

Verifying Relational Value:
The Moderating Role of Self-Esteem in Seeking Self-Verifying Feedback

by

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B.A., University of Manitoba, 2009

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Supervisory Committee

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Abstract

People feel discomfort when they receive feedback about their relational value that is inconsistent with their self-esteem and certainty when they receive feedback that is consistent (Stinson et al., 2010). Feeling discomfort prompts additional feedback-seeking to confirm or disprove the original feedback (Swann, 1987). Feeling certainty does not. People base their self-views on years of experience and so are more likely to seek self-view consistent feedback (Swann, 1987). Participants were given high relational value feedback to invoke discomfort in individuals with low self-esteem (LSEs) but not individuals with high self-esteem (HSEs). Participants were then able to seek additional relational-value feedback. LSEs were expected to seek self-esteem consistent feedback to reduce discomfort whereas HSEs were not expected to seek additional feedback because they would not be experiencing discomfort. Results did not support these hypotheses for all participants: Single LSEs sought feedback as a function of self-esteem but mated LSEs did not.

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Introduction

Jane and Anne each buy a new dress to wear to their friend's wedding. At the wedding they are both told that they look beautiful. Jane, who already thinks that she looks beautiful, feels validated after hearing the compliment. Anne, however, feels uncertain after hearing the compliment because she only thinks that she looks presentable, and not particularly beautiful. Feelings of uncertainty in response to social feedback indicate that one's self-views are inconsistent with the social feedback that one received, whereas feelings of certainty signal that one's self-views are consistent with the social feedback. Jane feels certain because the compliment that she received is consistent with how she sees herself. Anne feels uncertain because the compliment that she received is inconsistent with how she sees herself. The questions remain: How will Jane and Anne respond to these differing feelings of certainty and uncertainty? If Jane and Anne have the opportunity to acquire more feedback about how they look, feedback that might confirm or disconfirm the original feedback they received, what type of feedback will they seek? Will they seek feedback that is consistent with how they see themselves, or seek feedback that is consistent with the compliment? My research will answer these questions by focusing on one specific aspect of the self-concept – global self-esteem – and by examining reactions to self-concept consistent, or inconsistent, social feedback.

The Need for Consistency

According to self-verification theory, people have a need to verify their self-concept, which is a person's "cognitive representation of his/her attributes" (Sedikides, 1993, p. 336). Confirming one's self-views maintains perceptions of control and predictability (De La Ronde & Swann, 1993; Kwang & Swann, 2010; North & Swann, 2009; Swann, Stein-Seroussi, & Giesler, 1992), which are important for mental health (Pyszczynski, Greenberg, Koole, & Solomon,

2010). It is easy to feel as if one has control over very little in life; therefore confirming one's expectancies helps to maintain what little feelings of control one has (Swann, 1987).

Verifying one's self-concept can be conscious or unconscious (Swann, 1997), and people engage in a variety of strategies to verify, or confirm, their self-concept. For example, people tend to surround themselves with others who help them to maintain their self-views (Swann, 1987, 1997). People prefer romantic partners, roommates, friends, and even strangers who see them as they see themselves (Swann, Hixon, & De La Ronde, 1992; Swann & Pelham, 2002; Swann, Stein-Seroussi et al., 1992; Swann, Wenzlaff, Krull, & Pelham, 1992). For instance, research has shown that people are more interested in staying with roommates who reaffirm self-views than staying with roommates who do not (Swann & Pelham, 2002). This is particularly the case for people with negative self-views: they are more interested in staying with their roommate if their roommate confirms their negative self-view as opposed to disconfirms it.

If others are not being compliant in confirming their identity, then people can guide interactions so that others come to interact with them in self-confirming ways (Swann, 1987; Swann & Ely, 1984). For example, people who think of themselves as likable may compliment an interaction partner to get the partner to like them (Swann & Read, 1981), or people who are dominant may become more dominant if they think that an interaction partner perceives them as submissive (Swann & Hill, 1982). Using their behaviour to guide interactions so that interaction partners come to view them as they see themselves demonstrates the lengths that people will go to verify their self-concepts and retain feelings of control.

Although people are motivated to verify many aspects of their self-concepts (Swann, De La Ronde, & Hixon, 1994), aspects of the self-concept that provide coherence and predict important outcomes, like acceptance, are more likely to be verified (North & Swann, 2009).

Stinson and colleagues (2010) suggested that it is of particular importance for people to verify their value as a relational partners. If people over- or underestimate their value, then they may behave in ways that are off-putting to others (e.g., if they behave hubristically), resulting in negative outcomes like embarrassment or rejection. Thus, to avoid negative outcomes and ensure that interactions progress smoothly and predictably, it is important for people to ensure that this aspect of their self-concept is congruent with the social reality (Swann, Wenzlaff et al., 1992). The aspect of the self-concept that reflects one's value as a relational partner is called self-esteem, and is the focus of the present research.

Self-Esteem

According to sociometer theory, *global self-esteem* is one's chronic perceived relational value and is an aspect of the self-concept (Leary, 2005; Leary & Baumeister, 2000). *Relational value* is the degree to which one feels "relational appreciation and social belongingness" (Leary & Baumeister, 2000, p.12) and can vary along a continuum (Kernis, 1993). Through repeated social experiences, people develop and calibrate stable self-beliefs about whether they have high or low relational value (Leary & Baumeister, 2000). People use their general self-beliefs to fulfill the functions of global self-esteem: guiding behaviour and predicting social outcomes (Stinson et al., 2010; Swann, 1997). People who are higher in global self-esteem (HSEs) tend to hold positive self-views on attributes that are important to acceptance (e.g., competence and sociability; MacDonald, Saltzman, & Leary, 2003) and believe that others will generally accept them in the future (Leary, Tambor, Terdal, & Downs, 1995). People who are lower in global self-esteem (LSEs), on the other hand, tend to hold negative self-views on these attributes and are reluctant to predict that others will accept them (Anthony, Holmes, & Wood, 2007; Leary, 2005; MacDonald et al., 2003). Part of LSEs' hesitation to predict that others will accept them is

because they do not want to be inaccurate in their interpretation of social cues. If they misinterpret the ambiguous cues of acceptance, then there is the possibility that they will be rejected, which is painful (MacDonald & Leary, 2005).

If the function of global self-esteem is to guide and predict behaviour, then it is imperative that one's global self-esteem is accurate. *Accuracy* is the degree to which one's self-views match up with how others see one's self. Having accurate self-esteem is important because miscalculating one's social value can have negative interpersonal consequences, like rejection. For example, if Anne thinks that she does not look beautiful at the wedding, then she will carry herself in a way to show this. Perhaps she really does look beautiful, and people try to tell her this, but she keeps disregarding the compliments. As a result, others might give up trying to convince her of her beauty and might be unwilling to interact with her if her behaviour is too off-putting.

To avoid negative circumstances such as these and to keep global self-esteem accurate, people have an *epistemic signaling system* that indicates whether their knowledge of their relational value is congruent with the social reality. Part of a broader self-regulatory model of self-esteem (Stinson et al., 2010), the epistemic signaling system checks whether the feedback is consistent or inconsistent with chronic self-views.

If the relational value feedback is consistent with chronic self-views (i.e., it is self-verifying), then the epistemic system produces feelings of certainty and control because knowledge about the self has been affirmed. If the relational value feedback is inconsistent with chronic self-views, then the epistemic system produces feelings confusion and discomfort because knowledge about the self has been put into question (Stinson et al., 2010). So when Jane and Anne receive a compliment about their looks, Jane experiences *epistemic certainty* because

she thought that she looked beautiful and now her belief has been affirmed, while Anne experiences *epistemic confusion* because she thought that she only looked presentable and now her belief has been called into question. Once the signaling system has indicated whether feedback is consistent or inconsistent with the self, it then prompts reactions to the feedback.

Reactions to Self-Esteem Inconsistent Feedback

Epistemic confusion is an uncomfortable state. Receiving self-esteem inconsistent feedback could mean that one's self-esteem is wrong, which is distressing because, like other self-views, self-esteem is formed over time and is used to guide behaviour (Kwang & Swann, 2010). Or, self-esteem inconsistent feedback could mean that the feedback is wrong, which is distressing because generally one assumes that social feedback is correct (Gilbert, Krull, & Malone, 1990). Hence, people are motivated to reduce or dispel epistemic confusion to quell the uncomfortable feelings of discrepancy that the epistemic signaling system is producing and to regain feelings of self-certainty (Stinson et al., 2010; Swann, 1997). How might they do this? One way is to change the self-concept to match the discrepant feedback, another is to derogate the offending feedback, and yet another is to disprove the contradictory feedback (Swann, 1987). The present research focuses on this latter method for dispelling epistemic confusion.

Disproving the feedback. Self-concept inconsistent feedback can be disproved by seeking additional self-verifying feedback (Swann, 1987, 1992). Recall that Anne experienced epistemic confusion after receiving a compliment about her looks because the compliment was inconsistent with her self-views. In response, Anne could seek self-view inconsistent (i.e., positive) feedback to confirm the positive feedback because receiving a compliment feels good and increases state self-esteem (Marigold, Holmes, & Ross, 2007). However, it is more likely that Anne will seek self-view consistent (i.e., negative) feedback to disprove the positive

feedback because disproving the feedback would allow her to feel confident in her existing self-views and thus maintain perceptions of predictability and control (North & Swann, 2009; Swann, Griffin, Predmore, & Gaines, 1987; Swann, Stein-Seroussi et al., 1992). The present research will test this hypothesis.

The Present Research

Self-verification research has provided some evidence that people seek additional feedback following self-concept inconsistent feedback (Swann, 1992). For example, participants in Swann and Predmore's (1985) study sought the opinions of their romantic partner after receiving self-concept inconsistent feedback. However, feedback-seeking behavior in response to self-esteem inconsistent feedback has not been examined. To fill this gap in the literature, the present research tests the hypothesis that LSEs (like Anne) will seek self-esteem-verify (i.e., negative relational value) feedback after receiving positive feedback about their relational value. If this hypothesis is correct it will help provide insight into one of the puzzles of low self-esteem: If romantic partners view LSEs more positively than LSEs view themselves (e.g., Murray, Holmes, & Griffin, 2000), why do LSEs doubt their relational value? Possibly because, as I propose, LSEs seek self-esteem-verify feedback after they receive positive relational value feedback. This act could explain how LSEs maintain their negative self-views over time; they do not "quit while they are ahead" and instead question good news when it comes.

