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Personal Intelligence and Learning about Personality in Everyday Life

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PERSONAL INTELLIGENCE AND LEARNING ABOUT PERSONALITY IN EVERYDAY LIFE

BY

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DEDICATION

This dissertation is dedicated to Almighty God, and to the best gift He ever gave me—my husband Rob.

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ABSTRACT

PERSONAL INTELLIGENCE AND LEARNING ABOUT PERSONALITY IN EVERYDAY LIFE

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As we encounter other people, we form impressions of and judgments about them. Based on these evaluations, we choose whether we want to interact any further, and if we do, what type of relationship we want to have. Although such choices can have far-reaching consequences, we typically base them on tacit knowledge. Our abilities to reason about our own and others' personalities—abilities theorized to be part of a personal intelligence (Mayer, 2008)—determine in part the relationship outcomes we experience.

The existence of such an intelligence implies that people have a "database" they consult when making personality-relevant decisions. This raises the question: Can people readily recall events in which they learned about someone else's personality? In three studies, I show that most college students described an episode that taught them about positive and negative personality characteristics. The perceived costs and benefits associated with the target predicted whether the relationship strengthened or weakened after learning took place (Studies 2 and 3). Moreover, independent trained judges detected differences in sophistication significantly related to ability-based personal intelligence (Study 3). These findings suggest that people, with varying nuance, note personality information that they perceive as making another person a suitable or useful social companion. People also infer life lessons from their everyday "personality education."

Introduction

Personal intelligence is defined as the capacity to reason about personalities and to use personality-based information to influence one's plans and actions (Mayer, 2008; 2014). The argument for such an intelligence draws in part on psychoevolutionary theory, theories of intelligence, and from studies of accuracy in person-perception (e.g., Bernstein & Davis, 1982; Funder, 1995; Patterson & Stockbridge, 1998). According to the personal intelligence model, the ability involves four key areas of problem-solving:

> (a) to recognize personality-relevant information from introspection and from observing oneself and others, (b) to form that information into accurate models of personality, (c) to guide one's choices by using personality information where relevant, and (d) to systematize one's goals, plans, and life stories for good outcomes (Mayer, 2008, p. 215).

Therefore, personal intelligence would seem to require that individuals construct an informal personality "database" from learning about their own and others' personalities that they then consult when making decisions in personality-relevant domains.

If people do indeed build a database of personality learning episodes, then they should be able to retrieve some of these episodes from memory. Asking people to describe a time they learned about the personality of someone they know well--without other constraints-- allows us to see not only what categories people identify on their own as personality learning but also to see how such learning authentically unfolds in the events of daily life. This naturalistic procedure is uniquely positioned to capture the variety of learning experiences people encode, the uses they find for this learning, and the underlying dimensions such learning may possess. Numerous

studies have examined how perceptions of people are constructed (e.g., Asch, 1946; Dornbusch, Hastorf, Richardson, Muzzy, & Vreeland, 1965), but not how people learn about others' personalities in the real world.

In this paper, I will seek evidence for personal intelligence by investigating how naturalistic learning about personality functions in everyday life. To do so, I will develop a survey to record reports of learning about other people and the use of this knowledge. In Study 1, I will examine the open-ended answers to my survey. In Study 2, I will revise the survey so that it captures similar information in a fixed response format. I will then use the newly designed survey to investigate what people report learning about others and their use of that information. I will also explore some personality characteristics that may correlate with learning about other people. In Study 3, I will use the survey I created to investigate the relation between such learning and personal intelligence.

The Adaptive Importance of Learning about Personality and Personal Intelligence

Human neuropsychological development, like that of primates, is attributable in part to the demands of a social world (Dunbar & Shultz, 2010). Evolutionary reasons for judgments of personality include finding a mate (Haselton & Buss, 2000), detecting cheaters (Cosmides, 1989), and determining who is helpful and who is harmful (Haselton & Nettle, 2006). The crucial nature of these tasks to survival indicates that evolution should select for both the ability to make personality judgments and to predict behavior from them, abilities that may contribute to a personal intelligence. Such natural selection would favor effective decision rules to guide behavior, memorial databases that store relevant information, and search engines that are able to locate and route this information competently (Klein et al., 2002). Like other forms of intelligence, personal intelligence varies by individual, and differences should be found in the

sophistication people employ in learning about personality. Some personality characteristics are adaptive by helping to attract others (Anderson, John, Keltner, & Kring, 2001; Lewandowski, Aron, & Gee, 2007; Nettle, 2006); this implies that other people may notice differences related to personal intelligence, even if they do not categorize it by name.

What Might We Expect to Find in Recollections of Learning about Personality?

When we make a judgment of someone we know well, we tend to retrieve a semantic "trait summary," a sense of who that person is without the specific episodes that helped form our opinion, and episodic memories that place boundaries on the scope of that summary (Klein et al., 2002). Episodic memories are more likely to be retained when they "become attached to durable pre-existing long-term knowledge or if they lead to the formation of such knowledge," (Conway, 2003, p. 219). Boundary-placing memories, then, are likely to be of personality learning episodes that formed, or contributed to forming, a decision rule or opinion expected to be useful in the future. For example, in considering whether our friend will be supportive of our desire to be a single parent, we may retrieve the trait summary that she is "open-minded" while simultaneously remembering an episode where she became quite upset about non-traditional families. Therefore, though we consider her generally non-judgmental, we may decide not to approach her about this specific topic.

Another way to look at scope-limiting episodes that are retained is to recognize that they memorialize times our expectancies were violated. We expect our helpful friends to be helpful; the conditions under which they are not are worthy of noting if we wish to improve our ability to predict behavior. Research on cognitive schema such as scripts and category learning has shown that expectancy-violating information is indeed stored (Schank, 1980; Nosofsky, Palmeri, & McKinley, 1994; Palmeri & Nosofsky, 1995). When we ask for personality learning episodes,

we should expect that people are likely to recall a learning event where another person's behavior was not what they expected.

The Significance of Costs and Benefits

One reason we engage in learning about people is that our relationships to others have costs and benefits important to social decision-making. Research into animal "decision-making," defined as weighing reward expectations versus effort cost in choosing whether to pursue a course of action, attributes the process in part to the ventral striatum and dorsal anterior cingulate cortex (Koechlin, 2014). Research has shown that similar regions in the human brain (as well as regions including the dopaminergic midbrain) are active before taking a course of action, suggesting that we too are sensitive to the level and likelihood of reward as well as the effort required to obtain it (Croxson, Walton, O'Reilly, Behrens, & Rushworth, 2009). These two dimensions, reward and effort, could be termed approach and avoidance (Cacioppo & Berntson, 1999), benefits and costs (Croxson et al, 2009), pleasure and pain (Saucier, 2010), and - of course - good and bad (Saucier & Goldberg 2001; Wood, Harms & Vazire, 2010). Whatever the dimensions are called, significant evidence suggests that they are separate – one can be both attracted to and repulsed by someone or something at the same time (Arnold, 1960; Cacioppo et.al, 1999; Croxson et.al, 2009). Personal intelligence involves decision-making in personality relevant domains; therefore, we should expect to find two factors underlying what people report learning about another person. These factors should correspond to positive and negative learning, and they should be related to the decision to approach or avoid another person.

Individual Differences in Recollections of Personality Learning Episodes

Much of what people attend to is dictated by an individual's past history, disposition, and predilection (e.g., Downey, Mougios, Ayduk, London, & Shoda, 2004; Plaks, Grant, & Dweck,

2005; Plaks, Stroessner, Dweck, & Sherman, 2001; Robins, Caspi, & Moffitt, 2002; Schneider, 1973). Once they note information, people process it according to their goals, schemas, and expectations, all of which vary by individual (Taylor, 1998). Therefore, different people witnessing the same behavior may perceive the behavior, and thus the individual, differently. In the realm of personality characteristics, these divisions in perspective may be related to the big five personality traits. For example, it seems likely that people who are high in neuroticism might notice more negative qualities in others than do those who are not neurotic (Forgas & Bower, 1987). Differences in learning about personality may also relate to the motivation to understand others. Some people exhibit minimal interest in learning about others, while others approximate amateur psychologists. Those people interested in learning about others are termed "psychologically minded" (Conte, Plutchik, Jung, Picard, Karasu, & Lotterman, 1990).

Personal intelligence theory suggests that how well we learn about personality is not solely attributable to differing motivation but instead also arise from differing ability. Those higher in personal intelligence should note personality clues that are more precise and form more accurate models of personality than their less-skilled counterparts do. In other words, personal intelligence conveys an advantage in both the ability to differentiate between constructs related to personality and the ability to integrate them successfully. The degree of differentiation (e.g., Bieri, 1955) and integration (e.g., Schroder, Driver, & Streufert, 1967) afforded by an individual's system of constructs is said to reflect its cognitive complexity (MacNeil, 1974). The finer distinctions a person is able to make, the more accurate their perceptions tend to be (Bieri). Cognitive complexity, also called integrative complexity (Suedfeld & Rank, 1976), differs from personal intelligence in a critical way: both the content of personality information and the models that are formed from it are important in personal intelligence, but cognitive complexity is

theorized as independent of content (Schroder et al; Suedfeld & Tetlock, 2014). This means that any reasoning could be cognitively complex – even if the information in that reasoning is inaccurate. Neither cognitively complex thinking nor simplistic thinking are advantageous in all situations; it is the flexibility to use either where appropriate that is the hallmark of intelligence (Colzato, van Wouwe, Lavender, & Hommel, 2006).

Rationale for a Naturalistic Investigation of Learning about Personality

Everyday learning about personality is related to person perception, a broad area of research with many different foci. Many studies have examined how perceptions of people are constructed (e.g., Klein, Cosmides, Tooby, & Chance, 2002) and how well or how accurately they are constructed (e.g., Bernstein & Davis, 1982; Fiske, 2005; Funder, 1995). In this research, participants are generally asked to indicate perceptions using an experimenter-generated list of categories, and the target being perceived is often chosen by the experimenter as well (e.g., Funder; Kihlstrom & Cantor, 2000; Saucier, 2010; Schneider, 1973). Far fewer studies, to the best of my knowledge, have directly examined everyday learning about people as individuals themselves recollect it. In fact, I could not find a study that simply asked people to describe an episode when they learned about someone's personality and to state what they learned. That is the starting place of the empirical studies in this project.

Overview of the Three Studies

I conducted three studies to explore the relation between everyday learning about personality and personal intelligence. In Study 1, I investigated whether people could retrieve an episode of learning about the personality of another person, and I piloted a system to rate the apparent sophistication of the learning that was recalled. My intention was to direct participants' responses as little as possible, so that the choices of learning moment and the terms used to

describe it were free to vary. From the open-ended depictions gathered in my first study, I then created a response instrument for identifying interpersonal learning for use in Study 2 and refined the sophistication rating system. In Study 3, I used that rating system and the response instrument to explore correlates with ability-based personal intelligence.

Study 1: Learning Moments

In Study 1, I explored whether people could indeed recall memories of learning about a person and, if so, what those memories were like. I further intended to classify such memories according to their content.

My hypotheses were that:

1. Participants will identify and retrieve a "learning moment" when cued to retrieve the information. This was evaluated according to the percentage of respondents who were able to comply with the request to do so.

2. Participants will tend to recall a learning episode that is adaptive; that is, people will recall episodes that contributed to their decisions about engaging in a relationship with the target. This was evaluated by the percentage of respondents who reported a change in relationship status associated with the learning episode.

3. Participants will tend to recall a learning episode that they have tied to long-term knowledge. This was evaluated by the percentage of respondents who indicated that they had used what they learned beyond their relationship with the target person.

4. Participants will vary in the sophistication they employ in learning about personality. Calculating interrater agreement on evaluations of the sophistication of personality learning episodes tested this hypothesis.

In addition, the study allowed an exploration of what participants described as learning about the personality of someone else.

Method

Participants

Two hundred twenty students enrolled in lower-level undergraduate psychology classes at the University of New Hampshire participated in the study in exchange for course credit (54 male, 3 not reporting gender; $M_{age} = 18.78$ years, *SD* = 1.07).

Measures

Demographics. The survey began by asking participants about their age, gender, and (intended) major,

Open-ended personality learning episodes survey. This three-part survey inquired as to the participants' learning about another person from the start of the episode to its finish. Because I was interested in the learning participants would recall on their own, no prompts or examples were given other than the questions listed for each section of the survey.

***Part 1: Event recall*.** Participants were asked to "think back in your life to a time, place or event when you learned something about someone else's personality, and record it in a sentence or two." Once (and if) a memory was identified, participants described the episode with specific details such as their relationship to the target person, the length of time they had been acquainted when the learning occurred, and where and how it had occurred.

***Part 2: What was learned*?** Participants then were asked what specifically they had learned about the target person from the event. To allow them maximum freedom as to the choice of what to describe, no other prompt was provided.

Part 3: Learning outcomes. In order to determine whether the learning had any personal utility that participants recognized, participants were asked, "Have you been able to use this information about this person since you learned it? If so, how have you used it?"

Other questions. A subsidiary question concerned whether or not respondents had applied what they learned outside their relationship with the target person, and if so, how they used it. This allowed the participants to state any personal importance of the learning to them, and could suggest ties from learning about personality to the other knowledge structures people construct (e.g. their beliefs about human nature, their beliefs about life in general).

Other measures. I originally conceived Study 1 as broader than reported here. The core portions of the study reported here, however, were sufficiently valuable to prompt me to disregard other measures in the interest of maintaining my research focus. I had administered a further questionnaire asking about learning about the self (that was never analyzed), and several personality scales, including an early version of a self-reported personal intelligence measure collected on behalf of another research group. However, these measures were unrelated to how I ultimately used the survey and so they are not further analyzed here (Mayer, Caruso, & Salovey, 2000). The personality scales were included at the end of the survey to avoid influencing this research.

Procedure

Students first signed up for the study online using SONA systems® software; they then received an email that provided a link and a valid entry code to connect to a website and take the survey and scales online. The study utilized a secure software survey program called Qualtrics®, which has features including error checking and standard web survey security features. Participants indicated consent by clicking on a consent statement that included permission to

reproduce de-identified events. The participant then provided basic demographic information and took the Personality Learning Episodes Survey as well as those measures not analyzed here. Once the surveys were completed, the Qualtrics® software generated an email to the researcher who then issued credit for participation and sent a debriefing form to the participants.

Development of an Initial Coding System of the Learning Episode

Participants had related a time, place, or event in which they learned something about the personality of someone they knew well, and they described if and how they used their knowledge. To develop the coding system, I randomly selected 30 protocols from the data set (e.g., Woike, 2007) and constructed a three-part categorization system mirroring the three key parts of the survey: *Event Recall*, *What was Learned*, and *Learning Outcomes*. The general characteristics of the learning episodes reported in Event Recall were coded to obtain a sense of when, and what, people learned about one another. For example, here is the episode one participant recounted:

> I was going out with a friend and her other friends, and I was put into an uncomfortable situation. Jess told me that we would have a safe ride to the party and back. That was a lie. The driver was not sober nor reliable. All Jess was concerned about was getting to the party and drinking. I thought she would have made smarter decisions…I learned that she…doesn't make wise and safe decisions. She's not reliable or someone I want to hang out with…People are selfish and only worry about themselves. I now know that I need to look out for myself."

Coding concerned a number of attributes. In this example, the relationship of the learner to the target person was coded as *friend* (other categories included *parent, sibling, romantic partner*, etc.; See Table 1, left column for the complete list). The way that the learning took place

was coded as through *direct observation*. Other categories were *conversations with others* and *listening to the person* (see Table 1, left column, middle for more options), and the learning was coded as not reporting corroboration. Possible other options for coding corroboration were: *others had the same perception* and *repetitive behavior by target* (Table 1, left, lower portion).

