, before we finish this interview, is there any additional information that you can *help us* with? You might have just remembered something more?

**Closing line.** Thank you for taking the time. The interview is now over.

#### Control Interview

**Introduction and first question.** Yes, hello, this is Kim was from the police. I called to talk to you about the planned bomb attack. Are you okay?

Okay, shall we go over to what we are going to talk about?

I have a few questions that I want you to answer. You can begin by telling us details about the upcoming attack.

**Second question.** Thanks, is there anything more you can tell us? Perhaps you remembered something more?

**Third question.** So, before we conclude, is there any more information you can add for our investigation? If there is anything else you can remember.

**Closing line.** Thank you for taking the time. The interview is now over.



### Supplementary Analyses for Experiment 6

#### Consistency

We examined consistency between (a) the specific information units participants reported to have disclosed in the post-interview questionnaire (b) the information units they actually disclosed in the interview and (c) their subjective rating of the amount of information they had disclosed. Correlation analyses indicated high consistency. The relation between the specific information participants identified to have disclosed and information identified through independent coding of the interviews was highly significant,  $r = .81, p < .001, 95\% \text{ CI } [.74, .87]$ . The relation between perceived amount of information disclosed and the actual amount of information disclosed was also significant,  $r = .53, p < .001, 95\% \text{ CI } [.38, .65]$ . In addition, we examined whether information perceived to be possessed by the interviewer varied significantly between the conditions. This was examined in a Priming  $\times$  Interview Style moderation analysis; No significant effects emerged, all  $ps > .223$ . Descriptive statistics are reported in Table 1.

#### Moderation analyses of self-report measures.

We explored the effects of priming, interview style, and their interaction, as well as the Helpfulness Accessibility  $\times$  Interview Style interaction, on perceived interviewer sympathy and likelihood to submit to a repeat interview. Each moderation analyses were conducted with 5,000 bootstrapped samples. As recommended by Hayes (2013, p. 277) the priming [and interview style] variable was effect coded ( $-0.5 = \text{control priming [control interview]}$ ,  $0.5 = \text{helpfulness priming [helpfulness-focused interview]}$ ) before running each Priming  $\times$  Interview Style interaction analysis. In the Helpfulness Accessibility  $\times$  Interview Style interaction analyses, the helpfulness accessibility variable was maintained in its original metric and the interview style variable was dummy coded ( $0 = \text{control interview}$ ,  $1 = \text{helpfulness-focused interview}$ ).

**Perceived interviewer sympathy.** Perceived interviewer sympathy ratings (0 = *not sympathetic at all*, 10 = *very sympathetic*) was not significantly correlated to information disclosure,  $r = .10$ ,  $p = .285$ , 95% CI [-0.08, 0.28]. The main effect of priming on perceived interviewer sympathy was negative and significant,  $b = -1.12$ ,  $SE = 0.50$ ,  $p = .028$ , 95% BCa CI [-2.12, -0.12]. Participants in the helpfulness priming condition ( $M = 4.74$ ,  $SD = 2.80$ ) perceived the interviewer as less sympathetic compared to those in the control priming condition ( $M = 5.68$ ,  $SD = 2.86$ ). The main effect of interview style, on the other hand, was positive and significant,  $b = 1.54$ ,  $SE = 0.50$ ,  $p = .003$ , 95% BCa CI [0.54, 2.53]. Participants interviewed using the helpfulness-focused interview style perceived the interviewer as more sympathetic ( $M = 5.89$ ,  $SD = 2.54$ ) compared to those in the control interview condition ( $M = 4.42$ ,  $SD = 3.02$ ). The Priming  $\times$  Interview Style interaction was also significant,  $b = 2.21$ ,  $SE = 1.01$ ,  $p = .030$ , 95% BCa CI [0.21, 4.20]. Conditional effects analyses revealed that priming had a significant negative effect among participants in the control interview condition,  $b = -2.22$ ,  $SE = 0.74$ ,  $p = .003$ , 95% BCa CI [-3.69, -0.76]. This indicates that the negative effect main effect of priming on perceived interviewer sympathy was driven mainly by the control interview protocol. The effect of priming was not significant among participants in the helpfulness-focused interview condition,  $b = -0.02$ ,  $SE = 0.68$ ,  $p = .979$ , 95% BCa CI [-1.37, 1.34]. The Accessibility  $\times$  Interview Style interaction was not statistically significant,  $b = 0.49$ ,  $SE = 0.26$ ,  $p = .063$ , 95% BCa CI [-0.03, 1.00].

**Likelihood to submit to a repeat interview.** Participants' ratings of the extent to which they would agree to be interviewed again (0 = *not likely at all*, 10 = *very likely*) was not significantly correlated to information disclosure,  $r = .05$ ,  $p = .616$ , 95% CI [-0.15, 0.24]. The main effects of priming ( $b = -0.71$ ,  $SE = 0.50$ ,  $p = .157$ , 95% BCa CI [-1.70, 0.28]) and interview style ( $b = 0.45$ ,  $SE = 0.50$ ,  $p = .371$ , 95% BCa CI [-0.54, 1.44]) on likelihood to agree to be interviewed again were not significant. The interaction between

priming and interview style bordered on significance,  $b = 1.97$ ,  $SE = 0.99$ ,  $p = .051$ , 95% BCa CI [-0.01, 3.95]. Conditional effects analyses showed that priming had a significant negative effect when participants were interviewed using the control interview protocol,  $b = -1.70$ ,  $SE = 0.73$ ,  $p = .023$ , 95% BCa CI [-3.15, -0.24]. The effect of priming was positive when the helpfulness-focused interview protocol was used but the effect was not significant,  $b = 0.27$ ,  $SE = 0.67$ ,  $p = .689$ , 95% BCa CI [-1.07, 1.62]. The Helpfulness Accessibility  $\times$  Interview Style interaction failed to achieve statistical significance,  $b = 0.37$ ,  $SE = 0.26$ ,  $p = .145$ , 95% BCa CI [-0.13, 0.88].