In addition, the present research tests the hypothesis that HSEs (like Jane) will *not* seek self-esteem-verify (i.e., positive relational value) feedback after receiving positive feedback about their relational value. Research has shown that motivation decreases after the need is satisfied that initially provoked the motivation (DeWall, Baumeister, & Vohs, 2008). Positive feedback satisfies HSEs' need for self-certainty, so they will not desire to seek any other

feedback. Such lack of information-seeking motivation could explain how HSEs maintain their positive self-views over time; they “quit while they are ahead” and do not question positive feedback.

Hypotheses

The model depicted in Figure 1 illustrates my hypotheses, and is based on Stinson et al., (2010).¹ The processes that I am interested in studying are provoked by positive feedback about one’s relational value (e.g., that one is well liked by others). Because LSEs feel that they have low relational value, receiving feedback that they have high relational value is confusing (Path A). This confusion prompts a high motive to self-verify, which then causes people to look to available feedback options and decide whether to pursue the feedback or not. If the available feedback is self-esteem consistent, LSEs will seek the feedback (Path B). If the available feedback is self-esteem inconsistent, LSEs will not seek the feedback (Path C). In contrast, because HSEs feel that they have high relational value, receiving feedback that they have high relational value makes them feel certain about their self-views (Path D). Consequently, HSEs have no motive to self-verify, and will not seek any additional feedback (Path E). In sum, I expect that LSEs will be motivated to pursue negative feedback and less motivated to pursue additional positive feedback, in order to reduce their feelings of epistemic confusion. I expect that HSEs, on the other hand, will not be motivated to pursue additional feedback due to feeling epistemic certainty.

¹ There was a previous iteration of this research that was conducted by the author as part of another course requirement and was designed to target HSEs. In that study, all participants were given ambiguous relational value feedback, which invokes epistemic confusion in HSEs but confirms the self-views of LSEs. The feedback led HSEs to seek additional feedback that was self-verifying. HSEs performed better on a handgrip task when told that doing well was indicative of high relational value compared to LSEs and compared to when they were told that doing well was indicative of low relational value. The feedback did not lead LSEs to seek additional feedback because they had no motive to self-verify. LSEs performed the same on the handgrip task whether they were told that doing well was indicative of high or low relational value. These results lend support to my current predictions.

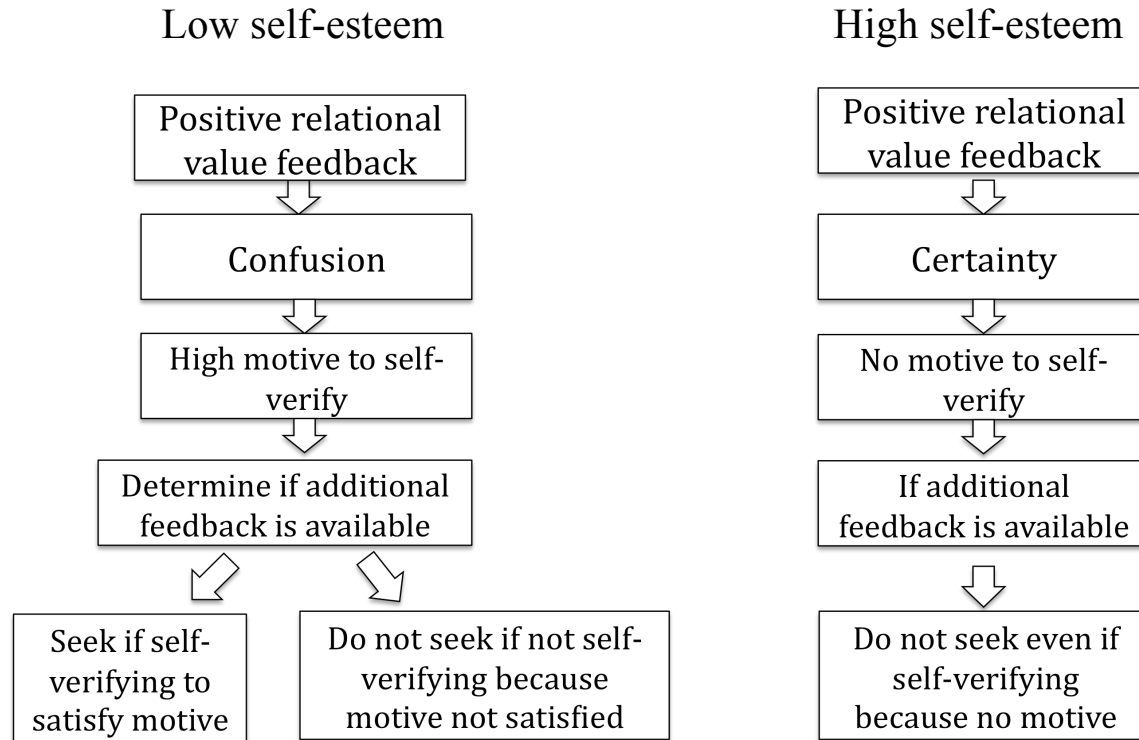


Figure 1. Model depicting the response of low and high self-esteem individuals to positive relational value feedback.

Method

Participants

Participants were required to have English as their first language, have been born in Canada, be Caucasian, and be enrolled in Introductory Psychology to participate.² One hundred and fifty-eight participants (78 women, 80 men; $M_{age} = 19.19$ years, $SD_{age} = 2.56$ years) from the University of Victoria participated for partial course credit, and candy or a pen.

² The first three requirements were in place because research has shown that self-esteem functions differently in Western/North American culture when compared to many other cultures (Heine, Lehman, Markus, & Kitayama, 1999) and it was important that participants understood the feedback that they were provided with. Additionally, students who have taken upper level psychology courses could have guessed my hypotheses and the deception due to their more advanced social psychology knowledge, which would have left their data unusable.

Procedure and Measures

Participants were recruited for a study on “Personality Styles” from September 2011 to February 2012. Participants were run through the study one at a time and were greeted by an opposite-sex experimenter when they arrived at the laboratory. After signing a consent form (Appendix A), they completed a computerized questionnaire (Appendix B). The questionnaire included Rosenberg’s Self-Esteem Inventory (1965) to assess global self-esteem; 10 items, 9-point Likert scale (1 = *very strongly disagree*, 9 = *very strongly agree*; $\alpha = .868$). An example item is “I feel that I have a number of good qualities.” The questionnaire also included demographic questions and filler items that disguised the focus of the study.

Next, participants received relational value feedback in the form of results from a bogus personality test, The Harvard Ashby Personality Inventory (HAPI). Participants were led to believe the test was real (see experimenter script in Appendix C). The HAPI (which has been used in previous research; Stinson et al., 2010) was administered on a computer via DirectRT, a reaction time computer program. Participants indicated whether each of 50 bogus items were true or false for them. Example items include “I have no pets” and “I usually sleep on my back.” After completing the personality test, the experimenter provided the participants with bogus test results that included positive feedback about their relational value. For example, they were told that people with their personality type were very well liked by others. To avoid influence, experimenters were kept blind to the nature of the feedback. All participants received the same feedback (Appendix D).

For reasons to be described shortly, participants next completed the game Operation and a handgrip task. Operation involves using a set of tweezers to remove thirteen small irregularly shaped, plastic pieces from their corresponding holes in a board without touching the sides of the

holes. A buzzer sounds when the sides are touched. Participants were instructed to work as fast as they could without making mistakes. Participants were given three attempts to remove each piece before being instructed to move on to the next piece. For the handgrip, participants placed a marble in between the arms of a medium strength handgrip and held the handgrip over a table. They were instructed to hold the handgrip for as long as possible, and were timed from the moment they placed the marble between the grips to the moment when the marble hit the table.

The instructions that participants received prior to completing the Operation and handgrip tasks constituted the experimental manipulation of available feedback in the present research. In the *Good Social Skills* condition, before participants started Operation, they were told, “Performing well on this task is associated with traits that are desirable in relationships, like empathy and social sensitivity. So people who do well on this task also tend to be quite empathetic and sensitive” (see experimenter script in Appendix C). Before participants started squeezing the handgrip and after they completed Operation, participants were told, “Just like with Operation, performing well on this task is associated with traits that are beneficial to relationships, like being committed. So people who do well on this task also tend to be quite committed to their relationships.” In the *Poor Social Skills* condition, before participants started Operation, they were told, “Performing well on this task is associated with traits that are undesirable in relationships, like being picky and socially insensitive. So people who do well on this task also tend to be quite picky and insensitive.” Before participants started squeezing the handgrip and after they completed Operation, they were told, “Just like with Operation, performing well on this task is associated with traits that are detrimental to relationships, like being stubborn. So people who do well on this task also tend to be quite stubborn.” Thus, performance on each task can be considered an indicator of participants’ interest in receiving

positive relational value feedback (in the Good Social Skills condition) or negative relational value feedback (in the Poor Social Skills condition; see DeWall et al., 2008). On the game Operation, shorter times and fewer errors indicated greater motivation, as did longer times spent squeezing the handgrip. Participants were assigned to condition based on the order that they participated, with every second participant being assigned to the Poor Social Skills condition.

Next, participants completed a second computerized questionnaire including manipulation checks and various other measures not relevant to the present hypotheses (Appendix E). Open-ended questions that served as manipulation checks asked participants to recall details about their personality feedback and the meanings provided for doing well on the Operation and handgrip task.

Immediately after completing the second questionnaire, participants wrote about a social value that they share with a close other (Appendix F). This last task served as a mood boost to counteract any negative feelings that may have risen throughout the procedure. Because there was deception in this study paradigm, participants were asked to sign another consent form after completing the mood boost (Appendix G), and were provided with a post-study debriefing and feedback letter (Appendix H). Participants were then thanked and given their choice of candy or a pen before departing.

Results

Prior to analyses, data for two participants were excluded (one man and one woman) due to procedure error and response set use (responding with the same answer for the majority of questions). One hundred and fifty-six participants remained for all subsequent analyses.

Manipulation Check. The majority of participants (91.7 %) correctly recalled the supposed meaning of performing well on the Operation and handgrip tasks. Those who were

incorrect ($n = 13$) were excluded from subsequent analyses. Participants were incorrect when they wrote that they were unsure of the meanings provided for doing well on the tasks and when they wrote that the meanings provided were the opposite of what they were.

Next, I used hierarchical linear regression to determine if gender was a consequential predictor, or whether it could be excluded from the analyses. Self-esteem was mean-centered, gender dummy coded (0 = female, 1 = male), condition dummy coded (0 = poor social skills, 1 = good social skills), and the two-way (i.e., self-esteem by gender, self-esteem by condition, condition by gender) and three-way (i.e., self-esteem by condition by gender) interactions computed. Main effects for self-esteem, gender, and condition were entered at Step One, two-way interaction terms were entered at Step Two, and the three-way interaction term was entered at Step Three. Results were interpreted at the step that they were entered. This regression equation was used to predict each of the dependent variables: length of time spent holding the handgrip, length of time taken to complete the game Operation, and number of errors made on Operation³. Results indicated that there were several main effects for gender across the dependent variables (see Table 1).

