Institutional Review Board Proposal

Proposal Date: November 3, 2004
Project Title: Problem Solving and Personality
Principal Investigator: Jean Pretz, Assistant Professor, Department of Psychology
Secondary Investigator: Matthew Hendrickson, Senior Psychology major completing an Independent Study

Purpose of study
The purpose of this study is to better understand the nature of cognitive and emotional intuition as personality traits and as processes in problem solving.

Background
Intuition is conceived as a “hunch” or “gut feeling” felt in the absence of rational thinking. Intuition is often used under circumstances of limited information, limited time to deliberate, or general uncertainty. There is a long tradition of the study of intuition in personality psychology. In fact, Jung’s early theory of personality types resulted in the creation of the Myers-Briggs Type Indicator (MBTI; Myers et al, 1998). However, experimental psychologists have also discussed intuition as a feature of problem solving and decision making processes (e.g., Bowers, Regehr, Balthazard, & Parker, 1990; Polanyi, 1966; Westcott, 1961). Intuition is thought to arise from tacit, unspoken knowledge as opposed to explicit, consciously-accessed thought.

Psychologists have proposed several theoretical conceptions of intuition. Some researchers have distinguished between intuition as used in the process of problem solving and decision making (cognitive intuition) and the intuition used in the context of interpersonal or social interactions (emotional intuition). Still others highlight the conception of intuition as foresight or premonitions about events in the future (“free intuition” per Raidl & Lubart, 2000). Though intuition has not been the subject of a great deal of empirical research, the existing data do support a distinction between cognitive and emotional intuition. Hill’s (1987) study revealed a distinction between intuition as measured with the MBTI (possibly reflecting emotional intuition) and intuition as measured with Westcott’s inferential problem-solving task (reflecting cognitive intuition). Pacini and Epstein (1999) have used a more recently-developed measure of intuitive and rational modes of thinking (Rational-Experiential Inventory; REI, Epstein, Pacini, & Norris, 1998) to discover an empirical relationship between intuitive traits (possibly reflecting emotional intuition) and actual heuristic behavior in a laboratory setting (cognitive intuition). Raidl and Lubart (2000) examined the relationship between the Experientiality (intuition) subscale of the REI and their Intuitive Behavior Questionnaire. This study found a positive relationship between the trait measure and self-reported reliance on intuition in work, personal, and interpersonal scenarios. Langan-Fox and Shirley (2003) recently found a lack of relationship between MBTI intuition and performance on the Accumulated Clues Task, a word game similar to Westcott’s (1961) measures of intuition. Langan-Fox and Shirley concluded that their results either question the validity of the ACT as a measure of intuition or, alternatively, suggest that measures of preferences for intuitive behavior do not reflect actual reliance on intuition in tasks requiring the use of intuition. Another possibility is that the MBTI measures emotional intuition, whereas the ACT taps cognitive intuition.
There are two major limitations in past studies of intuition. First, results are often based on self-report measures of the construct. Second, those studies that have included a behavioral, non-self-report component have not examined intuitive behavior in a variety of contexts (e.g., emotional and cognitive). In sum, previous studies have not systematically compared differential and experimental measures of various types of intuition. For example, Langan-Fox and Shirley compared the self-report MBTI (differential, possibly emotional intuition) with actual performance on the ACT (experimental, cognitive intuition), blurring the distinction between cognitive and emotional intuition with the difference between measures of preference and behavior.

The current study
This study explores the theoretical distinction between cognitive and emotional intuition by combining differential and experimental approaches. Intuition will be measured using trait-oriented self-report scales of preference for intuitive thinking, state-oriented measures of use of intuition in both cognitive and interpersonal scenarios, and behavioral measures of use of intuition in a cognitive problem solving task and an interpersonal task. Using this variety of measures, we can (1) examine the interrelationships among the differential measures of cognitive and emotional intuition to see if two distinct types of intuition exist, and (2) test their ability to predict performance on tasks that require the use of cognitive and emotional intuition. This experiment will contribute to the literature on intuition by combining several common methods into a single study, allowing for a more comprehensive understanding of the construct.

Characteristics of participant sample
Participants will be students at Illinois Wesleyan University. Approximately 100 participants will be recruited from the Psychology Department’s General Psychology class subject pool during the fall and spring semesters of the 2004-05 academic year. Additional participants will be recruited from the student body via posters, email, other psychology classes, and personal contacts.