The coding for *What was Learned* was divided into 26 categories that assigned the content of the learning to non-exclusive categories such as *is kind* and *can be counted on to keep a secret*. In the above example, the participant's learning about Jess was categorized in two ways: as learning that her friend could be *deceptive in a malicious, manipulative, or hurtful way* and learning she *does not do what she says she will do*. See Table 2, left, for the complete list.

I divided *Learning Outcomes* into eight categories denoting the consequences of the learning (Table 3, left); in the example with Jess, the consequence was coded as *ceased relationship*. Other episodes were coded as *increased contact or feeling of closeness* with the target person, the learner *changed his or her behavior* when dealing with the target person, or *no result indicated*. I also coded whether or not any generalized use of the learning was indicated; the learner in our example generalized her knowledge by saying that she had now learned she could not rely on others and had to take care of herself.

I then went on to classify the remaining 190 responses. To do this, I, along with four research assistants, applied the multi-part coding system holistically to each protocol (I coded all protocols in the dataset while each assistant coded a subset; see Agreement among Coders). This was important to be sure that the story each participant told was captured as accurately and thoroughly as possible, without losing the continuity of what was being expressed. During this process, additional categories for responses in the *What was Learned* section were created as data required.

Coding for Sophistication

The sophistication-rating system evaluated responses in six categories based on information that participants took into account and the differences in the types of conclusions that they drew from their experiences. Three categories were based on studies of cognitive complexity (Tetlock, Peterson, & Berry, 1993): perspective-taking, empathy, and good/bad thinking. Two additional categories were based on personal intelligence theory: attribution of the episode (cause of the episode assigned exclusively to the person or situation involved versus a distributed attribution) and consideration of developmental issues. These five categories were rated on a 4-point scale or coded "0" if the category did not apply to the story; a sixth overall subjective impression was also rated on a 5-point scale from 1 = "simplistic" to 5 = "very sophisticated." Composite ratings across the six sophistication categories were summed to obtain an overall sophistication score that could range from 1 to 25. I used the same procedure for my ratings, and the average of the two ratings became the final sophistication score.

Results

Preliminary Analyses

Examining response quality. A total of 248 students opened the survey online. Data from 28 students were excluded from analysis because they: (a) only opened but did not respond to the survey (n = 14); (b) stopped responding after recalling a memory but before answering any further questions (n = 11); (c) recalled a memory related to the participant's own personality and then stopped responding (n = 1); or (d) failed to recall an episode that raters could understand *(n= 2)*. After data screening, the sample used for analysis consisted of 220 students described in the methods section.

Quality of the learning-episode coding system: Agreement among coders.

Rating process and reliability data. Four undergraduate research assistants enrolled in a one-credit independent study that also involved lab meetings and other forms of learning acted as independent coders along with me. I read and coded all protocols. During training, the four raters spent between 50 and 75 minutes to code a protocol; thereafter, they reported completing a protocol in between 20 and 40 minutes. Because of the time demands, I limited my requirement of each rater to 90-95 protocols in a semester depending on rater speed. I conducted multiple cross-checks across raters to monitor reliability. The key evaluation employed a randomly selected group of 50 protocols that each of the four raters coded so that their answers could be compared. Each rater also completed a unique set of 40-45 further protocols beyond the common 50, so that all 220 protocols were rated by at least two people.

Agreement among research-assistant raters for the 50-protocol common set. The commonly used statistic for measuring agreement by two raters for categorical data is the kappa coefficient, which corrects the proportion of observed agreement for that which would be expected by chance (Hallgren, 2012). I calculated a kappa coefficient of agreement across raters for the 50 items in the survey as a whole that were coded dichotomously. A kappa coefficient of agreement was calculated by item for each pair of raters, 50 items x 6 combinations of raters, for 300 kappas in all. The median kappa was $\kappa = .67$ among the raters and ranged from a low of .17 to a high of .82. Forty-six of the 50 original content items had a median kappa above .4, considered to indicate moderate agreement (Landis & Koch, 1977). The "majority rule" of raters for these 46 items were used to create composite ratings (cf. Mayer, Wilson, & Hazelwood, 2010); where there were ties, a fifth independent undergraduate rater was employed specifically as a tie-breaker.

Agreement between composite ratings and first-author ratings. In a further test, kappa coefficients of agreement between the composite ratings and mine were again calculated for each item. Of the 46 items that previously had adequate interrater agreement, two that now had agreement below $\kappa = .5$ were not further analyzed. The median Kappa between the composite ratings and my own ratings across the remaining 44 dichotomous items was $\kappa = .82$, $p < .001$, considered to indicate very good agreement on which conclusions may be based (Krippendorff, 1980). Kappa coefficients for the retained items ranged from .59, indicating moderate agreement (Landis & Koch), to 1, indicating perfect agreement. As an additional reliability check, I also calculated a series of one-way random effects single measure intraclass correlations (ICC), appropriate for categorical data created by different sets of raters, to determine the proportion of variance attributable to actual variations in the participants' responses (Gisev, Bell, & Chen, 2013). Over the 44 items that were coded, intraclass correlations ranged from .697, indicating good agreement, to 1 with a median ICC of .877, indicating excellent agreement (Cicchetti, 1994).

Were Participants Able to Identify and Retrieve a "Learning Moment" —and What Were the Learning Moments Like?

Of the 248 original participants, 90 percent ($n = 220$) retrieved a memory of learning about others and responded to the questions I asked. Of the other 28 whose data were not analyzed, 11 did provide a memory of learning about another person's personality, but did not respond further to the survey. No conclusion can be drawn about the remaining 17: It is common for some potential participants to merely open the survey and then opt out, but it is at least possible that some decided to opt out because they were unable to retrieve a memory. Overall,

however, this result supported Hypothesis 1: minimally, 93% of all logins (231 of 248 people), did identify and retrieve an episodic memory of learning about personality when cued to do so.

What Did Participants Learn?

Of course, the key purpose of the study, assuming people could retrieve such personal experiences, was to explore what these recalled personality-learning episodes were like. Table 1 (Study 1 column, top) shows people most commonly learned about a friend (56%), followed by a romantic partner (15%). Other categories were not mutually exclusive, and so percentages sum to over 100. Most learning took place when directly observing a person (77%), followed by listening to what a person said (55%). The majority of participants also reported confirming their learning (Table 1, Study 1, bottom section) through repeated observation (63%).

The first column of Table 2 shows the various items participants learned during the episode they recalled, and the percentage of participants judged to endorse each item is shown in the second column. Learning about personality seemingly concerned learning of a person's desirable and undesirable characteristics, such as that he or she coped well with personal challenges (14%), was kind (13%), had to be dealt with in a special way (23%), and/or did not display genuine feelings (16%). The relation of these qualities to suitability as a social companion (e.g., Anderson et.al, 2001; Lewandowski et.al, 2007; Nettle, 2006) supports my second hypothesis that learning about personality is adaptive.

What Was the Outcome of the Learning?

Table 3 records the participants' learning outcomes (Study 1 column). Providing additional support for my hypothesis concerning the adaptive nature of this learning, 190 of the 220 participants reported that they made decisions about continuing the relationship based on

what they had learned. Some of these decisions were to change their behavior toward the target (39%), to revise negatively their opinion of the target (35%), or to feel closer to the target (31%).

Did Participants Tie Their Personality Learning into Other Knowledge?

In response to the question, "Has knowing this information changed how you view people other than this individual in any way?" 67% of participants answered affirmatively, $t(219) = 21.217$, $p < .001$, showing that participants believe they have tied their learning to longer-term attitudes. For example, one participant wrote, "I learned that not everyone will like you and you can't make everyone like you so you should just accept it." Table 4 shows how participants generalized their learning about personality. For example, some participants reported a heightened awareness of personality qualities (29%), while others volunteered that "what goes around comes around" (11%).

Could Variations in Sophistication of Learning about Personality be Detected Reliably?

I next tested the hypothesis that people vary in the sophistication they employ in learning about personality. Composite ratings across the six sophistication categories were summed to obtain an overall sophistication score. This score was compared to the overall sophistication score created from summing the author's ratings. Interrater agreement in a design that features scores averaged from several coders' ratings and interval-level data is appropriately assessed by a two-way mixed-effect, absolute agreement, average-measures intraclass correlation (Hallgren, 2012). This statistic for the two scores was in the excellent range (Ciccetti, 1994), ICC = .978, indicating that the raters agreed that there were apparent, reliable differences in sophistication. Average ratings for each category were summed to create the final sophistication score, which could range from 1 to 25; scores in this study ranged from 1 to 23 ($M = 9.30$, $SD = 4.99$). Reliability for this final scale was good, $\alpha = .80$.

Table 5 demonstrates that protocols rated as high in sophistication were noticeably different from those that were rated low. For example, the learning episode of Participant 38 (top section) was given high scores in all categories of the sophistication rating scale. The learner tells the story somewhat dispassionately, not insisting on his own perspective. He expresses great empathy for his friend, and he presents a nuanced picture of his friend's personality – a picture not based on the dichotomy of good and bad. In addition, he attributes his learning to both the target person and the situation, and he considers the developmental influence of his friend's diagnosis of Asperger's syndrome.

Conversely, the account of personality learning given by Participant 82 (Table 5, bottom section) received an overall score of 3. Raters gave this account low scores in all categories of the sophistication rating scale except for Empathy. The learner insists on only one perspective and recounts a dichotomous good/bad story. Everything in the story is attributed to the personalities of the learner and the target, with little consideration of the contribution the situation may have made. Developmental influences on the sister's behavior are mentioned briefly (her parents' disapproved of her move) with little interpretation of their impact. Lastly, the statement that [the sister] said the learner was "the strongest person she knows" seems to have little to do with the episode itself.

These examples indicate some of the differences apparent between the high and low responders. Most evidently, the more sophisticated respondents seemed to "fine tune" their perception of others and how they acted according to their evaluations.

Discussion

Of the 240 people who clicked on the link to my internet study, 231 were able to recall an event in which they learned about the personality of someone else (of whom 220 then completed

most or all of the survey). This learning typically involved discovering that a person was kind, helpful, or even needed to be dealt with strategically. Such learning appeared adaptive in that participants focused on whether the target individual seemed a more or less desirable companion after the learning than before. Participants also indicated that they related the learning episode to their broader personality knowledge, supporting the idea of a personality database. Lastly, participants varied in the sophistication they employed in learning about others, and these differences were reliably identifiable.

Two limitations of Study 1 were addressed in Study 2. First, most participants presumably knew more about their situation and what they learned than did raters who could only judge from an outside perspective what participants chose to state. Second, the thoroughness of the coding system necessary to capture personality-learning episodes could require 30 minutes per protocol—even after raters were trained; thus, a more efficient approach seemed desirable. I addressed both these limitation by asking participants to evaluate their learning themselves in Study 2.

Study 2: Self-Evaluated Lessons and Costs and Benefits

The open-ended survey and coding system developed for Study 1 was high in ecological validity in that the participants reported learning episodes from everyday life, but it involved a time-intensive coding process. Further, coding could not capture the learning participants may have experienced but not stated. In Study 2, I provided the categories developed in the Study 1 coding system to the participants themselves and asked them to evaluate their own learning episodes.

Study 2 also provided an opportunity for me to test my hypotheses that people learn about personality along two dimensions representing some variation of "good/bad," and that the

costs and benefits they associate with that learning would predict whether the relationship was weakened or strengthened. To do so, I introduced a new section to the survey asking participants to classify the potentially-learned items as costs, benefits, or neither a cost nor a benefit.

I had five research hypotheses to test in Study 2:

1. I will get information similar to that in my first study using the structured survey. This hypothesis was tested by calculating both a Pearson's product-moment correlation and a Spearman's rank order correlation between percentage endorsement for *Event Recall* and *Learning Outcomes* items, survey sections that were identical in both studies.
2. Replicating Study 1, participants will vary in the sophistication they employ in learning about personality. This hypothesis was tested in a two-step process mirroring that of Study 1, but appropriate for this study's design. First, intraclass correlations were calculated to determine interrater reliability across the categories of the sophistication assessment, and then coefficient alpha was calculated to determine the reliability of the scale constructed from mean ratings in each category.
3. Participants will express their interpersonal evaluations along two dimensions—often characterized as positive and negative in past research. To test this, I factor-analyzed the test items and tested a 2-factor model for its fit to the data.
4. The participants' evaluations will predict the outcome of their relationships, such that greater costs will result in distancing the parties and greater benefits will result in increased closeness. This was tested through hierarchical multiple linear regression, in which costs and benefits predicted the interpersonal distance in the relationship.

5. Independent raters can reliably assign personality-learning episodes to one of seven story-like plots. If this is so, raters will find few or no episodes that do not fit into one of the categories, and interrater reliability of plot classification will be good.

In addition, I explored any correlates between what participants learn and verbal intelligence or big five traits.

Method

Participants

Two hundred twelve students enrolled in lower-level undergraduate psychology classes at the University of New Hampshire (29 male; $M_{age} = 19.29$ years, *SD* = 2.04) participated in the study in exchange for course credit.

Measures

Demographics. The survey began by asking participants about their age, gender, and (intended) major,

Structured personality learning episodes survey. The Study 2 three-part survey was the same as in Study 1 except that, in addition to asking for a qualitative description of the learning episode, each section was followed by the categories developed in Study 1 to code that section. Participants were asked to rate their own learning using this system.

Part 1: Event recall. There were no changes to this part of the survey, except for the addition of fixed-response alternatives.

Part 2: What was learned? This section presented participants with a list of 38 items they may or may not have learned and asked them to respond with "yes" or "no" to each item individually. The list began with the stem, *I learned this person…* followed by items like *would*

help me, or *handled anger badly*. Participants were instructed to endorse the items they had learned (without any other constraint) and to write-in anything they learned that was not listed.

Part 3: Learning outcomes. In the revised third section of the survey, participants were presented with 14 statements describing possible consequences of having learned what they did. They were asked to respond "yes" or "no" to indicate whether an alternative described an aspect of what they learned. Examples included, *I began acting differently when dealing with this person* and *I have a more favorable opinion of this person*.

Costs and benefits assessment. In an added portion of the survey, participants were again presented with the list of *"What was learned"* items, and in this further phase, they were asked to rate each item according to whether they considered it to be a cost, a benefit, or neither a cost nor a benefit in having a relationship with someone else. This was done to obtain the participant's, rather than a standard or experimenter-determined, profile of the items they considered costs or benefits as well as those items they considered neutral. Costs were defined for participants as anything they considered negative about being in a relationship with someone and benefits as anything they considered positive about being in a relationship.

I quantified each participant's appraisal into separate scores for costs and for benefits. For each item that a participant endorsed as having learned in the *What was Learned* section of the survey, his or her general rating of the item in the Costs and Benefits part of the survey was used to total the number of costs and of benefits that were learned. Items that were not endorsed as having been learned were not included in this tally, although participants rated all items. This exclusion made it possible to consider only the costs and benefits associated with the specific relationship the participant had described when examining a possible relation between them and the learning outcome.