Men held the handgrip for longer than women, $\beta = .502$, $t(139) = 6.816$, $p < .001$, took longer to complete Operation, $\beta = .299$, $t(139) = 3.693$, $p < .001$, and made more errors on Operation, $\beta = .165$, $t(139) = 2.058$, $p = .041$. The only two-way interaction including gender that emerged was an interaction with self-esteem for time taken to complete Operation, $\beta = -.247$, $t(136) = -2.107$, $p = .037$, which is depicted in Figure 2. I used Aiken and West's (1991) method

³ DeWall and colleagues (2008) summed the z-scores for the number of errors made on Operation and length of time taken to complete the game and their results were significant, but were driven by the number of errors made. Likewise, I summed the z-scores for those two dependent variables and received significant results that also appeared to be driven by the number of errors made on Operation. There were no differences in results whether the dependent variable was the summed z-scores or the number of errors made on the Operation. Because the results appeared to be driven by the number of errors made, I report here solely those results and not the results of the summed z-scores. Using other combinations of the two dependent variables (e.g., the difference between the z-scores) yielded similar results to those presented here.

for decomposing the two-way interaction. Simple-effects analyses revealed a gender effect for participants one standard deviation below the mean on self-esteem (i.e., LSEs), such that men took longer to complete Operation ($M_{\text{est}} = 116.67$ seconds) than women ($M_{\text{est}} = 89.85$ seconds), $\beta = .434$, $t(136) = 3.055$, $p = .003$. A gender effect did not emerge for participants one standard deviation above the mean (i.e., HSEs), nor did a self-esteem effect emerge for men or women (all $ps > .10$). Furthermore, the three-way interaction between gender, self-esteem, and condition was not significant for any of the dependent variables, all $ps > .10$. Because gender did not moderate the associations between self-esteem and condition and any of the dependent variables, interactions between those variables and gender were excluded from subsequent analyses. However, to control for the main effects of gender described above, all further regressions included gender in Step One.

Next, I used hierarchical linear regression to test my primary hypotheses: That self-esteem would interact with condition to predict performance on the dependent measures. Main effects for self-esteem, gender, and condition were entered at Step One, and the interaction between self-esteem and condition was entered at Step Two. This regression equation was used to predict each of the dependent variables: length of time spent holding the handgrip, length of time taken to complete the game Operation, and number of errors made on Operation. Results revealed a main effect for self-esteem on number of errors made in the game Operation, with LSEs making more errors ($M_{\text{est}} = 8.67$ errors) than HSEs ($M_{\text{est}} = 6.34$ errors), $\beta = -.303$, $t(139) = -3.780$, $p < .001$. No other significant effects emerged for any of the dependent variables (all $ps > .10$).

Table 1

Hierarchical Multiple Regression Analyses Predicting Performance on Operation and Handgrip Tasks from Self-Esteem, Condition, and Gender by Dependent Variable

Predictor	Handgrip Time				Operation Time				Operation Errors				
	SE	β	<i>t</i>	<i>p</i>	SE	β	<i>t</i>	<i>p</i>	SE	β	<i>t</i>	<i>p</i>	
Step 1													
	Self-esteem	3.202	-.019	-.254	.800	2.230	-.060	-.744	.458	.274	-.303	-3.780	.000
	Cond	7.189	.502	6.816	.654	4.979	.078	.962	.338	.612	-.092	-1.155	.250
	Gender	7.149	.033	.449	.000	5.007	.299	3.693	.000	.615	.165	2.058	.041
Step 2													
	Self-esteem x Cond	6.526	-.058	-.513	.609	4.494	-.124	-1.009	.315	.558	-.046	-.377	.707
	Self-esteem x Gender	6.465	.012	.115	.909	4.453	-.247	-2.107	.037	.553	-.081	-.691	.491
	Gender x Cond	14.470	-.201	-1.520	.131	9.966	.046	.320	.749	1.237	.227	1.581	.116
Step 3													
	Self-esteem x Gender x Cond	13.084	.117	.685	.495	9.013	-.121	-.654	.514	1.115	-.218	-1.181	.240

Note. SE = Standard Error, Cond = Condition. Standard deviations for Handgrip Time, Operation Time, and Operation Errors were 48.87, 30.95, and 3.85, respectively.

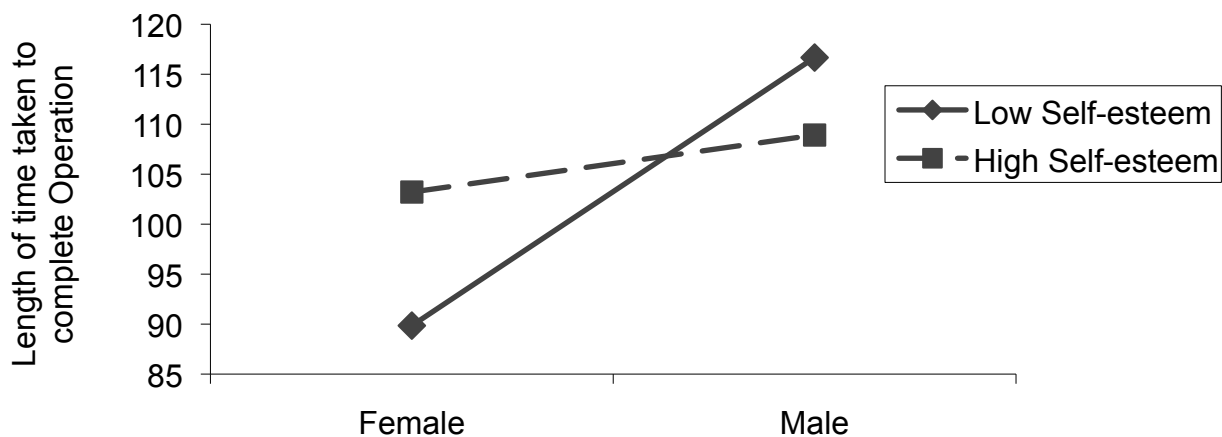


Figure 2. Length of time (in seconds) taken to complete the game Operation as a function of self-esteem and gender. Note that results are graphed for individuals one standard deviation below the mean (i.e., lower self-esteem individuals) and one standard deviation above the mean (i.e., higher self-esteem individuals) on self-esteem.

Exploring Potential Moderators

Because my predictions were not supported, I decided to conduct further analyses and explore a potential moderator variable: romantic relationship status. I explored relationship status as a potential moderator because the bogus personality feedback and the feedback manipulation both emphasized relationship qualities. For example, participants were told in the personality feedback that they “have the qualities that people desire in a relationship partner”. As another example, recall that prior to squeezing the handgrip, participants in the Good Social Skills condition were told that “performing well on this task is associated with traits that are beneficial to relationships, like being committed. So people who do well on the task also tend to be quite committed to their relationships.” Because the feedback emphasized relationship qualities, it is possible that it affected people differently depending on whether or not they were in a romantic relationship at the time of the study. Single participants may have been particularly self-conscious of their performance in front of the opposite-sex experimenter (a potential mate),

whereas people in romantic relationships may not have felt the same pressure. Because the social context was different for single and non-single participants, I thought it was possible that relationship status could moderate the feedback-seeking behavior of participants. I did not form *a priori* hypotheses about the nature of the moderating effect of relationships status.

Participants were asked questions about their relationship status at the same time that they answered demographic questions. Thirty-nine percent of participants were in a relationship at the time of the study. These participants were asked to indicate how long they have been together with their partner (in months) and to select all of the options that applied to their relationship status. The options were: casual dating, dating this person and others, exclusive dating, engaged, married, living together, and long distance. Of these, 10 were living with their partner, 9 were in long distance relationships, 46 were dating exclusively, and one was married. The average romantic relationship length was 17.24 months ($SD = 19.19$, range = 1 – 114 months). There were 21 mated and 48 single participants in the PSS condition, and 35 mated and 39 single participants in the GSS condition.

Relationship status was dummy coded (0 = single, 1 = in a romantic relationship) and the two-way (i.e., self-esteem by relationship status, condition by relationship status) and three-way (i.e., self-esteem by condition by relationship status) interaction terms were computed. Another set of hierarchical regression analyses was then run. The main effects for self-esteem, condition, gender, and relationship status were entered in Step One, the two-way interaction terms — self-esteem by relationship status, self-esteem by condition, condition by relationship status — were

entered in Step Two, and the new three-way interaction term was entered in Step Three.⁴ This regression equation was used to predict each of the dependent variables: length of time spent holding the handgrip, length of time taken to complete the game Operation, and number of errors made on Operation.

No significant effects emerged for time taken to complete Operation or time spent holding the handgrip (all $ps > .10$). The regression predicting errors made on Operation did yield results: a main effect for self-esteem, $\beta = -.302$, $t(138) = -3.76$, $p < .001$, an interaction between relationship status and condition, $\beta = -.300$, $t(135) = -2.087$, $p = .039$, and a three-way interaction between self-esteem, condition, and relationship status, $\beta = .394$, $t(134) = 2.473$, $p = .015$. No other significant effects emerged (all $ps > .10$). The three-way interaction is depicted in Figure 3. I used Aiken and West's (1991) method for decomposing the three-way interaction. HSEs' performance did not vary as a function of condition or relationship status ($ts < 1$). For LSEs, a number of interesting results emerged. Single LSEs in the Good Social Skills condition made more errors than single HSEs in the same condition, $\beta = -.413$, $t(134) = -3.225$, $p = .002$. LSEs in the Good Social Skills condition made more errors than LSEs in the Poor Social Skills condition, however this trend failed to reach statistical significance, $\beta = .174$, $t(134) = 1.253$, $p = .212$. LSEs and HSEs did not differ in the Poor Social Skills condition, $\beta = -.146$, $t < 1$. This

⁴ I used hierarchical linear regression to determine if gender was a consequential predictor, or whether it could be excluded from the analyses involving relationship status as a moderator. The two-way (i.e., relationship status by gender), three-way (i.e., condition by relationship status by gender, self-esteem by relationship status by gender, self-esteem by relationship status by condition, and self-esteem by gender by condition), and four-way (i.e., self-esteem by condition by relationship status by gender) interactions were computed. Main effects for self-esteem, gender, relationship status, and condition were entered at Step One, all possible two-way interaction terms were entered at Step Two, all possible three-way interaction terms were entered at Step Three, and the four-way interaction term was entered at Step Four. Results were interpreted at the step in which they were entered. This regression equation was used to predict each of the dependent variables: length of time spent holding the handgrip, length of time taken to complete the game Operation, and number of errors made on Operation (see Appendix I). Results indicated that the main effects for gender were still significant and that no new interactions emerged (i.e., the three- and four-ways including gender were not significant). Therefore, only the main effect for gender was included in further analyses.

suggests that single LSEs were more motivated than single HSEs to receive negative feedback (i.e., that they did not have high relational value).

