Further Linguistic Markers of Personality: The Way We Say Things Matters

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Abstract

The present research addresses the following question: What is the likelihood that the usage of certain relationship-establishing speech-acts is more prevalent among those who differ by measures that we call personality? This study used a speech act taxonomy established in the literature. The Chinese-Personality -at-Work personality scale was used as measures of personal predispositions. In a dyadic design, 16 995 utterances in 29 pairs of students' dialogue were video-recorded, transcribed, and then coded. The results indicate that different relational strategies are linked to a given personality trait such that it predisposes the person to relate to another in a certain way. The results expand the circumplex model to include verbal behavior in accounting for personality differences.

Keywords: Personality, Persuasion, Big five, Speech act, CPW

1. Introduction

Research exploring individual pre-dispositional influences on verbal characteristics has largely favored quantifiable linguistic criteria (Dewaele & Furnham, 2000; Fast & Funder, 2008; Pennebaker, 2001,). The way that we speak and the way that we act in order to relate speakers' experiences in social exchanges have a tradition led by scholars such as Austin (1975), Scherer & Giles (1979) and Searle (1969) but have been largely ignored by personality psychologists. There is much intuitive appeal in believing such a link exists. After all, personality is a theory of social behavior (Buss, 1999). Wiggins (1997) described the circumplex model of personality as accounting for differences in the way people do things to one another. Therefore, it is unusual research (or journal) editors have steered away from this arena. In particular, social relations involve exchanges of one person's words or utters in an attempt to tie together thoughts between dyads (or multi-ads) (Miller & Kenny, 1986; Stiles, 1992). The present study shall address the following question: What is the likelihood that the frequency of a certain relationship-establishing speech act is more prevalent among those who differ by measures that we call personality?

2. Literature Review

A general finding to emerge from research on speech use is that the use of different speech acts discriminates clearly and quantitatively among roles, among relationships, and among verbal tasks (Cansler & Stiles, 1981; Hinkle, Stiles & Taylor, 1988; McGaughey & Stiles, 1983; Ng & Bradac, 1993; Stiles, Putnam, James & Wolf, 1979; Stiles, Waszak & Barton, 1979). Each role, task, or type of relationship – to the extent that it involves verbal communication – has a distinctive and characteristic profile of mode use (Stiles, 1992). The main point is not to defeat the notion of personality in speech variation because Stiles also commented that there is variation within roles (that is, there are speech variations across individuals within the same situations) and variation is often interesting to those who may study the effects of individual differences.

To manage the potentially ambiguous nature of interpersonal communication, speech data are quantified according to linguistic categories (e.g., nouns, verbs, dialectics, tenses, etc.). Pennebaker & King (1999) reported on the association between individual differences variables, such as those measured by the FFM (John, Donohue & Kentle, 1991). Using a sample of 841 introductory psychology students, extraversion and conscientiousness were negatively related to making distinctions (including facets such as exclusive words – e.g. but, without, except – tentative words – e.g. perhaps, maybe). Openness was also negatively related to immediacy (including facets, such as first-person singular words – e.g. I, me, my – articles (fewer of) – e.g. a, an, the – long words

(fewer of), present tense verbs, and discrepancy – e.g. would, should, could). Neuroticism is positively related to negative-emotion words and extraversion positively related to positive-emotion words as well as social reference. Dewaele & Furnham (2000) compared linguistic markers between extraverts and introverts in a formal-informal paradigm. Linguistic markers, such as implicit speech style (that is, the use of deictic reference to increase ambiguity) and speech rate are both positively and significantly related to extraversion regardless of situation formality. Lexical richness (more use of) and semantic errors (lack of) are related to introversion only in a formal situation. The prevalence of "err" (hesitation marker) is high for those who are introverts, but only in a formal situation. In an informal situation, only introverts exhibit longer-length utterances. Recently, Fast and Funder (2008) have lent continuous support of a similar nature.

Seldom, if any attempts have tried to encode speech acts (utterance) by treating it as social behavior, where it carries weight, ties interpersonal experiences and produces coercions in interpersonal relations. As Austin (1975) puts it, it is not merely the utterances that convey what the speaker means, it is the weight and force afforded those utterances. The present study adopts Stiles' (1992) speech act classifications in the encoding of verbal behavior. Stiles (1992) proposed a general purpose taxonomy of the verbal response mode (VRM), which is defined by principles of classification. The principles of classification are based on a theory of verbal communication of experience. As Stiles (1992) would say, the VRM "*…draws on a conceptualization of verbal communication in which people are seen as centers of experience and speech acts are seen as links between them*"– p. 66.

Every utterance embeds three modes classifications: source of experience, presumption about experience, frame of reference. Firstly, every utterance refers to either the speaker's or the other's experience, where "experience" includes thoughts, feelings, perceptions, and intentional actions. For example in the sentence, "I want to cook spaghetti tonight" the source of experience is the speaker. In another sentence, "Do you want to have it with me?" the source of experience is the other. Secondly, the speaker may or may not require the speaker to presume to know what the other person is, was, will be, or should be thinking, feeling, perceiving, or intending. The speaker does not need to make presumption about other person's feelings or thoughts when saying "I want to cook spaghetti tonight" or "Do you want to have it with me?" However, in saying "Go get your coat" the speaker presumes to know what the other should do -- in effect, he or she seeks to impose an experience (the intention to go fishing) on the other. The former, non-presumptuous utterances require a presumption about experience of the speaker only, whereas the latter, presumptuous utterance requires a presumption about the experience of the other in order to have the meaning it has. Thirdly, the speaker may word the utterance either from his or her own personal viewpoint or from a viewpoint that is shared or held in common with the other. In saying, "I want to cook spaghetti" "Do you want to have spaghetti?" and "Go get your coat", the experience is understood from the speaker's viewpoint and may be described as directive. In contrast, when saying "You want to have dinner with me" takes the other's frame of reference and this represent the experience as the other views it (refer to Table 1 and 2 for details).

