

Running head: CONTEXTUAL PERSONALITY ASSESSEMENT

Contextualized Personality:  
Traditional and New Assessment Procedures

Daniel Heller

University of Waterloo

David Watson

University of Iowa

Jennifer Komar, Ji-A Min and Wei Qi Elaine Perunovic

University of Waterloo

## Abstract

We describe our on-going program of research related to the assessment of contextualized personality, focusing on social roles and cultural cues as contextual factors. First, we present our research employing the traditional assessment approach, wherein participants are asked to rate explicitly their personality across several different roles. We argue that this hypothetical approach is potentially susceptible to the influence of stereotypes, social desirability, and demand characteristics. We therefore describe the development of three novel and subtle assessment procedures that are based on obtaining on-line self-representations that are activated while occupying a specific context. Finally, the strengths and limitations of all four approaches, as well as directions for future research in the study of contextualized personality, are discussed.

### Contextualized Personality: Traditional and New Assessment Procedures

Issues of consistency across situations and contexts lie at the heart of personality and self psychology. Is a mother who is also a CEO, the same “person” at home and work? Is a Chinese-Canadian individual the same “person” when different cultural cues are present? The proliferation of roles and ethnic diversity in social life raise these important questions in the study of personality.

In this manuscript we describe our on-going program of research related to the assessment of contextualized personality: the stable patterns of thought, feelings, and behaviors that occur repeatedly within a given context (e.g., work). First, we discuss a series of studies in which we have used the traditional assessment approach, wherein participants are asked to rate explicitly their personality across several different contexts (e.g., roles such as student, friend, employee, and so forth). Next, we describe several preliminary studies in which we develop three novel, and more subtle, assessment procedures.

Specifically, instead of asking people explicitly or hypothetically to report their personality in different roles, we either: a) ask people to continuously report their “state” personality levels (i.e., a diary approach; see also Fleeson, 2001), and then aggregate these states in a bottom-up fashion within a context (e.g., role), or b) manipulate experimentally the salience or accessibility of a context prior to the completion of the personality ratings, or c) ask people to report their personality in real-life contexts (i.e., when occupying a role; a situation based assessment). These new approaches are based on recent methodological developments in both personality (i.e., diary studies) and social psychology (i.e., priming). They provide a more subtle approach to assessing contextual personality that can supplement and go beyond traditional approaches to trait assessment (e.g., Heller & Watson, 2005; Sheldon, Ryan, Rawsthorne, &

Ilardi, 1997; Wood & Roberts, in press). Importantly, these new methods are general and could be used to assess different types of contextual personalities. In this paper our focus will be both on social roles and cultural cues as contextual factors.

In particular, we will examine how social roles—that is, positions in society that are associated with characteristic expectations, goals, and behaviors (Stryker, 1986)—are related to different personality patterns. Consider, for example, a mother who changes diapers in the morning and runs a hi-tech company in the afternoon; these two roles are clearly associated with different behaviors, demands, and expectations. Moreover, the warm, caring, and loving person at home may be substantially different than the analytical, assertive, confident, ambitious, and intellectual person at work. Thus, social roles may represent a particularly interesting arena to examine the contextual nature of personality.

Cultural cues may represent another important antecedent of contextual variability in personality. Drawing from a recent social-cognitive approach to culture (*frame switching*; Hong, Morris, Chiu, & Benet-Martínez, 2000) that views culture as a system of meaning that is activated by cultural cues, we expect that cultural cues may activate different “personalities” within a person. Indeed, cross-sectional cultural research has shown mean-level differences in personality between different countries. For instance, individuals in North American cultures appear to be more extroverted, whereas individuals in Asian cultures are more introverted and have higher levels of neuroticism (Lynn & Martin, 1995; McCrae & Allik, 2002). Heine, Lehman, Markus, and Kitayama (1999) further showed that North Americans have a higher level of self-esteem compared to Asian cultures, and that the longer immigrants lived in a new country, the more their self-esteem ratings resembled those of the native population. Taken together, these conceptual arguments and findings suggest that the personality of bicultural

individuals—i.e., those possessing dual cultural systems—may change as a function of their salient cultural cues (see also Ramírez-Esparza, Gosling, Benet-Martínez, Potter, & Pennebaker, in press). Thus, it is important to develop appropriate assessment procedures in order to investigate the dual personalities of bicultural individuals.

In what follows, we first describe the traditional approach to contextual assessment, and then proceed to discuss the three more novel and subtle strategies; we then examine the strengths and limitations of all four approaches, and end with a discussion of future research directions in the study of contextualized personality.

### Traditional Approach

With a few exceptions, the bulk of research on contextualized personality has used explicit or hypothetical measures to assess contextual personality. In this approach, participants are typically requested to rate themselves using the same list of adjectives or statements separately for each one of multiple roles that are indicated in the stem or instructions<sup>1</sup> (e.g., Donahue & Harary, 1998; Heller & Watson, 2005; Roberts & Donahue, 1994; Sheldon et al., 1997). Using this traditional, explicit approach, research on contextual personality has made important strides in diverse research areas such as personality development (Wood & Roberts, in press), self (Suh, 2002), organizational psychology (e.g., Heller, Brown, Ferris, & Ibrahim, 2006; Heller & Watson, 2005) and close relationships (Heller & Watson, 2005). In our discussion here we will highlight research from the two latter domains.

In organizational psychology, the notion of contextual personality has been important in our own research in elucidating the dispositional source of job satisfaction (for an additional application to the study of the antecedents of job performance see also Bing, Whanger, Davison, & VanHook, 2004; Hunthausen, Truxillo, Bauer, & Hammer, 2003). Drawing on initial research

showing the important role of global personality traits in role satisfaction (for reviews see Heller, Watson, & Ilies, 2004; Judge, Heller & Mount, 2002), and the idea that contextual personality is more proximal to role related criteria than is global personality (Roberts & Donahue, 1994; Wood & Roberts, in press), we examined the hypothesis that role-specific self-conceptions (e.g., personality at work) should correlate strongly with outcomes for the same role (e.g., job satisfaction), but will have little predictive utility across different role contexts (e.g., when predicting marital satisfaction).