LSEs who were in a romantic relationship showed the opposite pattern of effect from their single counterparts. Mated LSEs in the Poor Social Skills condition made more errors than mated HSEs in the same condition, $\beta = -.807$, $t(134) = -3.077$, $p = .003$, and more errors than mated LSEs in the Good Social Skills condition, $\beta = -.623$, $t(134) = -3.088$, $p = .002$. However, LSEs and HSEs did not differ in the Good Social Skills condition, $\beta = -.170$, $t(134) = -.946$, $p = .346$. This suggests that mated LSEs were more motivated than mated HSEs to receive positive feedback (i.e., that they did have high relational value).

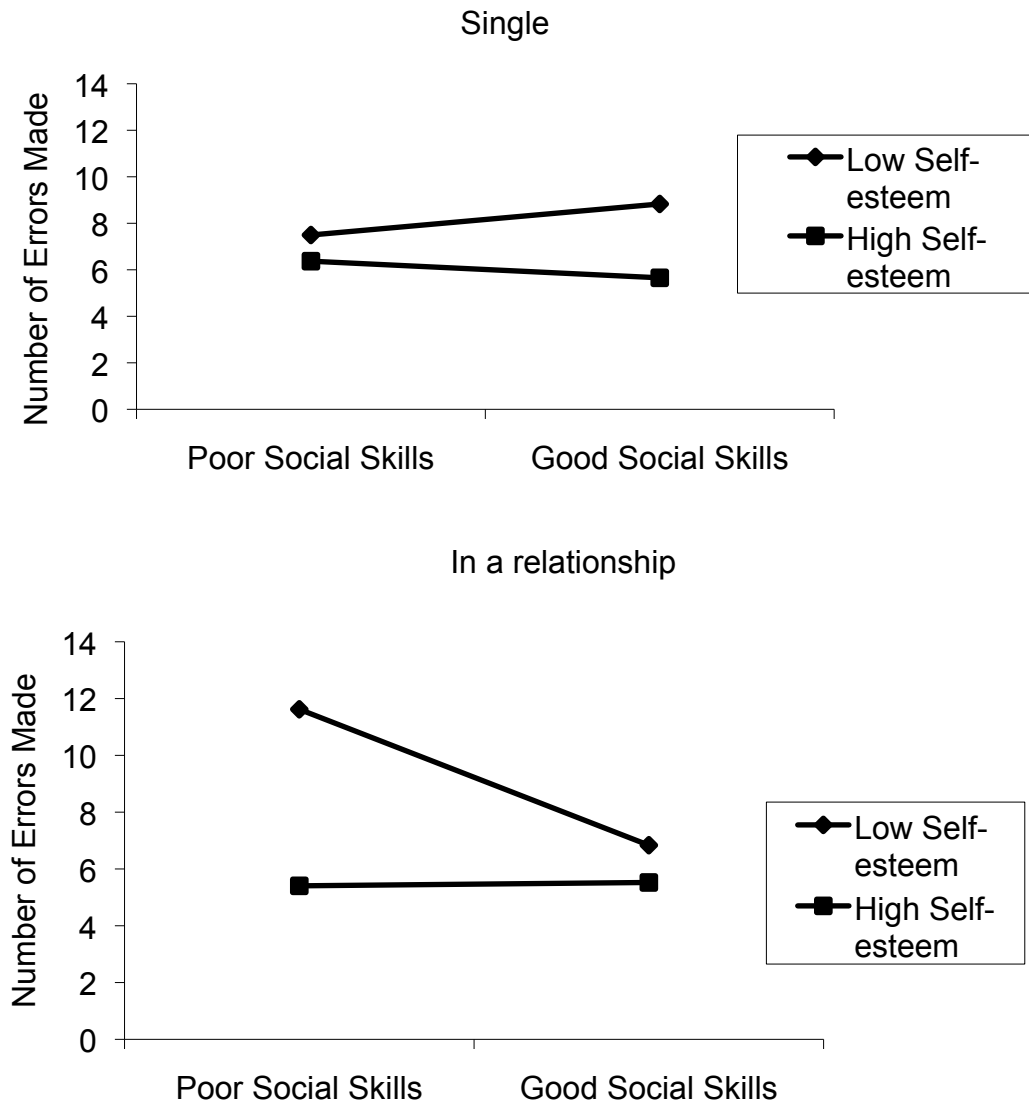


Figure 3. Number of errors made on the game Operation as a function of social skill condition and self-esteem by relationship status. Note that results are graphed for individuals one standard deviation below the mean (i.e., lower self-esteem individuals) and one standard deviation above the mean (i.e., higher self-esteem individuals) on self-esteem.

Discussion

The purpose of the present research was to examine individuals' pursuit of relational value feedback after having received relational value feedback that was either consistent or inconsistent with their global self-esteem. All participants were given high relational value feedback designed to invoke feelings of confusion in LSEs and certainty in HSEs. Feeling confusion was predicted to prompt pursuit of self-esteem-verifying feedback but feeling certainty was not.

Preliminary analyses indicated that the above hypotheses were not supported. Relationship status was then explored as a moderator in the analyses because romantic relationships were made salient throughout the study procedure. Results revealed that feeling certainty did not affect subsequent feedback pursuit. Participants who experienced certainty (in this case, HSEs) performed the same on the tasks whether they were purportedly indicative of high or low relational value. Recall that HSEs believe that they are well liked by most others, thus receiving feedback that tells them this comes as no surprise and validates their existing self-views. Congruent with research on motivation (e.g., DeWall et al., 2008), once HSEs' self-views were validated, any motivation that they may have had to receive feedback about themselves became satiated. These findings remained the same whether HSEs were single or in a relationship.

In contrast, results also revealed that feeling confusion did affect subsequent feedback pursuit. Participants who experienced confusion (in this case, LSEs) performed differently when the tasks were purportedly indicative of high relational value compared to when they were indicative of low relational value. Recall that LSEs are reluctant to believe that they are well liked by others, thus receiving such feedback is surprising to them and contradicts their existing

self-views. Congruent with research on motivation (e.g., DeWall et al., 2008), once LSEs' self-views were contradicted, their motivation to pursue additional feedback about themselves became intensified. The type of additional feedback pursued by LSEs varied depending on whether they were single or in a relationship.

The overall pattern of single LSEs' behaviour in comparison to single HSEs' behavior suggests that single LSEs were motivated to self-verify. Conversely, the overall pattern of mated LSEs' behaviour in comparison to mated HSEs' behavior suggests that mated LSEs were motivated to test the accuracy of the original positive feedback. Both strategies of self-verifying and testing the accuracy of the original feedback would have reduced LSEs' feelings of confusion (Stinson et al., 2010). Differences in relationship status may have influenced the degree to which single and mated LSEs felt certain about their low relational value, which might provide insight into why single and mated LSEs sought different feedback to quell their feelings of confusion. Mated LSEs had a partner who valued them, making it possible that they were more uncertain of perceived poor relational value than single LSEs. Receiving positive feedback from their romantic partner over time could increase self-doubt and would make it difficult for mated LSEs to verify that they have poor relational value because their epistemic system would be frequently triggered by the positive feedback (Stinson et al., 2010). People who are uncertain of their self-views are more likely to change them (Maracek & Mettee, 1972; Swann, 1987). Moreover, mated LSEs who are idealized by their romantic partner are more likely to change their self-views over time (Murray, Holmes, & Griffin, 1996). If mated LSEs were uncertain of their relational value in the present study, then perhaps the positive experimental feedback gave them the extra doubt they needed to feel confident enough to challenge their low perceived relational value by seeking good social skills feedback. Previous research has shown that LSEs

who are in a dating or married relationship underestimate how positively their partners see them, view themselves more negatively than their partners do, and want their partners to see them more positively (Murray et al., 2000). The context of the present study may have provided mated LSEs with a safe opportunity to test the possibility that their relational value actually is higher than they thought, by seeking additional positive feedback, without the pressure of performing in front of their partner. Future research should measure certainty of self-esteem at the time that self-esteem is measured to determine whether mated LSEs are more uncertain of their self-esteem than single LSEs. If mated LSEs are more uncertain to begin with, then it could explain their choice of feedback.

Certainty in self-views may not have been the only reason why single LSEs sought self-verifying feedback and mated LSEs did not; they may have also perceived the situation differently. Whereas mated LSEs may have perceived the situation to be a safe place to test their belief that they have low relational value, single LSEs may have perceived the situation to be risky and may have felt self-conscious due to the presence of the opposite-sex experimenter. A situation is risky when one does not know if the outcome will be acceptance or rejection (Stinson, Cameron, Wood, Gaucher, & Holmes, 2009). Undergraduate opposite-sex experimenters were used in the present study to make salient the relational value feedback in the stimulus and in the motivational tasks. I thought that having an opposite-sex experimenter would make relational value more salient because the experimenter could be viewed as a potential mate for some and a reminder of a current mate for others. If participants who were single viewed the experimenter as a potential mate, then the context may have become “risky” because by performing well on the tasks they would have been demonstrating their relational value (and their potential as a mate) in front of someone who could matter — someone from the opposite-

sex. The ambiguous nature of a risky situation may provoke self-verification because, if you recall, self-verification elicits feelings of stability and control (Swann, Stein-Seroussi et al., 1992; Swann, Wenzlaff et al., 1992). Therefore, single LSEs may have self-verified to establish feelings of control and predictability after receiving self-esteem inconsistent feedback in a risky situation. The hypothesis that risky situations may elicit self-verification has not previously been proposed, but an examination of the literature on self-esteem and risk reveals that this hypothesis may be correct: Studies that have examined LSEs' behaviour in situations of risk provide evidence of self-verification. LSEs tend to inhibit their behaviour and come across as less friendly in risky situations (Cameron et al., 2010). Behaving in this way can result in being liked less (Stinson et al., 2009) and in cold behaviour being reciprocated by interaction partners (DePaulo, 1992), results that would verify LSEs' negative self-views. This could be evidence of self-verification because when people self-verify in interactions with others, they will often interact with others in ways that bring the interaction partner to view them as they see themselves (Swann, 1987), just as LSEs in risky situations seem to behave in ways to confirm their negative self-views.