Sophistication assessment. Two independent coders rated all protocols for sophistication. A third undergraduate student and I each rated three randomly selected sets of 50 protocols, 150 in total, to enhance reliability (additional judges improve reliability up to 10; LeBreton & Senter, 2008). The sophistication rating procedure was modified slightly from that in Study 1: with input from the raters, I combined the categories of perspective and good/bad thinking to form a category called Balance. I also added two categories meant to capture additional aspects of personal intelligence: attention to specific traits and attention to motivation and goals. A 5-point, rather than 4-point, scale was used to make the ratings so as to improve the overall reliability of each rating (more alternatives up to seven often lead to better reliability; Nunally & Bernstein, 1994). Raters also evaluated each episodes on a single general impression of sophistication scale from demonstrating (1) a lack of understanding to (5) very good understanding. Average ratings for each category of sophistication were summed to create a sophistication score that could range from 7 to 35. I also explored the possibility of self-rated sophistication through a 12-item self-report scale written for that purpose. However, its reliability, at $\alpha = .20$, was too low to employ and it is not further discussed.

Plot assessment. One issue with asking for memories is to try to succinctly summarize the nature of the memories that participants produced. Recognizing that people readily recognize story plots (Booker, 2006) such as romantic comedies, tragedy, etc., and to take a step in the direction of better classifying the stories, I created seven story-like plots based on the episodes that participants recalled in Study 1. Personality learning episodes were classified according to the plot most similar to the story that was told, or they were flagged if they could not be suitably categorized. Examples of possible plots were *A secret revealed,* and an example given to raters

was, “My friend told me he was adopted.” These episodes were classified at the same time sophistication was assessed. A complete list of plots and their examples are shown in Table 6.

Additional measures.

Modified vocabulary scale. (30 items; Mayer, Caruso, & Salovey, 2000) Adapted from the Army Alpha test of intelligence (Yerkes, 1921), this vocabulary test served as a brief measure of vocabulary and verbal intelligence. Each item employs four response options for a to-be-defined word (e.g., “Torsion: (1) bending, (2) pulling, (3) compressing, (4) twisting”). Cohen’s alpha for this scale was a = .81.

Psychological mindedness scale. (45 items; Conte et al., 1990) A self-judgment scale designed to measure how much a person introspects about his or her motives, emotions and thoughts as well as those of other people, meant to assess motivation to learn about personality. This instrument features 45 items (e.g., “I am always curious about the reasons people behave as they do” and “Emotional problems can sometimes make you physically sick”) that are rated on a 5-point Likert scale from 1 = “Disagree strongly” to 5 = “Agree strongly.” Reliability was good, a = .88.

Big five inventory. (44 items; BFI-44; John, Donahue, & Kentle, 1991) This self-judgment scale of the Big Five personality traits consists of five sub-scales that use the opening phrase, “I see myself as someone who…” followed by various clauses that are rated on a 5-point Likert scale from 1 = “Disagree strongly” to 5 = “Agree strongly.” The five sub-scales are: Extraversion (e.g., “is talkative”), Openness (e.g., “is original, comes up with new ideas”), Neuroticism (e.g., “worries a lot”), Agreeableness (e.g., “has a forgiving nature”) and Conscientiousness (e.g., “is a reliable worker). Cohen’s alpha for these subscales in this study were (respectively): .85, .77, .86, .78, and .79.

Procedure

The procedure for participants completing the study was identical to that used in Study 1, with participants taking the personality learning episodes survey, followed by tests of vocabulary, psychological mindedness, and big five personality traits.

Results

Preliminary Analyses

Examining response quality. I screened data according to several criteria. The total study consisted of 471 items; using a minimum of 2 seconds per item (Huang, Curran, Keeney, Poposki, & DeShon, 2011), minimum response time below 872 seconds (or approximately 15 minutes) would be cause to suspect careless responding. Because my survey also required the participants to recall and describe a personality-learning episode, I added another 10 minutes to this criterion. Given that important personality characteristics are often associated with patterns of exerting insufficient effort in responding (Bowling, Huang, Bragg, Khazon, Liu, & Blackmore, 2016), I had to be careful of setting too conservative an estimate. No participant took less than 25 minutes to complete the survey. In terms of missing data, personality measures had between zero and four missing values, and my survey had none. Therefore, I did not impute missing values but instead used pair-wise deletion at the item level of analysis. As a final test, I used a LongString index (Johnson, 2005) to examine patterns of responding to the Big Five measure given at the end of the survey. The longest pattern found was answering the same way (as "Neither agree nor disagree) for 13 of the 44 items, which I considered a plausible pattern of response. All protocols were therefore retained for analysis.

Interpersonal distance scale construction and reliabilities. I hypothesized that costs and benefits would predict whether a relationship became closer or more distant. To create an

outcome measure to test this hypothesis, I used Mplus (Muthén & Muthén, 2010) to factor-analyze the 12 categorical items involving a change in relationship status. An example of an increased closeness item was *I spend or want to spend more time with this person*. Increased distance was indicated by items such as, *I ceased having a relationship with this person.* Exploratory factor analysis with CF-Facparsim rotation (Crawford & Ferguson, 1970), a technique from the Crawford-Ferguson group of rotations considered to best distribute categorical items across factors (Finch, 2011; Sass & Schmitt, 2010), yielded an acceptable fit for a one-factor model, $X^2(54) = 93.25$, $p = .0007$; RMSEA .059, CFI .998, TLI .997. I then removed two items on a conceptual basis as they described actions by the target rather than the learner: *The other person ceased the relationship,* and *the other person began acting differently*. Confirmatory factor analysis returned similar fit statistics to the exploratory, but with a warning that the bivariate table had empty cells. One item causing the empty cell warning, *I use this person as an inspiration*, was then removed. Confirmatory factor analysis for this model was very good, RMSEA .048, CFI .999, TLI .999. Using the factor loadings from the confirmatory factor analysis, I created an interpersonal distance scale to indicate whether the relationship between learner and target had grown closer or more distant. The higher the score, the more personal distance was put between the learner and the target. Conversely, the closer the score was to "0," the less personal distance was cultivated in the relationship. Reliability for the resulting scale was very good, $\alpha = .94$.

Did I Obtain Information Similar to that Gathered in Study 1?

As in my first study, participants were able to retrieve a memory of learning about another person's personality using my cue. Direct comparison for the first and third parts of the survey (the details surrounding the episode and the result of the learning, respectively) were

possible because all categories used by raters in Study 1 were presented to participants in Study 2. Correlations between percentage of endorsement for items in these two parts of the survey were $r = .89$, $p < .01$ ($r_s = .93$, $p < .001$) and $r = .92$, $p < .01$ ($r_s = .83$, $p < .05$), supporting my hypothesis that the results were similar despite different samples and different response formats. Also, once again, the majority (79%, $t(211)=28.384$, $p<.001$) of participants indicated that what they had learned influenced their current behaved and/or what they believed about other people.

Comparisons of the learned items in both surveys were a bit more difficult to test. Although all of the 38 potentially-learned items presented in Study 2 were created by coding developed for the episodes in Study 1, only half had sufficient interrater agreement to be analyzed in the first study. An examination of the proportion of respondents endorsing each learned item revealed a much higher percentage in Study 2 than in Study 1. The relation between the 19 overlapping items between studies proved statistically nonsignificant, $r = .19$, $p = .43$ ($r_s = -.01$, $p = .97$). As I had suspected and as shown in Table 2 (Study 2 column), learners were more able to indicate what they had learned than raters who could only go by what the participant had written. I had also given participants the instruction to write-in anything they had learned that was not listed. Slightly less than half the participants ($n = 104$; $N = 212$) offered something in their own words: for example, “It taught me that he would most likely always be a cheater and it was not worth a second shot with him when he wanted to be with me again.” In some cases, items that were written-in did represent learning that was not on my survey, such as “I learned this person was selfish.” Items on the survey were equally split between costs and benefits (N=37 and N=38 respectively), with 29 items being rated as neither a cost nor a benefit.

Not all the proffered responses in Study 2 pointed to missing categories in the fixed response survey; many items reflected an overflow of emotion (e.g. “I learned this person was

really wonderful"; or "I learned this person was evil") or the addition of context for the person's behavior (e.g. "I learned the person changed depending on who was around"). Based on these findings, I planned to add a measure of affect and intensity to my third study. More details regarding the learning reported in Study 2 can be found in Tables 1, 2 and 3 (Study 2 columns).

Were variations in the sophistication of learning about personality reliably detected?

I had hypothesized that variations in the sophistication displayed in learning about personality would be detected reliably. I determined interrater agreement using a two-way mixed-effect, consistency, average measures intraclass correlation (Hallgren, 2012). This statistic was calculated for each sophistication category, and ICCs ranged from .65 to .77, $M = .70$, all values considered to indicate good agreement (Cicchetti, 1994). Average ratings across the seven sophistication categories were summed to create a sophistication score that could range from 7 to 35; scores in this study ranged from 7 to 32 ($M = 16.73$, $SD = 4.84$). Reliability for this final scale was very good, $\alpha = .90$. Variations in sophistication of learning were reliably detected, supporting my hypothesis.

Table 7 demonstrates that protocols rated as high in sophistication were noticeably different from those that were rated low. For example, the learning episode of Participant 128 (top section, last row) garnered high marks in all sophistication categories. The participant reports a multi-dimensional view of her new acquaintance, showing a balanced perspective toward both positive (helpfulness in setting up an internet connection) and negative (blunt communication style) personality characteristics. The participant shows empathy and makes connections from the person's behavior to her traits and motivation, saying that the person appeared "cold" and "put up walls" in order to protect herself from hurt after the death of her

brother. The participant states that her new understanding of the person's motivation now causes her to view this person as someone who "has gone through a lot."

By comparison the narrative of Participant 49 (bottom section, middle row), tells a story with tenuous connections. Traits are mentioned, but with no interpretation or even connection to the episode or to other traits. In fact, there is no particular episode but rather a general statement that the participant learned her friend was manipulative. The learner seems focused on her own behavior —she had wanted her friend to like her—and then, despite the dislike she had expressed for manipulative behavior, ends with a justification that, "in certain circumstances [people in society] may have to manipulate people." Her disjointed and circular reasoning support the raters' determination of low sophistication.

Did Two Dimensions Underlie Interpersonal Evaluative Processes*?*

Using factor analysis, I hoped to reduce the 38 items from the *What Was Learned?* section of the survey to a smaller but still representative group of learning categories that I would use to correlate with personality variables. I began with an exploratory factor analysis using Mplus and CF-Facparsim rotation. Two factors represented the data well: X^2 (628) = 1272.44, $p < .001$; CFI = .95; TLI = .94; RMSEA = .07; with a correlation between factors of $r = -.352$. The three items with the highest loadings on Factor I all concerned learning something that detracted from the target, so I labeled the factor "Negative Qualities." Examples included that the target *would not admit when he/she was wrong* (.90), *violated expectations by behaving worse than [the learner]thought* (.85), and *said one thing but did another* (.84). The three items with the highest loadings on Factor II all concerned learning something favorable about the target. A few of the items were learning that the target *genuinely liked or cared about [the learner]* (.90), *would help* (.88), and *was kind* (.87). I labeled this factor "Positive Qualities."

I attempted to constrain the model further with this sample while improving its fit with the data, aiming to improve the scale for future use. Examining the factor loadings, I eliminated items that did not conform to simple structure (i.e., items that loaded significantly on both factors). After thus reducing[1] the 38 items to a group of 24 well-performing items, I proceeded to a confirmatory factor analysis with two factors. Model fit was improved: CFI = .98; TLI = .98; RMSEA = .059. Scores for items that loaded on each factor in the confirmatory factor analysis were summed to create factor scores; these items and their factor loadings are shown in Table 8. These scales were highly reliable, α = .91 for Negative Qualities and .92 for Positive Qualities.

Did Implicit "Costs versus Benefits" Assessments Predict the Outcome of the Relationship, such that Greater Costs Resulted in Distancing the Parties and Greater Benefits Resulted in Increased Closeness?

I had predicted that the cost and benefits assigned to the learning event would predict changes in the relationship. Using the *Interpersonal Distance Scale* as a measure of interpersonal distance (see Preliminary Analyses), I conducted a hierarchical multiple regression analysis that predicted relationship outcome (becoming closer versus becoming more distant) on the basis of perceived costs, perceived benefits, and the total number of items learned (all converted to z-scores) in Step 1. I then added the product term representing the interaction of costs and benefits in Step 2. This model explained a substantial proportion of variance in relationship result, R^2 = .76, $F(4, 207) = 163.89$, $p < .001$ (see Table 12 for regression coefficients).

In Step 1, a significant main effect of costs indicated a greater distancing result as costs increased, and a significant main effect of benefits indicated that distancing decreased (and, by

[1] IRT-Pro analysis resulted in the removal of 2 of the 14 total items that were discarded. Future IRT analyses of other measures created in this study are planned.

extension, becoming closer increased) as benefits increased. However, these effects were qualified by a significant costs X benefits interaction in Step 2. Tests of conditional effects revealed a dampened effect of benefits when costs were high (1 *SD* above the mean), relative to when costs were low (1 *SD* below the mean). Additional tests of conditional effects revealed a stronger distancing effect of costs when benefits were high than when benefits were low.

The main effects in the first step of the model suggest that costs and benefits predict closeness in hypothesized directions, with more costs being associated with more distance and more benefits being associated with more closeness. The interaction pattern qualifies these results by suggesting that costs and benefits are especially predictive of closeness when the other variable is low. Benefits appear to predict more closeness when they are not offset by strong costs, but costs appear to predict more distance when they coexist with strong benefits.

Did Raters Reliably Sort Personality-learning Episodes According to the Seven Plots Provided? All 212 personality-learning episodes were assigned to one of the seven plots by the four raters who coded the other parts of the survey. No protocols were flagged for not fitting into one of the categories. Two-way mixed effects, absolute agreement, average measures ICC = .84, indicating excellent agreement on the plot that was assigned (Cicchetti, 1994). Disagreements were resolved by discussion. The proportion of episodes assigned to each plot is shown in Table 9.

Interrelation of Learning Variables and Relation to Other Personality Characteristics

Table 10 shows the correlation among the learning variables and their relation to personality characteristics. The majority of learning variables were significantly and substantively correlated. Not surprisingly, the strongest correlations were between the factor of Negative Qualities and Costs ($r = .91$, $p < .01$) and between the factor of Positive Qualities and

Benefits (r = .94, p < .01). Positive and Negative Qualities were also highly correlated with the Interpersonal Distance Scale, with Positive Qualities decreasing interpersonal distance and Negative Qualities increasing it (r = -.89 and r = .84, p < .01, respectively).

In terms of personality characteristics, the Big Five trait of agreeableness had the most relations to learning variables, not all of them expected. Agreeable people were more likely to report learning something negative, and less likely to learn something positive. They were also more likely to perceive characteristics as costs and to recall an episode that resulted in increased distance in a relationship. Raters were also more likely to perceive agreeable people as providing less sophisticated accounts of learning. Conscientious people better confined their learning to the episode they recalled, and they were less likely to rate items as neither a cost nor a benefit. Conversely, neurotic people were more likely to rate items that way.

Vocabulary related only with the tendency to endorse fewer learned items; it was not significantly related to sophistication ratings. Psychological mindedness showed no significant correlation with learning variables.

Discussion

The findings using the structured survey were similar to those obtained in Study 1: Evidence continued to mount that most people had little trouble retrieving memories of learning about personality, and this learning had consequences for their relationship, either strengthening or weakening it. In addition, the majority of people reported using their personality knowledge more generally, to alter their behavior and/or to adjust their views of people in general.

Having learners, rather than raters, evaluate their own learning yielded similar results in the details surrounding the learning episode (such as the target of the learning) and the outcome of the learning (such as feeling closer or more distant). One exception was that participants

reported learning more from the episodes than did outside raters (as indicated by the endorsement of more personality-learning items in this study than in Study 1). Participants seemed to indicate all that they had learned about their target person, rather than limiting themselves to what was specific to the episode they recalled.

