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A Coding Typology to study dyadic
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Negotiations: Extending the IPA model

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A Coding Typology to study dyadic interactions in International Negotiations:

Extending the IPA model

This paper proposes a simple and versatile method for categorising face-to-face interactions exchanged in dyadic business negotiations. Following a review of literature on coding schemes over five decades, we propose a 24-category typology for coding, which takes its root from the Interaction Process Analysis (IPA) model. Our data was collected through simulated business negotiation role-plays that were video-taped and transcribed. We verified the practicality of our coding scheme by categorising the face-to-face dyadic interactions within these role-plays. Kappa's measure of inter-rater agreeability (κ) was used for validating the new coding scheme. The accuracy rate between coders using the new scheme was 98% on average while the coding times per negotiation session were nearly halved when compared with the IPA model. Our proposed methodology for coding should support more accurate and speedier coding of face-to-face interactions in small group negotiations and future research that aims at examining empirical investigations in this domain.

KEYWORDS

Coding scheme and methodology, IPA model, Kappa's measure of inter-rater agreeability, business negotiation, role-play simulation.

1 Introduction

International negotiation is a dynamic process (Druckman, 2001), where negotiation skills are required in our day-to-day formal and informal social interactions. In today's global marketplace, business relationships are constructed in a progressively rapid manner, and managers spend a substantial part of their time negotiating (Gettinger, Koeszegi, and Schoop 2012; Yang, De Cremer, and Wang 2017). Byrnes (1987) states that managers spend 20% of their time negotiating and this affects the remaining 80% of their activities. We corroborate with Kochan and Bazerman (1986) in stating that research on negotiations has direct relevance to managerial skills.

The "mutual movement" that characterises negotiation occurs through interactions, and interactions define the negotiation process to determine negotiation outcomes (Cai and Drake, 1998; Weiss, 1996). Adler (1991) states "negotiation is one of the single most important international business skills" (p. 182). Contemporary negotiations entail interactions with

both internal and external stakeholders and can involve various modes of communication and interaction, including face-to-face, telephone and a range of electronic modes (Baltes et al. 2002). Analysing business interactions can help individuals involved in negotiations recognise strategies that can help secure desired outcomes through joint benefits, manage complex business deals and group conflicts, thereby sustaining healthy business relationships with stakeholders. Since the stakes are high in business negotiations, owing to the careful planning and preparation involved (Ghauri 1986), studying both verbal and non-verbal interactions seem a useful way forward, as such interactions have long-term implications and occur in many facets of life, from organisational to educational settings.

The purpose of this article is to reiterate the importance of negotiations in today's hyper-connected and competitive business world, by proposing a coding scheme to study face interactions in business negotiations. This is the first step in our extensive study and at this stage, we merely propose a validated scheme, after attesting its ease of use within a simulated business negotiation environment. It is beyond the scope of this article to provide an extensive overview of this coding scheme to multiple exercises, contexts and empirical questions. However, with the help of our proposed scheme, we aim to conduct future studies to learn more about the art of negotiating. To further elaborate, our future studies will examine strategies and patterns in interactions that can be successfully incorporated during international business negotiations to make mutually beneficial trade-offs.

1.1 Addressing Gaps in Knowledge

Studies state that theoretically validated coding schemes to study business negotiations are scarce (Angelmar and Stern 1978; Beers et al 2007; Kelly 2000; Putnam and Jones 1982), despite coding schemes being important research tools that help structure and organise interactions for further analysis (Angelmar and Stern 1978; Schermuly and Scholl 2012). Coding systems lost its central place in interactions and communication research since the

1970s (Futoran, Kelly and McGrath, 1989; Kelly, 2000; Schermuly and Scholl, 2012). Some of the reasons for this could be the time-consuming nature of their development (Beers et al 2007; Garrison et al 2006; Orlik, 1989), the costly nature of these systems (Schermuly and Scholl, 2012, low-user friendliness and insufficiently tested psychometric properties (Schermuly and Scholl, 2012). Additionally, most of the schemes developed so far have been used to code interactions within specific communication settings, e.g. student-teacher (Hermkes Mach and Minnameier 2017) or physician-patient interactions (Kaplan Greenfield and Ware 1989; Roter Hall and Katz, 1988) and not in the area of negotiations. Our proposed model is an extension of the Interaction Process Analysis model (Bales, 1950) and the basic difference between our 24-category typology and the IPA model lies predominantly in its ease and agility of use by trained coders. A viable coding scheme in this case can help negotiation scholars study the tactics and strategies deployed by negotiators in a mixed-motive negotiation environment (Weingart et al., 1990), to understand their impact on negotiation outcomes. We further acknowledge that cultural inferences can make a negotiation process more complex (Johnson et al., 2006; Tinsley et al., 2006). Negotiations is not a straight forward process (Ghauri, 2003; Weingart et al., 1990). Adler et al. (1986) corroborates on this notion by stating that when parties involved do not share the same way of thinking, feeling and behaving, the negotiations are cross-cultural and hence all international negotiations are cross-cultural.