We first tested this hypothesis in a cross-sectional sample of 117 newly-wed, employed couples from the Iowa City community (Heller & Watson, 2005) that were asked explicitly to report their personality at work and at home. Our findings indicated significant differences in personality traits between work and home identities. For instance, participants reported being more conscientious at work compared to home. More importantly for our purpose here, and consistent with our predictions, personality at work was more closely related to job satisfaction, whereas personality at home was more closely associated with marital satisfaction.

In a related longitudinal study (Heller et al., 2006), 291 alumni of the University of Waterloo completed three web surveys over the course of a year: wave 1 included a general neuroticism scale, wave 2 assessed both neuroticism at work and neuroticism at home, and job satisfaction and marital satisfaction were assessed in wave 3. These authors replicated the aforementioned findings by showing that job satisfaction was better predicted by neuroticism at work, whereas relationship satisfaction was best predicted by neuroticism at home. Moreover, these authors showed that, consistent with their predictions, whereas neuroticism at work partially mediated the relation between general neuroticism and job satisfaction, neuroticism at home partially mediated the relation between general neuroticism and relationship satisfaction.

Another interesting application of this approach is the investigation of close relationships in general and the investigation of assortative mating in personality (i.e., similarity in personality between spouses) in particular. Previous research in this domain has indicated very little support for assortative mating processes in that spouses' personalities are typically found to be virtually unrelated (Watson, Hubbard, & Weise, 2000; Watson et al., 2004). However, we suspected that home personality may indicate greater convergence between spouses relative to the convergence that typically is seen with global personality ratings. Using the same sample of newly-wed couples described above (Heller & Watson, 2005), we found that similar to previous findings spouses' global personality Big-Five traits were virtually unrelated ( $r_s = -.03$ -. $.09$ , all non-significant). In contrast, as predicted, we found evidence for assortative mating when examining spouses' *home* identities ( $r_s = .06$ -. $.27$ , all significant with the exception of extraversion, mean  $r = .20$ ). Again, these findings demonstrate the utility of employing explicit contextual measures of personality in various research domains.

### *Evaluation*

Interestingly, we are not aware of any cross-cultural research that has employed this type of explicit approach. That is, we are not aware of any study wherein biculturals or multiculturals were asked hypothetically or explicitly to report their personalities across different cultures. In any case, this approach is very common in the investigation of role identities and has yielded important findings. The approach is straightforward, easy to apply and has yielded substantial evidence in terms of improved predictive validity of role-specific criteria.

This being said, we note that it has several limitations. First, this explicit approach may create demand characteristics by inducing participants to indicate different personality patterns across these different roles, in essence, creating artificial variability between roles. Alternatively,

given the strong Western cultural ideal of consistency and stability of identity and behavior (Kanagawa, Cross, & Markus, 2001; Suh, 2002), this approach may reduce the extent to which Western participants describe themselves differently across situations.

Consequently, we urge researchers to examine the convergent and discriminant validity of these explicit measures, in relation to ratings generated by knowledgeable informants such as supervisors, romantic partners, and close friends, as well as with observer reports. Indeed, informant reports can be collected through the internet in an efficient, inexpensive manner and yield valid information (Vazire, in press). For instance, we hypothesize that work and home ratings will converge with ratings generated by supervisors and romantic partners, respectively. Indeed, Heller and Watson (2005) found partial support for this notion. In our data, spouses' ratings of the neuroticism, agreeableness, and conscientiousness levels of their partners were more closely related to partner's self ratings of their home identity (mean  $r=.39$ ) than they were to partner's self ratings of their work identity (mean  $r=.30$ ).

Moreover, these explicit measures may be substantially influenced by role stereotypes, as well as social desirability concerns. For example, research participants share common stereotypes of a conscientious employee and a warm mother. Because explicit measures make two strong (and largely) un-tested assumptions that: a) people know and are aware of their personality in different contexts; and b) that people are motivated to report honestly (Fazio & Olson, 2003), we feel there is a need for developing additional assessment procedures, such that possible weaknesses associated with the use of one procedure will be offset by another (Campbell & Fiske, 1959).

To summarize, we suspect that describing oneself in hypothetical contexts may yield self-descriptions that may be different from one's "real" contextual personality. Consequently, we

review three alternative procedures below that are based on obtaining on-line self-representations that are activated while thinking about or occupying a specific context.

### Diary Approach

The first novel approach involves the use of a diary design to capture people's daily lives as they unfold naturally in everyday settings. More specifically, a diary design is employed to capture multiple measurements of personality "states"—defined as short-term concrete ways of acting, feeling, and thinking (Fleeson, 2001)—while participants are actually occupying particular contexts (such as social roles or cultures; Perunovic, Heller & Deeth, 2006; Theakston, Heller, Komar & Lee, 2006). These personality states can then be aggregated within context in a bottom-up fashion to reliably assess personality within different contexts.

Theakston, Heller, and their colleagues have used this approach successfully in a study of role based personality. In their study, 80 undergraduate students were asked to report their personality and roles at three specific times during the day for 10 consecutive days, including weekends. Participants were asked to indicate the primary role they had occupied in the last two hours (e.g., student, friend, romantic partner, son or daughter, employee, or other), and to complete a measure assessing the extent to which Big-Five personality adjectives described them during the last two hours. Participants also indicated how satisfied they were with the current circumstances in each of the 5 different social roles. For pragmatic reasons, we opted to focus our analyses on the two most frequently reported roles in our sample: student and friend. As described earlier, we aggregated the responses to personality and role satisfaction measures in a bottom-up fashion within the student and friend roles.