The sophistication with which people learned about personality varied in ways that were apparent to raters. Examples of low- and high-sophistication stories bore out the face validity of the (rater-supplied) sophistication evaluations. Moreover, the lack of relation between sophistication ratings and vocabulary supported the idea that raters were not responding simply to how well the participant wrote.

As I had hypothesized, what people learned about personality had two underlying dimensions that corresponded to negative/positive learning and broadly overlapped with costs/benefits. Both predicted relationship outcome. Learning about personality also showed some interesting though slight correlations with Big Five personality traits, such as the tendency for agreeable people to report stories that were negative and led to more distance in their relationships; perhaps agreeable people retrieved more negative stories because they are atypical in their experience and so stand out. Neurotic people were less likely to rate characteristics as costs or benefits, perhaps indicating an apathy related to negative affect.

With the fixed-response survey and sophistication rating procedures worked out, I turned next to examining the relationship between these measures and an actual, ability-based measures of personal intelligence.

Study 3: Personal Intelligence and Personality Learning Episodes

Study 3 added an ability-based measure of personal intelligence to evaluate whether it was related to sophistication of learning (as evaluated by independent raters) and other variables. In

order to better describe the personality learning episode and its use, I took into account the suggested items and affective responses written-in by participants in Study 2 by adding 12 new potentially-learned items. In order to account for variance associated with the emotional impact of the learning episode, I added three questions regarding the affect and intensity of the episode (How positive it was, how negative it was, how intense the emotion of it is now) using a Likert scale from *(1) Not at all* to *(5) Extremely*. To provide convergent validity for my interpersonal distance scale, I added a question asking participants to move a slider to indicate the current distance in their relationship with the target. An additional step in better exploring the use of personality learning episodes was to investigate the participants' perceived use of the memory they recalled.

Episodic memories are known to have functions beyond just understanding people. Significant research has distinguished three such functions (e.g., Bluck & Alea, 2011): self (memories that are used to bolster self-esteem or create a coherent life story), social (memories that are used to create and strengthen social bonds), and directive (memories that are used to guide present and future behavior and/or to solve problems). Personal intelligence involves guiding behavior in personality-relevant domains (such as learning about the characteristics of another person), and directive memories are used to guide behavior. I hypothesized that those higher in personal intelligence would be more likely to ascribe a directive function to their memories of a personality-learning episode relative to those who were lower. To test this, I added two questions identifying each of the three functions.

I had six hypotheses for this study:

1. Many of the effects from Studies 1 and 2 will be replicated in Study 3, including: (a) learning item endorsements will correspond to those in Study 2 (tested through

correlation); (b) variations in the sophistication of learning will be reliably detected (tested by calculating intraclass correlations and coefficient alpha); (c) personality learning will have 2 underlying dimensions corresponding to negative and positive learning (tested by fitting the model from Study 2 to Study 3 data through confirmatory factor analysis); and (d) costs and benefits will predict relationship outcome (tested through hierarchical multiple linear regression)..

2. There will be a significant correlation between ratings of sophistication and scores on an ability-based measure of personal intelligence.
3. Personal intelligence will show a relation to directive memory function. Pearson correlations were used to test this hypothesis.
4. Affect and intensity associated with the learning event and with the target person will account for additional variance (beyond costs and benefits) in the prediction of relationship outcome. This was tested through hierarchical multiple linear regression.
5. People can classify their learning episodes into one of seven story-like plots. This was tested by examining the number of stories that were not assigned to any category.
6. Agreeableness, neuroticism, and conscientiousness will have significant correlations with learning variables.

Method

Participants

A total of 301 students enrolled in lower-level undergraduate psychology classes at the University of New Hampshire participated in the study in exchange for course credit (56 male, 2 not reporting gender; $M_{age} = 18.95$ years, *SD* = 1.85).

Materials

Structured personality learning episode survey-form b. A variation of the three-part survey used in Study 2 was used; it followed the same pattern and had the same three sections, except that it offered additional fixed response alternatives in Part 2 that were suggested by the data in study 2.

Part 1: Event recall. This section was identical to that in Study 2.

Part 2: What was learned? Participants responded "yes" or "no" to 36 descriptions of items that they may have learned about their target person. Twenty-four of these were the items from Study 2 included in the confirmatory factor analysis of learned items; 12 were new to this survey and taken from those written-in by Study 2 participants. Of the new items, half appeared to be negative while the other half appeared to be positive; for this reason, they were thought *apriori* to load on the corresponding negative or positive factor. Items that were not part of the model of personality learning in Study 2 were not presented to participants in Study 3. An attention check question was added at the end of this section.

Part 3: Learning outcomes. This section was identical to that in Study 2, except that there was an additional question at the end asking participants to use a slider to depict visually the current distance in their relationship with the target.

Part 4: Affect and Function. This brief additional section contained 10 questions designed to address emotional aspects of the personality-learning episode that was reported. Three items asked participants to rate the emotional valence and intensity of the event they described and their relationship with the person they learned about using a 5-point Likert scale. Patterned after Pillemer et al (2015), six questions were adapted from the TALE (Bluck & Alea, 2007) to determine the perceived function of the memory that was recalled. All items began with the stem, "My memory of this episode…" Two items addressed each of the 3 functions: self-

(*helps me to understand myself; helps me to feel better about myself*); directive (*affects the way I deal with other people; influences the way I view the world*); and social (*is something I share with other people to let them know more about me; is something I share when I want to also find out what another person is like*). An attention check question was added to the end of this section.

Part 5: Plot Assessment .One question asked participants to choose one of the seven plots used in Study 2 (and shown in Table 6) that best represented their story.

Costs and benefits assessment. To measure costs and benefits, participants were again presented with the same items as in *Part 2 What was learned* described above. To allow participants to rate the extent that items were both costs and benefits, costs and benefits were rated separately on a 5-point Likert scale. Data gathered through this assessment was analyzed in the same way as in study 2.

Sophistication assessment. To analyze the sophistication of responses, I used the same rating scale developed in Study 2. Three independent raters from that study rated all protocols in this study. The mean rating on each of the seven aspects of the sophistication assessment were summed and their average became the sophistication score.

Additional measures.

TOPI 1.4 (96 items; Mayer, Panter, & Caruso, 2012) This ability-based measure of personal intelligence asks participants to answer multiple-choice questions from four areas of problem-solving: (1) recognizing clues to personality, (2) forming mental models of personality, (3) guiding choices using relevant personality information, and (4) systematizing goals and plans.

Big five inventory. (44 items; BFI-44; John, Donahue, & Kentle, 1991) Cohen's alphas for each subscale in this study were: extraversion, .86; agreeableness, .80; conscientiousness, .77; neuroticism, .80; and openness, .77.

Modified vocabulary scale. (30 items; Mayer, Caruso, & Salovey, 2000) Cohen's alpha for this scale was .81.

Other measures. Memory research has suggested a relation between the inability to retrieve specific memories and personality processes such as emotional regulation (e.g., Raes, Hermans, Williams, & Eelen, 2006; Roberts, Carlos, & Kashdan, 2006). For that reason, episodes in this study were also coded as specific (the episode described only one particular event that happened at a singular point in time) or general; however, only nine episodes were coded as general, too few for meaningful analysis. These episodes were retained in the dataset.

Procedure

The same general procedure used in my previous studies was used here; the only changes were the addition of the TOPI 1.4 and a modification to the order of presentation, with participants taking the Personality Learning Episodes Survey followed by the TOPI 1.4, the BFI-44, and the test of vocabulary.

Results

Examining Response Quality

I screened data according to several criteria. Of the 346 participants that opened the survey online, 34 reported nothing beyond demographics, five failed to provide a personality learning episode, and one did not take the TOPI 1.4. Another participant had taken the survey twice and reported the same learning episode; the second instance was removed from the dataset.

I next excluded six participants who had not completed the majority of my survey or the TOPI 1.4, the measurement instruments of primary interest.

Next, I examined various indices of insufficient effort responding (IER). My survey contained three attention check questions: two were instructed response items (e.g., "Please choose the word that rhymes with 'funny'"), and the other was a self-report single item at the end of the survey asking participants to indicate the level of attention they had devoted to answering the questions (Meade & Craig, 2011). All participants answered the first two questions correctly. In response to the last question, two participants indicated they "had just clicked through to get it done." This alone was not a sufficient reason to discard the data. Important personality characteristics may be linked to exerting insufficient effort in responding (Bowling, Huang, Bragg, Khazon, Liu, & Blackmore, 2016), and self-reported diligence can be misleading (Meade & Craig). Before excluding the data, I consulted another indicator of IER.

The TOPI 1.4 employs several indices of insufficient effort responding including infrequency (e.g., Huang, Bowling, Liu, & Li, 2014) and response pattern (e.g., Johnson, 2005) warnings, as well as a scale designed to consider all these criteria in determining whether a protocol should be flagged. I examined the protocols flagged by the latter scale (although the test's authors are currently discouraging use of the infrequency scale as it may reflect a genuine lack of ability rather than careless response; J. D. Mayer, personal communication, January 5, 2017). I found that the two participants who indicated their data were unusable were truthful: There was quite a bit of long string responding. Two other participants—of the 12 that were flagged—were removed after a visual inspection revealed several patterns of long string responding. A check for missing data showed that, except for the slider question at the end of the

Interpersonal Distance scale (14 values missing), no variable had more than nine missing values. Therefore, I did not impute missing data, but instead used pair-wise deletion at the item level.

Were the Findings from Study 2 Replicated?

Did endorsement of learned items correspond to that in Study 2? Table 11 shows the percentage of participants endorsing each learned item (second column) alongside the percentage endorsement from Study 2. There was a significant correlation between the items learned in the two studies, $r = .67$, $p < .001$ ($r_s = .58$, $p = .003$), providing a replication of Study 2 in that regard.

Were variations in sophistication again reliably detected? As in previous studies, a two-way random-effects, consistency average measures intraclass correlation was calculated for each sophistication category. In this study, ICCs ranged from .42 to .68 with an average ICC = .54, indicating agreement in the fair to good range (Cicchetti, 1994). Average ratings in each category were summed to form a sophistication scale with scores that could range from 7 to 35, and that did range from 7 to 30.33. Reliability for this scale was quite good, $\alpha = .89$, and reliability for the same scale in Study 2 was $\alpha = .90$. These findings supported my hypothesis that variations in sophistication would again be detected reliably, replicating Study 2 findings.

Dimensions underlying *What was learned?* Confirmatory factor analysis with Mplus was used to fit the model of personality learning developed in Study 2 to the data in Study 3. Model fit was good, $X^2(251) = 552$, $p < .001$; RMSEA .063, CFI .976, TLI .973. Assigning the new items suggested by Study 2 participants by factor did not improve model fit, RMSEA .077, CFI .960, TLI .958. Thus, the model developed in Study 2 did reflect the learning participants reported in Study 3, supporting replication of the model across studies. Factor loadings for Study 3 are shown in Table 8 (Study 3 Column).

Dimensions underlying the *Interpersonal distance scale* as a measure of relationship outcome. Using Mplus, I performed a confirmatory factor analysis fitting the 1-factor model of interpersonal distance developed in Study 2 to the data from this study. Model fit was very good: $X^2(27) = 46.3$, $p = .01$; RMSEA .049, CFI .999, TLI .999. Again, my hypothesis was supported; data from both studies were well-represented by one bipolar factor.

As had occurred in Study 2, confirmatory factor analysis of the interpersonal distance model again indicated an empty cell in the bivariate table of two items. For thoroughness, I ensured that the modified model suggested by Study 3 did not substantially reduce the fit for data in Study 2 by fitting the modified model to the data in that study. Fit was not significantly reduced: $X^2(20) = 14.1$, $p = .03$; RMSEA .058, CFI .999, TLI .998. The interpersonal distance scale correlated significantly with the visual depiction of interpersonal distance created with a slider, $r = .77$, $p < .001$.

Costs and benefits as predictors of relationship outcome. I again conducted a hierarchical multiple regression analysis that predicted relationship outcome (becoming closer versus becoming more distant) as represented by the interpersonal distance scale, on the basis of perceived costs, perceived benefits, and the total number of items learned (all converted to z-scores) in Step 1. I then added the product term representing the interaction of costs and benefits in Step 2. This model explained a substantial proportion of variance in relationship result, $R^2 = .60$, $F(4, 296) = 110.38$, $p < .001$. Table 12 reports the regression coefficients.

Costs and benefits again affected interpersonal distance in predicted ways, with costs having a distancing effect and benefits bringing the parties closer. Although the interaction between costs and benefits was again significant, tests of conditional effects showed a different pattern than in Study 2. When costs were high (1 *SD* above the mean), benefits had a greater

effect in reducing interpersonal distance than when costs were low (1 *SD* below the mean). When benefits were high, costs had a lessened effect on interpersonal distance than when benefits were low. However, when benefits were low, the opposing effects of costs and benefits appeared to have equal strength.

Use of personality learning beyond the relationship in which it was acquired. Replicating data from both previous studies, 87.4% of participants indicated that they had used their learning more generally, applying what they had learned about the target person to other people and events. Some participants even offered an example of how they used their learning, such as, "In high school I just assumed people who were shy were ALWAYS shy; now I know that some people just have to become comfortable around others before they start acting like their true selves." Thus, the import of personality learning episodes as consequential to both the outcome of the specific relationship and to other aspects of the learners' lives was supported.

Overall, the hypothesis that Study 2 findings would be replicated was supported. Endorsement of learned items, reliable detection of variations in sophistication, and models of personality learning and interpersonal distance resulting from learning in Study 3 were all similar to the results of Study 2. Costs and benefits affected interpersonal distance in the predicted ways, though the conditional effects in this study were different from those in my prior study.

Were Ratings of Sophistication Related to Ability-based Personal Intelligence?

As predicted, high sophistication of learning about personality was related $r = .37$, $p < .001$, to high personal intelligence as measured by the TOPI 1.4. An examination of the narratives from the three highest and lowest scorers on the TOPI 1.4 (Table 13) shows some similarity to the highest and lowest narratives in my previous studies (which were based on sophistication ratings).

Consider the narrative from the participant highest in personal intelligence (no. 307, top section, first row). She answered 98% of the TOPI items correctly and received a sophistication score of 20.3. The participant describes an episode in which she became afraid of her brother's anger, yet she maintains a balanced perspective. She demonstrates empathy in describing her brother's behavior not as "bad" (although frightening to her at the time), but as a reflection of his own "internal pain." The participant qualifies the behavior by considering both personality and situational influences, pointing out that her brother was "struggling at that point in his life." This participant also mentioned connections between her brother's behavior and his motivation, saying that he was reacting to his pain by lashing out and blaming others for it.

The personality-learning episode from a participant lowest in personal intelligence (no. 41, Table 12, bottom section, top row) demonstrates far less personality knowledge. She answered just 20% of the TOPI items correctly and received a sophistication score of 9. She shows a lack of both understanding and empathy as she regards her sister's attempted suicide as demonstrating that her sister is "the most selfish person on the face of the planet." She classifies this behavior as manipulative, without any suggestion that she had considered, and ruled out, actual emotional pain and/or desperation as a possible motive. Her reasoning about personality appears limited as she ends with, "I don't know what else to write…"

Relation of Personal Intelligence to Personality-learning Variables and Vocabulary Score

Although both personal intelligence and sophistication were inversely related to costs, total items learned, and reporting learning positive personality qualities, relations for sophistication became statistically nonsignificant after Bonferroni correction. In the case of personal intelligence, there were two modest correlations remaining: A correlation with the total

number of items learned (r = -.21, p < .05) and with learning about positive qualities (r = -.23, p < .05).