Each of the principles are oriented by either the "speaker" or "other" yielding eight basic modes: disclosure (D), edification (E), advisement (A), confirmation (C), question (Q), acknowledgement (K), interpretation (I), and reflection (R). The definition of each of the modes is determined by asking whether each of the principles is either self or other oriented. For example, disclosure (D) is based on utterances that are self "focused", self "referenced", and self "experienced". Reflection, in contrast, is based on utterances that are other "focused", other "referenced", and other "experienced". Each of the eight codes, when used by either participant in a dyad, can be used to relate with the other person in the dyad. Conversely, one can tabulate how one speaker attempts to relate with his/her opponent. According to the VRM, the nature of the interaction depends on the type of codes used during the interaction. In other words, the type of codes used reflects the nature of the interaction or interpersonal relationship. Readers may refer to Stiles (1992) for elaborations on the latent dimensions of the VRM, which included: Informativeness-Attentiveness, Unassumingness-Presumptuousness, and Directiveness -Acquiescence. Also refer to Table 2 for reference.

2.1 Rationale for using the VRM

The present study will adopt the VRM of Stiles. The following are the reasons for this choice.

1) Each speech act is coded by its grammatical property (or form) and illocutionary property (or intent). This type of coding categorizes each utterance according to its form and intent – whether it is a single sentence or a chain of utterances comprising of series of perfectly/imperfectly structured sentences.

2) Unlike other interaction systems (Donohue, Diez & Hamilton, 1984; Morley & Stephenson, 1977; Putnam & Jones, 1982), the VRM is not restricted by the domain of application (Cansler & Stiles, 1981; Hinkle,

Stiles & Taylor, 1988; McGaughey & Stiles, 1983). Hence, we can use this coding system across different contexts where the content of the interaction contains verbal behavior.

3) Past research has also utilized social interaction dimensions similar to that of the VRM (Wish, D'Andrade & Goodnow, 1980). Their study included speech factors such as: a) asking versus informing, b) initiatory versus reactive, c) dissension versus approval, d) forceful versus forceless, and e) judgmental versus nonjudgmental.

4) The VRM treats an utterance as a speech act that attempts to achieve the goal of bridging two disconnected experiences by referring to the speaker's source of experience, presumptions about experience, and frame of reference.

2.2 Hypothesis

One assumption that VRM makes is that each utterance is an attempt to relate the speaker's experience (or state) with the recipient—that is, each utterance forms a micro-relationship that bridges an experience between two persons. These experiences consist of three latent and bipolar dimensions that include: (a) Informativeness vs. Attentiveness, (b) Unassumingness vs. Presumptuousness, and (c) Directiveness vs. Acquiescence. These dimensions correspond to the proportion of speaker versus other values on the source of the experience, presumption about the experience, and the frame of reference, respectively.

Stiles (1992) found that those who adapt the strategy of expressing the recipient's or other's concern act like a "mirror" in that the speaker dare not interject thoughts of his/her own into the social experience between a pair of speakers. In the study, most psychoanalysts used this approach during psychotherapy. This "attentive" approach used the following VRM: interpretation, acknowledgement, question, and reflection intent. Classical psychoanalytic theory (e.g., Freud, 1958) holds that change comes from making unconscious experience conscious and by modifying the patient's understanding in light of the therapist's interpretations."The doctor should be opaque to his patients and, like a mirror, should show them nothing but what is shown to him" (Freud, 1958, p. 118). The author expects those high in Deference (DEF) are likely to adapt a verbal strategy that is grounded on concerns for the other's experience (i.e. attentiveness). Those who are high on Attention Seeking, Innovativeness and Change Orientation are likely to talk in ways that reflect their concerns for themselves (i.e. informativeness).

Deference (DEF): the speaker is too afraid to express their opinions or maybe they are overwhelmed by the demands of the situation. As a result, the speaker retreats into a defensive mode whereby the person spends much time focusing on the counterpart's argument – to such an extent, that the person is facilitating the counterpart to elaborate their arguments so that the listener need not worry about contributing ideas of their own. Attention Seeking (ATN): the speaker talks a lot about oneself and ignores what others have to say. Innovativeness and Change Orientation (CHG): like speakers high in openness to experience, they spend much time entertaining their innovative and creative thoughts and focus less on the counterpart's thoughts.

A summary of the above hypotheses are as follows:

H_1: Deference is positively related to attentiveness

H_2: Attention Seeking is positively related to informativeness

H_3: Innovativeness and Change Orientation is positively related to informativeness

Stiles (1992) also found that those who express empathy and acceptance tend to communicate at the Acquiescence end of the "Directiveness-Acquiescence" dimension. In the study, therapists who adopt this Rogerian-like approach (or the client-centered approach—Rogers, 1951) tend to restrict their intent utterance to the following VRM: Edification, Confirmation, Acknowledgment, and Reflection. Conversely, those who adopt the approach characterized by "Directiveness" (the bipolar opposite of acquiescence) conducted therapy in Gestalten approach. A good Gestalt therapist "stays absolutely in the now" and "doesn't listen to the content of the bullshit the patient produces" (Perls, 1969, p. 53). That is, in direct contrast to the client-centered therapist, the gestalt therapist is supposed to hold to his or her own (realistic) viewpoint and not be taken in by the patient's (possibly distorted) viewpoint. This approach should restrict Gestalt therapists to the four modes in the speaker's frame of reference: Disclosure, Question, Advisement, and Interpretation. Again, the following is the author's speculative list of associations between this communicative strategy and personality traits.