## **Appendix B2. Experiment 7**

Facilitating Disclosure in Intelligence Interviews: The Joint Influence of Helpfulness

Priming and Interpersonal approach

### Author Note

David Amon Neequaye, Department of Psychology, University of Gothenburg and Department of Psychology, University of Portsmouth; Karl Ask and Pär Anders Granhag, Department of Psychology, University of Gothenburg; Aldert Vrij, Department of Psychology, University of Portsmouth.

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Correspondence to: David Amon Neequaye, Department of Psychology, University of Gothenburg. Box 500, 405 30 Gothenburg, Sweden; Email: david.neequaye@psy.gu.se

### Abstract

This study examined the joint influence of helpfulness priming and a helpfulness-focused interpersonal approach on information disclosure in an intelligence interview. We based the research on the theoretical proposition that consistency between an interviewee's primed dispositions and an interviewer's interpersonal approach would facilitate disclosure. Participants ( $N = 116$ ) took on the role of an informant with information about an upcoming terror attack. Afterwards, an interviewer solicited information about the attack using an interpersonal approach that exhibited either high (helpfulness-focused) or low (control) fit with helpfulness concerns. Prior to the interview, in a seemingly unrelated experiment, we primed participants' helpfulness motivation and assessed their cognitive accessibility to helpfulness-related constructs. We observed that helpfulness priming increased information disclosure when the helpfulness-focused interpersonal approach was used but not when the control protocol was used. This research suggests that implementation of an interpersonal approach that complements an interviewee's primed dispositions may function symbiotically with the previous priming to facilitate information disclosure.

*Keywords:* disclosure, helpfulness, intelligence interviewing, interpersonal approach, priming

## Facilitating Disclosure in Intelligence Interviews: The Joint Influence of Helpfulness

## Priming and Interpersonal approach

In human intelligence interviews, interviewees typically have competing motivations to disclose and withhold information, which may lead them to manage their information disclosure (see Herbig, 2008). Such information management could be implemented by interviewees to partially satisfy perceived information objectives of the interviewer while covering up possible complicity in a subject of investigation and/or to protect culpable significant others. An emerging body of research (e.g., Dawson, Hartwig, & Brimbal, 2015; Dawson, Hartwig, Brimbal, & Denisenkov, 2017; Neequaye, Ask, Granhag, & Vrij, 2017b) has started to explore how priming disclosure motivations can be used as a subtle elicitation tactic to facilitate disclosure in intelligence contexts. As noted by Neequaye et al. (2017b), an interviewer could draw on a primed disclosure motivation to persuade an interviewee to share information. Thus, priming disclosure motivations afford the interviewer an opportunity to boost the likelihood that an interviewee would share, rather than withhold, information. In addition, compared to strategic interview techniques (e.g., Scharff technique: Oleszkiewicz, 2016), priming tactics can be executed without the interviewer having much information about a topic of interest. Hence, priming could be used as an initial tactic to reel in some information about a topic, before turning to strategic techniques that require such prior information to build strategic tactics. In this work, we explore whether activating interviewees' helpfulness motivations will promote their information disclosure in an intelligence interview.

**Helpfulness and Information Disclosure**

Previous research has found linkages between individuals' helpfulness tendencies and their likelihood to offer beneficial assistance to others in the form of volunteering (McClintock & Allison, 1989) and cooperation in social dilemmas (Van Lange, 1999; Capraro, Smyth, Mylona, & Niblo, 2014). Beyond the influence of dispositional helpfulness on cooperation,

some studies have demonstrated that activating helpfulness through priming facilitates cooperativeness (Capraro et al., 2014, Study 3; Arieli, Grant, & Sagiv, 2014). The finding that helpfulness predicts cooperation is particularly applicable in intelligence interview contexts because activating an interviewee's helpfulness motivations generally aligns with an interviewer's information solicitation objectives. An interviewee can demonstrate their helpfulness motivations during an interview by cooperating and sharing reliable information. Moreover, (Neequaye et al., 2017b) have found that interviewees' helpfulness motivations correlate positively with information disclosure. Similar to this study, the authors examined the processes through which helpfulness priming influences information disclosure.

### **Situated Inference as a Theoretical Account of Prime-to-Behavior Effects**

Loersch and Payne (2014) offer the situated inference model as a theoretical account to explain priming effects. According to the situated inference model, exposure to a prime stimulus generally increases accessibility to the primed content outside primed individuals' awareness. Such increased primed content accessibility is important for assimilative priming effects because previous research indicates that individuals typically rely on readily accessible concepts when making decisions (e.g., Mussweiler & Strack, 1999). In that regard, Loersch and Payne (2014) propose that when readily accessible primed content is misattributed as internally generated, due to lack of conscious awareness, the accessible primed content becomes a heuristic that guides the navigation of one's current situational affordances. Thus, increased accessibility to the primed content mediates the impact of priming on target behavior. However, high (vs. low) suitability affordances, which provide opportunities to enact the target behavior, facilitate such behavioral assimilation to the accessible primed content (Loersch & Payne, 2014). Research by Macrae and Johnston (1998) demonstrate such moderating effects of suitability affordances. In their experiments, Macrae and Johnston found that participants

who had been primed to be helpful exhibited greater helpfulness in situations that encouraged (vs. discouraged) the enactment of helpfulness. The research indicated that participants picked up more *functioning* pens (i.e., high suitability affordance) in aid of an experimental confederate, who had dropped the pens, compared to participants who had not been primed. Nonetheless, when the pens were *leaking* (i.e., low suitability affordance), the assimilative helpfulness priming effect was eliminated. In a follow-up study, participants primed with helpfulness helped an experimental confederate by picking up more pens than those who did not receive the helpfulness priming. However, when participants were under the impression that they were *running late* (i.e., low suitability) for a second experiment, the effect of helpfulness priming was eliminated. The helpfulness priming effect was maintained when participants perceived that they were *on time* (i.e., high suitability) for the second experiment.

In summary, principles of the situated inference model suggest that in examining whether helpfulness priming promotes information disclosure, (a) the priming method must activate the cognitive accessibility to helpfulness-related constructs (henceforth referred to as helpfulness accessibility), and (b) the primed interviewee must be presented with a high suitability affordance that encourages the demonstration of helpfulness through information disclosure.