The results exhibited a pattern of Big-Five traits in the friend and student roles that generally mirrored the findings of traditional investigations of personality in social roles (e.g.,

Sheldon et al., 1997). Specifically, participants reported being more extraverted, agreeable, and open as friends, and more conscientious as students. Neuroticism scores did not differ between friend and student roles, although the direction of the means was consistent with past research. These results are depicted in Figure 1.

In addition to this variability in personality across roles, our results also demonstrated considerable consistency in personality between the two roles as evident in the substantial correlations between personality in friend and student roles that ranged from  $r=.37$  for openness to experience to  $r=.50$  for neuroticism. Moreover, both the friend and student personalities also showed small to moderate associations ( $r_s=.07-.55$ ) with global personality measured in a mass testing session completed prior to the diary recordings. These findings are generally consistent with those reported by Donahue and Harary (1998) who also found significant associations between role personality and global personality using the traditional method, although the correlations in our study were substantially lower than those reported by these authors (we will return to this issue later in the evaluation section). Taken together, these results suggest that global personality influences contextual personality to a degree, and that contextual personality varies across roles in predictable ways.

We also found general support for the validity of our approach such that contextual personality was a better predictor of satisfaction in the corresponding role than either the non-corresponding role personality or global personality. Specifically, whereas satisfaction in the friend role was best predicted by friend personality, student satisfaction was best predicted by student personality. This pattern of findings is consistent with findings from the traditional approach to assessing contextual personality reported by Roberts and his colleagues (Roberts & Donahue 1994; Wood & Roberts, in press). Furthermore, this finding extends the

aforementioned findings by Heller et al. (2006)—who focused on work and home personalities assessed in a community sample via the traditional approach—to friend and student roles within a younger, undergraduate student sample.

We are currently in the process of examining the psychological components or ingredients of roles that may explain why particular roles elicit different contextual personalities. For example, the pursuit of a particular goal may evoke different affective, cognitive, and behavioral response patterns (Elliot & Church, 1997) that can be captured by distinct patterns of Big-Five states. Along these lines, the findings of a recent diary study (Heller, Theakston, & Lee, 2006) indicate that approach and avoidance goals were associated with increased levels of state extraversion and neuroticism, respectively.

Our next step is to determine whether roles function as a higher-order construct influencing the adoption of particular goals, which, in turn, can influence contextual personality. In support of this logic, Sheldon and Elliot's (2000) study of the self-concordance goal framework showed that a friend role was associated with goals pursued for more intrinsic and identified reasons relative to a student role, which in turn was more closely associated with goals pursued for extrinsic and introjected reasons. Some additional psychological features of roles worthy of study are: a) the expectations of how one should behave in a role; b) the number or characteristics (e.g., status or power) of the individuals one interacts with while occupying a role; c) the ease of termination of a role; or d) the level of intimacy characteristic of a role (cf. Donahue & Harary, 1998; Fleeson, 2001).

We are also in the process of using this diary approach to examine culture as an antecedent of contextual personality in a sample of Asian-Canadian biculturals using a sample of European Canadians as a comparison group (Perunovic et al., 2006). In these diary recordings

we employ both subtle measures of contextual cultural markers (e.g., language spoken, ethnicity of one's interaction partner(s)), as well as a more explicit measure of the culture participants most identified with during the time directly prior to the diary recording. Derived from the notion that bicultural Asian-Canadians may possess two self-systems, with each activated by its associated language or cultural cues (Perunovic, Ross & Wilson, 2005), we are examining how these bicultural individuals' personality states may vary as a function of shifts in cultural markers and ethnic identities. We predict that Asian-Canadians' contextual personalities will demonstrate a pattern of Big-Five traits consistent with previous cross-sectional research (Lynn & Martin, 1995; McCrae & Allik, 2002). For example, we expect Asian-Canadians in an Asian setting to report higher mean levels of neuroticism than when in a Canadian setting, whereas a Canadian setting should lead to higher mean level ratings of extraversion compared to an Asian setting.

### *Evaluation*

The diary approach to studying contextual personality relies on recent or current thoughts, feelings, and behaviors within a context that are salient and accessible for retrieval. This approach, therefore, should be less influenced by stereotypes of role or cultural personalities than the traditional approach. Although demand characteristics are a perennial threat to the validity of contextual personality research, the scales of interest in a diary study can be embedded among other measures to reduce their salience, as was done in the diary studies described herein. This approach is more ecologically valid, and the repeated assessment of personality states within each individual, wherein the participant serves as his/her own control, can provide an idiographic perspective on personality dynamics as they occur within daily life situations. Finally, diary studies also represent a more reliable assessment of contextual personality because multiple measurements are aggregated over time (for a somewhat less

reliable variant of this approach, based on a single-shot situation based assessment, see the description below).

The pattern of means for the Big-Five traits in the friend and student roles, and associations of contextual and global personality with role-specific outcomes found in the diary study generally replicated that of past research using the traditional method. However, there were important differences as well, specifically in terms of the correlations of personality among roles, and with global personality. These associations were much lower in the diary study than those reported in traditional studies (Donahue & Harary, 1998; Sheldon et al., 1997).

This discrepancy may be explained by differences between the two methods. For example, in the traditional method, participants typically complete a sequence of personality scales while imagining themselves in each role. This method may be susceptible to the use of response sets, or perhaps, as mentioned earlier, to a demand for consistency in self-views (especially within a Western culture in which the self is construed as stable and independent; Suh, 2002). Additionally, individuals may be relying on inaccurate reconstructions of memories of experiences and behaviors that are far removed from the present, as well as stereotypes which may be used to fill in gaps in recall. Because diary recordings are separated in time, and are more proximal to the experiences in question, they may be more accurate. Thus, the conclusion of previous studies that individuals show substantial consistency among roles warrants further investigation using other assessment strategies. It is also clearly necessary to replicate the findings of our diary study using different designs (e.g., time intervals) and samples.