In the following section, we provide a comprehensive framework that integrates culture, communication and business negotiations. Given the interdisciplinary nature of the negotiations literature that not only draws upon fields such as business and management but also psychology, international relations, law and communication (Cai and Drake, 1998), we review other coding methods and schemes that have facilitated investigations in interactions.

2 Literature Background

2.1 Goals-Plans-Action Theory and its Features

Social interaction is a goal-driven process (Bylund et al., 2012) and the negotiation process involves social interactions. We use the Goals-Plans-Action (GPA) theory (Dillard, 2008) to provide a substantive theoretical review to examine communication in business negotiations and the role of culture in the negotiation process. This theory seems fitting for our study as the basic principles of the GPA theory can be used to understand any type of communication behaviour (Dillard, 2008; p. 65). It views communication as an interactive process, where one actor adjusts his/her message behaviour based on the other actor sequentially (Dillard, 2008; Druckman, 1983; Druckman, 2001). It assumes that individuals make purposeful choices about the messages they create for the accomplishment of goals (Berger, 1997; Wilson, 2002) and they do this with some degree of awareness, which Wilson (1990; 1995) refers to as ‘cognitive rules.’

There are two types of goals in the GPA model - primary and secondary goals (Dillard, 2008), and these can be egoistic, altruistic, self-serving or philanthropic in nature. Primary goals or influence goals motivate the GPA sequence (Dillard, Anderson and Knobloch, 2002) and provides functional utility to a stream of behaviours to represent what the interaction is about (Dillard and Schrader, 1998). Secondary goals follow from the adoption of the primary goals (Dillard, 2008). While primary goals places importance on the decision to engage, this is not the case for secondary goals (Hullet, 2004). For this study, we focus on primary goals that focuses on the salient perception, thoughts and engagement that connects the goals to actions via plans (Dillard and Schrader, 1998; Dillard, 2008).

2.1 Conceptualising national culture, communication and negotiations

We define each of the three concepts (i.e. culture, communication and negotiation) before we integrate them conceptually in *Figure 1*.

Hofstede being a pioneer researcher on culture states that “Culture is the collective programming of mind, which distinguishes one category of people from another” (Hofstede, 1980, p. 43).

Keessing (1974) defines culture as a “system of knowledge that enables communication with others and allows interpretation of their behaviour” (p. 89).

Nam et al., (2009) states that “Culture is a unique combination of rituals, religious beliefs, ways of thinking, and ways of behaving that unify a group of people” (p. 772).

Spencer-Oatey (2008) defines culture as “the set of attitudes, values, beliefs, and behaviours shared by a group of people, but different for each individual, communicated from one generation to the next” (p. 2).

From the four definitions above, we see that culture has different interpretations, but a combined understanding of these definitions is that it is a set of values, beliefs, attitudes and behaviours that can influence an individual’s interaction towards others. According to Weiss (1994), negotiation practices differ from culture to culture. It is one of the major factors that can impact a negotiation process (Brett, 2000).

The second concept ‘communication,’ is the process of sending messages between sender and receiver (Adler, 1991; Thomas, 2002). Adair and Brett (2004) state that communication is culture-dependent and different social groups have different ways of expressing themselves, handling conflict (Ting-Toomey, 1988) and negotiating (Harris and Moran, 1991). Culture and communication are inextricably tied, which makes the encoding and decoding of verbal and non-verbal interactions intercultural in nature (Gudykunst and Kim, 1992). Adaptability and flexibility to one’s culture seems necessary for intercultural communication to be successful and these have been described as critical components of communication competence (Rubin, 1990; Spitzberg and Cupach, 1989). In other words, those individuals who are adept at monitoring and adjusting their plans during interactions are competent and

subsequently able to accomplish group goals effectively (Greene and Burleson, 2003). They foresee likely implications for their actions and can integrate their goals and adjust their plans according to the situational, relational and cultural conditions.