### **Interpersonal Approaches as Information Disclosure Affordances**

Birtchnell (1993, 1994) has proposed that when interacting with others, one could either adopt a constructive (adaptive) or unconstructive (maladaptive) interpersonal approach to achieve one's relating objectives. For example, when an individual feels neglected by their partner and is in need of intimacy, the neglected partner could communicate their needs adaptively with a considerate and specific message that voices their concerns without attacking the other partner. Alternatively, the need for intimacy could be communicated maladaptively through vague and inconsiderate passive-aggressive messages. According to



Birtchnell (1994), an adaptive interpersonal approach aims at interrelating, rather than relating forcefully, by taking the other relator's current state of mind and/or needs into consideration. Thus, in the example above, the partner who communicates their need for intimacy with a considerate message inherently accommodates their partner's feelings and is more likely to achieve the desired relating objective—intimacy. Conversely, the vague and inconsiderate passive-aggressive message is likely to induce anger and withdrawal from the attacked partner. In that regard, as Birtchnell posits, adaptive interpersonal approaches are more likely to achieve one's relating goals. In contrast, maladaptive interpersonal approaches usually elicit resistance and consequently impair interrelating and one's relating objectives (e.g., Birtchnell & Evans, 2004; Birtchnell, Shuker, Newberry, & Duggan, 2009).

Intelligence interviewing can be defined as an information gathering endeavor that requires interaction between an interviewer(s) and an interviewee(s) (Granhag, Cancino Montecinos, & Oleszkiewicz, 2015). This definition suggests that interpersonal relating is linked inextricably to intelligence interviewing. Regarding such interpersonal relating in intelligence interviewing, it has been found that interviewers' adaptive interpersonal behaviors elicited adaptive interpersonal behaviors from interviewee's and increased information disclosure (Alison, Alison, Noone, Elntib, & Christiansen, 2013). In contrast, interviewers' maladaptive interpersonal behaviors evoked interviewees' maladaptive behaviors such as resistance and reduced information disclosure.

As discussed earlier, increased helpfulness accessibility, from priming, is likely to predispose primed interviewees to be helpful by disclosing information. However, we deduce from the situated inference model that high (vs. low) suitability affordances would enhance such behavioral assimilation. In that regard, we propose that an interview style, which embodies an interpersonal approach that draws on primed interviewees' helpfulness, is likely to be adaptive in enhancing information disclosure. Put simply, an interviewer

who makes it readily apparent that they (i.e., the interviewer) needs help, and that such help can be provided by sharing reliable information, creates a high suitability affordance to promote information disclosure. Conversely, an interview style whose interpersonal approach displays low fit with helpfulness concerns is likely to be maladaptive when implemented in tandem with priming.

### **The Present Research**

In the current study, we assessed participants' dispositional orientation toward helpfulness, as part of a pre-study survey, prior to the main study. When participants arrived for the main study, they were invited to prepare for an interview, assuming the role of a police informant who possesses information about an imminent terrorist plot. Before the interview, in a seemingly unrelated experiment, we primed the helpfulness motivations of half of the participants (controls received a helpfulness-unrelated prime) and assessed helpfulness accessibility. After the priming, each participant was interviewed about the terrorist plot using either a helpfulness-focused or control interpersonal approach. These served as proxies for high and low suitability affordances, respectively, and were specifically designed to be consistent with the priming manipulation. Hence, in addition to displaying high fit with helpfulness, the helpfulness-focused approach was designed to make it readily obvious to the interviewees that helpfulness could be exhibited by sharing reliable information. Furthermore, the interviewer set the agenda of the interview by asking directive questions while seeking help. The control interpersonal approach, which was implemented as a comparison condition, did not seek any help and consisted of directive and straightforward questions. Although the interview protocols differed in their interpersonal approaches, both retained similar internal structure and were scripted to ensure interviewer equivalence.

We hypothesized that participants in the helpfulness (vs. control) priming condition will disclose more information in the subsequent interview (Hypothesis 1). Moreover, we

predicted an interaction between priming and interpersonal approach. Specifically, we hypothesized that the effect of helpfulness (vs. control) priming would be stronger when combined with the helpfulness-focused (vs. control) interpersonal approach (Hypothesis 2). Finally, based on the theoretical proposition that construct accessibility mediates the effect of priming on behavior, we predicted that helpfulness accessibility would mediate the effect of helpfulness priming on information disclosure. However, because of the previous hypothesis that the priming effect would be moderated by the interviewer's interpersonal approach, we predicted a conditional mediation effect. Specifically, the mediation effect of helpfulness accessibility would be stronger in the helpfulness-focused (vs. control) interpersonal condition (Hypothesis 3). Figure 1 illustrates the proposed conditional mediation.

## **Method**

### **Participants and Design**

The sample consisted of 126 participants, which included university students and community members, 93 females and 32 males (one participant did not state their gender), with an average age of 29.91 years ( $SD = 11.38$ ). The participants were recruited through advertisements at university libraries and departments as well as public notice boards. We employed a 2 (priming: helpfulness vs. control)  $\times$  2 (interpersonal approach: helpfulness-focused vs. control) between-groups design. Random assignment resulted in a distribution of between 30 and 32 participants in each cell of the design. Each participant received a gift card worth 100SEK (~11.5USD) as compensation. Eight participants with high discrepancy ( $> 10$  information units) between their subjective and actual information disclosure (see Phase 4 below) were excluded from the analyses. Such discrepancy possibly reflects confusion between intended and actual information disclosure. Moreover, they could have misunderstood the post-interview instructions and provided untruthful information. Analyses including these excluded participants did not alter the pattern of

findings reported below. The analyses including the eight participants have been reported in the supplemental material. Two participants who expressed awareness of the experimental hypothesis were also excluded from the analyses. The final sample thus consisted of 116 participants.