The diary approach may present challenges to studying attributes of contexts that occur relatively rarely in a given sample, or to isolating the effects of contexts that may co-vary. For example, in Theakston et al.'s (2006) study of undergraduate students, participants infrequently

reported occupying the son/daughter role. If our study had been implemented during breaks in the academic year during which students might be expected to return home, we may have captured many more occurrences of the son or daughter role. Alternatively, an event-sampling diary based approach may be more appropriate for instances where a particular role or event is of interest.

The diary approach yields measures of perceptions of contexts as they naturally occur in daily life; however, these are not necessarily mutually exclusive (e.g., an individual can be a friend at the same time they are a student or an employee). Thus, it may be difficult to isolate contextual personality within a single specific context using this naturalistic approach. Indeed, future studies could measure the extent to which individuals are occupying any number of roles or cultural contexts, and further investigate the implications of occupying several potentially conflicting roles on one's contextual personality. Finally, it should be noted that the diary approach can be time and resource consuming (e.g., the use of palm-pilots) compared to the other less elaborate single- or two-shot approaches described below.

### Experimental Approach

The second and third novel approaches to assessing contextual personality are both based on priming (cultural or role based) identity. However, whereas in the second approach we experimentally or artificially prime an identity, the third approach employs a more "naturalistic" version of priming. In this section we focus on the experimental assessment approach.

The basic idea behind this approach is to manipulate experimentally the salience or accessibility of contextual cues, which are expected to trigger or activate an identity, immediately prior to the completion of the personality ratings (Lee, Heller, McInnis, & Steele, 2005; Steele & Heller, 2005). For example, Steele and Heller (2005) manipulated role identity

accessibility by asking participants to write about their experiences within a role prior to completing a personality inventory. Specifically, in a sample of 75 undergraduate students, half the participants were asked factual questions about their experiences as friends, whereas the other half of the participants were asked factual questions about their experiences as students. Next, in an ostensibly unrelated task, participants completed a personality inventory, as well as a prisoner's dilemma task. In accordance with our hypotheses, findings indicated that participants in the friend condition rated themselves as more agreeable, and were also more likely to cooperate in a prisoner's dilemma task, as compared to participants in the student condition.

A similar experimental approach can be used to also investigate personality shifts in biculturals. As discussed earlier, both cross-sectional and longitudinal findings illustrate that meaningful differences exist in personality profiles among individuals from different cultures (Heine et al., 1999; Lynn & Martin, 1995; McCrae & Allik, 2002). More conceptually, Hong and her colleagues have recently introduced a new dynamic constructivist approach to culture known as Cultural Frame Switching (CFS). According to this reasoning, individuals can switch between cultural frames (e.g., values, attributions, and cognitions) based on accessible cultural cues (Hong et al., 2000).

Two recent studies have sought to extend the CFS approach to personality using language to prime cultural identities. First, Ross, Xun, and Wilson (2002; see also Perunovic et al., 2005) found that Chinese bicultural participants responding in Chinese reported more collective self-statements and lower self-esteem than those responding in English. In a second study that is of direct relevance to our study described below, Ramírez-Esparza et al. (in press) administered both English and Spanish versions of the Big-Five Inventory to Spanish bilinguals. Consistent

with cross sectional personality differences from each country, these researchers found that bilinguals were more extraverted, agreeable, and conscientious in English than in Spanish.

However, the use of language as a prime may potentially confound inequivalence of instruments in different languages with the effects of identity activation (McCrae, in press). That is, the concern around using the language of personality questionnaires as a prime is that the equivalence in meaning between versions may not be fully maintained. Consequently, we are currently in the process of extending Ramirez-Esparza et al.'s findings by using national icons as primes for Asian-Canadians' bicultural identities and assessing personality with the same language in both conditions (for a similar recommendation see also McCrae, in press).

In this study (Lee, Heller, McInnis, & Steele, 2005), Chinese-Canadian undergraduates were recruited for a "knowledge-memory task," a task ostensibly used to determine how previous knowledge and experiences can influence memory. Participants were provided with a variety of facts (related to China or Canada or general knowledge facts in the control condition) and were asked questions about their knowledge and experiences on the given topics. For instance, the Chinese condition group were shown pictures and given facts about China (e.g., a map of China, a picture of the Great Wall of China). Next, participants engaged in an allegedly unrelated task while waiting for the memory test to take place: the personality scale which served as the dependent variable in the study. In addition, base-level personality scores were obtained for all participants from a mass-testing procedure prior to the experimental session. Based on cross-sectional differences in personality profiles of different countries we expect the following interaction pattern: the Chinese prime will lead to an increase in neuroticism in the Chinese condition compared to the base level, whereas the Canadian prime will lead to a decrease in neuroticism compared to the base-level. In addition, we expect that the Canadian prime will lead

to an increase in extraversion compared to the base-level, whereas the Chinese prime will lead to a decrease in extraversion compared to the base-level.

### *Evaluation*

An important strength of this approach is that it enables a causal inference to be drawn, indicating that a change in context causes a personality change or shift (rather than the reverse causal sequence or the influence of a potential third confounding variable). However, the limitation of this approach lies in its total reliance on the effectiveness of the artificial priming procedure employed in activating the appropriate identity. Given the availability of multiple priming approaches and lack of clear guidelines as to which approach should be employed in a given situation, it is not always clear which approach should be used. Interestingly, we note that subliminal priming procedures have not to date been used in the investigation of contextual personality. For instance, future research can use material objects common to the domain of business (e.g., boardroom tables and briefcases; see also Kay, Wheeler, Bargh, & Ross, 2004), or the names of employees' supervisors to subliminally prime an employee identity. In any case, given the somewhat artificial and contrived nature of this procedure, we next present a more "naturalistic" priming approach.

### Situation Based Approach

Third, we discuss the potential use of more "naturalistic" priming procedures in which participants are asked to report on their personality characteristics in a real-life context. As discussed earlier, previous role-based personality research has relied solely on explicit, hypothetical measures that may be substantially influenced by demand characteristics such as role stereotypes.