LSEs behave differently when risk is not present (e.g., Cameron et al., 2010), which would explain mated LSEs' behaviour in the present study. Acceptance or rejection would likely have been less salient for mated LSEs because even though an opposite-sex experimenter was present, they were already committed to someone and had little reason to try to impress the experimenter. It would not matter if these participants performed poorly and were rejected by the experimenter because their romantic partner already accepted them. Situations where risk is irrelevant may provoke testing of self-concept inconsistent feedback because such situations are safe occasions to test the accuracy of feedback without worry. Testing the accuracy of the self-

concept inconsistent feedback elicits feelings of control and predictability in those who are experiencing epistemic confusion (Swann & Hill, 1982). Evidence of LSEs testing the accuracy of self-esteem inconsistent feedback can be found in studies that have examined LSEs' behaviour in situations where risk is removed or irrelevant. LSEs tend to come across as warm and friendly in situations where risk is not present (e.g., Cameron et al., 2010). Behaving in this way can result in being well liked (Stinson et al., 2009) and in warm behaviour being reciprocated by interaction partners (DePaulo, 1992), results that would verify the accuracy of the self-esteem inconsistent feedback.

LSEs are not the only ones affected by risk; research has shown that HSEs are too. HSEs tend to be expressive and come across as more friendly in risky situations than in safe situations (Cameron et al., 2010). Behaving in this way can result in being well liked (Stinson et al., 2009) and in friendly behaviour being reciprocated by interaction partners (DePaulo, 1992), results that would verify HSEs' positive self-views. However, in the present study, single and mated HSEs may not have felt compelled to verify their value because they had just received confirmation from the personality feedback. As a result, HSEs were likely already feeling in control. Taken together, it appears that feedback-seeking behaviour may depend on the presence of social risk and the presence of epistemic confusion.

The present results add to the literature on feedback seeking by suggesting that feedback pursuit is guided by cognition and not affect, a topic that is widely debated (e.g., Swann et al., 1987; Swann, Wenzlaff et al., 1992). Some argue that people prefer to seek feedback that is positive and makes them feel good (e.g., Sedikides, 1993), whereas others argue that people prefer to seek feedback that is consistent with their self-views (e.g., Swann, 1987). In the present study, affect was not measured at the time that participants received the positive personality

feedback because I wanted to capture their immediate motivations to receive additional feedback without giving them an opportunity to think too much about the feedback. If affect had been measured at the time that participants received the feedback, then research indicates that participants would have experienced positive affect because being told that they are well liked by others feels good (Swann et al., 1987). However, research by Swann and colleagues (1987 & 1992) illustrates that even though people with negative self-views react to positive feedback with positive affect, they prefer it less if it is inconsistent with their chronic self-views (e.g., Swann, Wenzlaff et al., 1992). By providing all participants with positive feedback about their personality, the present study controlled for affect. Thus, affect differences are unlikely to explain the observed self-esteem differences as a function of relationship status. Therefore, my results suggest that it was cognitive reactions to feedback, not affective reactions, that guided feedback-seeking behavior.

Limitations

Although the present research does provide some valuable insights, it is not without limitations. It is possible that completing the measure of self-esteem before the dependent measures primed relational insecurity because the measure of self-esteem includes items like “I wish I could have more respect for myself.” Priming relational insecurity could have led participants to behave differently on the dependent measures than they would have behaved if self-esteem been measured at a different time. However, people’s self-esteem is very stable and is often in awareness (Leary & Baumeister, 2000). Therefore measuring self-esteem prior to the present research is unlikely to have substantively affected people’s awareness of their own perceived relational value. However, to rule out the possibility that relational insecurity was primed and thus influenced performance on the dependent variables, future research should

measure self-esteem well in advance of participants arriving or should measure self-esteem after the dependent variables.

The dependent measures have been used in published research (e.g., DeWall et al., 2008; Stinson et al., 2010), however they were not always reliable in the present research. For example, in a previous iteration of this study, the results of the handgrip were statistically significant and the results of the number of errors made playing Operation were not, whereas in the present iteration the reverse pattern was true. Including measures that are not very reliable influences the clarity of the results by hindering the ability to detect effects. If a measure does not produce consistent results when used in situations that are held constant, then it becomes difficult to tell whether the manipulation had an effect. Unreliable measures could explain why my hypotheses were not supported. These indirect measures of motivation were used because I believed they would give a more accurate picture of participants' motivations than would directly asking participants if they wanted to receive additional feedback. The epistemic system is thought to guide behaviour at a non-conscious level (Swann & Schroeder, 1995) and people often cannot consciously explain what occurs non-consciously (Nisbett & Wilson, 1977). Therefore, I opted not to have people consciously choose what kind of feedback that they would prefer and to instead use indirect, objective measures of motivation to pursue relational value feedback. Future research should use different indirect measures that have been pilot tested to ensure reliability.

Assuming the measures are reliable, order effects could explain my null results on the handgrip. When order effects are present, the order in which participants complete the tasks confounds the results so that it becomes difficult to tell if the results are due to the order or due to the manipulation. For example, order effects may be present if participants consistently perform better on the first task but then perform worse on the second task (no matter which task is

completed first), which would indicate that participants might be becoming fatigued. To illustrate, if participants complete the handgrip task first, then they could have less dexterity in their hand after squeezing the handgrip resulting in poorer performance on Operation. This pattern would not be evident if there were no order effects. Counterbalancing the order of the measures randomizes order effects and shows whether they are occurring so that they can be accounted for in the analyses. The measures were not counterbalanced in the present study to ease comparison to the previous iteration (for more details about the previous iteration, see Footnote 1).

In the present research, order effects could have influenced the results because performance on Operation may have provided participants with sufficient evidence of their relational value to quell their epistemic confusion. Research by DeWall and colleagues (2008) has shown that motivation temporarily decreases after the cause of the motivation is satiated. Hence, once epistemic confusion was dispelled, participants may not have been motivated to pursue additional feedback when squeezing the handgrip. Future research using a similar paradigm could ask participants whether they inferred that their performance was good or poor on Operation. In addition, if future research uses multiple measures of motivation to pursue additional feedback, then the order of the measures should be counterbalanced to rule out potential order effects. Doing so would also control for any order effects due to self-regulation depletion.

Although using unusual objective measures is a strength of the present study, the tasks themselves could have potentially influenced the results. Operation is a game that arguably involves a degree of motor skill (i.e., hand-eye coordination), whereas holding a handgrip involves no skill at all, but does involve strength. Skill and/or strength could be extraneous

variables that influenced the results in some way. For example, men squeezed the handgrip for longer than women, a result that could be explained by gender differences in strength. Although skill or strength may explain gender differences, these factors cannot explain my results: Skill and strength are unlikely to have been affected by the manipulations, and are likely unrelated to self-esteem. Still, future research should try replicating the present study but with different objective measures (for example, anagrams) to ensure outcome validity.

Another limitation of the present study is that there was no control group. The current study design allowed for the desired comparisons between LSEs and HSEs, but a control group would have permitted us to compare their responses to a baseline and would have facilitated the interpretation of the observed three-way interaction. Additionally, including a control group would allow us to rule out affect as a potential confound. Comparing participants' responses to a baseline would have allowed us to interpret why LSEs' performance was worse than HSEs. Did LSEs perform worse than HSEs because they generally perform at that level or because LSEs were affected by the self-esteem inconsistent feedback that they had received? If the conditions used in the present study were compared against a control group where participants are not provided with feedback about their relational value, then it would be possible to determine whether LSEs are affected by the feedback. If there are no differences in ratings of affect and no differences in performance between LSEs who receive the inconsistent feedback and LSEs who do not (i.e., LSEs who are in the control group), then it will indicate that LSEs generally perform at that level and are not affected by the feedback. If LSEs who receive the positive feedback report greater positive affect and do worse on the tasks than LSEs who do not receive feedback, then it will indicate that LSEs are affected by the feedback. I did not include a control group where participants were not provided with feedback about their relational value because I wanted

to activate the epistemic signaling system to see how the system affects feedback pursuit. Future research should include a control condition.

Further insight could also be gained if the conditions used in the present study were compared against a control group where participants are not told anything about the tasks. Comparing to this kind of control group would make it possible to determine how the meanings assigned to the tasks influence performance. For example, if there are no differences in performance between the low relational value condition and the control condition for epistemically confused single LSEs, then the results would indicate that their performance is particularly affected by the meaning assigned to the high relational value condition. I did not include a control group where participants were not told anything about the tasks because I wanted to focus on participants' motivation to pursue additional feedback. The information that they were given about the tasks provided them with this motivation. If participants were not told anything about the tasks, then the tasks would not reflect motivation and would simply have been measures of depletion. Despite these limitations, the present research has important implications for future research and potential interventions.

Implications

The present research is important because it not only joins self-verification theory and sociometer theory, but it also joins two previously unwed theories: self-verification theory and risk regulation theory. These three theories are well established on their own within the literature, however this is the first time that they have been combined together to predict and explain behaviour. The present study demonstrated that people who have recently received self-esteem inconsistent feedback are prompted to self-verify when in situations where the outcome of rejection or acceptance is ambiguous, and are prompted to verify the original feedback when in

situations where the outcome is irrelevant. The present study also demonstrated that people who have recently received self-esteem consistent feedback are not prompted to seek additional feedback. Future research should manipulate risk to get a better understanding of how risk, self-esteem, and self-verification interact. In the present study, risk was a naturally occurring consequence of relationship status and was not experimentally manipulated. If risk had been experimentally manipulated, then one could say with greater certainty that it was risk that was influencing feedback pursuit and not something else associated with relationship status. Future research should see if the present findings could be replicated while improving upon this limitation.

One way that this could be done is if only single participants were recruited and risk was manipulated by having an attractive opposite-sex experimenter mention to half of the participants at some point before the dependent measures that he/she is single and mention to the other half that he/she is in a relationship. The situation in which both the experimenter and the participant are single would hypothetically be more risky than the situation in which the experimenter is in a relationship and the participant is single. Alternatively, future research could manipulate risk by using a computer to administer the motivational measures (e.g., using a computerized word puzzle) but leading some participants to believe that an attractive, opposite-sex interaction partner will see their results, leading others to believe that an opposite-sex stranger that they will never meet will see their results, and leading another group to believe that no one will see their results. This study design introduces a control group, which would facilitate interpretation of LSEs' behaviour in the present study.