### **Procedure and Materials**

We disguised procedures in this study to appear as two independent studies in order not to give the working hypotheses away. In the first study, we told participants that we were examining the effectiveness of a range of interview techniques. In the second purportedly unrelated study that contained the priming manipulation, we told participants that the study explored individual differences in language use and communication. Before each experiment began, all participants read and signed a standard consent form.

A Regional Ethical Review Board approved all procedures in this research.

**Phase 1: Helpfulness values.** Participants completed a shortened version of Schwartz's Value Survey (SVS) designed by Lindeman and Verkasalo (2005) prior to arrival for the main study. We translated the survey to Swedish and used back-translation procedures recommended by Brislin (1986) to ensure equivalence between the English and Swedish versions. The survey was then computerized and sent to participants via a web link. Participants were to indicate the importance of ten motivationally distinct values as personal life-guiding principles on a 9-point scale Likert scale (0 = *opposed to my principles*, 1 = *Not important*, 4 = *important*, 9 = *of supreme importance*). In addition to helpfulness (i.e., benevolence)—the target value—the survey assessed power, achievement, hedonism, stimulation, self-direction, universalism, tradition, conformity, and security values. Only helpfulness values, which was intended as a potential covariate when testing the influence of the independent variables on information disclosure, will be examined in this study.

**Phase 2: Background and planning.** We used the background and planning materials designed by Oleszkiewicz et al. (2014). Participants were to assume the role of a police informant with some information about an imminent terrorist attack. We provided each participant with a booklet containing incomplete information about a terrorist plot by a left-wing extremist group. The information was presented in a coherent storyline containing 37 relevant details. A pilot test ( $N = 373$ ) indicated that each of the 37 pieces of information were considered to be substantially relevant to a police investigation. Analyses of these data are presented in the supplemental analyses (see also, Table S1).

Using the instructions of Oleszkiewicz et al. (2014), we instructed participants to manage their information disclosure in order to induce semi-cooperativeness (i.e., divided loyalty) and prevent floor and ceiling effects. Participants were told (a) not to provide too little information (assisting the police was necessary to be granted free passage out of the country), and (b) not to provide too much information (because participants were to imagine having strong ties to the extremist group). This information management dilemma has been successful in inducing competing motivations to disclose and withhold information in previous research (Granhag, Kleinman, & Oleszkiewicz, 2016; Oleszkiewicz, Granhag, & Kleinman, 2017). To ensure adherence to the information management instruction, we offered participants the possibility of earning an extra gift card if they managed information effectively. However, in truth, all participants received a single gift card. Participants were allowed to provide untruthful information during the interview.

**Phase 3: Priming.** When participants indicated completion of Phase 2, they were invited to complete the second study. We told participants that the police contact was going to conduct the interview a little while later. Thus, completing the second study while they waited would save time. All participants agreed to this.

The priming phase was fully computerized. In accordance with the cover story that the priming experiment was to examine individual differences in language use and communication, participants were informed that they would be writing down some guided thoughts. In the *helpfulness* condition, participants were instructed to think about and visualize a time when they had been helpful. Liberman, Förster, and Friedman (2007) have argued that post-attainment decrements in motivation attenuate goal-priming effects. Hence, we instructed participants to focus on their internal state right before they had provided help to mitigate such post-attainment decrease. Participants in the *control* condition reflected on a relatively neutral topic: their morning routine. They were instructed to reflect on their regular morning routine and visualize their usual preparations to commence each day. In both conditions, participants presented their reflections in writing. We apportioned a maximum of five minutes for reflection and writing: mandatory two and half minutes, and optional two and half minutes if necessary. Examination of participants' written reflections indicated that they adhered to the instructions. Those in the *helpfulness* condition wrote about their internal states prior to various scenarios where they had offered help and participants in the *control* condition wrote about morning routines, which were relatively neutral to helpful behaviors.

Helpfulness accessibility was measured after priming using an implicit measure—a word-fragment/stem completion task. All participants completed the same task and had a maximum of 10 seconds to complete each word fragment. The ten-second time limit was implemented to prevent extensive reflection during word completions. Following Koopman, Howe, Johnson, Tan, and Chang's (2013) recommendations, some of the word fragments had specific letters missing and others were incomplete word stems. In total, the word-fragment/stem completion material comprised of 40 word-fragments, 20 target words which could be completed to form helpfulness related words, and 20 of which were neutral with regard to helpfulness. However, both target and neutral word fragments could be

completed with a varied range of words. A single word was presented at a time and participants had to input their chosen word in a textbox below each word-fragment. We assigned a score of one point when a word-fragment was completed to a helpfulness related word and zero when completed with an unrelated word. Higher scores indicated greater helpfulness accessibility. See supplemental material for priming instructions and list of word fragments.

**Phase 4: The Interview.** Each participant was interviewed approximately three minutes after the priming and were allowed to access notes they had prepared in Phase 2 during the interview<sup>1</sup>. We implemented this feature to eliminate memory confounds. The interviewer initiated contact with the participant via an audio Skype call. All the interviews were recorded for the purposes of data analysis. Individual interviews ranged from 164 to 773 seconds. An independent-samples *t*-test indicated that the average helpfulness-focused interview ( $M = 362.26, SD = 104.86$ ) lasted longer than the average control interview ( $M = 269.19, SD = 74.59$ ),  $t(114) = 5.52, p = .001, d = 1.03, 95\% CI [0.64, 1.41]$ . The introduction and phrasing of questions used in the helpfulness-focused interview possibly contributed to the observed difference in length.

***Helpfulness-focused approach.*** For participants interviewed using the helpfulness-focused protocol, the interviewer opened with an expression of sympathy, emphasized the informant's autonomy in determining what information to share, and stated the purpose of the call. Some studies have found that expressions of sympathy (e.g., Batson et al., 1997) and emphasis of actors' autonomy (Gagné, 2003; Weinstein & Ryan, 2010) promote enactment of helpful behaviors. After the introduction, the interviewer asked three open-ended directive and thematic questions. The wording of each question displayed high-fit with helpfulness. The first question solicited details about the members of the terrorist group planning the attack. The second question, which included four sub-questions, sought information about specific plans of the attack. Next, the interviewer requested additional

information. The interviewer ended the interview after the informant responded to the third question. The appendix contains the full interview protocol.