The use of a “naturalistic” priming design attempts to eliminate this potential confound by asking participants to describe their personality characteristics while occupying the social role or cultural identity itself. A similar methodology was recently employed by Kanagawa et al. (2001), who also argued that describing oneself in a hypothetical situation may generate self-descriptions that differ from those activated while in the situation itself. On the assumption that the self is not necessarily fixed and stable, but rather active and dynamic, they examined differences in self-concept as assessed by the open-ended Twenty Statements Test between Japanese and American students across four real-life social situations (i.e., in a group, with a peer, with a faculty member, and alone). In alignment with their interdependent cultural orientation, the self-descriptions of the Japanese students were more varied than those of the American students, indicating that the former group may view the self as more contingent on the current social context compared to the latter group (Kanagawa et al., 2001).

In our study (Min & Heller, 2006), 94 participants were recruited ostensibly to test whether perceptions of one’s experiences are more accurate when measured in context rather than with recollection. Participants completed Big-Five personality measures in two on-line sessions: once while in the student role and once while in the friend role. In order to reduce potential demand characteristics, in the student condition, participants were instructed to complete the questionnaires while in an “academic context” (“during, or immediately after, an academic-related situation”) rather than in the “role of a student,” and in the friend condition, participants were instructed to complete the questionnaires in a “social context” (“during, or immediately after, a social situation”) rather than in the “role of a friend.” To decrease memory effects, the two sessions were separated by an interval of approximately one week. Additionally, to control for order effects, the sessions were counterbalanced across the participants such that

half of them completed the questionnaires while in the friend role first and in the student role second, and vice versa for the other half.

First, we conducted a within-subject MANOVA in which the 10 in-role personality trait means (5 for each role) were the dependent variables. Inconsistent with previous findings, we did not find a significant main effect for role  $F(1, 93) = .00, ns$ . However, more importantly and consistent with previous research, a significant interaction between role and trait was obtained,  $F(4, 90) = 4.36, p < .01$ . Next, a series of paired  $t$  tests on the individual traits was used to probe this significant interaction. As shown in Table 1, consistent with our hypotheses, ratings of agreeableness were higher ( $t = -3.23, p < .01$ ) in the friend role compared to the student role, whereas ratings of neuroticism were higher ( $t = 3.73, p < .001$ ) in the student versus the friend role; ratings for extraversion, conscientiousness, and openness to experience were not significantly different across the roles.

We also examined the consistency of each trait across roles. Correlations between roles ranged from .49 (agreeableness) to .59 (extraversion) and were all significant at the  $p < .05$  level. These findings are considerably lower than those reported by Donahue and Harary (1998) and slightly higher than those obtained by Theakston et al. (2006) using the diary approach. We failed to replicate the significant mean differences for extraversion and conscientiousness found in previous research based on the traditional approach (Sheldon et al., 1997) or with the diary approach (Theakston et al., 2006). We also found different consistency correlation coefficients than those reported in previous research. These differences in results may be indicative of the substantive differences among the content assessed with the various approaches.

### *Evaluation*

An important strength of this “naturalistic” priming approach lies in its ecological validity: measuring context related personality while in the context itself. As such, this design is also arguably less susceptible to biased responding compared to traditional assessments in this area. These strengths make this design readily adaptable to study personality or self-concept differences between bi- or multiculturals across different cultural contexts or identities.

However, the limitation of this design is the relative lack of control compared to the experimental approach, which can introduce possible confounding variables. That is, inherent to this naturalistic method is the difficulty in keeping all the variables consistent between the two assessments (e.g., participants completing the questionnaires during the same time and day), which may introduce unwanted variance in the measures. Another limitation relates to researchers’ ability to isolate the desired context to be occupied while completing the questionnaires. For example, the subtlety of the instructions employed in the Min and Heller study may have led students to report their personalities while occupying multiple social roles (e.g., studying together with friends and being both a friend and a student). Alternatively, as discussed earlier in the context of the diary approach, social contexts may not always be “pure” in the real world. Indeed, especially with university students, their academic and social domains may be substantially conflated. Careful attention to timing issues and to the wording of instructions is especially important in this regard.

As mentioned earlier, this approach can be considered a less reliable variant of the diary approach. However, it enjoys several advantages over the diary approach. First, it is quicker and less expensive than the diary approach. Another advantage of the situation based approach compared to the diary approach is that it affords greater internal validity in that the researcher has more control over: a) the independent variable (e.g., by instructing bicultural participants to

complete the questionnaires at any time or date when they feel highly identified with their Chinese identity, and at a second time when feeling highly identified with their Canadian identity [but, not both]); and b) potential third variables that can be either held constant (e.g., by instructing participants to complete all questionnaires on a certain time and day of the week), or included as full-fledged factors in the study's design (e.g., by instructing half the participants to respond to the questionnaires in one order, and the other half of participants to respond in a different order). Nonetheless, as mentioned earlier, the situation based approach is inferior to the experimental approach in terms of establishing a causal sequence between context and personality.

We are currently in the process of employing this design to further elucidate why social roles or cultural contexts may lead to personality change (Min & Heller, 2006). Although social roles are assumed to differ in their associated demands, expectations, audiences, behaviors, and goals (Stryker, 1986), few researchers have empirically examined the psychological makeup of a role. For example, as discussed earlier, the type of goals pursued within a role may represent an important ingredient of a social role. The potentially more valid on-line assessment of both the context and contextual personality can help investigators better elucidate the underlying psychological features of the situation. In sum, we believe this is a promising approach and we encourage other researchers to further develop and apply this methodology.

#### Future Directions

In this section we identify four deserving areas for future research including:

a) construct and predictive validity studies; b) the examination of combinations of hypothetical (traditional) and subtle (novel) assessment procedures; c) the investigation of antecedents and

outcomes of intra-individual variability in personality; and d) the examination of assimilation or contrast effects within a context.