Description of procedures
Participants will be tested in groups of approximately 20 to 25 students in a typical IWU classroom setting. After completing the Informed Consent form, the experimenter will direct students to complete several measures of problem solving and personality. One block of measures are timed and must be completed as a group. The other block of measures is self-paced. The order of blocks will be counterbalanced across groups of participants. Among the timed measures, two will be presented to the group via the classroom LCD projector. The Interpersonal Perception Task-15 (IPT-15) is a 20-minute DVD. The Dyads of Triads (DOT) task will be presented via PowerPoint. The third timed task is the Cattell Culture Fair Test of g. The experimenter will administer this test to the group using a stopwatch. The block of self-paced measures includes the Mill Hill Vocabulary Scale, the Intuitive Behavior Questionnaire (IBQ), the Rational-Experiential Inventory (REI), and the Intuition and Feeling subscales of the Myers-Briggs Type Inventory (MBTI). The testing session is expected to last approximately 90 minutes. In the event that participants have any down-time during the experimental session, they will be asked to complete additional IBQ items for piloting purposes. After the testing session, participants’ ACT and SAT scores will be obtained, as available, from the IWU Registrar’s Office.
Measures to be administered (see Appendix)

*Interpersonal Perception Task-15 (IPT-15; Costanzo & Archer, 1989)*
The IPT-15 is a 20-minute DVD consisting of 15 film clips, each approximately 1 minute in duration. The clips were created from unscripted conversations that were of a spontaneous nature. Each of these scenes is accompanied by a multiple-choice question that has either 2 or 3 responses, one of which is objectively correct.

*Dyads of Triads (DOT; Bowers, Regehr, Balthazard, & Parker 1990)*
The DOT consists of two groups (dyad) of three words (triads) adapted from Mednick & Mednick’s (1967) Remote Associates Task. In each dyad, one triad is coherent, meaning that it can be solved by finding a fourth word that is a common associate to the three. The other triad is not coherent (has no solution). In this task, participants are asked to indicate which triad is coherent even when they cannot identify the solution. Participants also rate their confidence in this coherence judgment. In the current study, participants will attempt 50 DOT items, allowing 5-10 seconds for each item.

*Cattell Culture Fair Test of g (Cattell & Cattell, 1961)*
The CCFT is a standard measure of fluid cognitive ability. Subtests 2 and 4 will be administered. Both tests measure abstract reasoning using simple geometric figures.

*Mill Hill Vocabulary Scale (Raven, Raven, & Court, 1985)*
The Mill Hill is a standard measure of crystallized cognitive ability. It is a multiple-choice measure consisting of 34 words for which participants must select a synonym.

*Intuitive Behavior Questionnaire (IBQ; Raidl & Lubart, 2000)*
The IBQ is comprised of brief descriptions of interpersonal, personal, and work-related scenarios with response options that reflect either intuitive or rational-analytic solutions. The IBQ consists of 9 test scenarios and 11 distracter scenarios. For this study, we will include items that focus on social scenarios and items that focus on non-social scenarios. Additional non-social scenarios will be created to balance the number of social and non-social scenarios. These IBQ will be presented to the participants in paper format within a packet of questionnaires.

*Rational-Experiential Inventory (REI; Epstein, Pacini, & Norris, 1998, Pacini & Epstein, 1999)*
The REI is a 40-item questionnaire consisting of two subscales -- the rational and experiential inventories. The analytical inventory measures an individual’s preference and reliance on logic and analysis in making decisions and solving problems. In contrast, the experiential inventory measures preference to rely on intuition or hunches when making decisions.

*Myers-Briggs Type Inventory Form M (MBTI; Myers et al, 1998)*
The MBTI Form M is a 93-item inventory consisting of four subscales. The current study includes two of these subscales (50 items) – the intuitive/sensate and the thinking/feeling dimensions. These dimensions correspond to four different types (Jung, 1926). “Intuitive” individuals are described as concentrating on potential rather than actual ideas. A “sensing” person is more concerned with details and facts than an intuitive person. A “thinking” type of person is analytical, logical, and intellectual. “Feeling” types are described as preferring feelings over analysis.
Procedures for assuring confidentiality
Participants will be given a participant identification number for this study. Participants will be asked to provide their IWU identification number and their name and contact information on a sheet separate from their data. This step is necessary to enable the experimenter to request participants’ standardized test scores from the Registrar using IWU identification numbers. In addition, names and contact information will be collected so that participants can be contacted at a later time for participation in future research. Specifically, we are interested in selecting participants who score particularly high and low on these measures of intuition for comparison purposes in future studies. These studies may examine the relationship between intuition and level of expertise, domain of expertise, and under various experimental conditions thought to induce intuitive thinking. All identifying information will only be traced to participants’ data via the participant identification number, and the paper that links these numbers will be kept in a locked cabinet separate from the data that is accessible only to the principal investigator and research assistants in this study. ID numbers for this study will not be derived from participants’ IWU ID numbers. Research assistants will be required to sign a confidentiality statement.

Procedures for assuring informed consent
Participants will be given an informed consent form prior to participation in the study (see Appendix). Participants will be encouraged to ask questions, and their questions will be answered before proceeding with the study.

Risks and benefits of participation
The risks of participation in this study are minimal. Participants may find the problem solving tasks (IPT and DOT) somewhat challenging, but these tasks should not prompt an unusual amount of stress among these participants. The benefits include the experience of participating in psychological research and learning more about personality measures and paradigms used in cognitive psychology.