It is important to understand how LSEs handle challenging information for theoretical and practical reasons. Theoretically, it helps us to be able to better predict how self-esteem

guides behaviour. The findings of the present study demonstrate that self-esteem guides reactions to positive relational value feedback. HSEs did not pursue additional relational value feedback after receiving the positive feedback, which illustrates that HSEs perpetuate their positive self-view by “quitting while they are ahead.” Thus, when Jane, the high self-esteem woman from the scenario depicted in the introduction, receives a compliment about her looks, she does not seek out additional opinions from others. By quitting while she is ahead, Jane continues to experience positive affect from the compliment and she avoids irritating others by asking for additional opinions. LSEs did pursue additional relational value feedback, which illustrates that LSEs perpetuate their negative self-view by not “quitting while they are ahead” and instead question good news when it comes. Thus, when Anne, the low self-esteem woman from the introduction, receives a compliment about her looks, she continues to seek out additional opinions from others. By not quitting while she is ahead, Anne not only risks losing the feelings of positive affect because additional opinions could be negative, she also risks irritating others by asking for additional opinions. A reason why LSEs may question good news is because their epistemic signaling system tells them that the news is inconsistent with their chronic self-views, which is an uncomfortable feeling (Stinson et al., 2010). The present study tells us that one way to get LSEs to question their self-views instead of the good news is by making them feel safe enough to question their self-views without the risk of being rejected. Practically, it is important to understand how LSEs handle challenging information because it helps us in creating potential interventions to change the negative self-views and patterns that LSEs’ hold. The negative spiral that LSEs create in their interactions with others can be detrimental to themselves and their relationships (Murray, Holmes, & Collins, 2006), therefore a better understanding of how this might be broken is essential. The present research takes a step in that direction by demonstrating

that LSEs may be willing to test their belief that they are low in relational value if they are placed in an environment where feelings of epistemic confusion are stimulated, risk is made irrelevant, and the opportunity to seek additional relational value feedback is present. By placing a seed of doubt into LSEs's minds and then giving them an opportunity to act on that doubt and test its veracity in a safe environment, LSEs may find that their relational value is not so low after all. Improving LSEs' perceptions of their relational value could stop and potentially reverse the negative spiral that LSEs create. Future research should explore different ways that this could be done, such as those described in the next section.

Directions for Future Research

In addition to the previously mentioned possibilities for future research, additional research should examine the epistemic signaling system in greater detail because the mechanisms within this important system are, as of yet, relatively unexplored. Future research could establish external validity by manipulating the source that triggers the epistemic signaling system and demonstrating that the present findings can be obtained using other methods (Brewer, 2000). In the present study, the results of a bogus personality test triggered the system in participants. Future research might try using interactions with romantic partners, strangers (confederates and other participants), or experimenters as the source of the feedback that triggers the system. For example, romantic partners could provide participants with compliments verbally or via a love letter to indicate high relational value. Receiving compliments from a romantic partner creates a risky situation for LSEs because they become worried that they cannot live up to the compliments in the future (Murray, Holmes, MacDonald, & Ellsworth, 1998).

Intervention. Research has shown that interventions are possible to reduce the risk for LSEs and enable them to accept compliments (e.g., Marigold et al., 2007). The interventions

involve LSEs' thinking about the compliments abstractly (e.g., by thinking of what the compliment means to them) so that the compliments become more meaningful. Future research could test whether abstract thinking can turn the epistemic signaling system off in LSEs by acting as a buffer so that the system does not trigger that positive relational value feedback is inconsistent with their self-view. An alternative intervention strategy could be to use self-affirmation in the study procedure. Self-affirmation involves focusing on a source of self-integrity (e.g., one's values) and has been shown to cause LSEs to behave more prosocially (Stinson, Logel, Shepard, & Zanna, 2011) and to cause people to be more open to points of view that contradict their own (Sherman & Cohen, 2002, 2006). In light of research on affirmation, I would expect that LSEs would act like HSEs did in the present research if LSEs were given a self-affirmation exercise before receiving the self-concept inconsistent feedback. If single LSEs do become less likely to seek additional feedback after self-affirmation, then it may tell us that affirming the self turns off the part of the epistemic signaling system that indicates that feedback is discrepant with self-views. Without having the signal of discomfort to indicate that feedback is inconsistent, LSEs may be more open to not testing the original positive feedback and a seed may be planted in their minds that they do have higher relational value. This seed may be what is necessary to get LSEs to change their low self-views. Future research should also examine the long-term influence that these interventions have on LSEs' self-views and relationships with others. I expect that the outcomes could last for a long time, as research using self-affirmation has shown that benefits can last even eight weeks later (Stinson et al., 2011). The results of the intervention would tell us that affirming the self influences reactions to inconsistent feedback and influences how people pursue additional feedback. That is, it would tell us more about how the epistemic signaling system functions and how it could be manipulated so that it does not

automatically indicate when feedback is incongruent with self-views. By testing if the epistemic signaling system can be manipulated, one gains a better understanding of the system and is able to design interventions to improve the self-views of LSEs.

Conclusions

The present study sought to determine what kind of feedback people seek when epistemically confused; do they seek subsequent feedback that is consistent or inconsistent with their self-views? Relationship status emerged as an important factor to consider when answering this question. LSEs who were single verified their self-views by seeking self-esteem consistent feedback, possibly because the situation may have been risky for them. Conversely, LSEs who were in a relationship verified the original feedback by seeking self-esteem inconsistent feedback, possibly because the situation was not risky for them. It is important to understand how people respond to different kinds of feedback about their relational value in order to understand how we might change LSEs' self-views for the better. Changing LSEs' perceptions of their relational value has the potential to improve their own well-being as well as improve their relationships with others (Stinson et al., 2008). The present research provides insight into how this might be possible: give LSEs the opportunity to test their relational value in a safe situation.

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Appendix A

Information Letter and Consent Form- Personality Styles Study

Student Investigator: Lisa Reddoch, Department of Psychology, stinsonlabuovic@gmail.com
 Faculty Advisor: Dr. Danu Stinson, Department of Psychology, dstinson@uvic.ca

You are invited to participate in a study entitled “Personality Styles” that is being conducted by Dr. Danu Stinson, a faculty member in the Department of Psychology at the University of Victoria. You may contact her if you have further questions by using the contact information provided above. This research is being funded by the Social Sciences and Humanities Council of Canada.

As a participant in this study, you will be asked to participate in a variety of tasks assessing personality and verbal/nonverbal performance. You will be asked to complete a series of questionnaires about your activity preferences and habits, your thoughts and feelings about yourself, and some background demographic information, and to take a computerized personality test. You will also be asked to perform two nonverbal tasks which involve fine motor control, such as using tweezers to extract small objects.

You may not benefit personally from your participation in this study. However, it is anticipated that participation in this study will give you insight into how experimental studies in psychology are conducted. As a participant in this study, you should be aware of the possible risks of participation. Although anticipated risks are minimal, it is possible that participation may cause some participants to experience temporary feelings of discomfort.

Participation in this study will take approximately 45 minutes of your time. In appreciation for your time you will receive course credit and may choose to receive a chocolate bar. Although you may be known to be a study participant by the researcher, your confidentiality and the confidentiality of the data will be protected: Your name will not be associated with your data in any way, and your data will be stored inside password protected computers in a secure area of the psychology building.

It is anticipated that the results of this study will be shared with others in the following ways: Scholarly journals or books, presentations at scholarly meetings, the internet, and the media. Data from this study will be disposed of by shredding paper records or deleting data files five years after publication.

You may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca). Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

With full knowledge of the abovementioned information, I hereby agree to participate in this study.

Participant Name

Signature of Participant

Date

Witness Name

Signature of Witness

Date

Appendix B

Background Questionnaire

In psychology research it is important to collect some basic demographic information about participants. Results will only be reported in aggregate form. You may decline to answer these questions if you wish.

1) What is your age? _____

2) What is your gender? (circle one) Male Female

3) What is your ethnicity? (circle one)

Aboriginal/First nations

Hispanic

African/Black

Middle Eastern

Asian

Caucasian/White

East Indian

Not listed: _____

4) Were you born in Canada? (circle one) Yes No

5) Are you currently involved in a serious dating relationship (circle one): Yes or No

6) If **YES** how long have you been involved in your current relationship? _____ (months)

7) What is the current status of this relationship? (check all that apply)

Casual dating _____

Exclusive dating _____

Engaged _____

Living together _____

Married _____

Long distance _____

Dating this person and others _____

How do you feel generally?

Think about each statement that follows and rate the degree to which you agree or disagree with it on the following scale.

1	2	3	4	5	6	7	8	9
very strongly disagree		moderately disagree		neutral		moderately agree		very strongly agree

1. _____ I feel that I am a person of worth, at least on an equal basis with others.
2. _____ I feel that I have a number of good qualities.
3. _____ All in all I am inclined to feel that I am a failure.
4. _____ I am able to do things as well as most other people.
5. _____ I feel I do not have much to be proud of.
6. _____ I take a positive attitude toward myself.
7. _____ On the whole I am satisfied with myself.
8. _____ I wish I could have more respect for myself.
9. _____ I certainly feel useless at times.
10. _____ At times, I think I am no good at all.

Health Questionnaire

The following questions ask about your current health. Please only consider the last 2 weeks.

1. How much sleep do you get in an average night? _____hours

Please use the following scale for questions # 2-7.

1	2	3	4	5
rarely	occasionally	sometimes	often	always

2. ____ How often do you eat balanced meals (protein source, vegetables/fruit, grains, calcium source)?

3. ____ How often do you exercise?

4. ____ How often do you floss your teeth?

5. ____ How often do you meditate or take time out to reflect on your life?

6. ____ How often do you encounter stressful situations or events?

Place a check mark next to the activities that you enjoy doing. (Check all that apply):

<input type="checkbox"/> cooking	<input type="checkbox"/> visiting with friends
<input type="checkbox"/> watching tv	<input type="checkbox"/> shopping
<input type="checkbox"/> watching movies	<input type="checkbox"/> playing video games/computer
<input type="checkbox"/> exercising	<input type="checkbox"/> listening to music
<input type="checkbox"/> talking on the telephone	<input type="checkbox"/> going on Facebook
<input type="checkbox"/> going to the bar	<input type="checkbox"/> reading books
<input type="checkbox"/> participating in sports	<input type="checkbox"/> surfing the internet

Appendix C

Experimenter Script Outline

So why don't you just sit down here [in the first chair at table closest to the door]. Thanks for coming. We really appreciate your participation. Before we begin, please turn off your cell phone. In this study, we're interested in examining different aspects of personality and their relation to verbal and nonverbal performance. Today you'll be asked to participate in a series of tasks—some related to personality, and others related to motor skills. All of the information you provide today will be kept confidential, and all materials will be marked with your study ID number, and not your name. First, I would like you to read this information consent letter. If you decide to continue in the study, please sign the consent section [give them the **Information Letter and Consent Form**]. If you have any questions, feel free to ask them.

[When P is done with the consent, stand up and take P to computer] The first thing that I'd like you to do is complete this short survey, which should take about 5 minutes. I'll be just outside the door when you're finished, so you can just open the door to let me know when you're done. Please **do not** close the survey when you are done. [Have participant complete **Questionnaire #1**. Wait outside room].