### *Construct and Predictive Validity*

The most important immediate need for future research relates to the examination of the convergent and discriminant validity of these traditional and novel assessment strategies. That is, there is a need to validate all procedures vis-à-vis: a) each other; b) knowledgeable informant reports (e.g., supervisors, romantic partners, and friends) and; c) external criteria (e.g., job performance). For example, in one such study described briefly earlier, Heller and Watson (2005) examined the convergence between explicit measures of work and home identity with spouse ratings. Our findings indicated that neuroticism, agreeableness, and conscientiousness ratings of spouses were more closely related to partner's self ratings of their home identity than they were to partner's self ratings of their work identity. This approach can be easily expanded to include more comprehensive investigations of multiple contexts, and multiple informants within these contexts, as well as to include multiple methods for assessing contextual personality.

Moreover, it is important to investigate the unique and joint predictive validity of both hypothetical and subtle contextual personality measures against external criteria, most notably against objective criteria (e.g., job performance and turnover, marital dissolution). This is important as some of the aforementioned previous research employing self-reports of attitudes and other self-conceptions as criteria may have been susceptible to common-method bias concerns, as well as problems of overlap in content between predictors and criteria (i.e., the "criterion contamination" problem).

### *Investigation of Combinations of Subtle and Traditional Approaches*

Another intriguing area of future research is the examination of the implications of different combinations of explicit and subtle measures of contextual personality (for a similar idea applied to the assessment of implicit and explicit self-esteem see also Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003). For example, consider a person who rates herself as highly conscientious at work, whereas the aggregation of her state assessments of conscientiousness at work actually indicates she is low on this contextual trait. We suspect that this incongruence may cause her to experience substantial role confusion, job dissatisfaction, and may also negatively influence her job performance levels. Thus, it may be useful to avoid simply viewing the two types of assessments as competitors (e.g., by examining their unique effects in a multiple regression framework), and instead to examine the statistical interaction between them, wherein the focus shifts to the investigation of meaningful combinations of the two types of measures.

*Investigation of Antecedents and Outcomes of Variability in Contextual Personality*

Using both explicit and subtle types of assessment procedures, future research should examine both old and new questions in the study of intra-individual variability in personality. For example, what is the magnitude of role- or culture-based within-individual variability in personality? How does it compare to the magnitude of between-individual variability in personality? Recent statistical advances in multi-level modeling may be especially conducive for answering such questions.

Another important issue relates to the antecedents of this contextual variability. Are they dispositional factors such as self-monitoring, self-concept clarity, self-construal, or (low) self-esteem? Are they related to contextual or situational differences such as differences in goals,

audiences, and expectations in different contexts? Or is it the case, perhaps, that both dispositional and situational factors are causing these fluctuations in personality?

Finally, what are the implications of contextual personality variability for both hedonic and eudaimonic well-being (Ryan & Deci, 2001)? For instance, consider the “social chameleon” who is very different at her work as a CEO and at home as a mother, or a Chinese-Canadian who is very different with her Canadian friends than her Chinese parents. Is she happier than a person who is more consistent across roles or cultures? Does she function more effectively than someone who is more consistent across roles or cultures?

Conceptually, a differentiated self could be indicative of high levels of adaptation and specialization in response to environmental demands or, conversely, of fragmentation of the self and a lack of a sense of coherence or unity. Role-based variability in personality findings reported by Sheldon et al. (1997) and Donahue et al. (1993) lend support for the fragmentation view by indicating that a more differentiated self is associated with lower levels of well-being. However, these initial findings are based on explicit measures of personality within roles and on a limited conceptualization of the well-being construct (Ryan & Deci, 2001). Thus, future research should examine the link between role-based personality variability and well-being using multiple assessments of personality variability, as well as examine the implications of this variability on individuals’ life satisfaction, depression levels, as well as sense of purpose, self-acceptance, and vitality. In addition, it would be interesting to examine whether these effects on well-being are moderated by self-monitoring; that is, are those high on self-monitoring less bothered by their inconsistency in personality across cultures or social roles compared to their low self-monitoring peers?

The well-being implications of culture-based variability in personality represent a novel and intriguing question. A large divergence in personality could be associated with a sense of incoherence, confusion, and conflicting tendencies (i.e., low levels of well-being). Alternatively, if these different culture-based personalities are stored in separate knowledge structures that are rarely activated simultaneously, then this divergence may indicate a high level of adaptability to a new culture and serve as a buffer against stress (i.e., high levels of well-being; see Ross et al., 2002).

Alternatively, individual differences in Bicultural Identity Integration (BII; that is, how biculturals experience their dual culture identities; see Benet-Martínez, Leu, Lee, & Morris, 2002) may moderate the relation between culture-based variability in personality and well-being. That is, whereas high BIIs (i.e., those that see the two cultures as compatible and integrated) may benefit from greater culture-based variability in personality, their low BII peers (i.e., those that see the two cultures as oppositional and difficult to integrate) may have a more negative experience of confusion and conflict when trying to manage their different culture-based personalities (i.e., a negative association between personality variability and well-being). All of these possibilities are speculative at this point and empirical data are very much needed to examine the well-being implications of culture-based variability in personality.

#### *Examination of Assimilation or Contrast Effects Within a Context*

Our discussion of the three subtle approaches to assessing contextual personality may have created an erroneous perception that contextual cues are always associated with an assimilation effect; that is, that individuals always conform or adapt the appropriate thoughts, feelings, and behaviors associated with a context. This is not always the case; indeed, people may show contrast effects such that specific contextual cues may lead to or activate patterns of

thoughts, feelings, or behaviors that are inconsistent with the context (see also Perunovic et al., 2005). Consider, for example, a Chinese-Canadian living in Canada for many years returning to China for a visit after several years. We suspect that such a person may feel a bit out of place in his home country and, consequently, may actually feel more Canadian during his visit than when in Canada. Future research should examine the prevalence of assimilation and contrast effects both within- and between-individuals, as well as the situational (e.g., extremity of contextual cues) and dispositional (e.g., BII, self-monitoring) antecedents of these conflicting effects.