Deference (DEF): the disposition of persons high in deference is their tendency to be subservient to their counterparts. Although deference is target-specific, we expect the strain inherent in the demand of the exercise might offset the deferent so that they regress into their subservient state. They may engage in conversation

reflecting the person's empathy and acceptance to others because they feel their own opinions are not important or persuasive. If this is true, then the deferent are more likely to use utterances that indicate their acceptance of other's opinions.

H_4: Deference is positively related to acquiescence

One repeated finding based on role dimensions involves the relationship of the VRM role dimension presumptuousness to relative status in face-to-face interaction. The higher-status member of an interacting dyad has been found consistently to be more presumptuous. That is, the higher-status member's proportion of presumptuous utterances is higher than that of the lower-status member. Physicians were more presumptuous than patients in all three segments of their medical interviews (Stiles, Putnam, James & Wolf, 1979). Psychotherapists were more presumptuous than clients during sessions of various types of psychotherapy (Knight & Stiles, 1987; Stiles, Shapiro & Firth-Cozens, 1988). Parents were more presumptuous than their ten-to twelve-year old children in two laboratory- problem-solving exercises, (a) reach agreement on an ongoing source of conflict and (b) tell each other how you feel in the conflictual situation (Stiles & White, 1981). Courtroom attorneys were more presumptuous than witnesses (rape victims) during both direct and cross-examination (McGaughey & Stiles, 1983). Professors were more presumptuous than students both in classroom discussions and in laboratory conversations (Stiles, Waszak & Barton, 1979). Management representatives were more presumptuous than labor representatives in a negotiation session (Hinkle, Stiles & Taylor, 1988). Thus presumptuousness appears to reflect relative status (i.e. in relation to the other person) rather than some absolute characteristic of the speaker. Based on this we expect support seeking (SUP) to be associated with the verbal strategy to be presumptuous. By constantly needing other people's reassurance, their attention is more outwardly focused on other people's experiences. This would require their utterances to be primarily unassuming.

H_5: Support seeking is positively related to utterances that center on the VRM dimension of unassumingness

The next hypotheses on ORD are based on the following rationale. Donohue (1981) outlined three characteristics associated with a persuasive situation where the speakers' interests are at stake. First, the situation renders the expectation on the part of both parties that each utterance represents some tactics that are designed to gain an advantage in the negotiation. Each party assumes that little co-operative communication exists in the interaction. Winning the debate is the primary goal until the event is terminated and the expectations are relaxed. Thus, each utterance or act will be interpreted as a symbol of some underlying position or strategy. Second, the strategic nature of the persuasive episode requires that individual's co-ordinate their expectations about what each is willing to accept. Each persuader tries to discover the other's "bottom line" or focal point (Schelling, 1960) and uses it as a resource for formulating arguments and proposing offers. This focal point becomes an expected outcome, or the point at which the individual will resist change. Repeated concessions indicate an inexact focal point and increased vulnerability to attack. Firm focal points indicate a strong position that remains less vulnerable to attack. Thus, each utterance by one party will be assumed to reveal some information to the other about the source's focal point. Third, each utterance is assumed to be strategic and indicative of the individual's focal point. A clear implication of these three assumptions, based on the three characteristics, is that the negotiation event is a relational activity (such as advocated early in the introduction) such that the outcome is dependent upon how each utterance is sequenced in relation to its preceding utterance. Given the "reciprocal-argument and counterargument, proposal and counterproposal" nature of the persuasion event, it seems reasonable to assume that the "interaction" is the basic unit of analysis in addition to isolated utterances. This feature suggests that the "command" aspect should be examined in addition to its "report" aspect (Ruesch & Bateson, 1951) to gain a clearer picture of the structure of the interaction.

This view is supported by a study by Cushman and Craig (1976) who argued that persuasion requires two sets of skills. First, the persuader must be able to respond decisively to their opponent. Failure to do so will leave the opponent unchallenged and this will be interpreted as a sign that the respondent has downgraded their expected outcome. Thus, each utterance must be examined in relation to its preceding utterance to determine how it responded to the prior utterance. Second, to gain control and maintain an offensive posture, the persuader must be able to cue, or constrain the next utterance presented by the opponent. Failure to use offensive tactics to constrain the opponent gives that person a free hand to control the direction of the interaction. Thus, each utterance must be examined in terms of how it cued or constrained the next utterance. Orderliness (ORD): individuals with a predisposition for organization and order are likely to engage in cueing behavior more often compared to others. This seems reasonable since the cueing process requires the persuaders to be orderly and instruct their counterparts on how the debate should be viewed (Donohue, 1981). The orderly persuaders are likely to use edification (E) and confirmation (C) as an expression of their task-structuring predisposition.

H_6: Orderliness is positively related to the use of edification (E) utterance.

H_7: Orderliness is positively related to the use of confirmation (C) utterance.