[When participant opens door, enter again]: [answer any questions participant has before proceeding and then open up DirectRT while talking]. Okay, the next thing I'm going to ask you to do is to complete a personality test called the **Harvard- Ashby Personality Inventory**, or **HAPI**. You may or may not have heard of the test before, but it has really drawn a ton of interest in the psychology community. It was developed by a team of personality psychologists, headed by Dr. Benjamin Ashby at Harvard University, and it determines which of 12 personality types the test-taker has. The test has been shown to predict a number of traits and behaviours with over 90% accuracy, which is incredibly high. Most psychological tests only predict outcomes with 30 - 50% accuracy! What's really cool about this test is that the questions on the test seem like they shouldn't predict anything- they're so random- but they actually predict important outcomes. Because this test is so accurate in predicting certain things, we're interested in looking at what else it might be able to predict. So today, we're going to ask you to take the test, and then we're going to ask you to complete another task, which might seem kind of unrelated. At the end of the study, we'll tell you more specifically what we were looking at.

So now I'd like you to follow the instructions on the computer to complete the HAPI. Once you've answered all of the questions, the computer will determine which personality type you have. Please circle the name of your personality type on this piece of paper [give **Harvard- Ashby Personality Type Sheet**] because you'll need to know what type you are for some of the tasks later on. Do not over-think your responses, just go with your gut reaction. Again, I'll be just outside the door when you are finished, so you can just open the door to let me know when you're done [leave room].

[when participant opens door]: Now that you've taken the HAPI, we're actually able to provide you with some of your results. We've found that people really like to get feedback when they take this test. So, the HAPI assesses six different dimensions of personality. Because of copyright restrictions, we can't provide you with feedback on your results from all six dimensions...we'd have to pay a lot of money for that! But the software package we're using

does give you results on a few of the dimensions for free. So I'm just going to type in the print code and I'll go grab your results from the printer. It prints with a cover sheet, so I won't see your actual results [**leave circled personality type sheet**].

[re-enter room with **Harvard-Ashby Feedback sheet**]: My computer received your anonymous print code and the sheet is printed with a cover page, to preserve the confidentiality of your results. Here are your results for one of the six HAPI dimensions. I'll leave the room and give you some time to read over the results. When you're done, just open the door and I'll come in.

[give participant **Harvard-Ashby Feedback sheet**]:

[When participant opens door. Seat participant in chair by the door and place the Operation game in front of him/her. Make sure all pieces are visible.]:

"Now I would like you to complete a game.

[In experimental condition ONE] Performing well on this task is associated with traits that are desirable in relationships, like empathy and social sensitivity. So people who do well on this task also tend to be quite empathetic and sensitive.

[In experimental condition TWO] Performing well on this task is associated with traits that are undesirable in relationships, like being picky and socially insensitive. So people who do well on this task also tend to be quite picky and insensitive.

In this game, your job will be to extract 13 different objects from holes using tweezers without touching the side of the holes. If you make an error by touching the side of the holes, a buzzer will sound [demonstrate for participant]. You will get three chances to extract each object without making an error. If all three attempts result in errors, I will instruct you to move on to the next object. I will be timing you and keeping track of how many errors you make. Please try to work as quickly and as accurately as possible. Please take out objects in the order listed, put them in the grey container, and do not move onto the next object before removing the previous one. Also, please do not move the board. Ok, you can start now."

[Time the P and stop the time when they have finished removing the final piece. If the P makes some kind of comment while playing like "I suck at this" just say "Please try to work as quickly and as accurately as possible". If participant asks a question about how s/he did after playing Operation, say that you will tell her/him when the experiment is over. **Do not** deviate from this and try to reassure them! If s/he does ask, then write it down on your comments sheet]

[When participant finishes playing Operation- Before they do the handgrip task]: "So now I'll get you to complete another related task."

[In experimental condition ONE] Just like with Operation, performing well on this task is associated with traits that are beneficial to relationships, like being committed. So people who do well on this task also tend to be quite committed to their relationships.

[In experimental condition TWO] Just like with Operation, performing well on this task is associated with traits that are detrimental to relationships, like being stubborn. So people who do well on this task also tend to be quite stubborn.

Please place the marble near the bottom of the handgrip and hold it over the game [demonstrate for P]. Do not hold your arm with your other arm. Please try to hold onto the handgrip for as long as possible and I will time you. Ok, you can start now.

[Time the P and stop time when you hear the marble hit the game. If the P says anything, just repeat that they should "try to hold on for as long as possible"]

[Seat P back in front of the computer, close Direct RT and re-open the survey. Give P **Social Value-2 sheet**] "Now I would like you to complete this final questionnaire and writing task, please let me know when you are finished by opening the door."

[enter room when P opens door]: “Okay, so we’re done with the session. I’ll just ask you a few last questions.” [read questions on **Comments Sheet** to participant and record their answers on Comments Sheet]

Verbal Debriefing Script

We appreciate your participation in our study, and thank you for spending the time helping us with our research.

When you first arrived here today, you were told that this study was designed to investigate the relationship between personality and performance on verbal and nonverbal tasks. Although we were indeed interested in studying some aspects of personality and performance, the study was of a different nature than we originally explained to you.

In this study, we were interested in how people respond to different degrees of social acceptance. Past research has suggested that ambiguous levels of acceptance are distracting or confusing for some people. For other people, ambiguous levels of social acceptance are not upsetting. We wanted to see whether these differing reactions to levels of acceptance would influence people’s performance on tasks that use cognitive resources, particularly if told that the tasks predict social acceptance. Hence, we hypothesized that some people would show improved performance on tasks that require concentration following high acceptance if told that the task is predictive of social acceptance, whereas others who were told that the task is predictive of social rejection would show decreased performance.

During the lab session, you were asked to take a computerized personality test. You were told that this test was called the Harvard-Ashby Personality Inventory and that it was created by a psychologist at Harvard University. In fact, the test you took was not a real personality test at all. It was just a group of questions compiled by the researchers to resemble a real personality test. The company “Psychometric Testing Services” was also a name we made up, and the contact information provided was made up as well. Because the personality test is not real, full results cannot be purchased as you were led to believe.

You were told, based on the supposed personality test, that you had a certain personality type. In reality, all participants were told they were the same “type”, and none of the personality types in the study actually exist. Similarly, the information you were given about the “social value” aspect of your personality type was fabricated by the researchers.

In reality, the answers you gave to the questions on the supposed “personality test” do not tell us anything at all about you, about how others feel about you, or about your personal relationships. Participants were given ambiguous feedback (for example, that their personality type was liked by some others) or positive feedback (for example, that their personality type was liked by most others). All participants were assigned to the nonverbal tasks condition, where you were asked to play Operation as quickly and accurately as possible and to hold a handgrip for as long as possible. We were interested in seeing whether learning that it was associated with either poor social skills or high social skills would influence performance. In order to test this, we told some participants that they were diagnostic of high social skills and some participants were told that they were diagnostic of poor social skills. These statements were completely untrue- Operation and handgrip performance are unrelated to social ability. This factor was of interest because we

were interested in seeing if people, upon receiving positive feedback, would seek to “test” the validity of the feedback through trying harder at the Operation and handgrip tasks when told that they were associated with high social skills.

The reason we needed to use deception in this study was because if we had told you what we were studying, your responses may not have been natural. We could not tell you that the personality test was bogus and that the feedback about your personality was fictional because we expected that people would respond very differently if they knew specifically what we were interested in, and this would invalidate the results of the study. We apologize again for having deceived you in this study, but we hope you understand why it was necessary to use deception in this research.

Do you have any questions about the study?

Before we continue with the debriefing, I would like to ask if you are currently experiencing a negative mood, or are feeling confused?

[If they respond “Yes”]: I’m very sorry to hear that- we attempted to design this experiment in a way which would prevent residual negative mood and confusion. I would like to direct your attention to the UVic counselling service contact information which is on the back of the Post-Study Debriefing and Feedback Letter. If these feelings persist I recommend you contact the counselling services.

[give P **Post-Study Debriefing and Feedback Letter** and point out the counselling information]

[If they respond “No”]: Excellent.

Because some elements of the study are different from what was originally explained, we have another consent form for you to read and sign if you are willing to allow us to use the information that you have provided. This form is a record that the purpose of the study has been explained to you, and that you are willing to allow your information to be included in the study.

[Give participant **Post-Debriefing Consent Form**]

Also, we have some written feedback about the study that you can keep [You can omit this sentence if you’ve already given them the sheet when they said that they were confused. Add instead: Like I said...]. There’s some contact information on the back, for people you can call if you have any questions or concerns about the study, and we have also included the number for Counselling Services, which you can contact if your participation in this research has raised any issues that you wish to discuss.

Finally, we’d really appreciate it if you would help us out by not telling any other students about what you did in this study today. If people come into the study knowing about our specific predictions, as you can imagine, it would influence their results, and the data we collect would not be useable. As a way of saying thank you, and to compensate for the fact that it is not possible to purchase your full test results, we’d also like to give you a chocolate (in addition to your experimental credit). [Bring basket of chocolates to participant].

Thanks so much! [Show participant out]

Appendix D

Bogus Positive Relational Value Feedback

Personality Type Preview IPC # 632-4997

Your Harvard-Ashby Personality Inventory (HAPI) results indicate that your personality type is that of **Maranta™**.

Here is your free personality type preview on the dimension of **Social Value**:

Our research shows that Marantas™ share the following core characteristics:

- ◆ Marantas™ are well-liked by diverse groups of people
- ◆ Other people commonly seek out Marantas™ as friends, teammates, and relationship partners
- ◆ Marantas™ are perceived to be interesting and engaging conversationalists

Research conducted in both naturalistic and experimental settings has shown that Marantas™ are very well-liked by others. Two longitudinal studies examining the personal relationships of more than 1,350 students found that Marantas™ are respected and admired by people in their social networks.

In one laboratory study examining face-to-face social interactions among strangers, people reported finding Marantas™ extremely easy to get along with. Partners reported high levels of liking for Marantas™, and a strong desire to get to know them better. Partners also reported really enjoying their interaction with Marantas™, and found Marantas™ to be interesting and engaging.

Several longitudinal field studies have also shown that Marantas™ are accepted and valued by diverse groups of people. In general, Marantas™ have the qualities that people desire in a relationship partner.

Appendix E

Questionnaire Two with Manipulation Checks

Thoughts and Feelings Questionnaire

The following list consists of a number of words that describe different feelings and emotions. Read each item and then put a numerical rating from the scale provided below in the space next to each word to describe how you feel **right now**.