Both personal intelligence (r = .51, p < .05) and sophistication (r = .25, p < .05) were positively correlated with vocabulary scores, though the relation was approximately twice as strong for personal intelligence. This is not surprising, as verbal intelligence often correlates with other intelligences (McGrew, 2009). Correlations are shown in Table 14. Hierarchical multiple linear regression predicting sophistication scores from personal intelligence and vocabulary showed that only personal intelligence significantly predicted sophistication; Table 17 shows the regression coefficients.

Relation of Personal Intelligence to Memory Function

I had hypothesized that personal intelligence would increase the likelihood of ascribing a directive function to the personality-learning episode. This was not supported; personal intelligence related only to a lessened tendency to use the episode for a social function. However, personality-learning episodes were most likely to serve a directive, rather than self or social, function for the sample as a whole, Descriptive statistics for memory function are shown in Table 15.

Was More Variance in Interpersonal Distance Accounted for When Affect and Intensity were Added to the Regression Model?

I added negative affect in the third step of the hierarchical multiple linear regression predicting interpersonal distance (see Table 12). This effected a significant increase in variance accounted for by the model including costs, benefits, and their interaction; ΔR^2 = .09, $\Delta F(3, 293)$ =29.25, p < .001. Neither positive affect at the time of the episode nor the present intensity of emotion accompanying episode recall proved to be statistically significant. The more negative a

personality-learning episode was when it occurred, the more interpersonal distance it created. My hypothesis was supported in that negative affect accounted for additional variance beyond that of costs and benefits, but neither positive affect nor intensity had a significant effect.

The Plot Thickens: The Use of Plots to Categorize Personality-learning Episodes

All but one participant was able to classify a personality learning episode using one of the seven plots provided, suggesting that personality learning may generally follow a limited number of scripts. To examine further the participants' use of plots, two independent raters who had rated plots in Study 2 also rated 50 randomly selected protocols for plot. Two-way mixed-effect absolute agreement intraclass correlation for plot categorization by raters and by participants themselves was .78, showing strong support for the utility of these plots in classifying personality learning episodes. Moreover, the percentage of plots classified by category was similar in both studies, $r = .91$, $p = .004$. The percentage of learning episodes classified by plot is shown in Table 9 (Study 3 column).

Were Correlations between Learning Variables and Personality Characteristics Replicated?

Study 2 suggested a relation between the Big Five traits of agreeableness and neuroticism and some of the learning variables. In Study 3 with its larger sample size, similar relations were not found. Neuroticism was correlated only with the tendency to recall an episode of learning negative things about personality, $r = .26$, $p < .05$, and there were no significant correlations with agreeableness. The relation between conscientiousness and the tendency to endorse fewer learned items was replicated in Study 3. Conscientiousness was also inversely related to learning about negative qualities and with rating learned items as costs. Table 16 shows these correlations.

Discussion

In Study 3 participants were once again able to retrieve memories of learning about another person's personality, and this learning was deemed to have a directive function by most participants. The study breaks new ground, however, by demonstrating for the first time a relation between personal intelligence and the perceived sophistication of recounted personality-learning episodes. As in Study 2, ratings of sophistication were not simply a reflection of verbal ability; sophistication scores were more strongly related to personal intelligence than to any other personality variable.

As in my prior studies, personality-learning episodes were consequential in both determining relationship outcome and altering learners' thoughts and behaviors beyond that relationship. This draws a network of connections among trained judge's view of a person's sophistication in learning—learning that pertains to costs and benefits—and actual, directly measured personal intelligence; ergo, the chance to manage one's relationships poorly or well.

In terms of its relation to learning variables, personal intelligence was related to the tendency to endorse fewer learned items. Those with higher personal intelligence may streamline their recollections due to finer discrimination, an ability associated with accurate perception (Bieri, 1955). Those higher in personal intelligence were also less likely to relate an episode of learning about someone's positive qualities. This tendency, without any correlation to the affect or intensity of the episode, might also reflect efficiency: learning about another person's positive qualities seems less likely to be educational, and positive memories are more likely to be ascribed a self or social function rather than a directive one (Rasmussen & Berntsen, 2009). Those higher in personal intelligence were less likely to ascribe a social function to their

personality-learning episode, perhaps because they were less likely to retrieve one in which they learned about positive qualities.

Conclusion

Through a series of three studies, I have progressively demonstrated a connection between the judged sophistication of a personality-learning episode (by independent, trained raters) and personal intelligence. In Study 1, and both studies thereafter, participants were able to retrieve a memory of learning about the personality of someone else, learning that informed both their relationship with the target person and their broader views on human nature. In Study 2, I showed that learning about personality occurred along two dimensions, one positive and one negative, that strongly corresponded to participants' perception of the costs and benefits of social relationships. Moreover, these costs and benefits significantly predicted relationship outcome. In Study 3, I showed that the negative affect participants felt at the inception of their episode was also a significant predictor of relationship outcome. All three studies showed that raters could reliably detect variations in the sophistication people employed in learning about personality. In Study 3, I showed that these variations in sophistication were significantly related to the learner's personal intelligence.

I began with the premise that the existence of personal intelligence would require that people have a "database" in memory constructed, at least in part, from episodes of learning about personality in their everyday life. When I asked people to recall such an episode, they were able to do so, suggesting that they do indeed have a personality database, and that they are able to retrieve information from it. These findings are consistent with personal intelligence theory.

I found additional support for personal intelligence in the differing levels of sophistication employed in learning about personality that were apparent to raters. Judging

episodes along selected dimensions of personal intelligence and cognitive complexity, they were reliably able to detect differences significantly related to personal intelligence. This suggests that personal intelligence may be adaptive not only in conveying an advantage in directing one's self, but also because it can be perceived by others as a form of sophistication and thus potentially attract more desirable companions and/or raise social status (Anderson et.al, 2001; Lewandowski et.al, 2007; Nettle, 2006).

Consider the table showing the narratives of the highest and lowest scorers in ability-based personal intelligence (Table 13). The highest scorers not only attend to personality details but also to the connections between them. For example, the second-highest scorer (no. 318, top section, middle row) shows concern that there may have been signs of her ex-boyfriend's controlling nature that she had missed. In recounting the episode, though, she makes a connection between knowing that he "could often be opinionated" and the foreshadowing of the controlling nature he displayed later. Although her ex-boyfriend's behavior took her by surprise, her subsequent introspection allowed her to realize there were signs she had missed. Someone lower in personal intelligence would be less likely to make such a realization, even in retrospect.

The narrative below hers, that of the third highest scorer, is fraught with emotion. She appears very upset as she recalls the betrayal she felt at the behavior of her former childhood friend. Even so, she manages to consider the situational influences, such as being new to college and wanting to impress new people, along with the problematic behavior she witnessed. In addition, despite the obvious intensity of the emotion she was feeling, she still allowed for the possibility that her friend's behavior might be temporary until multiple instances confirmed her initial judgment.

Contrast these examples with the narratives of the lowest-scorers in personal intelligence. Each of them seem oblivious to the possible meaning of what they are observing. For example, the narrative of the second lowest-scorer (no. 237, bottom section, middle row) indicates that the learner is fastidious – he plans every detail of the trip he takes with his girlfriend. He notes that she does not question their itinerary at all, but he fails to recognize that her behavior may reflect a more relaxed, spontaneous attitude. One could imagine there had been several instances where he might have made this connection before they traveled out of the country together, particularly where their approaches seem diametrically opposed. Yet, this learner is amazed and states that he "never even knew this side of her existed."

The narrative of the third lowest-scorer (no. 28, bottom section, last row) reminds us that personal intelligence is a "hot" intelligence: it deals with information likely to arouse emotion. This participant describes a boating vacation where he observes his friend taking care of the boat while others are enjoying social comradery, and he attributes this to his friend's work ethic. He does not consider any other interpretation, although he states that they have spent a good deal of time together and the reader notes that this is the first time he observed his friend acting thusly. If his friend were motivated simply by work ethic, it seems likely he would have displayed that behavior one of the many times they had worked together. The participant goes on to say that he "despises" people who do not work hard without complaining. His strong stance leaves no room for an alternate interpretation of those with less stoic or diligent work practices. His lower personal intelligence may not allow him to consider that such behavior may not warrant his hatred.

Asking people what they have learned about personality through their everyday life experiences showed that key aspects perceived as "personality" tend to align themselves along

positive and negative dimensions. These dimensions correspond to how much we benefit from a relationship and how much time and energy it costs us to maintain the relationship. In effect, judgments of personality may come down to how pleasurable or painful a stimulus we find the person in question to be (Saucier, 2010). If so, such an affective judgment benefits from personal intelligence by allowing people to construct more reasonable models of personality and to apply their learning in a more accurate and nuanced way.

Although these studies have done much to advance the understanding of what and how people learn about personality in important ways, a few limitations should be considered. This research was conducted with one age group – college students – with certain developmental concerns that accompany that age (e.g., Arnett, 2000). Studies that ask middle-aged people or senior citizens to recall a personality-learning episode may find that what we learn about personality changes as our concerns and goals change.

Because this study was exploratory in nature, it required calculating many correlations. Statistically correcting for this, though necessary, may mean that the study could not detect small, but meaningful, relations between personal intelligence and learning about personality. In addition, maintaining a reasonable survey length required assessment of correlates between personal intelligence and constructs such as memory function with only a few items. Additional items would increase both the likelihood and reliability of meaningful findings. Other scope-specific studies should focus just on one possible relation to personal intelligence,

Over the course of three studies, we have seen tangible evidence of what is essentially an intangible concept – personal intelligence. It is detectable in the episodes people recall as having taught them something about personality, and it is related to what we think of as sophistication. In personality learning episodes, we acquire knowledge that we not only use in that specific

relationship, but that we also use to form future judgments and guide future behavior. A better ability to construct and apply such far-reaching knowledge would certainly convey an advantage in navigating the world, and such is the promise of personal intelligence.

References

Anderson, C., John, O. P., Keltner, D., & Kring, A. M. (2001). Who attains social status? Effects of personality and physical attractiveness in social groups. *Journal Of Personality And Social Psychology, 81*(1), 116-132. doi:10.1037/0022-3514.81.1.116

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469-480.

Arnold, M. (1960). *Emotion and Personality*. New York: Columbia University Press.

Asch, S. (1946). Forming impressions of personality. *The Journal of Abnormal and Social Psychology, 41*(3), 258-290.

Bernstein, W., & Davis, M. (1982). Perspective-taking, self-consciousness, and accuracy in person perception. *Basic and Applied Social Psychology, 3*(1), 1-19. doi:10.1207/s15324834basp0301_1

Bieri, J. (1955). Cognitive complexity-simplicity and predictive behavior. *The Journal of Abnormal and Social Psychology, 51*(2), 263.

Bluck, S., & Alea, N. (2011). Crafting the TALE: Construction of a measure to assess the functions of autobiographical remembering. *Memory, 19*(5), 470-486.

Booker, C. (2004). *The seven basic plots: Why we tell stories*. New York: Continuum.

Bowling, N. A., Huang, J. L., Bragg, C. B., Khazon, S., Liu, M., & Blackmore, C. E. (2016). Who cares and who Is careless? Insufficient effort responding as a reflection of respondent personality. *Journal of Personality and Social Psychology, 111*(2), 218-229.

Cacioppo, J., & Berntson, G. (1999). The affect system: Architecture and operating characteristics. *Current Directions in Psychological Science, 8*(5), 133-137.

Cicchetti DV. Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. Psychological Assessment. 1994;6(4):284–290.

Colzato, L.S., van Wouwe, N.C., Lavender, T.J. & Hommel, B. (2006). Intelligence and cognitive flexibility: Fluid intelligence correlates with feature "unbinding" across perception and action. *Psychonomic Bulletin and Review, 13*(6), 1043-1048. doi:10.3758/BF03213923

Conte, H. R., Plutchik, R., Jung, B. B., Picard, S., Karasu, T. B., & Lotterman, A. (1990). Psychological mindedness as a predictor of psychotherapy outcome: A preliminary report. *Comprehensive Psychiatry, 31*, 426- 431.

Conway, M. (2003). Commentary: Cognitive-affective mechanisms and processes in

autobiographical memory. *Memory*, *11*(2), 217-224.

Cosmides, L. (1989). The logic of social exchange: Has natural selection shaped how humans reason? Studies with the Wason selection task. *Cognition*, *31*(3), 187-276.

Crawford, C. B., & Ferguson, G. A. (1970). A general rotation criterion and its use in orthogonal rotation. *Psychometrika*, *35*(3), 321-332.

Croxson, P., Walton, L., O'Reilly, J., Behrens, T., & Rushworth, M. (2009). Effort-based cost-benefit valuation and the human brain. *Journal of Neuroscience*, *29*(14), 4531-4541.

Dornbusch, S. M., Hastorf, A.H., Richardson, S. A., Muzzy, R.E., & Vreeland, R. S. (1965). The perceiver and the perceived: Their relative influence on the categories of interpersonal cognition. *Journal of Personality and Social Psychology*, *1*(5), 434-440. doi: 10.1037/h0021864

Downey, G., Mougios, V., Ayduk, O., London, B., & Shoda, Y. (2004). Rejection sensitivity and the defensive motivational system. *Psychological Science*, *15*(10), 668-673.

Dunbar, R., & Shultz, S. (2010). Evolution in the social brain. *Science*, *317,* 1344-1347. doi 10.1126/science.1145463

Finch, W. H. (2011). A comparison of factor rotation methods of dichotomous data. *Journal of Modern Applied Statistical Methods, 10,* 549-570.

Fiske, S. T. (2005). Social cognition and the normality of prejudgment. In Dovidio, J. F., Glick, P., & Rudman, L. A. (Eds.), *On the nature of prejudice: Fifty years after Allport* (pp. 36-53). Malden, MA: Blackwell.

Forgas, J., Bower, G., & Krantz, S. (1984). The influence of mood on perceptions of social interactions. *Journal of Experimental Social Psychology, 20*(6), 497-513. doi: 10.1016/0022-1031(84)90040-4

Funder, D. C. (1995). On the accuracy of personality judgment: A realistic approach. *Psychological Review*, *102*(4), 652-670.

Gisev, N., Bell, J. S., & Chen, T. F. (2013). Interrater agreement and interrater reliability: key concepts, approaches, and applications. *Research in Social and Administrative Pharmacy*, *9*(3), 330-338.

Hallgren, K. A. (2012). Computing Inter-Rater Reliability for Observational Data: An Overview and Tutorial. *Tutorials in Quantitative Methods for Psychology*, *8*(1), 23–34.

Haselton, M. G., & Buss, D. (2000). Error management theory: A new perspective on biases in cross-sex mind reading. *Journal of Personality and Social Psychology*, *78*(1), 81-91.

Haselton, M. G., & Funder, D. C. (2006). The evolution of accuracy and bias in social judgment. In Schaller, M., Simpson, J. A., & Kenrick, D. T. (Eds.), *Evolution and social psychology* (pp. 15-37). Madison, CT: Psychosocial Press.

Haselton, M. G., & Nettle, D. (2006). The paranoid optimist: An integrative evolutionary model of cognitive biases. *Personality and Social Psychology Review*, *10*(1), 47-66.

Huang, J. L., Bowling, N. A., Liu, M., & Li, Y. (2015). Detecting insufficient effort responding with an infrequency scale: Evaluating validity and participant reactions. *Journal of Business and Psychology*, *30*(2), 299-311.