The following should lay the context for hypotheses on 'interpretation' intent. It has been suggested that one goal operating in most encounters is that of face management (Goffman, 1955, 1967). Face refers to the line or public self-image a person assumes in an encounter. Any act that threatens this line may be regarded as face-threatening, and individuals are generally motivated to avoid such occurrences (Brown, 1970). However, face-threatening situations (such as the setting for this study) are bound to occur, and Goffman suggested that the interactants often "collectively co-ordinate" their actions, including their talk, to reduce the potential for threatening one another's face. One type of situation that is potentially face-threatening is the discussion of negative information that pertains to one of the interactants. By using indirect speech acts, an interactant may bring up a topic to which is responded in a manner that avoids the direct expression of negative information. In this way face concerns are encoded in the utterance. Thus, it was expected that indirect questions and replies would be perceived as more appropriate in face-threatening situations. Conversely, direct questions and replies should be perceived as more appropriate in non-face-threatening than in face-threatening situations. Holtgraves (1986) provided empirical support for such a notion by reporting that speakers tend to use indirect speeches out of face-management concerns. Based on this rationale, the author predicts that individuals with traits such as deference (DEF), is less likely to engage in confrontational activities. In contrast, individuals with traits such as Achievement Orientation (ACH), and Autonomy (AUT) will engage in confrontational speech acts when the situation demands it. In doing so, the former will exhibit more evaluative statements (that is, the use of interpretation) whereas the latter will use less.

A summary of the above hypotheses are as follows:

H_8: Deference is negatively related to interpretation (I)

H_9: Achievement orientation is positively related to interpretation (I)

H_{10}: Autonomy is positively related to interpretation (I)

3. Methods

3.1 Participants

Fifty-eight participants came from students who attended psychology courses. There were 24 males and 34 females in the sample (all between the ages of 18 to 21). The sample size mirrors studies of a similar kind (Cappella, 1997; Cappella & Street, 1989; Spitzberg & Cupach, 1985).

3.2 Procedures

All the participants were assigned to a time slot according to their time availability. Prior to the experimental design, the participants also completed the online version of the Chinese Personality at Work (CPW) Questionnaire (Hui, Gan & Cheng, 2000). The participants were required to debate on a topic: Should genetically modified food be banned? Participants flipped coins to decide who will support or not-support the argument. Prior to the debate, the participants were given relevant reading materials on the topics. The reading time was 60 minutes. The participants were allowed to take note but they were asked not to read sentences from their written notes. After the reading period, they were allowed a 10 minute recess before the debate began. They were asked to speak only in Cantonese throughout the debate. The participants signed a consent form for the study conditions and to have their conversations recorded using a digital recording device which stood approximately 6 feet away. Most conversations carried on for 20 minutes while some lasted up to 45 minutes. The participants were not given any monetary or credit incentives. Instead, they were promised a thorough analysis of their speech style and personality profile which would be useful as part of their personal development feedback. Debriefing followed afterwards. Details of design can also be found in Cheng (2008).

3.3 Instruments

The Chinese Personality at Work (CPW) Questionnaire is an inventory that measures 15 personality characteristics pertinent to the work setting (Hui, Cheng & Gan, 2000). Some personality characteristics are related to the intrapersonal aspects of work, such as "Drive for Personal Achievement", "Organizing and Orderliness", "Tenacity", and "Innovativeness & Change Orientation". Others are more relevant to the interpersonal aspects of work activities, such as "Attention-Seeking", "Non-Abrasiveness and Modesty", "Need for Affiliation", "Deference to Authority", "Nurturance", "Dependent Support-Seeking", "Client-Centered Service Orientation", and "Dominance". "Autonomy" and "Introspectiveness" underlie a person's allocation of resources between the intrapersonal activities and the interpersonal activities. "Overall Managerial Readiness"

involves both intrapersonal processes (strategic thinking, stress resilience, and so forth) as well as interpersonal, people-management processes (see Table 3). The test-retest reliabilities of these scales across a three-week interval ranged from 0.63 to 0.84, with a median of 0.70. The instrument demonstrated concurrent validity with the five-factor-model (Hui, Gan & Cheng, 2000). Based on the hypotheses above, only 9 scales were selected in the analyses although all of the 15 scales were measured.

3.4 Transcriptions and Coding

In the present study, the number of subjects is low, whereas the number of observations per dyad is modest. Two assistants transcribed the recorded conversations. Both have had a similar experience when they attended translation courses. The combined naturalistic data sets produced 16 995 utterances. The author and an assistant coded the conversations. For the data source, the coders first familiarized themselves with the conversations by viewing the recorded interactions. All coders were required to read the coding manual by Stiles (1992) before coding took place and to continue to refer to it if they had any doubts during the coding process. In addition, specific indigenous considerations were made since we adapted an English coding system for use in a cross-cultural setting. Initially, all coders used two samples (or 2 dyads) for coding practice. Each sample contained approximately 300 codes. These practice data were later re-coded since it was expected that the coding criteria and system of the coders would oscillate substantially at the beginning and then settle down as the coding reached the end of the batches. The coders were also asked to meet after they had coded the practice samples. This provided a way to calibrate the coding system of the coders. At the same time, the author urged the coder not to be overly agreeable, and each coder was allowed to have their own subjective views on how utterances were coded according their understanding of the coding scheme. During all the coding process, the coders had copies of the conversations on the video as well as copies of the transcriptions. They were encouraged to preview the video once and continue the process when they were doing the coding.

An utterance was defined as phrases or sentences that housed one of the VRM intent categories. As is frequently the case, the utterances in persuasion can be quite lengthy and that more than one VRM category will be used in each speaking turn; these longer utterances could be comprised of several VRM categories. Each utterance is double-coded for grammatical (or form) and intentional (intent) aspects. In the analysis section, these terms are denoted by FM and IN, respectively. Unlike Gottman (1971) and Putnam and Jones (1982), the present study will use all the codes: persuaders' (or affirmatives' for RCA study) utterances, persuadees' (or negatives' for RCA study) utterances, and turn-switch utterances. The first two domains are self-explanatory while the "turn-switch" denotes points in the conversation where interruptions or "turn-taking" took place.