The third concept ‘negotiation,’ can be termed as the process of communicating back and forth for the purpose of reaching an agreement (Fisher, Ury and Patton, 1991). It is a process in which a joint decision is made by two or more parties (Pruitt, 1981). In intercultural negotiations, which focuses primarily on business with people from foreign countries (Adler, 1991; Graham and Andrews, 1987), cultural considerations are an important part of the negotiation process as it helps parties identify their common, complimentary and conflicting interests with an attempt to achieve their business goals (Cai and Drake, 1998).

In *Figure 1*, we coherently conceptualise the three concepts (i.e. culture, communication and negotiation) with the three components of the goals-plans-action theory, which are – goals or outcomes; plans and the action (Baxter and Braithwaite, 2008; Bylund et al., 2012). The Goals-Plans-Action theory (Dillard, 2008) provides the impetus to progress in our research and develop our 24-category typology.

We link *goals to negotiation* as these are fundamentals for negotiators to consider during interactions (Brett, 2000). Wilson and Putnam (1990) concisely term goals as, ‘the basis of the negotiating script.’ Since negotiators come from either the East or the West, otherwise known as a high-context culture or a low-context culture (Hall, 1976), they tend to think and communicate differently. Goals are the general orientation that negotiators have towards the negotiation and so differences in goals can pose a threat to cross-cultural negotiations (Tinsley et al., 2012). It is thus important for negotiators to have goals as these motivate plans (Dillard, 2008) and enable negotiators to reach an agreement on their common, complementary and conflicting objectives (Fisher, Ury and Patton, 1991; Pruitt, 1983).

We link *plans to culture* because these are the ‘mental representations of messages’ (Dillard, 2008). During the planning stage, it is important to consider the other parties’ cultural background as this can make the negotiation process less complicated. According to Maaja, et al., (2009), “one of the first places where cultural differences arise in international business is when the East and West meet at the negotiations table” (p.165) and this can make the negotiation process difficult to manage. Martin and Nakayama (1999) state that a clear negotiation strategy is one of the most important factors for cross-cultural business relationships to succeed since negotiation practices differ from culture to culture (Weiss, 1994).

We link *action to Communication*, to show the planned strategies and actions that are carried out through verbal and non-verbal interactions or utterances (Dillard, 2008). Cross-cultural negotiations can be challenging as negotiators come with different views and preferences (Buckley, Cross, De Mattos 2015; de Almeida and Wachowicz 2017; De Mattos, Sanderson and Ghauri 2002). These views often stem from their cultural upbringing and give rise to misapprehensions during the negotiation process (Metcalf et al 2006). Such issues can be overcome to a considerable extent through effective communication, a fundamental ingredient for interactions between parties (Mircică, 2014). According to Hall (1976) and Earley (1993), negotiators with different communication styles have trouble understanding each other. And one negotiator’s behaviour acts as a stimulus for the other’s party’s response and the second negotiator’s response provides the stimulus for the first and the cycle goes on (Weick, 1969). In other words, communication can be structured in sequences that could emerge as predictors of negotiator’s outcomes (Olekalns and Smith, 2013).

2.2 Overview of Bales Interaction Process Analysis (IPA) Model

Our proposed coding scheme uses the IPA model (Bales, 1950) as the root for its development, with the aim of developing coherent and robust categories for coding face-to-

face interactions. Bales' main area of research focuses on group observations and on measuring interaction processes (Bales 1950). The IPA model has been used by numerous researchers over several decades in studies relating to group interactions and communications (Littlejohn 2002; Nam et al. 2009; Rosenberg and Bonoma 1974). It has also been used in other contexts, e.g. in observing child protection teams (Bell 2001), psychotherapy groups (Waxler and Mishler 1966), on-line group interactions (Fahy 2006), and construction-professionals' meetings (Gorse and Emmitt 2007).

The IPA model consists of a structured set of twelve categories for studying both verbal and non-verbal influences in face-to-face interactions. These categories provide a systematic framework for coding observed interactions (Bales 1950; Fahy 2006). Group-behavioural patterns are classified into two main areas: task-related and socio-emotional (or relationship-oriented) (Bales, 1950). The six socio-emotional activities include inter-personal behaviours while the remaining six categories are based on task-related input. Categories 4 to 9 cover task-related areas and categories 1 to 3 and 10 to 12 cover socio-emotional areas (McGrath 1984) (see *Table 2*). Socio-emotional categories attempt to capture interactions concerned with emotions in a social context, e.g. laughing to ease tension, showing solidarity, satisfaction, acceptance or agreeableness, disagreement or rejection, anxiety or withdrawal from discussion, and antagonism or defensiveness. Task-oriented categories are concerned with actions relating to the agreement in discussion between the groups, e.g. making suggestions or giving directions or opinions, expressing desire, giving information or clarification, asking for information or clarification, opinions or suggestions or directions. Categories 1, 2 and 3 are targeted towards positive group statements and categories 10, 11 and 12 are targeted towards negative group statements (Bonoma and Rosenberg, 1978). Categories 4, 5 and 6 can be construed as assertive or command-related interactions and