Huang, J. L., Curran, P. G., Keeney, J., Poposki, E. M., & DeShon, R. P. (2012). Detecting and deterring insufficient effort responding to surveys. *Journal of Business and Psychology*, *27*(1), 99-114.

John, O. P., Donahue, E. M., & Kentle, R. L. (1991). The big five inventory: Technical report. Berkeley: University of California, Institute of Personality and Social Research.

Johnson, J. A. (2005). Ascertaining the validity of individual protocols from web-based personality inventories. *Journal of research in personality*, *39*(1), 103-129.

Kashdan, T. B., Roberts, J. E., & Carlos, E. L. (2006). Impact of depressive symptoms, self-esteem and neuroticism on trajectories of overgeneral autobiographical memory over repeated trials. *Cognition and Emotion*, *20*(3-4), 383-401.

Kihlstrom, J. F., & Cantor, N. (2000). *Social Intelligence*. Retrieved from http://socrates.berkeley.edu/ ~kihlstrm/social_intelligence.htm

Klein, S., Cosmides, L., Tooby, J., & Chance, S. (2002). Decisions and the evolution of memory: Multiple systems, multiple functions. *Psychological Review, 109*(2), 306-329.

Koechlin, E. (2014). An evolutionary computational theory of prefrontal executive function in decision-making. *Philosophical Transactions of the Royal Society B, 369*, 1-8. doi 10.1098/rstb.2013.0474

Krippendorff K. Content analysis: An introduction to its methodology. Sage Publications; Beverly Hills, CA: 1980.

Landis JR, & Koch GG. The measurement of observer agreement for categorical data. Biometrics. 1977;33(1):159–174.

LeBreton, J. M., & Senter, J. L. (2007). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods*.

Lewandowski, G. J., Aron, A., & Gee, J. (2007). Personality goes a long way: The malleability of opposite-sex physical attractiveness. *Personal Relationships, 14*(4), 571-585. doi:10.1111/j.1475-6811.2007.00172.x

Linda K.. Muthén, & Muthén, B. (2010). *Mplus*. Muthén & Muthén.

MacNeil, L. W. (1974). Cognitive complexity: A brief synthesis of theoretical approaches and a concept attainment task analogue to cognitive structure. *Psychological reports, 34*(1), 3-11.

Mayer, J. D. (2008). Personal intelligence. *Imagination, Cognition and Personality*, *27*(3), 209-232.

Mayer, J. D. (2014). *Personal intelligence: The power of personality and how it shapes our lives* New York: Farrar, Straus and Giroux.

Mayer, J. D., Caruso, D. R., & Salovey, P. (2000). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, *27*(4), 267-298.

Mayer, J., Panter, A., & Caruso, D. (2012). Does personal intelligence exist? Evidence from a new ability-based measure. *Journal of Personality Assessment*, *94*(2), 124-140. doi: 10.1080/00223891.2011.646108

Mayer, J., Perkins, D., Caruso, D., & Salovey, P. (2001). Emotional intelligence and giftedness. *Roeper Review, 23*, 131-137.

Mayer, J., Wilson, R., & Hazelwood, M. (2010). Personal intelligence expressed: A multiple case study of business leaders. *Imagination, Cognition, and Personality, 30*(2), 201-224.

McGrew, K.S. (2009). CHC theory and the human cognitive abilities project: Standing on the shoulders of the giants of psychometric intelligence research. *Intelligence, 37*(1), 1-10. doi: 10.1016/j.intell.2008.08.004

Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological methods*, *17*(3), 437.

Nettle, D. (2006). The evolution of personality variation in humans and other animals. *American Psychologist*, *61*(6), 622-631. doi:10.1037/0003-066X.61.6.622

Nosofsky, R., Palmeri, T., & McKinley, S. (1994). Rule-plus-exception model of classification learning. *Psychological Review, 101*(1), 53-79.

Nunnally, J. C., & Bernstein, I. H. (1994). The assessment of reliability. *Psychometric theory*, *3*(1), 248-292.

Palmeri, T., & Nosofsky, R. (1995). Recognition memory for exceptions to the category rule. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *21*, 548-568.

Patterson, M. L., & Stockbridge, E. (1998). Effects of cognitive demand and judgment strategy on person perception accuracy. *Journal of Nonverbal Behavior*, *22*(4), 253-263.

Paulhus, D. L., Lysy, D. C., & Yik, M. S. (1998). Self-report measures of intelligence: Are they useful as proxy IQ tests?. *Journal of personality*, *66*(4), 525-554.

Pillemer, D. B., Steiner, K. L., Kuwabara, K. J., Thomsen, D. K., & Svob, C. (2015). Vicarious memories. *Consciousness and cognition*, *36*, 233-245.

Plaks, J. E., Grant, H., & Dweck, C. S. (2005). Violations of implicit theories and the sense of prediction and control: Implications for motivated person perception. *Journal of Personality and Social Psychology*, *88*(2), 245-262.

Plaks, J. E., Stroessner, S. J., Dweck, C. S., & Sherman, J. W. (2001). Person theories and attention allocation: Preferences for stereotypic versus counterstereotypic information. *Journal of Personality and Social Psychology*, *80*(6), 876-893.

Raes, F., Hermans, D., Williams, J. M. G., & Eelen, P. (2006). Reduced autobiographical memory specificity and affect regulation. *Cognition and Emotion*, *20*(3-4), 402-429.

Rasmussen, A. S., & Berntsen, D. (2009). Emotional valence and the functions. *Memory & Cognition*, *37*(4), 477-492.

Robins, R., Caspi, A., & Moffitt, T. (2002). It's not just who you're with, it's who you are: Personality and relationship experiences across multiple relationships. *Journal of Personality*, *70*(6), 925-964.

Sass, D. A., & Schmitt, T. A. (2010). A comparative investigation of rotation criteria within exploratory factor analysis. *Multivariate Behavioral Research*, *45*, 73-103.

Saucier, G. (2010). The structure of social effects: Personality as impact on others. *European Journal of Personality*, *24*, 222-240. doi 10.1002/per.761

Saucier, G., & Goldberg, L. (2001). Lexical studies of indigenous personality factors: Premises, products, and prospects. *Journal of Personality*, *69*, 847-879.

Schank, R., C. (1980). Language and memory. *Cognitive Science*, *4*, 243-284.

Schneider, D. J. (1973). Implicit personality theory: A review. *Psychological Bulletin*, *79*(5), 294-309.

Schroder, H. M., Driver, M. J., & Streufert, S. (1967). Human information processing. New York: Holt, Rinehart, & Winston.

Suedfeld, P., & Rank, A. D. (1976). Revolutionary leaders: Long-term success as a function of changes in conceptual complexity. *Journal of Personality and Social Psychology*, *34*(2), 169.

Suedfeld, P., & Tetlock, P. E. (2014). Integrative complexity at forty: Steps toward resolving the scoring dilemma. *Political Psychology*, *35*(5), 597-601.

Taylor, S. (1998). The social being in social psychology. In D. Gilbert, S. Fiske, & G. Lindzey (Eds). *Handbook in social psychology, 4th ed.* (pp. 58-95). New York: McGraw-Hill.

Tetlock, P. E., Peterson, R. S., & Berry, J. M. (1993). Flattering and unflattering personality portraits of integratively simple and complex managers. *Journal of Personality and Social Psychology*, *64*(3), 500.

Woike, B. (2007). Content coding of open-ended responses. In Robins, R., Fraley, R., & Krueger, R. (Eds.), *Handbook of research methods in personality psychology* (pp. 292-307). New York: Guilford Press.

Wood, D., Harms, P., & Vazire, S. (2010). Perceiver effects as projective tests: What your perceptions of others say about you. *Journal of Personality and Social Psychology*, *99*(1), 174-190. doi: 10.1037/a0019390

Yerkes, R. M. (1921). Psychological examining in the United States. *Memoirs of the National Academy of Sciences, 15,* 890.

Table 1

Percentage of Participants Endorsing "Event Features" Items

Participants reported learning about…	**Study 1[a]**		**Study 2**	
	Percent and *95% C.I.*		**Percent and *95% C.I.***	
A friend	56.36	*49.81;62.92*	62.74	*56.23;69.24*
A romantic partner	15.00	*10.28;19.72*	19.34	*14.02;24.66*
A sibling	9.55	*5.66;13.43*	4.72	*1.86;7.57*
A parent	9.09	*5.29;12.89*	5.66	*2.55;8.77*
Another peer	5.91	*2.79;9.03*	2.83	*.60;5.06*
Another relative	2.73	*.58;4.88*	3.77	*1.21;6.34*
Another authority figure	1.36	*-.17;2.90*	.94	*-.36;2.24*
The learning took place when…				
Observing the person	77.27	*71.69;82.85*	90.48	*86.47;94.48*
Listening to the person	55.00	*48.37;61.63*	41.43	*34.71;48.15*
Being told about the person by someone else	20.91	*15.49;26.32*	28.10	*21.97;34.22*
Watching person's facial expressions	-	-	34.29	*27.81;40.76*
Being told directly by the person	-	-	32.86	*26.45;39.26*
Participant confirmed what they learned by…				
The person's repeated behavior	62.27	*55.82;68.73*	91.43	*87.61;95.25*
Agreement from other people	31.36	*25.18;37.54*	84.29	*79.32;89.25*

[a]Raters categorized the responses in Study 1; Study 2 ratings were generated by the participants themselves. Items marked with an "-" were not used in the pilot coding system.

Table 2

Percentage of Participants Endorsing each Item in "What was Learned"

Participant learned that the person…	**Study 1[a]** **Percent and *95% C.I.***		Study 2 **Percent and *95% C.I.***	
Was kind	13.18	*8.68;17.69*	63.81	*57.26;70.36*
Would help the participant	12.73	*8.29;17.17*	61.43	*54.79;68.07*
Handled his/her anger well	.91	*-.35;2.17*	45.24	*38.45;52.03*
Was similar to the participant	6.36	*3.11;9.61*	45.71	*38.92;52.51*
Was open-minded	1.36	*-.18;2.91*	50.0	*43.18;56.82*
Had no self-discipline	8.64	*4.90;12.38*	-	
Handled his/her anger badly	6.82	*3.46;10.18*	33.81	*27.36;40.26*
Had to be dealt with in a special way	22.73	*17.15;28.31*	41.90	*35.18;48.63*
Could keep a secret	.91	*-.35;2.17*	53.33	*46.53;60.14*
Was self-disciplined	5.45	*2.43;8.48*	-	
Coped well with adversity or personal challenges	14.09	*9.46;18.72*	40.95	*34.25;47.66*
Did what the person said he or she would do	5.41	*2.77;9.05*	44.76	*37.98;51.54*
Had no problem admitting when he/she was wrong	1.82	*.04;3.60*	29.05	*22.86;35.24*
Did not do what the target said he or she would do	7.27	*3.81;10.73*	41.43	*34.71;48.15*
Would not help the learner	5.91	*2.77;9.05*	20.95	*15.4;26.5*
Was mean	9.09	*5.26;12.92*	33.81	*27.36;40.26*
Was judgmental	4.09	*1.45;6.73*	37.62	*31.01;44.22*
Did not want to be in any relationship with the learner	6.36	*3.11;9.61*	18.10	*12.85;23.34*
Did not display genuine feelings	15.91	*11.04;20.78*	36.19	*29.64;42.74*
Would not admit when he/she was wrong/Needed to be right	6.36	*3.11;9.61*	44.29	*37.51;51.06*
Could not keep a secret	2.73	*.56;4.90*	21.9	*16.26;27.54*
Genuinely liked/cared about learner	-		67.14	*60.74;73.55*
Was funny	-		53.81	*47.01;60.61*
Was cooperative	-		51.43	*44.61;58.24*
Was trustworthy	-		56.19	*49.42;62.96*
Could be depended on	-		56.67	*49.91;63.42*
Has had past experiences that influence present behavior	-		64.29	*57.75;70.82*
Violated my expectations by behaving better than I thought	-		35.24	*28.72;41.75*
Was not trustworthy	-		30.95	*24.65;37.26*
Was deceptive or phony	-		32.86	*26.45;39.26*
Could not be depended on	-		36.19	*29.64;42.74*
Was competitive	-		49.05	*42.23;55.86*
Violated my expectations by behaving worse than I thought	-		49.52	*42.71;56.34*
Was different from me	-		58.57	*51.85;65.29*
Has had past experiences but they don't influence present	-		14.76	*9.92;19.6*
Was not confident	-		33.81	*27.36;40.26*
Was confident	-		53.81	*47.01;60.61*
Could be taken at face-value	-		43.81	*37.04;50.58*
Coped poorly with adversity or personal challenges	-		40.95	*34.25;47.66*
Was solemn or serious	-		38.51	*31.93;45.21*

[a]Raters categorized the responses in Study 1; Study 2 ratings were generated by the participants themselves. Items marked with an "-" were not used in the coding system.

Table 3
Percentage of Participants Endorsing each Relationship-specific" Learning Outcome"

	Study 1[a]		Study 2	
Learning Outcome	**Percentage**	**95% C. I.**	**Percentage**	**95% C. I.**
changing their behavior toward the target	39.09	32.59; 45.59	57.62	50.88; 64.36
negatively revising opinion of the target	35.45	29.08; 41.83	42.9	39.5; 46.3
feeling closer to the target	31.36	25.18; 37.54	50.95	44.14; 57.77
positively revising opinion of the target	29.09	23.04; 35.14	46.67	39.86; 53.47
feeling more distant from the target	24.55	18.81; 30.28	41.43	34.71; 48.15
ceased the relationship	11.82	7.52; 16.12	23.33	17.57; 29.10
the target ended relationship	-		10.95	6.69; 15.21
the target changed his or her behavior	-	-	36.19	29.64; 42.74
spending more time with the target	-	-	49.52	42.71; 56.34
spending less time with the target	-	-	35.71	29.18; 42.25
no change in their attitude	-	-	34.29	27.81; 40.76
no change in their behavior	-	-	27.14	21.08; 33.21
no change in their feelings	-	-	26.67	20.64; 32.70
other result not listed	-	-	4.72	1.84; 7.59

[a]Raters categorized participants' responses in Study 1 (items marked with an "-" were not used in the Study 1 analyses); Study 2 figures are generated from the participants' own evaluations.

Table 4

Use of Learned Information Outside of the Relationship (Generalization)

Use classified as forming	Percentage	95% C. I.	Example
An increased tendency to notice certain qualities in other people	28.64	22.62; 34.66	"Now when I see others on the sideline injured, I realize how dedicated they are."
Something about how good people are	10.91	6.76; 15.06	"I believe that everyone has a good soul, it just requires the right person to bring it out."
A need to withhold judgment	10.91	6.76; 15.06	"I try to give more people the benefit of the doubt that maybe they have problems that are deeper than I can see..."
A philosophy like "what goes around, comes around"	10.91	6.76; 15.06	"Watch what you say about people because it may come back to you."
An observation of different qualities, tendencies, or behavior from one individual to the next	10.91	6.76; 15.06	"Everyone is different and to be friends you just have to be accepting, understanding, and use honest communication."