A total of 16695 utterances from the 29 pairs of participants were coded. Those on either sides of the rhetoric were not bias. That is, there were 7431 and 6127 for those taking 'for' or 'against' the topic respectively. Turn taking consisted of 3437 utterances. Using Guetzkow's (1950) formula, unitizing reliability for the multiple-coded utterances was 0.07, which Guetzkow pointed out, is an agreeable score in the measurement of the disagreement among coders. Using his categorizing reliability formula, the coders trained to work with the transcripts achieved reliabilities of 0.70 & 0.75 (GE) for the VRM form and intent, respectively.

4. Results

The correlation table revealed the associations between traits from the CPW (please refer to Table 4). The results showed no major contradictions from a previous study (Hui, Gan & Cheng, 2000). Respectively, significant coefficients ranged by magnitude from 0.46 to 0.27.

The associations between personality and speech-act markers are shown in Table 5. The results indicated that some linguistic markers can be identified with a number of traits. This seems to agree with the findings of Pennebaker and King (1999). To avoid misleading results due to outliers or extreme scores, all correlations in the following section were also checked by plotting bivariate scatter-plots. The following has descriptions of the results in greater detail. First, it is the individual VRM. Second, it is the aggregate VRM.

4.1 "K – Acknowledgement"

Persons scoring high on the achievement scale (ACH) are associated with acknowledge-utterance in both form and intent speeches (K-IN & K-FM) ($r = 0.36$ and 0.36 respectively, $p < 0.01$ for both). This was also the case for those high in attention seeking (ATN) ($r = 0.30$ and 0.35, $p < 0.05$ and 0.01 respectively for form and intent). It was speculated that high-achievement-oriented persons (ACH) used acknowledge-utterance (K) as a way to "mark" their opponents, similar to players in a one-on-one basketball game. This use of "K" served as a reminder to the opponent that one was listening to the other person's arguments. Indeed, if this was true, when we look into the transcription, the positions of "K" VRM codes may be different for the two personalities. The high

achievement person (ACH) uses "K" mostly in the middle of the other person's utterance. Indeed, the use of K responses was similar for all those high in achievement (ACH), deference (DEF), and attention seeking (ATN) for both form and intent VRM codes, whether it was "hm", "係囉" ("yes" in Chinese), or "係呀" ("that's right!" in Chinese) for acknowledgement or for interruption during the middle or the end of another person's conversation. However, it also was possible for all these forms of behavior to have a different meaning for the high achievers (ACH), the deferent people (DEF) and the attention seekers (ATN). That is, it was a sign for subservience for the deferent; and a sign of acknowledgement and understanding for both the achievers and attention seekers. The above suggests that different personalities (e.g. ACH, DEF, etc.) made use of one specific type of utterance (i.e. acknowledgement – (K) for different reasons.

4.2 "I – Interpretation"

The correlation between AUT and interpretation supports H_{10} – that is, those high in autonomy are willing to engage with their speaking partners during the debate ($r = 0.34$, $p < 0.01$). One interesting aspect was the infrequent use of interpretative utterance (I-FM & I-IN) for those high in deference (DEF) ($r = -0.27$ and -0.31 respectively, $p < 0.05$). Apparently, this was consistent with the tendency of a deferent person (DEF) since they acted subserviently and therefore, they were unlikely to "evaluate" their counterpart. However, this was inconsistent somewhat with the definition of deference since their behavior should be target-specific (that is, subservient to those in power or those holding a place of authority) (Hui, Gan & Cheng, 2000). Hence, we attributed this behavior in the present study as the result of an over-learned tendency and it was carried over to other settings because the deferent was overwhelmed by the social demand of the experimental design such that the deferent became subservient to all their partners. For example, utterances that were coded as "Interpretation" included the following. Note that they were taken from different times in the conversation and therefore they were not related to each other.

- 咁你係好大概咁樣講 (You are brave to say that — in Chinese)
- 你唔係解決到.. 你唔係解決到 (You are not solving it… You are not solving it — in Chinese)
- 你就覺得無問題 (You think there isn't any problem — in Chinese)
- 你用一個 simple method 去改變一種品種丫 (You use a simple method to change species — in Chinese)

4.3 "Q – Question"

An orderly person (ORD) in this study also asked less questions by intention (Q-IN) ($r = -0.27$, $p < 0.05$). This was probably because they spent too much time planning what they had to say and spent less time questioning or scrutinizing other's points or arguments. For example, utterances that were coded as "Question" included the following. Note that they were taken from different times in the conversation and therefore they were not related to each other.

- 即係你會覺得有咩問題先 (Like what problem do you see? — in Chinese)
- Unnatural 有咩問題 (What's wrong with unnatural? — in Chinese)
- Unnatural 點解無問題呀 (Why would unnatural be okay? — in Chinese)
- 你會唔會咁做先 (What would you do? — in Chinese)

4.4 "C – Confirmation"

Another interesting finding was between orderliness and "C" responses ($r = 0.32$ and 0.28, $p < 0.05$ for form and intent VRM, respectively). The "C" responses were a heterogeneous group. Sentences with 1) "話" (say — in Chinese), 2) "譬如," (for example — in Chinese), 3) "啦" (la — in Chinese) (Luke, 1990), 4) "我們"(we — in Chinese), 5) "但係" (but — in Chinese), 6) "不" (no — in Chinese), and 7) "喎" ("wo" — in Chinese) (Luke, 1990) were likely to be coded as a "C" response. The first four words were used to establish a common understanding. This action is entirely consistent with what an orderly person (such as those high in ORD) will do when trying to persuade someone in an argument. They were likely to structure their argument during the conversation so that everything was in good order. An orderly person was not going to leave any points implicit and therefore the use of "話" (say — in Chinese) and "啦" (la — in Chinese) were likely to be employed. To increase understanding, an orderly person will provide examples.