***Control approach.*** This protocol took a business-like approach and consisted of straightforward questions. The interviewer did not draw on the interviewee's helpfulness to elicit information. After an initial introduction and statement of the purpose of the call, the interviewer asked three open-ended directive and thematic questions. The interviewer first asked for information about members of the terrorist group. Next, the interviewer asked for information about specific plans of the attack. The second question included four sub-questions. Finally, the interviewer asked for additional details and ended the interview when the informant finished speaking. The appendix contains the full interview protocol.

***Interviewer.*** We trained a female interviewer (using practice trials) to conduct all the interviews. To ensure internal validity, she was instructed to follow the interview protocols strictly and not to improvise. She adhered to the script throughout all the interviews and did not improvise. The interviewer was blind to the priming condition of the participant.

**Phase 5: Post-Interview Questionnaires.** Participants completed a post-interview questionnaire after the interview. We told participants that they had now completed the role-taking part of the study, and were to answer the questionnaire truthfully. First, we provided two separate but identical checklists, which contained all the 37 units of information present in the background and planning information. We instructed participants to identify and mark the specific information they disclosed to the interviewer in the first checklist. This measure was planned as a reliability check for consistency with the actual information that was disclosed. Recall that participants were allowed to consult their notes and the background material to eliminate memory confounds. In the second checklist, participants were to mark the information they believed the interviewer was likely to possess prior to the interview. Previous research on the Scharff technique suggests



that an interviewee's perception about the extent of an interviewer's knowledge is an important element in an interview approach that may influence disclosure (e.g., Oleszkiewicz, 2016). Thus, we included the second checklist to examine whether the interview protocols influenced participants' perceptions of interviewer's prior information. After the checklists, participants rated a series of statements on separate 11-point continuous scales. They commenced by providing a retrospective rating of how much information they perceived to have disclosed to the interviewer (0 = *no information*, 10 = *all of the information*). The analyses of these data are presented in the supplemental analyses. Next, participants indicated the extent to which they were motivated to help the interviewer by disclosing information during the interview (0 = *not motivated at all*, 10 = *very motivated*), the extent to which the interviewer's interpersonal approach matched their expectations (0 = *did not match my expectations at all*, 10 = *matched my expectations completely*), and the extent to which the interviewer's interpersonal approach mismatched their expectations (0 = *did not mismatch my expectations at all*, 10 = *mismatched my expectations completely*). We implemented the latter two variables to explore whether the priming and the interview approaches interacted to confirm participants' expectations of the interviewer's interpersonal approach. The measures displayed a strong negative correlation,  $r = -.72$ ,  $p < .001$ , 95% CI [-0.62, -0.80]. Thus, we reverse coded the mismatch expectations variable and aggregated the measures to an average to create an expectancy confirmation score. Internal consistency was good ( $\alpha = .84$ ).

When the battery of ratings was completed, we assessed participants' subjective interview experiences regarding the extent to which they felt (a) autonomy in choosing what information to disclose, (b) trust in the interviewer, and (c) at ease during the interview. The ratings were provided on a 7-point scale (1 = *do not agree at all*, 7 = *agree completely*). Next, participants gave retrospective ratings about their perceptions of the interviewer on separate 7-point Likert scales. These included perceptions about the

interviewer's sympathy (-3 = *not sympathetic at all*, 3 = *very sympathetic*), friendliness (-3 = *not friendly at all*, 3 = *very friendly*), and interpersonal warmth (-3 = *not warm at all*, 3 = *very warm*). We combined the interviewer perception measures to create an interviewer likeability index. Internal consistency was good ( $\alpha = .88$ ).

***Coding procedure for interviews.*** Each interview was transcribed verbatim. All transcripts were coded for the quantity of information disclosed (range: 0–37). Repeated information was marked as one unit of information only. Incorrect and/or fabricated information was counted but not included in the quantity measure because its occurrence was extremely low. Thirty percent of the transcribed interviews were randomly selected and coded separately by two coders. Reliability analysis indicated that inter-rater reliability was very good,  $\kappa = 0.89$ ,  $SE = 0.02$ , 95% CI [.85, .92]. The assistants discussed and settled minor disagreements after reliability analysis. One of the coders coded the remaining 70% of transcripts.

## Results

### Main Analyses

We examined the focal hypotheses using the bootstrapping method, which makes no assumptions about the shape of a sample distribution and thus is robust against any irregularities in a sampling distribution (Wood, 2005). Furthermore, Hayes (2013) notes that the bootstrapping method produces more accurate estimates than the normal theory approach when the characteristics of a statistic over repeated sampling have not been investigated extensively. To our knowledge, this is one of the first attempts in the literature to investigate (a) the interaction between priming and prime-focused interviewing on information disclosure and (b) the mediating role of construct accessibility in such priming effects. Hence, such uncertainty exists in this research area that the implementation of the bootstrapping method is warranted. Means for all dependent measures are reported in Table 1.

**Moderation analyses.** We examined the main effect of priming and the Priming  $\times$  Interview Approach interaction on the amount of information disclosed in a moderation analysis with 5,000 bootstrapped samples. As recommended by Hayes (2013, p. 277), the condition variables were effect coded before the analysis (-0.5 = control priming, 0.5 = helpfulness priming; -0.5 = control approach, 0.5 = helpfulness-focused approach). Correlation analysis indicated that the relationship between benevolence values and information disclosure was not significant,  $r = -.01$ ,  $p = .958$ , 95% CI [-0.19, 0.18]. Moreover, covariate analysis including the benevolence values variable did not influence the nature of the results. Thus, we did not include the benevolence values measure in the results below.