To summarize, the four diverse assessment approaches discussed in this manuscript enable an in-depth assessment of contextualized variability in personality, ensuring both the internal validity and external validity of findings, as well as minimizing concerns regarding potential demand characteristics. These approaches can help researchers uncover the magnitude, antecedents (e.g., social roles, culture, goals, self-monitoring), and well-being consequences of intra-individual variability in personality. Moreover, they further point to the need to supplement traditional global assessments of personality with more contextual ones that take into account situational influences. As such, these studies represent a first step in a larger program of research that examines processes of consistency and change in personality/self, their antecedents, and their implications.

## References

- Benet-Martínez, V., Leu, J., Lee, F., & Morris, M. (2002). Negotiating biculturalism: Cultural frame-switching in biculturals with 'oppositional' vs. 'compatible' cultural identities. *Journal of Cross-Cultural Psychology, 33*, 492-516.
- Bing, M. N., Whanger, J. C., Davison, H. K., & VanHook, J. B. (2004). Incremental validity of the frame-of-reference effect in personality scale scores: A replication and extension. *Journal of Applied Psychology, 89*, 150-157.
- Campbell, D.T., & Fiske, D.W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*, 81-105.
- Cousins, S. D. (1989). Culture and self-perception in Japan and the United States. *Journal of Personality and Social Psychology, 56*, 124-131.
- Donahue, E. M., & Harary, K. (1998). The patterned inconsistency of traits: Mapping the differential effects of social roles on self-perceptions of the Big Five. *Personality and Social Psychology Bulletin, 24*, 610-619.
- Donahue, E. M., Robins, R. W., Roberts, B. W., & John, O. P. (1993). The divided self: Concurrent and longitudinal effects of psychological adjustment and social roles on self-concept differentiation. *Journal of Personality and Social Psychology, 64*, 834-846.
- Elliot A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 72*, 218-232.
- Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition research: Their meaning and uses. *Annual Review of Psychology, 54*, 297-327.

- Fleeson, W. (2001). Towards a structure- and process-integrated view of personality: Traits as density distributions of states. *Journal of Personality and Social Psychology, 80*, 1011-1027.
- Heine, S. H., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review, 106*, 766-794.
- Heller, D., Brown, D., Ferris, D. L., & Ibrahim, F. (2006). *The mediating role of contextual personality on the dispositional source of job satisfaction*. Unpublished manuscript.
- Heller, D., Theakston, J. A., & Lee, W. B. (2006). *The dynamics of personality states, goals and well-being*. Manuscript submitted for publication.
- Heller, D., & Watson, D. (2005). *Using contextualized personality scores to resolve basic issues in personality research*. Paper presented at the 6th Annual Meeting of the Society for Personality and Social Psychology, New Orleans, LA.
- Heller, D., Watson, D., & Ilies, R. (2004). The role of person versus situation in life satisfaction: A critical examination. *Psychological Bulletin, 130*, 574-600.
- Hong, Y., Morris, M. W., Chiu, C., & Benet-Martínez, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist, 55*, 709-720.
- Hunthausen, J. M., Truxillo, D. M., Bauer, T. N., & Hammer, L. B. (2003). A field study of frame-of-reference effects on personality test validity. *Journal of Applied Psychology, 88*, 545-551.
- Jordan, C., Spencer, S. J., Zanna, M. P., Hoshino-Browne, E., & Correll, J. (2003). Implicit self-esteem, explicit self-esteem and defensiveness. *Journal of Personality and Social Psychology, 85*, 969-978.

- Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction. *Journal of Applied Psychology, 87*, 530-541.
- Kanagawa, C., Cross, S. E., & Markus, H. R. (2001). "Who am I?" The cultural psychology of the conceptual self. *Personality and Social Psychology Bulletin, 27*, 90-103.
- Kay, A. C., Wheeler, S. C., Bargh, J. A., & Ross, L. (2004). Material priming: The influence of mundane physical objects on situational construal and competitive behavioral choice. *Organizational Behavior and Human Decision Processes, 95*, 83-96.
- Lee, W. B., Heller, D., McInnis, & Steele, J. (2005). *Personality dynamics in Bi-Cultural individuals*. Unpublished manuscript.
- Lynn, R., & Martin, T. (1995). National differences for thirty-seven nations in extraversion, neuroticism, psychoticism and economic, demographic and other correlates. *Personality and Individual Differences, 19*, 403-406.
- McCrae, R.R. (in press). Some limitations of item bias analyses: A note on Ramírez-Esparza et al. *Journal of Research in Personality*.
- McCrae, R.R. & Allik, J. (2002). *The five-factor model of personality across cultures*. New York: Kluwer Academic/Plenum Publishers.
- Min, J., & Heller, D. (2006). *Systematic personality variations in our everyday lives: How and why we differ across our social roles*. Unpublished manuscript.
- Perunovic, W. Q. E., Heller, D., & Deeth, P. (2006). *Personality dynamics in East-Asians vs. Westerners: A diary study*. Unpublished manuscript.
- Perunovic, W. Q. E., Ross, M., & Wilson, A. E. (2005). Language, Culture, and conceptions of the self. In R. M. Sorrentino, D. Cohen, J. M. Olson, & M. P. Zanna (Eds.), *Cultural and*