In contrast, those high in "Innovativeness & Change Orientation" (CHG) did quite the opposite, at least for the form response ($r = -0.31$, $p < 0.05$). They did little planning in their arguments and preferred their creativity to govern the stream of issues to be discussed. However, the conclusion here was less strong since the

corresponding intent response was insignificant (although it is slightly consistent in the direction of the trend as indicated in the sign of the coefficient; r = 0.21, n.s.).

4.5 "E – Edification"

A support-seeking tendency inhibits the use of edification for both form and intent utterances (r = -0.29 and -0.31, $p < 0.05$ respectively). In this case, the support seekers were regarded as unconfident in the task of persuasion. Therefore, they used less argument by the occurrence of objective information. For example, utterances that were coded as "Edification" included the following. Note that they were taken from different times in the conversation and therefore they were not related to each other.

- 其實佢唔係一 D 動物 gei genes (Actually, they are not animal genes — in Chinese)
- 即係其實只不過係.. 將將動物入面一 D 呢.. 一 D 一 D 一 D 營養呀 (Actually, only certain bits of animal's quality — in Chinese)

4.6 "R – Reflection"

Finally, highly persevering individuals (those who scored high in TNC) used substantially less R-response (in form) compared to everyone else (r = 0.27, $p < 0.05$). It was likely that they spent much time trying to solve the problem at hand rather than taking the time to understand the perspective of their counterpart. For example, utterances that were coded as "Reflection" included the following. Note that they were taken from different times in the conversation and therefore they were not related to each other.

- 即係你 gei 意思即係話研究 gei 過程之中唔應該推出市面住 (so you are saying that in the process of researching, it shouldn't't be pushed in the market — in Chinese)
- 你話因為佢窮..(you say because he is poor — in Chinese)
- 你話個 cost 會低 (you say the cost is low — in Chinese)
- 你話即係可能會果 D 呢果 D 農作物咪會無咁多害蟲食 (you say maybe it's possible that the plants will have less pests — in Chinese)

4.7 VRM Role Dimensions

The terms INF, UNA, and DIR, corresponded to the aggregates of the three VRM higher order dimensions: (a) Informativeness versus Attentiveness, (b) Unassumingness versus Presumptuousness, and (c) Directiveness versus Acquiescence. Each dimension is bipolar so that a positive correlation between INF (or UNA or DIR) and a trait (i.e., ACH) indicate positive correlation between informativeness and ACH. However, if the correlation was negative, then ACH is positively related to attentiveness.

Verbal remarks that originated from other's experience were abundant for highly deferent individuals (DIR_FM & DIR_IN; r = -0.28 and -0.33, $p < 0.05$ and 0.01 respectively). This non-evaluative but accepting approach was entirely consistent with the definition of deference since individuals high in deference were likely to be afraid of offending their counterparts with potentially offensive commentaries. On the safe side, they provided responses that were reflective, confirmatory, objective, and speeches that established common ground (which leaves little room to reveal to others their positions, feelings, thoughts of their own). The results indicated that H_4 was confirmed as the deferent was opting for an approach that was based on taking the perspective of the other speaker (i.e. the client-centered/Rogerian approach to interpersonal relations). Here are some sample utterances that constitute the acquiescence approach to interpersonal communication.

- 譬如直接係 modify 呢一個個 gene..咁樣呢個..即係只不過係將個 process 縮短 (for instance, a gene is being modified… like it is shortening the process — in Chinese)
- 佢地已經開始做過好多呢 D 咁 gei test (they have already done many of these tests — in Chinese)
- 即係有 D 人係譬如即係唔食豬 gei ..(like some people don't eat pork — in Chinese)
- 但係成唔成問題就係呢度啦 (but whether it is a problem depends on this — in Chinese)
- 係丫 (yes — in Chinese)
- 哦 (oh — in Chinese)
- 你就話會只係一個有錢 gei 國家就會做呢樣 (you say a rich country will do that — in Chinese)
- 你都講佢會私底下做..(you say that will do it secretly — in Chinese)
- 係啦 (yeah — in Chinese)
- 你好多人都係唔遵守啦 (you have a lot of people who don't obey it — in Chinese

Similar responses were exhibited by highly organized individuals (ORD). However, it was expected that the underlying instrumentality was different for individuals embracing these two traits. That is, an orderly individual would use edifications and confirmations to establish some fundamental agreements and prepositions with the counterpart (or to score some "hits"). They would use reflections (like barristers would do in court) to try to bring out an experience in favor of their position. Although the intent response was not significant (r = -0.17), the form aspect was (r = -0.27, $p < 0.05$). Therefore, it appeared that those who scored high on ORD may use a client-centered approach in grammatical form perhaps as a way to manage their impressions.

Individuals high in CHG exhibited more responses that were unassuming (r = 0.27, $p < 0.05$ for form utterances). In other words, individuals who were oriented to change center their response that did not require presumption of the other's experience – this included the use of: advisement, confirmation, interpretation and reflection. They were less concerned about the other's experience and they tended to orient any kind of experiences that did not impose experiences on others (that is, disclosure, edification, question, and acknowledgement). On the other hand, support-seeking individuals (SUP) were quite the opposite (r = -0.30, $p < 0.05$). Perhaps they had little confidence in their own experiences (such as their views and were too scared to pose questions to others), and thus tended to focus on what the counterpart had said and, in the process, made more responses that referred to experiences that were social or common to both of the interactants. This behavior is consistent with the nature of those who are high in support seeking (SUP). Having little confidence in their own judgment, they often referred to other's opinions, which involved acknowledging what other's had voiced, and/or evaluated or summarized what other's had to say in order to receive confirmation by the opinionated person(s).