The main effects of priming ( $b = 1.03$ ,  $SE = 0.74$ ,  $p = .165$ , 95% BCa CI [-0.42, 2.51]) and interview approach ( $b = 0.19$ ,  $SE = 0.74$ ,  $p = .795$ , 95% BCa CI [-1.24, 1.69]) were not significant. The former indicates that Hypothesis 1 was not supported; helpfulness priming did not have significant direct impact on the amount of information disclosed (see Table 1). The interaction between priming and interview approach was not significant by conventional standards,  $b = 2.57$ ,  $SE = 1.49$ ,  $p = .083$ , 95% BCa CI [-0.31, 5.49]. To examine the predicted pattern in detail, however, we conducted a conditional effects analyses. The analyses revealed that the helpfulness (vs. control) priming had a significant positive effect when the helpfulness-focused approach was used,  $b = 2.31$ ,  $SE = 1.11$ ,  $p = .036$ , 95% BCa CI [0.14, 4.44]. The effect of helpfulness (vs. control) priming was not significant when the control approach was used,  $b = -0.26$ ,  $SE = 0.99$ ,  $p = .792$ , 95% BCa CI [-2.16, 1.69]. Hence, Hypothesis 2 received partial support. Figure 2 illustrates the interaction and descriptive statistics are reported in Table 1.

**Mediation analysis.** To examine Hypothesis 3, we conducted a conditional mediation analysis with 5,000 bootstrapped samples using Hayes's (2015) PROCESS macro (model 15) for SPSS. We dummy coded the priming [and interview approach]

variable (0 = control priming [control approach], 1 = helpfulness priming [helpfulness-focused approach]). Helpfulness accessibility was maintained in its original metric. Path labels in the following results correspond to the naming convention used in Figure 1.

The effect of priming on helpfulness accessibility (path *a* in Figure 1) was not statistically significant,  $b = 0.36$ ,  $SE = 0.34$ ,  $p = .298$ , 95% BCa CI [-0.33, 1.06]. As can be inferred from Table 1, this indicates that on average participants in the helpfulness (vs. control) priming condition did not complete the word completion task with significantly more helpfulness-related words. The Priming  $\times$  Interview Approach interaction (*c*) was again not significant by conventional standards,  $b = 2.61$ ,  $SE = 1.54$ ,  $p = .093$ , 95% BCa CI [-0.45, 5.67]. Moreover, the interaction between helpfulness accessibility and interview style (*b*) was not significant,  $b = 0.04$ ,  $SE = 0.422$ ,  $p = .921$ , 95% BCa CI [-0.79, 0.88].

Failing to support Hypothesis 3, the indirect effect of priming, through helpfulness accessibility was neither significant among participants who were interviewed using the helpfulness-focused ( $b = -0.01$ , 95% BCa CI [-0.41, 0.28]) nor control approach ( $b = -0.03$ , 95% BCa CI [-0.45, 0.10]).

### **Exploratory Analyses**

We explored the effects of priming, interview approach, and their interaction, as well as the Helpfulness Accessibility  $\times$  Interview Approach interaction, on helpfulness motivation and expectancy confirmation self-reports. These analyses might provide information to guide future research in the examination of contextual factors that influence priming tactics in intelligence contexts. In each Priming  $\times$  Interview Approach interaction analysis, we used the same moderation analysis strategy reported in the main analyses. The helpfulness accessibility variable was maintained in its original metric and the interview approach variable was dummy coded (0 = control approach, 1 = helpfulness-focused approach) in the Helpfulness Accessibility  $\times$  Interview Approach interaction analyses.

**Helpfulness motivations.** The correlation between helpfulness motivation and information disclosure was positive and significant,  $r = .29$ ,  $p = .002$ , 95% CI [0.11, 0.45]. The main effect of priming on helpfulness motivations was not significant,  $b = 0.39$ ,  $SE = 0.35$ ,  $p = .271$ , 95% BCa CI [-0.30, 1.07]. Nevertheless, the main effect of interview approach was significant,  $b = 0.86$ ,  $SE = 0.35$ ,  $p = .014$ , 95% BCa CI [0.18, 1.55]. This indicates that participants interviewed using the helpfulness-focused (vs. control) approach reported higher helpfulness motivations. The Priming  $\times$  Interview Approach interaction was, however, not significant ( $b = 0.70$ ,  $SE = 0.70$ ,  $p = .318$ , 95% BCa CI [-0.67, 2.07]). The interaction between helpfulness accessibility and interview approach was significant,  $b = 0.41$ ,  $SE = 0.19$ ,  $p = .028$ , 95% BCa CI [0.06, 0.78]. Conditional effects analyses revealed that at high levels of helpfulness accessibility (+1SD), the effect of the helpfulness-focused (vs. control) approach was positive and significant,  $b = 1.61$ ,  $SE = 0.50$ ,  $p = .002$ , 95% BCa CI [0.62, 2.61]. The effect of the helpfulness-focused (vs. control) approach at low levels of helpfulness accessibility (-1SD) was not significant,  $b = 0.07$ ,  $SE = 0.50$ ,  $p = .877$ , 95% BCa CI [-0.91, 1.06]. This shows that for participants who experienced high levels of helpfulness accessibility, the helpfulness-focused (vs. control) approach boosted helpfulness motivation self-reports.

**Expectancy confirmation.** Perceived expectancy confirmation was positively and significantly correlated to information disclosure,  $r = .18$ ,  $p = .025$ , 95% CI [0.03, 1.00]. The main effects of priming ( $b = -0.30$ ,  $SE = 0.41$ ,  $p = .459$ , 95% BCa CI [-1.10, 0.55]) and interview approach ( $b = 0.03$ ,  $SE = 0.41$ ,  $p = .936$ , 95% BCa CI [-0.77, 0.82]) as well as their interaction ( $b = 1.31$ ,  $SE = 0.84$ ,  $p = .117$ , 95% BCa CI [-0.26, 2.89]) were not significant. The Helpfulness Accessibility  $\times$  Interview Approach interaction was not significant,  $b = 0.03$ ,  $SE = 0.24$ ,  $p = .907$ , 95% BCa CI [-0.46, 0.48].