- social behavior: Vol 10. The Ontario Symposium* (pp. 165-180). Mahwah, NJ: Lawrence Erlbaum Associates.
- Ramírez-Esparza, N., Gosling, S.D., Benet-Martínez, V., Potter, J., & Pennebaker, J.W. (in press). Do bilinguals have two personalities? A special case of frame switching. *Journal of Research in Personality*.
- Roberts, B.W., & Donahue, E. M. (1994). One personality, multiple selves: Integrating personality and social roles. *Journal of Personality*, *62*, 199-218.
- Ross, M., Xun, W. Q. E., & Wilson, A. E. (2002). Language and the bicultural self. *Personality and Social Psychology Bulletin*, *28*, 1040-1050.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*, 141-166.
- Sheldon, K. M., & Elliot, A. J. (2000). Personal goals in social roles: Divergences and convergences across roles and levels of analysis. *Journal of Personality*, *68*, 51-84.
- Sheldon, K. M., Ryan, R. M., Rawsthorne, L., & Ilardi, B. (1997). "True" self and "trait" self: Cross-role variation in the Big Five traits and its relations with authenticity and well-being. *Journal of Personality and Social Psychology*, *73*, 1380-1393
- Steele, J., & Heller, D. (2005). *Friend or foe? Contextualizing personality through identity activation*. Poster session presented at the annual meeting of the Society of Personality and Social Psychology, New Orleans, LO.
- Stryker, S. (1986). Identity theory: Developments and extensions. In K. Yardley & T. Honess (Eds.), *Self and identity* (pp. 89-104). New York: Wiley.
- Suh, E. M. (2002). Culture, identity consistency, and subjective well-being. *Journal of Personality and Social Psychology*, *83*, 1378-1391.

- Theakston, J. A., Heller, D., Komar, S. G., & Lee, W. B. (2006). *Variability in personality across student and friend roles: A diary approach*. Poster to be presented at the 67th Canadian Psychological Association Conference, Calgary, Canada.
- Vazire, S. (in press). Informant reports: A cheap, fast, and easy method for personality assessment. *Journal of Research in Personality*.
- Watson, D., Hubbard, B., & Wiese, D. (2000). Self-other agreement in personality and affectivity: Effects of acquaintanceship, trait visibility, and assumed similarity. *Journal of Personality and Social Psychology, 78*, 546-558.
- Watson, D., Klohnen, E. C., Casillas, A., Simms, E. N., Haig, J., & Berry, D. S. (2004). Match makers and deal breakers: Analyses of assortative mating in newlywed couples. *Journal of Personality, 72*, 1029-1068.
- Wood, D., & Roberts, B. W. (in press). Cross-sectional and longitudinal tests of the personality and role identity structural model (PRISM). *Journal of Personality*.

## Author Note

This research was supported by a grant from the Social Sciences and Humanities Research Council of Canada to the first author. Correspondence should be addressed to Daniel Heller, Department of Psychology, University of Waterloo, 200 University Avenue W., Waterloo, Ontario, CANADA N2L 3G1. Electronic mail may be sent to [dheller@uwaterloo.ca](mailto:dheller@uwaterloo.ca).

## Footnotes

<sup>1</sup> A similar hypothetical approach has been used by Cousins (1989). This author asked both American and Japanese college students to describe themselves hypothetically in various social contexts (e.g., at home, at school, with friends). However, in contrast to our focus on standardized personality questionnaires, he used the open-ended Twenty Statements Test, asking participants to respond twenty times to the question “Who am I?” As such, this study is susceptible to the same criticisms that can be leveled at the traditional approach to assessing contextualized personality (see also Kanagwa et al., 2001).

Table 1

*Means of Big-Five for Student and Friend Roles from the Situation Based Approach*

Big-Five Trait	Student	Friend
Extraversion	3.11 (.80) <sub>a</sub>	3.20 (.81) <sub>a</sub>
Agreeableness	3.81 (.70) <sub>a</sub>	4.02 (.61) <sub>b</sub>
Conscientiousness	3.67 (.72) <sub>a</sub>	3.74 (.65) <sub>a</sub>
Neuroticism	2.58 (.86) <sub>a</sub>	2.26 (.82) <sub>b</sub>
Openness to Experience	3.19 (.60) <sub>a</sub>	3.15 (.68) <sub>a</sub>

*Note.* N = 94 for all analyses. Values enclosed in parentheses represent standard deviations.

Different subscripts on means within the same row indicate that scores are significantly different by paired *t* tests at  $p < .01$ .

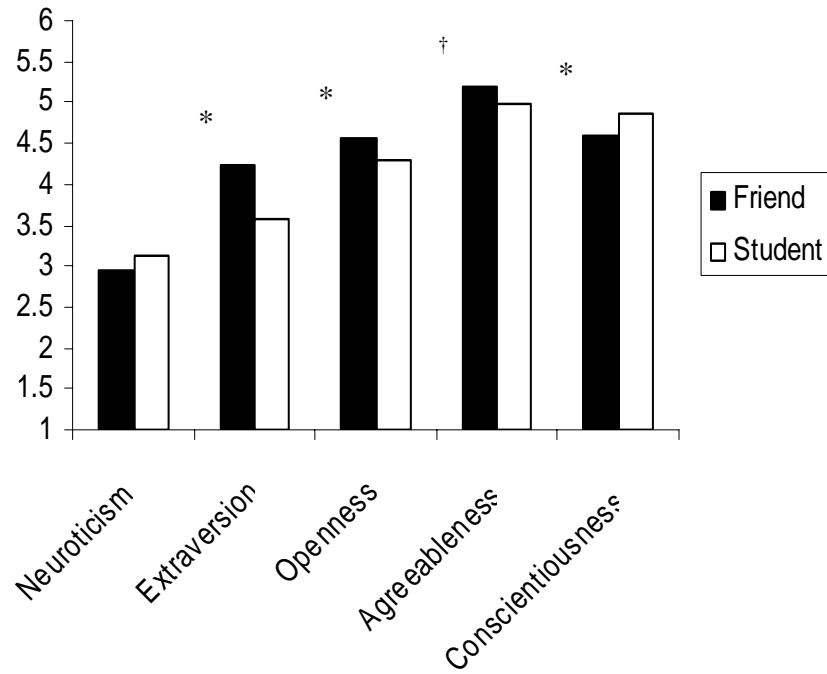


Figure 1. Mean Big Five trait differences for the friend and student roles from the diary approach. Note: \* = significant difference at  $p < .01$ . † = significant difference at  $p < .05$ .