1	2	3	4	5
Not at all	A little	Moderately	Quite a bit	Very/Extremely

interested _____
 distressed _____
 excited _____
 upset _____
 strong _____
 guilty _____
 scared _____
 hostile _____
 enthusiastic _____
 proud _____
 sad _____
 irritable _____
 alert _____
 ashamed _____
 inspired _____
 nervous _____
 determined _____
 attentive _____
 jittery _____
 active _____
 afraid _____
 worthless _____
 pleased _____
 inadequate _____
 successful _____
 competent _____
 smart _____
 happy _____
 confident _____
 angry _____
 unhappy _____
 humiliated _____
 unattractive _____

The following questions ask about your thoughts and feelings right now.

Please use the following scale to indicate your agreement with the following questions:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1. My beliefs about myself conflict with one another right now.
2. Right now I have one opinion of myself, and tomorrow I might have a different opinion I am wondering about what kind of person I really am.
3. Right now I feel that I am not really the person that I appear to be.
4. Thinking about the kind of person I was in the past, I'm not sure what I was really like.
5. I am not currently experiencing any conflict between the different aspects of my personality.
6. Right now I think I know other people better than I know myself.
7. My beliefs about myself seem to change very frequently.
8. If I were asked to describe my personality right now, my description might end up being different from what it was a few days ago.
9. Even if I wanted to, I don't think I could tell someone what I'm really like right now.
10. Right now I have a clear sense of who I am and what I am.
11. It is hard for me to make up my mind about things right now because I don't know what I really want.

Please think about the information you received about your personality type based on the Harvard-Ashby Personality Inventory. Thinking about the kinds of things you learned about your personality type, please answer the following questions:

1. What was your personality type? _____
2. How accurate was the information you received about your personality type?

1	2	3	4	5	6	7
Not at all Accurate			Moderately Accurate			Extremely Accurate

3. How positive was the information you received about your personality type?

1	2	3	4	5	6	7
Not at all Positive			Moderately Positive			Extremely Positive

4. How negative was the information you received about your personality type?

1	2	3	4	5	6	7
Not at all Negative			Moderately Negative			Extremely Negative

5. To what degree are people with your personality type accepted by others?

1	2	3	4	5	6	7
Not at all Accepted			Moderately Accepted			Extremely Accepted

6. To what degree are people with your personality type rejected by others?

1	2	3	4	5	6	7
Not at all Rejected			Moderately Rejected			Extremely Rejected

7. How much do other people like your personality type?

1	2	3	4	5	6	7
Not at all Liked			Moderately Liked			Extremely Liked

8. How hard did you try to work as quickly and accurately as possible when you played Operation?

1	2	3	4	5	6	7
Not at all			Moderately			Very hard

9. How hard did you try to hold the handgrip as long as possible?

1	2	3	4	5	6	7
Not at all			Moderately			Very hard

10. Based on what you were told, if you performed well on Operation what did it mean?

11. Based on what you were told, if you performed well on the handgrip task what did it mean?

Appendix G

Post-Debriefing Consent Form

Project Title: Personality Styles Study

Faculty Advisor: Dr. Danu Stinson, Department of Psychology, dstinson@uvic.ca

Student Investigator: Lisa Reddoch, Department of Psychology, stinsonlabuvic@gmail.com

During the debriefing session, it was explained to me why it was necessary for the researchers to use deception in this study. I was informed that having full information on the purpose of the study might have influenced my behaviour and/or responses, and invalidated the results of the study. For this reason, the purpose of the study that I was initially provided was a misrepresentation of the study's true purpose.

I have now received a thorough verbal and written explanation as to the study's true purpose. I have also had the opportunity to ask any questions about this study, and to have these questions answered to my satisfaction.

I have been asked to give permission to the researchers to use my data in their study, and I hereby agree to this request. I realize that I may withdraw my consent at any time by notifying the Principal Investigator that I wish to do so.

I am aware that if I have any comments or concerns pertaining to my participation in this study, I may contact the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca).

Participant Name

Signature of Participant

Date

Signature of Witness

Date

Appendix H

Post-Study Debriefing and Feedback Letter

Student Investigator: Lisa Reddoch, Department of Psychology, University of Victoria,
stinsonlabuvic@gmail.com

Faculty Advisor: Dr. Danu Stinson, Department of Psychology, University of Victoria,
dstinson@uvic.ca

We would like to take this opportunity to thank you for your participation in this study. We truly appreciate your taking the time to help us with this research.

When you first arrived here today, you were told that this study was designed to investigate the relationship between personality and performance on nonverbal tasks. Although we were indeed interested in studying some aspects of personality and performance, the study was of a different nature than we originally explained to you.

In this study, we were interested in how people respond to different degrees of social acceptance. Past research has suggested that ambiguous levels of acceptance are distracting or confusing for some people, while for other people high levels of social acceptance are distracting or confusing. We wanted to see whether these differing reactions to different levels of acceptance would influence people's performance on tasks that use cognitive resources. Hence, we hypothesized that some people would show impaired performance on tasks that require concentration following acceptance feedback, whereas others would show improved performance.

During the lab session, you were asked to take a computerized personality test. You were told that this test was called the Harvard-Ashby Personality Inventory and that it was created by a psychologist at Harvard University. In fact, the test you took was not a real personality test at all. It was just a group of questions compiled by the researchers to resemble a real personality test. The company "Psychometric Testing Services" was also a name we made up, and the contact information provided was made up as well. Because the personality test is not real, full results cannot be purchased as you were led to believe.

You were told, based on the supposed personality test, that you had a certain personality type. In reality, all participants were told they were the same "type", and none of the personality types in the study actually exist. Similarly, the information you were given about the "social value" aspect of your personality type was fabricated by the researchers.

In reality, the answers you gave to the questions on the supposed "personality test" do not tell us anything at all about you, about how others feel about you, or about your personal relationships.

You were asked to play operation as quickly and accurately as possible and to hold onto a handgrip for as long as possible. We were interested in seeing whether learning that they were associated with either poor social skills or high social skills would influence performance. In

order to test this, we told some participants that it was diagnostic of high social skill while we told other participants that it was diagnostic of poor social skill. These statements were completely untrue- operation and handgrip performance are unrelated to social ability. This factor was of interest because we were interested in seeing if people, upon receiving ambiguous feedback, would seek to “test” the validity of the feedback through trying harder at the Operation and handgrip tasks when told that they were associated with high social skills.

The reason we needed to use deception in this study was because if we had told you what we were studying, your responses may not have been natural. We could not tell you that the personality test was bogus and that the feedback about your personality was fictional because we expected that people would respond very differently if they knew specifically what we were interested in, and this would invalidate the results of the study. We apologize again for having deceived you in this study, but we hope you understand why it was necessary to use deception in this research.

Because some elements of the study are different than were originally explained to you, we have another consent form for you to sign if you are still willing to allow us to use your data, now that you have been informed of the true details of the study.

We would like to remind you that all information you provided is considered confidential, and your name will not be included or in any other way associated, with the data collected in the study. Furthermore, because the interest of this study is in the average responses of the entire group of participants, you will not be identified individually in any way in any written reports of this research. Data collected during this study will be retained indefinitely, on a secure server in the UVic psychology department.

If you have any questions or concerns about this study, or if you would like a copy of the results, you may contact Lisa Reddoch or Dr. Danu Stinson. This project has been reviewed by, and received ethics clearance through, the Office of Research Ethics. In the event you have any comments or concerns resulting from your participation in this study, please contact the **Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca)**.

If you experience any residual feelings of negative mood or confusion, please contact the Uvic Counselling office (phone #: [250-721-8341](tel:250-721-8341), email: counsell@uvic.ca) or visit them in person at the University Center, room **B202 (located on Ring Road at the University of Victoria)**.

Thank you once again for your participation. We hope this has been an interesting experience for you. If you would like to learn more about social acceptance and performance, please see:

Baumeister, R.F., Twenge, J.M., & Nuss, C.K. (2002). Effects of social exclusion on cognitive processes: Anticipated aloneness reduces intelligent thought. *Journal of Personality and Social Psychology*, 83, 817-827.

DeWall, C., Baumeister, R. F., & Vohs, K. D. (2008). Satiated with belongingness? Effects of acceptance, rejection, and task framing on self-regulatory performance. *Journal of Personality and Social Psychology*, 95, 1367-1382.

Appendix I

Table 2

Hierarchical Multiple Regression Analyses Predicting Performance on Operation and Handgrip Tasks from Self-Esteem, Condition, Gender, and Relationship Status

Predictor	Handgrip Time				Operation Time				Operation Errors				
	SE	β	t	p	SE	β	t	p	SE	β	t	p	
Step 1													
Self-esteem	3.215	-.019	-.253	.801	2.228	-.063	-.784	.435	.275	-.302	-3.760	.000	
Cond	7.285	.033	.442	.659	5.049	.094	1.150	.252	.623	-.094	-1.159	.248	
Gender	7.231	.502	6.776	.000	5.011	.293	3.613	.000	.619	.166	2.056	.042	
Rel	7.479	.000	-.008	.994	5.183	-.095	-1.164	.246	.640	.012	.148	.882	
Step 2													
Self-esteem x Cond	6.713	-.068	-.587	.558	4.582	-.113	-.903	.368	.565	-.042	-.342	.733	
Self-esteem x Rel	7.527	.048	.520	.604	5.138	-.095	-.954	.342	.633	-.035	-.352	.726	
Rel x Cond	15.267	-.057	-.422	.674	10.421	-.123	-.847	.399	1.285	-.275	-1.908	.059	
Self-esteem x Gender	6.645	.022	.203	.840	4.536	-.253	-2.119	.036	.559	-.094	-.794	.429	
Gender x Cond	14.975	-.220	-1.606	.111	10.221	.058	.393	.695	1.260	.230	1.575	.118	
Gender x Rel	15.477	.076	.615	.540	10.564	-.085	-.635	.527	1.303	-.135	-1.015	.312	
Step 3													
Self-esteem x Cond x Rel	16.341	.036	.220	.827	11.267	-.044	-.248	.805	1.357	.333	1.923	.057	
Self-esteem x Gender x Cond	13.771	.163	.906	.366	9.495	-.152	-.776	.439	1.144	-.194	-1.023	.308	
Cond x Rel x Gender	32.291	.331	1.504	.135	22.264	.040	.167	.868	2.682	-.141	-.608	.544	
Self-esteem x Rel x Gender	15.410	-.040	-.322	.748	10.625	.076	.565	.573	1.280	.153	1.179	.240	
Step 4													
Self-esteem x Cond x Rel x Gender	33.020	-.214	-.969	.334	22.578	.419	1.759	.081	2.724	-.383	-1.661	.099	

Note. SE = Standard Error, Cond = Condition, Rel = Relationship Status