### **Informants' Interview Perceptions**

Exploratory moderation analyses did not reveal any systematic Priming  $\times$  Interview Approach interactions on informants' interview perceptions. Hence, to examine the efficacy of helpfulness-focused (vs. control) approach manipulations, we tested the influence of the interview approaches on participants' subjective interview experiences and interviewer likeability using independent-samples *t*-tests. A small effect of the helpfulness-focused (vs. control) approach was observed with regard to perceived autonomy but a statistically significant difference did not emerge,  $t(114) = 1.16, p = .249, d = 0.22, 95\% \text{ CI} [-0.15, 0.58]$ . However, participants interviewed using the helpfulness-focused (vs. control) approach reported feeling more trust in the interviewer,  $t(114) = 3.88, p < .001, d = 0.72, 95\% \text{ CI} [0.35, 1.10]$  and more at ease during the interview,  $t(114) = 2.14, p = .039, d = 0.40, 95\% \text{ CI} [0.03, 0.77]$ . Regarding interviewer likeability, participants interviewed using the helpfulness-focused (vs. control) interview approach rated the interviewer as more likeable,  $t(114) = 4.87, p < .001, d = 0.91, 95\% \text{ CI} [0.52, 1.29]$ . Descriptive statistics are reported in Table 2.

### Discussion

We examined the possibility of eliciting information in an intelligence interview by priming helpfulness motivations and using a helpfulness-focused interpersonal approach. Overall, neither the helpfulness priming nor the helpfulness-focused interpersonal approach had a significant direct influence on information disclosure. However, we observed that helpfulness (vs. control) priming increased information disclosure when the helpfulness-focused interpersonal approach was used, but not when the control approach was used. Finally, we did not observe the proposed conditional mediation effect (as a function on the helpfulness-focused [vs. control] approach) of helpfulness priming on information disclosure, through helpfulness accessibility.

Based on the propositions of the situated inference model (Loersch & Payne, 2014) and the interpersonal octagon (Birtchnell, 1994), we proposed that helpfulness priming

would facilitate information disclosure in an intelligence interview when an interviewer implements a high suitability affordance in the form of a helpfulness-focused interpersonal approach. We deduced that consistency between an interviewee's primed dispositions and an interviewer's interpersonal approach would facilitate disclosure. Overall, the present results lend partial support to the theoretical proposition. Though the observed effects are small, our findings indicate that the helpfulness-focused approach, which sought to draw on primed interviewees' helpfulness, functioned as an adaptive interpersonal approach by facilitating disclosure when helpfulness had been primed. Moreover, in line with Birtchnell's (1994) relating theory, increased information disclosure was modestly associated with interviewees' increased perception about the suitability of the interviewer's interpersonal approach. It is worth to note that such small effects are similar to what has been found extant research that have examined priming influences in intelligence interviews (e.g., Dawson et al., 2015; Dawson, et al., 2017). In intelligence interview contexts, information gain is inherently beneficial; hence, such small effects could produce important real-world impact (see Lakens, 2013, p. 3 on interpreting effect sizes).

### **Limitations**

Our prediction that helpfulness priming would indirectly influence information disclosure more strongly in the helpfulness-focused approach condition, through helpfulness accessibility, was not supported. We suspect that this null result may have stemmed from the inability of the word fragment task to discriminate differential levels of helpfulness accessibility between the helpfulness and control priming conditions successfully. Thus, unfortunately, the data from the present work is unable to decipher the interplay between helpfulness priming, helpfulness accessibility, and helpfulness-focused interviewing fully. It is worth noting, however, that the priming manipulation and the word fragment task we used in this study has successfully discriminated the levels of helpfulness accessibility between helpfulness and control priming conditions in previous experiments. A meta-

analysis of the four experiments reported by Neequaye, Ask, Granhag, & Vrij, (2017a) and Neequaye et al. (2017b) revealed a fairly medium-sized effect of the priming manipulation on helpfulness accessibility ( $d = 0.38$ , 95% CI [0.20, 0.56], see Table S2 in the supplemental analyses for further details). Hence, though this study was adequately powered, random sampling variability may have contributed to the null effect of the priming manipulation on helpfulness accessibility (see Lakens & Etz, 2017).

It is also possible that during the word completions some participants in the control priming group were primed inadvertently because they self-generated helpfulness-related words. This limitation may have especially weakened our efforts to uncover the possible main effect of helpfulness (vs. control) priming on information disclosure. That notwithstanding, we deduced from previous research that multiple sources of construct accessibility combine additively (Bargh, Bond, Lombardi, & Tota, 1986; Higgins & Brendl, 1995). Hence, a larger effect of priming was expected among helpfulness-primed participants because they self-generated helpfulness-related words in addition to completing the helpfulness priming task. Future research would benefit from measures of construct accessibility that demonstrate priming effects without priming control groups accidentally.

### **Implications**

It is important to caution that the research on priming influences in the intelligence context is still in its infancy and that the extant conclusions are preliminary. Further high-powered replications of the current body of work are needed to fully uncover the potential usefulness of priming tactics. This work, however, provides information for intelligence interviewers considering the practical utility of subtle influence tactics such as priming. Regarding information elicitation, our research indicates that in addition to priming a motivation of interest, an interpersonal approach that displays high fit with the primed motivation may be required to facilitate disclosure. The results suggest that a priming tactic and a complementary interpersonal approach could work symbiotically to facilitate



disclosure. For example, though participants interviewed using the more congenial interpersonal approach (i.e., helpfulness-focused interview) reported higher helpfulness motivations and more positive perceptions (e.g., trust) of the interviewer; the helpfulness-focused interpersonal approach facilitated information disclosure only when helpfulness had been primed.

### **Conclusions**

In this work, we explore a novel and innovative approach to information elicitation in intelligence interviewing. The research provides useful information about the importance of implementing a complementary interpersonal approach to solicit information when a disclosure-related motivation has been primed. In all, our findings indicate that helpfulness priming may facilitate information disclosure when combined with a helpfulness-focused interpersonal approach. This study sets the stage for future intelligence interviewing research to explore how priming varied disclosure-related motivations and their complementary interpersonal approaches may work in concert to influence information disclosure.