If we compared the correlation patterns with specific hypotheses about the association between personality and speech act, then it appeared there were partial overlaps. Orderliness (ORD) was significantly correlated with C-IN & C-FM but not with edifications. Support seeking (SUP) was negatively related to E-IN and E-FM, but not with disclosure. Autonomy (AUT) was positively (and significantly) related to I-IN but not for I-FM. Deference (DEF) was significantly and positively related to K-IN, but not with K-FM. DEF was negatively related to I-IN and I-FM. In total, the hypotheses are confirmed as follows: H_4, H_5, H_7, H_8 and H_{10}.

5. Conclusions

The findings from the correlation analyses support the main theses proposed in the introduction. First, the correlation tables give rise to the notion that the ways or strategies of relating people in interpersonal situations is generally associated with taxonomies provided by personality theories – that is, based on the theoretical underpinnings of the CPW. The level of engagement operates at the unit as well as at the aggregate level. We can see this in the individual and aggregated VRM (see Table 5). Second, the evidence also implied that utterances, speeches, or everyday conversations are more than words that convey meanings. They involve acts spoken to achieve a given goal driven by certain motivated needs of the individual. In other words, as postulated by Wiggins (1997), our individual differences are also based on the things that we *say* and not just *do* to each other.

One benefit in the merging linguistics and psychology is that we can use the functional aspect of speech acts theory to bridge the gap between personality and behavior, and discover the reason why they exhibit a causal relationship. We know that behavior differs from one person to the next. However, there has been no serious attempt to systematically map verbal behavior (as identified by speech acts theory) with a universal taxonomy of individual differences. In psychology, researchers have identified forms of behavior that have become markers of a particular trait. For instance, conscientiousness is related to organizational citizenship behavior (Borman & Motowidlo, 1993; Organ & Ryan, 1995). Like non-verbal forms of social behavior, verbal forms of social behavior, such as speech acts, are instrumental in achieving a goal that the beholder of the behavior is motivated to achieve. Utterances in the form of a question can serve the purpose of making a request to the recipient of the utterance. The present study has conducted such mapping of the correspondence between personality traits and acts denoted by speech acts theory. However, the author stresses that the mapping may not be generalizable to other interpersonal or social contexts. There is much work on this matter that begs for academic attention.

Unfortunately, the limitation of such a mapping method is that we cannot probe the underlying reason or motivation behind the corresponding behavior. In fact, researchers are trapped into the fallacy in which a theory of personality is used to explain behavior rather than predict behavior. To overcome this problem, personality theories grounded by theories of motivation may lend some assistance to the present research. Researchers can hypothesize sets of behavior that serve the purpose of fulfilling the needs of a given trait. Another method is to look into the theory of social behavior that explains behavior from a functional perspective. Understanding the various underlying drives of a given form of behavior will lend assistance in the understanding of the possible association between personality and behavior or behavioral tendencies. It is here that scholars of pragmatics may

serve a role in the development of personality theory. In future studies the use of sequential analysis can also demonstrate that sentences or speech acts operate at a molecular level between interpersonal exchanges.

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Table 1. Taxonomy of Verbal Response Modes (VRM)

Source of experience	Presumption about experience	Frame of reference	Verbal Response Mode (VRM)	Summary of verbal response mode (VRM) form criteria
Speaker	Speaker	Speaker	DISCLOSURE (D) Reveals thoughts, feelings, perceptions, or intentions	Declarative; first person ("I") or first person plural ("we") where other is not a referent
		Other	EDIFICATION (E) States objective information	Declarative; third person (e.g., "he," "she," "it" or a noun).
	Other	Speaker	ADVISEMENT (A) Attempts to guide behavior; suggestions, commands, permission, prohibition.	Imperative, or second person with verb of permission, prohibition, or obligation
		Other	CONFIRMATION (C) Compares speaker's experience with other's; agreement, disagreement, shared experience or belief.	First person plural ("we") where referent includes other (i.e. "we" refers to both speaker and other).
Other	Speaker	Speaker	QUESTION (Q) Requests information or guidance	Interrogative, with inverted subject-verb order or interrogative words
		Other	ACKNOWLEDGMENT (K) Conveys receipt of or receptiveness to other's communication; simple acceptance, salutations	Non-lexical or content-less utterances; terms of address or salutation
	Other	Speaker	INTERPRETATION (I) Explains or labels the other; judgments or evaluations of other's experience or behavior	Second person ("you"); verb implies an attribute or ability of the other; terms of evaluation.
		Other	REFLECTION (R) Puts other's experience into words; repetitions, restatements, clarifications	Second person ("you"); verb implies internal experience or volitional action

Table 2. VRM dimensions

Role dimension	Constituent VRMs
Informativeness	Disclosure, Edification, Advisement, and Confirmation
Attentiveness	Question, Acknowledgment, Interpretation, and Reflection
Unassumingness	Disclosure, Edification, Question, and Acknowledgment
Presumptuousness	Advisement, Confirmation, Interpretation, and Reflection
Directiveness	Disclosure, Advisement, Question, and Interpretation
Acquiescence	Edification, Confirmation, Acknowledgment, and Reflection

Table 3. Definitions of the Constructs of the Chinese Personality at Work Questionnaire (CPW)