Table 5

Qualitative Comparison of Excerpts from the Three Highest and Lowest-Scored Narratives, as Evaluated for their Sophistication in Study 1

ID number	Sophistication Score	Excerpts from Narrative
		Highest-Rated Sophistication
38	23	I learned that T. was really obsessive over events. It took a year for me to learn he had Asperger's syndrome, but I suspected after half a year. I watched him learn how to play Dungeons and Dragons in three weeks…it took me 1/2 a year to learn. I watched him get really involved in his backstory and make up lots of data…I learned he could focus so much that he would obsesses… I still value him as a friend. I just have to be careful about what I talk about around him. I can watch for warning signs and subtly keep him from getting obsessive about games. I think that the personality of a person depends on the context in which you see them. I might never have seen the obsessive nature of his personality if I only met him in class.
83	23	I learned that my father was addicted to drugs and how that was beginning to control his life. I could tell there was something wrong with him by his actions and voice. He has some very serious and deep seated issues regarding his past and…those influence the way he lives his life…he is a deeply flawed man that has a lot of pain…I do believe that despite his issues and poor choices he does love my brother and I.
158	22	…I had always noticed that [my friend's] personality was kind of stand-offish and she seemed to never fully let me into her world or why she reacted so strongly to certain [things]. When [my friend] was talking to me, it really hit me the effect that parents/role models have on younger children and how an addiction can really affect someone's life, not just your own. I could see how much pain and suppressed grief that her mother had caused her…she has been through some really hard times and she only puts up those walls out of habit to keep from getting hurt.
		Lowest-Rated Sophistication
230	1	I learned that one of my friends is going to be there for me no matter what. My friend M. and I have been best friends forever and through everything we have always been friends. In bad situations M. was always there for me no matter what.
182	2	I remember when one of my best friends from back home decided that she wanted to be a music major. I realized that it would happen before that, however, when her life started revolving around music and her passion for it…I observed her actions becoming more and more music related and her focus centered more and more on music in general.
82	3	my sister moved away to California…After she was gone for a while she told me that I was the strongest person she knows. This meant a lot to me because she knows everything that happens in my life and how hard it was for us to not be around each other that often. I learned that you can do anything you want to do. Even though no one helped her financially, she still moved out there …I learned that all you need is determination and drive. With that you can accomplish mostly anything…I now know that I can choose what I want to do and that I don't need everyone's permission to do so. When I see someone not doing something they really wanted to do because his/her parents thought it wasn't a good idea it saddens me because I know how great it would be for them if they didn't let people hinder him/her.

Table 6
Plots used to Classify Personality Learning Episodes

Organization of Main Plot Categories		**Examples**
The Big Reveal	1: A secret revealed	"my friend was adopted"
	2: Betrayed!	"my cousin flirted with my boyfriend"; "my friend talked about me behind my back"
Observed personality process/growth over time	3: Observed personality process/growth over time	"my sister overcame her shyness"
Decisive Act	4: Decisive single behavior or act that changes perception of person	"my friend stuck up for someone who was being teased"
Intimate Caring Gesture	5: Intimate caring gesture	"my girlfriend stayed up all night caring for me when I was sick"
Observing Traits	6: New trait, or conditional aspect of known trait, revealed in new circumstance	"my confident brother became really intimidated when he met a professional athlete"
	7: Repeated observation of trait or characteristic behavior	"my roommate never tells the truth about where she is going"

Table 7

Qualitative Comparison of Excerpts from the Three Highest and Lowest-Scored Narratives, as Evaluated for their Sophistication in Study 2

ID number	Sophistication Score	Excerpts from Narrative
		Highest-Rated Sophistication
169	32	My boyfriend and I have been together for about two years and five months, and I've known him for a few months longer than that. Recently, we were talking as we were driving home from the store. We have a lot of open dialogue, so he's never afraid to tell me anything and he knows that I'll usually understand. He was talking about certain reactions he has to things and how he's gotten good at avoiding arguments with people. Piecing together what I already knew, I mentioned that his hyper-awareness of certain situations was similar to abuse/neglect victims, except that his parents were never abusive or neglectful - they've genuinely tried to do their best by him and are generally nice people. He started talking about how his mother often cornered him for long, guilt-inducing lectures that could be set off by anything…Often, when he has opinions that his parents find undesirable, they twist his words around to make it sound like he's trying to spite them (I've actually seen this in action, simply because we have a special-needs cat), and when he calls them out on it, they twist that around as well, and he starts feeling like he's crazy for thinking there was ever a problem in the first place…it's pretty clear as to why he tends to shy away from having opinions on matters that affect other people, and why he's especially careful about the words he chooses when making arguments with others. Though it makes him a relatively amicable person, he also lacks much initiative to take matters into his own hands.
115	29	My friend R and I were headed to my friend S's house we went to relax and have some fun. My friend R is a very passive person, he is like a big teddy bear, not a very take charge type of person. When we showed up at S's house we saw that our friend S was on the ground getting beat up by two kids from our school. Even before the car stopped my friend R was out of the car and ran over to help our friend. I learned that day that My friend R is very protective and very take charge when it comes to the people he cares about and if they are in trouble.
128	28.7	When first moving into my dorm and beginning my first year at college I met a girl named A. She seemed very nice and helped me and my roommate set up our internet connection. I got to know her better and learned that she was very blunt, and always says what is on her mind even if it hurts other people. I had a specific run in with this type of behavior when she said that people view me as dumb because I am very loud. I was upset at that but got over it. A also made it seem like nothing really affected her and that made her come off as cold. After about a month or two of knowing her I found out that she had a little brother who died of a heart disease when she was seven and therefore she does not trust people and has a wall up. From then on I saw A in a different light she was no longer just a cold blunt person but actually someone who had gone through a lot in her life.
		Lowest-Rated Sophistication
227	7	My friend Z came over with a bunch of stolen belongings. [I] learned to protect and keep an eye on my belongings. Don't trust strangers and security is important.
49	7.5	I had known this girl since the second grade or well at least I thought I knew her. We didn't really become friends until the fourth grade because we had a mutual friend, who we often fought each other for attention…around fifth grade…we became best friends…I often remember myself trying to impress her, almost following her lead… about senior year of high school we were really close friends until I found out…I knew that she was smart and liked to procrastinate, but later on I found out she was manipulative. Perhaps I didn't see this because I tried so hard to be like her and like the same things as her, but it is obvious now that she was only manipulating me. She had many personality traits like happy, smart, bubbly, and competitive, and now I know she is manipulative…I know that not everyone is society is the same, but we do live in an individualistic society so obviously people are going to look out for themselves rather than others. In certain circumstances they may have to manipulate people.
125	7.6	I had been friends with Amber since we were in 6th grade, when we were seniors she told me that I shouldn't bring my boyfriend to our senior banquet. I've learned that people are not always what they seem.

Table 8
"What was learned" Factor Loadings

	Study 2		Study 3	
Item using stem: I learned this person …	**I.**	**II.**	**I.**	**II.**
Wouldn't admit when he/she was wrong	.899*		.846**	
Violated my expectation by behaving worse than I thought	.854*		.942**	
Said one thing but did another	.843*		.871**	
Was not trustworthy	.791*		.947**	
Couldn't keep a secret	.784*		.772**	
Was judgmental	.773*		.769**	
Was deceptive or phony	.751*		.905**	
Coped poorly with adversity and/or personal challenges	.749*		.721**	
was cruel or mean	.733*		.879**	
Had to be dealt with in a special way	.711*		.710**	
Was different from me	.702*		.777**	
Would not help me	.684*		.837**	
Genuinely liked or cared about me		.899*		.920**
Would help		.875*		.928**
Was kind		.867*		.950**
Could keep a secret		.842*		.769**
Was cooperative		.788*		.947**
Was dependable		.784*		.968**
Was similar to me		.727*		.822**
Was open-minded		.723*		.915**
Did what he/she said he/she would do		.642*		.789**
Handled anger well		.640*		.716**
Could be taken at face-value		.614*		.692**
Would admit when he/she was wrong		.607*		.592**

Table 9

Percentage of Personality Learning Episodes by Plot

	Study 2[a]		**Study 3**	
Plot	**Percent and *95% C.I.***		**Percent and *95% C.I.***	
A secret revealed	4.2	*2.8-5.6*	12.6	*10.69-14.51*
Betrayed!	10.4	*8.3-12.5*	10	*8.27-11.73*
Growth over time	19.8	*17.1-22.5*	17.6	*15.4-19.8*
Decisive act	31.6	*28.4-34.8*	23.6	*21.15-26.05*
Intimate caring gesture	6.6	*4.9-8.3*	8	*6.44-9.56*
New or conditional trait	17	*14.4-19.6*	18.3	*16.01-20.53*
Repeated behavior	10.4	*8.3-12.5*	11.6	*9.75-11.45*

Table 10

Personality Correlates of Learning about Others' Personalities

	Negative learning	Positive learning	Interper. Dist	Sophist. Score	Cost	Benefit	Neither	Total Items Learned
Negative learning	1	-.595**	.838**	-.394**	.914**	-.588**	.316*	.370**
Positive learning	-.595**	1	-.694**	.237**	-.546**	.941**	-.048	.489**
Interper. Dist.	.838**	-.894**	1	-.483**	.803**	-.696**	.193	.089
Sophist. Score	-.394**	.237*	-.463**	1	-.446**	.222**	.070	-.141
Costs	.914**	-.546**	.803**	-.446**	1	-.540**	.044	.369**
Benefits	-.588**	..941**	-.696**	.222**	-.540**	1	-.222*	.474**
Neither	.316*	.-.048	.193	.070	.044	-.222*	1	.288**
Total Items Learned	.370**	.488**	.089	-.141	.369**	.474**	.288**	1
Extraver	.052	.023	.052	.008	.055	.023	.030	.091
Conscien	-.193	-.118	-.094	-.069	-.158	-.056	-.241**	-.326**
Neurotic	.087	-.023	.046	-.024	.048	-.083	.232*	.068
Open	-.076	.000	-.041	.116	-.076	.013	-.019	-.066
Agreeabl	.196*	-.205*	.246**	-.206*	.226**	.076	-.222*	-.012
Vocab	-.067	-.164	.008	.134	-.054	-.174	-.039	-.259**
Psych-minded	.003	-.067	.019	.091	.044	-.022	-.157	-.060

(Bonferroni correction applied)

Table 11

Percentage of Participants Endorsing each Item in "What was Learned"

Participant learned that the person…	**Study 3**		Study 2	
	Percent and *95% C.I.*		**Percent and *95% C.I.***	
Was kind	48.5	*45.70;51.30*	63.81	*57.26;70.36*
Would help the participant	51.8	*48.81;54.79*	61.43	*54.79;68.07*
Handled his or her anger well	40.9	*38.54;43.26*	45.24	*38.45;52.03*
Was similar to the participant	41.5	*39.11;43.89*	45.71	*38.92;52.51*
Was open-minded	41.9	*39.48;44.32*	50.0	*43.18;56.82*
Had to be dealt with in a special way because of unique qualities of the person	49.0	*46.18;51.82*	41.90	*35.18;48.63*
Could keep a secret	48.5	*45.70;51.30*	53.33	*46.53;60.14*
Did what the person said he or she would do	41.9	*39.48;44.32*	44.76	*37.98;51.54*
Had no problem admitting when he/she was wrong	27.9	*26.29;29.51*	29.05	*22.86;35.24*
Did not do what the target said he or she would do	33.2	*31.29;35.11*	41.43	*34.71;48.15*
Would not help the learner	20.6	*19.41;21.79*	20.95	*15.4;26.5*
Was mean	31.9	*30.06;33.74*	33.81	*27.36;40.26*
Was judgmental	39.2	*36.94;41.46*	37.62	*31.01;44.22*
Would not admit when he/she was wrong/Needed to be right	43.9	*41.37;46.43*	44.29	*37.51;51.06*
Could not keep a secret	22.3	*21.01;23.59*	21.9	*16.26;27.54*
Genuinely liked/cared about learner	56.8	*53.53;60.07*	67.14	*60.74;73.55*
Was cooperative	41.2	*38.83;43.57*	51.43	*44.61;58.24*
Could be depended on	48.8	*45.99;51.61*	56.67	*49.91;63.42*
Was not trustworthy	31.6	*29.78;33.42*	30.95	*24.65;37.26*
Was deceptive or phony	30.9	*29.12;32.68*	32.86	*26.45;39.26*
Violated my expectations by behaving worse than I thought	48.8	*45.99;51.61*	49.52	*42.71;56.34*
Was different from me	62.1	*58.52;65.68*	58.57	*51.85;65.29*
Could be taken at face-value	33.9	*31.95;35.85*	43.81	*37.04;50.58*
Coped poorly with adversity or personal challenges	41.9	*39.48;44.32*	40.95	*34.25;47.66*

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Table 12

Hierarchical Multiple Linear Regression Predicting Interpersonal Distance from Survey Variables

Variables	Regression Coefficients				
	Unstandardized		Standardized		
	B	Std. Error	*β*	*t*	Sig.
			Study 3 Model		
Costs	.20	.02	.52	8.74	<.001
Benefits	-.27	.02	-.70	-11.78	<.001
Total Items Learned	.04	.03	.10	1.17	.245
Costs x Benefits	-.07	.02	-.19	-4.22	<.001
Model Summary	*R*	*R²*	*Adjusted R²*	*Std. Error of Est.*	
	.77	.60	..59	.25	
			Study 3 Conditional Effects Coefficients		
High Costs	.31	.04	.81	7.48	<.001
Benefits	-.34	.02	-.87	-14.95	<.001
Low Costs	.31	.04	.61	7.48	<.001
Benefits	-.21	.03	-.53	-6.49	<.001
High Benefits	-.27	.02	-.70	-11.75	<.001
Costs	.14	.02	.35	6.37	<.001
Low Benefits	-.27	.02	-.70	-11.75	<.001
Costs	.27	.03	.68	8.08	<.001
			Study 3 Addition of Memory-related Variables		
Costs	.14	.02	.35	6.30	<.001
Benefits	-.18	.02	-.47	-8.09	<.001
Total Items Learned	.04	.03	.10	1.39	.166
Costs x Benefits	-.04	.01	-.12	-3.03	.003
Positive Affect	-.02	.02	-.09	-1.56	.120
Negative Affect	.08	.02	.32	5.20	<.001
Intensity	-.01	.01	-.03	-.82	.413
Model Summary	*R*	*R²*	*Adjusted R²*	*Std. Error of Est.*	
	.83	.69	.68	.22	

Table 13

Qualitative Comparison of Excerpts from the Narratives of the Three Highest and Lowest Scorers in Personal Intelligence as Measured with the TOPI 1.4