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### **Endnotes**

<sup>1</sup> All the interviews were conducted in Swedish, and the descriptions of the interview protocols are approximate English translations. It should be noted that, in Swedish parlance, all the questions were structurally open-ended. Furthermore, participants' responses in the individual interviews reflected forethought. No participant responded to any of the questions with a simple "yes" or "no".

## Supplemental Analyses for Experiment 7

### Consistency

We conducted correlation analyses to examine consistency between (a) the specific information units participants reported to have disclosed in the post-interview questionnaire (b) the information units they actually disclosed in the interview and (c) their subjective rating of the amount of information they had disclosed. Overall, the analyses indicated high consistency. The relation between the specific information participants identified to have disclosed and information identified through independent coding of the interviews was highly significant,  $r = .80, p < .001, 95\% \text{ CI } [.72, .87]$ . The relation between perceived amount of information disclosed and the actual amount of information disclosed was also significant,  $r = .51, p < .001, 95\% \text{ CI } [.33, .65]$ . Finally, we examined whether the priming and the interview approaches interacted to influence participants' perceptions of the amount of prior information possessed by the interviewer. We conducted a Priming  $\times$  Interview Style moderation analysis for this examination; No significant effects emerged, all  $ps > .291$ .

### Information value

We recruited 373 participants, 262 females and 104 males (five participants and two participants identified as non-binary and as transgender respectively) in a pilot study to ascertain the information value of the thirty-seven pieces information contained in the background and planning information. The average age of the sample was 30.88 years ( $SD = 10.60$  years; three participants did not state their age). The study was fully computerized and sent to prospective participants via an anonymous web link. After participants were introduced to the purpose of the study and they had indicated consent to participate, we presented the same instructions and planning materials, used in Phase 2 of the main study, to them. Participants were instructed to study the information in order to assume the role of a police informant with information about an upcoming terrorist attack. However, instead



of being interviewed subsequently, we asked participants to provide a rating indicating the extent to which each of the thirty-seven pieces of information would be *helpful* to their police contact's investigation. Participants were instructed to be mindful of their information management dilemma as an informant while providing their ratings. We included this instruction, as in the main study, to prevent floor and ceiling effects. Ratings were provided on an 11-point continuous scale (0 = *not helpful at all*, 10 = *extremely helpful*).

One-sample *t* tests (comparison test value = 5) indicated that, overall and on average, each of the thirty-seven pieces of information was considered to be of high information-value, all *ps* < .01. In addition, we examined the consistency between information-value observed in this pilot study and quantitative information disclosure in the main study. Thus, using the mean information-value ratings of the respective pieces of information in this pilot study, we computed total information-value scores for participants' information disclosure in the main study. The correlation analyses indicated excellent consistency between total quantitative information disclosed and total information-value of information disclosed ( $r = .99, p < .001, 95\% \text{ CI } [.99, 1.00]$ ). Descriptive and inferential statistics are presented in the supplemental table.

**Results including the eight participants previously excluded due to high discrepancy between subjective and actual information disclosure**

**Information disclosed**

**Moderation analysis**

Main effect of priming:  $b = 1.06$ ,  $SE = 0.72$ ,  $p = .142$ , 95% BCa CI [-0.36, 2.45]

Main effect of interview approach:  $b = .10$ ,  $SE = 0.72$ ,  $p = .895$ , 95% BCa CI [-1.33, 1.52]

Priming  $\times$  Interview approach interaction:  $b = 2.26$ ,  $SE = 1.44$ ,  $p = .118$ , 95% BCa CI [-0.59, 5.11]

**Conditional effects**

**Helpfulness-focused approach**

Helpfulness (vs. control) priming:  $b = 2.19$ ,  $SE = 1.02$ ,  $p = .033$ , 95% BCa CI [0.18, 4.20]

**Control approach**

Helpfulness (vs. control) priming:  $b = -0.07$ ,  $SE = 1.02$ ,  $p = .946$ , 95% BCa CI [-2.08, 1.94]

**Conditional mediation effects**

Helpfulness-focused approach:  $b = -0.03$ , 95% BCa CI [-0.46, 0.91]

Control approach:  $b = -0.02$ , 95% BCa CI [-0.43, 0.23]

**Helpfulness motivation**

**Moderation analyses**

Main effect of priming:  $b = 0.17$ ,  $SE = 0.36$ ,  $p = .64$ , 95% BCa CI [-0.54, 0.88]

Main effect of interview approach:  $b = 0.74$ ,  $SE = 0.36$ ,  $p = .042$ , 95% BCa CI [0.03, 1.44]

Priming  $\times$  Interview approach interaction:  $b = 0.49$ ,  $SE = 0.72$ ,  $p = .495$ , 95% BCa CI [-0.93, 1.91]

Helpfulness accessibility  $\times$  Interview approach interaction:  $b = 0.47$ ,  $SE = 0.19$ ,  $p = .013$ , 95% BCa CI [0.10, 0.85]

**Expectancy confirmation**

**Moderation analyses**

Main effect of priming:  $b = -0.47$ ,  $SE = 0.82$ ,  $p = .572$ , 95% BCa CI [-2.09, 1.16]

Main effect of interview approach:  $b = -0.07$ ,  $SE = 0.82$ ,  $p = .936$ , 95% BCa CI [-1.69, 1.56]

Priming  $\times$  Interview approach interaction:  $b = 3.18$ ,  $SE = 1.64$ ,  $p = .055$ , 95% BCa CI [-0.07, 6.43]

Helpfulness accessibility  $\times$  Interview approach interaction:  $b = 0.07$ ,  $SE = 0.46$ ,  $p = .878$ , 95% BCa CI [-0.83, 0.97]

**Interview perception (Helpfulness-focused [vs. control] approach)**

Autonomy:  $t(122) = 1.14$ ,  $p = .258$ , 95% CI [-0.25, 0.93]

Trust:  $t(122) = 3.38$ ,  $p = .001$ , 95% CI [0.45, 1.71]

At ease:  $t(122) = 1.82$ ,  $p = .071$ , 95% CI [-0.50, 1.21]

Likeability:  $t(122) = 4.82$ ,  $p < .001$ , 95% CI [0.53, 1.26]