Personality Constructs	Descriptions of Personality Traits
Drive for Personal Achievement (ACH)	A desire to complete important and difficult tasks, and to strive for success at work. This is often achieved through setting and exceeding high standards of job performance, and constantly improving skills and work habits in order to enhance work efficiency and quality.
Deference to Authority (DEF)	A willingness to demonstrate subordination, and a tendency to conform to instructions and regulations set forth by experts, credible staff, or the organization – with a strong motivation to model after someone.
Planning and Orderliness (ORD)	The tendency to logically establish and monitor task schedules within the boundaries of available resources in order to perform job tasks accurately and neatly and the tendency to devise specific goals from such task schedules.
Attention-Seeking (ATN)	A desire to express job competence, experiences and achievements to others through both verbal and nonverbal channels, sometimes by using terms others find difficult to understand.
Autonomy (AUT)	A preference for a hands-off management style, with minimum supervision from and interaction with other staff members. There is a tendency to perform tasks independently and not to be bound by conventional methods.
Dependent Support-Seeking (SUP)	The appreciation of and need for encouragement, understanding, and advice from colleagues, and a willingness to take advice from them. This may be even to the point of allowing others to act on behalf of him or her in the presence of obstacles.
Innovativeness & Change-Orientation (CHG)	The willingness to accept and engage in new experiences, as well as being tolerant with frequent changes in the work environment. There is a need to experience novelties at work.
Tenacity (TNC)	A habit of exerting extra effort and time in completing a task, despite failures, lack of progress, or obstacles – with a strong emphasis on perseverance and determination, and a reluctance to change course or start something different.

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Table 4. Correlations between CPW scales

Scales	ACH	DEF	ORD	ATN	AUT	SUP	CHG	TNC
ACH	14.02 (3.46)							
DEF	0.07	10.37 (3.84)						
ORD	-0.17	0.07	10.70 (5.19)					
ATN	0.22	0.21	-0.11	12.26 (4.36)				
AUT	0.21	-0.35**	-0.33**	0.05	15.96 (4.40)			
SUP	-0.31**	0.12	0.10	0.13	-0.22	16.81 (4.87)		
CHG	-0.02	-0.23	-0.17	-0.08	0.29*	-0.33**	14 (4.17)	
TNC	0.10	-0.09	0.04	-0.46***	-0.27*	-0.16	-0.28*	13.75 (4.01)

N = 58 (Diagonals contain means and standard deviations in brackets)

* $p < 0.05$ (2-tailed)

** $p < 0.01$ (2-tailed)

*** $p < 0.001$ (2-tailed)

Table 5. Correlation between VRM (Form & Intent) and CPW Scales

		ACH	DEF	ORD	ATN	AUT	SUP	CHG	TNC
Individual Units	Form (FM)								
	Disclosure (D)	0.03	0.03	-0.16	-0.11	-0.06	0.14	-0.16	-0.07
	Edification (E)	-0.06	0.04	-0.01	-0.02	-0.01	-0.29*	0.30*	0.04
	Advisement (A)	-0.12	-0.26	-0.03	0.01	0.01	0.07	0.23	0.12
	Confirmation (C)	0.01	0.16	0.32*	-0.09	-0.08	0.18	-0.31*	0.19
	Question (Q)	-0.15	-0.10	-0.11	-0.11	0.03	0.01	0.05	0.13
	Acknowledgement (K)	0.36**	0.21	0.01	0.30*	-0.02	-0.14	-0.05	-0.16
	Interpretation (I)	0.09	-0.27*	-0.14	0.19	0.19	0.23	-0.10	-0.20
	Reflection (R)	-0.04	-0.03	0.23	0.00	0.09	-0.10	0.00	-0.27*
	Intent (IN)								
	Disclosure (D)	0.16	-0.15	0.00	0.10	-0.02	0.11	-0.04	0.02
	Edification (E)	-0.14	-0.04	0.01	-0.17	-0.01	-0.31*	0.21	0.15
	Advisement (A)	-0.26	-0.20	-0.05	-0.10	0.01	0.06	0.10	0.15
	Confirmation (C)	0.10	0.26	0.28*	0.18	-0.25	0.13	-0.09	-0.09
	Question (Q)	0.02	-0.06	-0.27*	0.04	0.14	-0.08	-0.06	0.02
	Acknowledgement (K)	0.36**	0.29*	-0.03	0.35**	-0.05	0.01	-0.12	-0.16
	Interpretation (I)	0.07	-0.31*	-0.12	0.07	0.34**	0.09	-0.07	-0.21
	Reflection (R)	-0.09	-0.11	0.21	-0.06	0.11	0.06	-0.10	-0.08
Aggregate Units	Informativeness--Attentiveness (INF_FM)	-0.07	0.15	0.09	-0.20	-0.13	-0.09	0.09	0.18
	Unassumingness--Presumptuousness (UNA_FM)	-0.01	0.10	-0.23	-0.08	-0.06	-0.30*	0.27*	0.01
	Directiveness--Acquiescence (DIR_FM)	-0.06	-0.28*	-0.27*	-0.04	0.07	0.25	-0.08	-0.04
	Informativeness--Attentiveness (INF_IN)	-0.08	-0.02	0.17	-0.11	-0.12	-0.07	0.22	0.13
	Unassumingness--Presumptuousness (UNA_IN)	0.05	-0.10	-0.13	-0.01	0.08	-0.23	0.18	0.11
	Directiveness--Acquiescence (DIR_IN)	0.02	-0.33**	-0.17	0.05	0.17	0.10	0.00	0.01

N=58; * $p < 0.05$ (2-tailed); ** $p < 0.01$ (2-tailed)