ID number	TOPI 1.4 Score	Excerpts from Narrative
		Highest-Scoring in Personal Intelligence
307	.98	When my younger brother and I were in high school, we had gotten into an argument…It had escalated really quickly from a simple disagreement, and his words and tone became more and more forceful; he started moving closer and closer to me, backing me into the stairs. I started to feel afraid,..I started crying, but he kept yelling. Eventually I stopped saying anything in response to him because I was overwhelmed with tears, and he abruptly walked away. Initially I was just scared of this new side of him, but as I have gotten older, I understand now that my brother often responds to his own internal pain by lashing out at others and blaming him for his emotions. He was struggling at that point in his life because he was lonely and felt like an outsider all the time.
318	.97	…For the 7 or so years that I knew [my ex-boyfriend A.] he always seemed…to be a kind, caring, go-with-the-flow person. He could often be opinionated, but I had never seen him be controlling…. prom season this year, however, when parties were being planned… suddenly the controlling side of him came barreling through. One of our …friends, C., had an already planned party, but A. wanted to have his own since C. left out [someone A. would invite]…A. tried to set up a competing party and this divided our friend group. He…threatened everybody into agreeing to come to his party instead of C.'s. He got very angry and uncooperative. It was a side if A. that I had never seen before… I'm now overly worried and conscious that maybe there were signs that I had missed, and if there were then I could just as easily miss them in other people as well.
184	.96	I was friends with "M" for around 5 years…During the first week of college, I found out that she was telling people many things about herself that simply were not true. to gain the affections of others at school. Later that week I was supposed to meet up with M to go to a party, and she ignored me when she saw me walk up to her… she just takes my other friends hands, and runs away from me, laughing. A few seconds later, I found out…a boy in the group M was with was trying to start a fight ..I warned M and said I was going to a different party… I gave her direction…and she said she would help me get in. I never heard from her again…I pretty much knew that I meant very little, if not nothing, to my childhood best friend. I stopped talking to her that night, and found out a few days later that she had sent 3 pages of texts to some boy that she had just met from school, slandering me. The boy showed me the texts… This was the moment that everything was solidified for me. M did not care about me, she was not an honest person, and she would do essentially anything in her power to make herself look better, to put me down, or to get the attention of others.
		Lowest-Scoring in Personal Intelligence
41	.20	The person that I will be discussing in this text box is my sister. I knew my sister for 15 years before I learned this particular personality trait about her. She is a manipulative human being that only looks out for herself. She is the most selfish person on the face of the planet because she tried to commit suicide. When I learned this trait it was not because the event happened it was the event that put into perspective her actual personality. I don't know what else to write so thats what I will leave as the answer I guess.
237	.25	My girlfriend J, and I went on a trip to Canada last fall. I had the whole trip planned out from where we were going to stay to what restaurant we were going to go to, even at what time we were going to go to said restaurant. I assumed J was comfortable with my plans and she seemed fine due to the lack of questioning about what was going on....we went to the hotel and unpacked and started to make our way down the block toward the restaurant where I planned we would go. On our way, J saw street music preforming outside of a popular sports bar. She randomly stopped...smiled at me, and slipped off her black heels. I was starting to worry because we had to be at a restaurant at the time I planned, but she neglected to care about the time or place she was. She started to dance to the…loud drum sound…I stopped and watched her move without a care. At that point I saw a spontaneous side to J. that I never knew even existed.
28	.25	Over summer and winter break while I am not at school I spend my time commercial fishing…One of my mates, A., has been fishing with me for about 4 years now. Over our spring break two years back A and I, along with a few other friends…spent our week long vacation on the boat in the Bahamas. While we were there it was nothing but good times in the sun….One thing I noticed about A. though was that even when everybody else was sitting around having a drink and relaxing, he would still be working on the boat, making sure every square inch was as clean as possible. It showed me that he was treating the boat like it was it his own…It showed me that A. was not willing to rest until the job was finished and I believe that is one of the best traits you could possibly have. If I see people slacking on the job, or complaining about how hard their job is, or trying to get away with as much as they can with as little effort as possible; it makes me despise them.

Table 14

Correlations between Personal Intelligence and Learning and Personality Characteristics

	TOPI 1.4 Score
Positive Qualities	-.23*
Negative Qualities	.06
Costs	-.13
Benefits	-.20
Total Items Learned	-.21
Distance Consequences	.07
Sophistication Score	.37*
"Self" Function	-.09
Directive Function	-.01
Social Function	-.21*
Vocabulary	.512*
Extraversion	-.06
Openness	.02
Conscientiousness	.11
Neuroticism	.14
Agreeableness	.03

Bonferroni correction applied

Table 15

Descriptive Statistics for Memory Function Variables

	Self	Directive	Social
Mean	6.18	7.85	4.54
Median	6.00	8.00	4.00
Mode	6.00	8.00	2.00
Std. Deviation	1.92	1.71	2.21

Table 16
Correlations between Learning Variables and Other Personality Characteristics

	Negative Qualities	**Positive Qualities**	**Interpers. Dist.**	**Sophist. Score**	**Cost**	**Benefit**	**Total Items Learned**
Extraversion	-0.029	0.028	-0.014	0.010	-0.019	0.035	0.009
Agreeableness	-0.101	0.030	-0.090	0.098	-0.066	0.045	-0.048
Conscientiousness	-.119*	-0.042	-0.039	0.077	-.124*	-0.086	-.175*
Neuroticism	.259*	-.122	.175	-0.018	.171	-0.042	0.108
Openness	-0.007	0.027	-0.006	0.091	0.112	0.070	0.065
Vocabulary	0.059	-.176	.084	.247*	-.120	-.162	-.153

Table 17

Hierarchical Multiple Regression Analyses Predicting Sophistication Rating from Personal Intelligence and Vocabulary Scores

Variables	Regression Coefficients			Model Fit Statistics			
	Unstandardized		Standardized				
Predictor	B	Std. Error	β	R^2	ΔR^2	ΔF	Sig. ΔF
Step 1: Vocabulary	-0.013	0.269	-.016	.061	.061	19.439	<.001
Step 2: Personal Intelligence	8.007	5.156	.281	.142	.081	28.130	<.001
Step 3: Personal Intelligence x Vocabulary	0.100	0.333	.128	..142	.000	.089	.765

Appendix A: Personality Learning Questionnaire

General Demographics:

Age_____ Gender_____ Major_____

This questionnaire will ask you to describe in detail a time, place, or event, when you learned something about the personality of someone you know well, and what it was that you learned. Below you will find a number of questions about what you learned and how you learned it.

Part 1. To begin, please think back in your life to a time, place or event when you learned something about the personality of someone you know well. Describe it in as much detail as you can. Please include the person's relationship to you and how long you had known the person before the learning occurred. Include how you learned the information as well as what you learned. Please tell it as you would tell a story, including specific details and feelings that would allow someone else to really understand and imagine what happened:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Has what you learned affected the way you react to people other than the person you learned about?

_____

_____

_____

_____

_____

Has what you learned supported or changed the way you look at life and/or human nature?

_____

_____

_____

_____

_____

Part 2. This part of the questionnaire asks you to indicate, from the choices given, the answer that corresponds most closely to the details about the event you described in part 1.

1) **The relationship to me of the person I learned about is/was (please check one):**

1 – Friend 2 – Romantic interest 3 – Parent 4 – Sibling 5 – Other Peer

6- Other authority figure 7 – Other family member

If relationship is not listed above, please indicate relationship here:

_____

2) **The length of time I have known this person is (please check one):**

(1) ___One month or less

(2) ___ More than one month, but less than 6 months

(3) ___ 6 months to one year

(4)___Longer than one year, but less than 3 years

(5)___ At least 3 years but less than 5 years

(6)____ Between 5 years and 10 years

(7)___Longer than 10 years but not all my life

(8)___I have known this person all my life

3) The length of time I had known this person when the event I described occurred (please check one):

(1) ___One month or less

(2) ___ More than one month, but less than 6 months

(3) ___ 6 months to one year

(4)___Longer than one year, but less than 3 years

(5) ___ At least 3 years but less than 5 years

(6)____ Between 5 years and 10 years

(7)___Longer than 10 years

4) When I learned what I did about this person, the triggering event occurred when (please answer "yes" or "no" to each statement below):

(1) The person told me something directly about himself or herself. YES NO

(2) I heard about this person (or something he or she had done) from one or more other people. YES NO

(3) I listened to someone talk and realized something about that person. YES NO

(4) I watched someone's facial expression and realized something about that person. YES NO

(5) I observed the person's actions and realized something about his or her personality from doing so. YES NO

(6) Other YES NO (If "YES", please specify)_____

Concerning what I learned…

5) I have discussed this event with at least one other person: YES NO

6) At least one other person has told me that he or she has the same impression or opinion that I do of the person I described: YES NO

7) There has been more than one occasion when this person acted as I described:

YES NO

Part 3. This part of the questionnaire asks you to indicate whether or not the statements below apply to the event that you described in Part 1.
I learned this person (please answer "yes" or "no" to each statement below):

1) violated my expectation of how he or she would behave by behaving worse than I thought he or she would.

YES NO

2) could keep a secret. YES NO

3) could not keep a secret. YES NO

4) was manipulative. YES NO

5) was inspiring. YES NO

6) was cooperative. YES NO

7) was judgmental. YES NO

8) was open-minded. YES NO

9) could be depended on. YES NO

10) was not trustworthy. YES NO

11) said one thing but did another/was a liar. YES NO

12) did what he/she said he/she would do. YES NO

13) was selfish. YES NO

14) was generous. YES NO

15) was cruel or mean. YES NO

16) was kind. YES NO

17) would not admit when he or she was wrong. YES NO

18) had no problem admitting when he or she was wrong. YES NO

19) would help me. YES NO

20) would not help me. YES NO

21) was sympathetic. YES NO

22) was stubborn or controlling. YES NO

23) could be taken at face-value. YES NO

24) was deceptive or phony. YES NO

25) was moody/unstable. YES NO

26) would stand up for me. YES NO

27) handled his or her anger well. YES NO

28) was overly sensitive/needy. YES NO

29) will generally behave as I expect. YES NO

30) coped poorly with adversity and/or personal challenges. YES NO

31) genuinely liked and/or cared about me. YESNO

32) was a people-pleaser. YES NO

33) was humble. YES NO

34) was similar to me. YES NO

35) was different from me. YES NO

36) had to be treated in a special way because of what he/she was like. YES NO

Part 4. **This part of the questionnaire asks you to indicate, from the choices given, the answers that correspond most closely to the results of the event you described in Part 1.**

Because of the event I described in Part 1 (please answer "yes" or "no" to each statement below):

1) I ceased having a relationship with this person. YES NO

2) This person ceased having a relationship with me. YES NO

3) I began acting differently when dealing with this person. YES NO

4) This person changed his or her behavior toward me. YES NO

5) I spend or want to spend more time with this person. YES NO

6) I spend or want to spend less time with this person. YES NO

7) I feel closer to this person. YES NO

8) I feel more distant from this person. YES NO

9) I have a more favorable opinion of this person. YES NO

10) I have a less favorable opinion of this person. YES NO

11) I view this person as a positive model or as inspiration for myself. YES NO

12) I view this person as an example of how not to behave or as someone I do not want to be like. YES NO

13) There have been no changes in my behavior toward this person as a result of what I learned. YES NO

14) There have been no changes in my attitude toward this person as a result of what I learned. YES NO

15) There have been no changes in my feelings about this person as a result of what I learned. YES NO

Part 5. This part of the questionnaire asks you about how the memory you recalled may affect you. Please respond to each item below using the response scale provided.

1) When this episode occurred, I considered it positive. Not at all 1 2 3 4 5 Extremely
2) When this episode occurred, I considered it negative. Not at all 1 2 3 4 5 Extremely
3) Now when I remember this episode, I feel intense emotion. Not at all 1 2 3 4 5 Extremely
4) My memory of this episode:
    a. Helps me to understand myself. Not at all 1 2 3 4 5 Very much so
    b. Helps me to feel better about myself. Not at all 1 2 3 4 5 Very much so
    c. Affects the way I deal with other people. Not at all 1 2 3 4 5 Very much so
    d. Is something I share with other people to let them know more about me.

       Not at all 1 2 3 4 5 Very much so
    e. Influences the way I view the world. Not at all 1 2 3 4 5 Very much so
    f. Is something I share when I also want to know about other people.

       Not at all 1 2 3 4 5 Very much so

Part 6. This part of the questionnaire asks you to consider the event you recalled and to choose one category below that best describes it in general:

Organization of Main Plot Categories		Examples
The Big Reveal	1: A secret revealed	"my friend was adopted"
	2: Betrayed!	"my cousin flirted with my boyfriend"; "my friend talked about me behind my back"
Observed personality process/growth over time	3: Observed personality process/growth over time	"my sister overcame her shyness"
Decisive Act	4: Decisive single behavior or act that changes perception of person	"my friend stuck up for someone who was being teased"
Intimate Caring Gesture	5: Intimate caring gesture	"my girlfriend stayed up all night caring for me when I was sick"

Observing Traits	6: New trait, or conditional aspect of known trait, revealed in new circumstance	"my confident brother became really intimidated when he met a professional athlete"
	7: Repeated observation of trait or characteristic behavior	"my roommate never tells the truth about where she is going"

Part 7. This final part of the questionnaire asks you to rate each item below as to whether you consider it a cost or a benefit of interacting with another person. In this final question, we ask for your thoughts IN GENERAL, rather than focusing on the event you described...

When most of us interact with others, we experience both costs and benefits. Costs may involve such experiences as putting up with another person's annoying habits, his or her asking to borrow things – any qualities we find negative. Benefits may include feeling happy around someone, receiving good guidance – any qualities we find positive. We might also have mixed feelings about a quality, finding it both a cost and a benefit to some extent. Please indicate to what degree you generally consider each aspect of a relationship below a cost, and to what degree you consider it a benefit.

The person:

1) violated my expectation of how he or she would behave by behaving worse than I thought he or she would.
   COST Not at all 1 2 3 4 5 Very much so
   BENEFIT Not at all 1 2 3 4 5 Very much so (response scale repeated after each item)

2) could keep a secret.
   COST Not at all 1 2 3 4 5 Very much so
   BENEFIT Not at all 1 2 3 4 5 Very much so

3) could not keep a secret.

4) was manipulative.

5) was inspiring.

6) was cooperative.

7) was judgmental.

8) was open-minded.

9) could be depended on.

10) was not trustworthy.

11) said one thing but did another/was a liar.

12) did what he or she said he or she would do.

13) was selfish.

14) was generous.

15) was cruel or mean.

16) was kind.

17) would not admit when he or she was wrong.

18) had no problem admitting when he or she was wrong.

19) would help me.

20) would not help me.

21) was sympathetic.

22) was stubborn/controlling.

23) could be taken at face-value.

24) was deceptive or phony.

25) was moody/unstable.

26) would stand up for me.

27) handled his or her anger well.

28) was overly sensitive/needy.

29) will generally behave as I expect.

30) coped poorly with adversity and/or personal challenges.

31) genuinely liked and/or cared about me.

32) was a people-pleaser.

33) was humble.

34) was similar to me.

35) was different from me.

36) had to be handled in a special way because of what he/she was like.

Appendix B: Sophistication Coding Sheet

Specific Rating	Rating Scale				
Balance	1 Insistence on his/her own all good or all bad perspective	2	3 Uses one perspective, but mentions that there may be other viewpoints; sees good, bad, and areas of grey	4	5 Very balanced description; nuanced throughout as to what is good and bad OR no assignment of good and bad
Empathy	1 No empathy expressed	2	3 Average empathy	4	5 Very empathic; feels for person and/or the person's situation
Responsibility	1 The event was solely due to the person or to the event	2	3 The event was chiefly caused by the person or by the situation, but both contributed.	4	5 Sophisticated balance between person and situational attributions
Developmental influences	1 Developmental issues (e.g., age, upbringing) not mentioned	2	3 Age or upbringing taken into account	4	5 Age or upbringing taken into account with reasonable connections made
Attention to specific traits	1 No mention of traits or incorrect use of trait label(s)	2	3 Traits somewhat linked to behavior and/or to other traits	4	5 Well-developed connections between traits and behavior
Motivation and goals	1 No mention of what the person's motivation may have been.	2	3 Some mention of what the person's motivation may have been with a connection to his or her behavior	4	5 Expressed understanding of cooperation and/or conflict between goals, motives, and/or behavior
Overall Impression	1 Person shows lack of understanding (e.g., unreasonable expectations or highly evaluative reactions). Misses or incorrectly interprets the person and/or the situation.	2	3 Person shows average understanding of person, expressing reasonable expectations and balanced evaluative reactions; Seems to correctly interpret the event, but connections are basic	4	5 Person shows very good understanding and interpretation and describes highly plausible connections between the person and the unfolding event and its interpretations