References


Statement of Informed Consent
Problem Solving and Personality Study

Purpose of the study
This research study is about individual differences in problem solving. The study is being conducted by Dr. Jean Pretz, Assistant Professor of Psychology and Matt Hendrickson, senior Psychology major. We are interested in how individual differences in personality are related to problem solving performance.

Your role in the study
In this study, you will be asked to participate in some problem solving tasks and complete some questionnaires. One task involves viewing several short film clips and answering questions about the scenes presented. Another task is a word game in which you will view three words and try to find a common fourth word that is related to the first three. You will also complete questionnaires on problem solving, vocabulary, and personality. In total, the session should last approximately 90 minutes.

Potential risks
The risk to you in this study is minimal. The problem solving tasks depict typical social interactions, and the word puzzles are similar to games you may play in your free time. The personality measures are similar to those you may have taken in the past.

Potential benefits
If you are participating in this study through the General Psychology subject pool, you will receive research credit for your participation. Other participants will receive either payment or course credit (as arranged by your instructor). The benefits of participating in this study include learning more about psychological research, personality measures, and the paradigms used in cognitive psychology.

Confidentiality
The data you provide today will never be directly associated with your name. This data will be recorded under a participant identification number. No individuals will be identified in any reports that result from this study.

If you choose to complete the study, we ask your permission to obtain your ACT and/or SAT scores from the Registrar. This information will be requested via your IWU identification number, and your name will never be directly attached to this information. In order to request these scores, we ask you to record your IWU identification number (found on the back of your IWU identification card) on a separate sheet of paper provided by the experimenter.

*Please initial here ____ to indicate your permission to request your scores from the Registrar.

We also request that you provide us with your name and contact information so that we may invite you to participate in future research studies. Providing this information does not obligate you to participate in future studies, but we would appreciate that you give us the opportunity to
extend the invitation. The papers that link your personal information and your IWU identification number to your participant identification number will be kept in separate, locked cabinets.

**Right to refuse or withdraw**
You are encouraged to ask questions about the study. You have the right to refuse to participate or to withdraw at any time without penalty or loss of benefits. If you have questions or comments about this study or about the informed consent process, please contact Dr. Jean Pretz at (309) 556-3867. You may also contact Dr. David Bollivar, Chair of the Institutional Review Board at IWU at (309) 556-3677.

**Informed consent agreement**
I have read and understood the above explanations and voluntarily consent to participate in this study.

__________________________________________ ______________
Signature of research participant    Date

__________________________________________ ______________
Signature of experimenter     Date

Prepared on 11/3/04
Confidentiality Statement for Research Assistants

All participants in research have the right to the confidentiality of their data. As an experimenter, you are obliged to uphold this right. Data collected from participants will be identified via participant identification numbers and never directly associated with their names. When identifying information is collected (e.g., IWU identification number, name, and/or contact information), this information will be recorded on a separate sheet of paper from the data. This paper linking the identifying information with the data will be kept separate from the data itself and should remain locked up. If there is ever a breach in confidentiality, the person with such knowledge should keep it to him or herself in order to preserve confidentiality among the other experimenters.

Below is the confidentiality statement that is given to all participants in this study.

“The data you provide today will never be directly associated with your name. This data will be recorded under a participant identification number. No individuals will be identified in any reports that result from this study.

If you choose to complete the study, we ask your permission to obtain your ACT and/or SAT scores from the Registrar. This information will be requested via your IWU identification number, and your name will never be directly attached to this information. In order to request these scores, we ask you to record your IWU identification number (found on the back of your IWU identification card) on a separate sheet of paper provided by the experimenter.

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We also request that you provide us with your name and contact information so that we may invite you to participate in future research studies. Providing this information does not obligate you to participate in future studies, but we would appreciate that you give us the opportunity to extend the invitation. The papers that link your personal information and your IWU identification number to your participant identification number will be kept in separate, locked cabinets.”

Please read and sign.
I have read the above statement and will uphold the confidentiality of the data collected in this study.

_________________________ ______________
Signature of research assistant    Date

_________________________ ______________
Signature of principal investigator    Date
Debriefing

Problem Solving and Personality Study

Thank you for participating in this study! We very much appreciate your cooperation.

This study was designed to explore the relationship between personality traits and problem solving performance. Psychologists often use self-report questionnaires to approximate a person’s behavior, yet we know that these questionnaires may or may not be related to actual behavior. This is a question about the validity of the questionnaire – that is, does this questionnaire measure what we say that it measures?

In this study, we are using personality questionnaires as measures of your general preferences, a situational behavior questionnaire as a measure of your preferences in a specific situational context, and finally problem solving tasks as measures of your behavior on actual problems. Using all three types of measures, we can better understand the accuracy of our insight into our own behavior.

If you have any questions or concerns about this study or if you are interested in learning more about this line of research, please contact Dr. Jean Pretz in the IWU Psychology department at 556-3867.

References on test validity