categories 7, 8 and 9 can be construed as information-seeking or submissive type of interactions (Bales, 1950; Bonoma and Rosenberg, 1978).

The IPA model seems appropriate to use in our study as it is the earliest and most durable system for examining face-to-face small group interactions (Bales and Strodtbeck 1951; Perakyla 2004). Furthermore, it is recognised as a sound method for analysing decision-making and problem-solving interactions (Fahy 2006).

2.2.1 Criticisms on the IPA model

The IP model has undergone some criticism as it is devoid of coherent theoretical orientation (Bonoma and Rosenberg, 1978). The coders were required to make complicated judgements on the codes. For example, categories 3, 5, 6 and 10 have become “sinks” in coding usage, i.e. ‘catch-all’ categories used by raters when multiple coding is possible (Bales, 1970, p. 134). On the other hand, categories 2 and 11 have been found to receive little usage from coders (Bales, 1970).

Many researchers have found the model less suitable in clinical and psychotherapeutic interactions (Strupp, 1960; Mills, 1964; Liberman, 1970) and other experimental applications (Mcgrath and Julian, 1963; Bonoma and Rosenberg, 1978). In addition to this, the time to rater proficiency seemed lengthy with the IPA model even with expert judges involved (Bonoma and Rosenberg, 1978).

2.3 *Theoretical Context on Negotiation coding schemes*

Interaction coding schemes have been proposed within various disciplines, including computer sciences (Helgeson et al. 2006; Kleppe et al. 2003), mathematics (Gencer and Gürpınar 2007), information technology (Olson et al 1999), and engineering (Tsai 2005). To use these systems, substantial knowledge of programming languages or experience in quantitative research methods is usually required. On the other hand, few studies have proposed coding schemes to study interactions within a business-negotiation setting (Putnam

and Fuller 2014). For example, the ‘Towers Market Coding Scheme’, intended initially for the analysis of decision-making activities (Weingart, Bennett and Brett, 1993), was later validated and used for coding negotiation behaviour (Weingart, Olekalns and Smith, 2004). Mills coding model on the other hand, was used to evaluate interaction process during negotiations, where message units are defined as uninterrupted verbalisations ((Mills, 1964). Fundamentally, it seems like the narrowness of existing schemes and the conceptual vagueness of category choices in them have minimised their operational viability (Bonoma and Rosenberg, 1978).

In *Table 1*, we chronologically illustrate the pros and cons of 15 existing coding schemes that were inspired by the IPA model. In *Table 2*, we chronologically illustrate the pros and cons of other existing coding schemes that were not inspired by the IPA model. In these 2 tables (*Table 1 and Table 2*), we attempt to theoretically review a list of coding schemes and models that have been employed by practitioners and researchers to analyse communication processes over decades. These lists are not exhaustive; however, it indicates the pioneering influence the IPA model has had on many of the coding systems developed thereafter (Bales, 1950).

We extracted our information on these existing coding schemes from various sources (e.g. JSTOR, Wiley Online, Science Direct, Web of Science, and the Internet). The keywords used for this were: coding scheme, coding model, coding process, coding instrument, interaction coding, IPA model, communication coding.

3 Methodology

3.1 Research Setting

Our empirical data was collected through simulated business negotiation role-plays that were conducted over a six-year period from 2009 to 2014. The negotiation exercise was about a British company selling their milk plant to Saudi Arabia, who had offers from other foreign

companies as well. The same exercise was carried out by all participants over this six-year period. The negotiation simulation was dyadic in nature with each dyad comprising of four or five members, emulating either a British culture or a Saudi Arabian culture. The idea behind this was to broadly project a cross-cultural setting with both Eastern and Western influences. Instructions were provided to participants two weeks prior to the simulation date. The simulation exercise was an assessed component of the 'International Business Negotiations' course.

Each negotiation simulation was set for a minimum of 30 minutes and these were recorded using one fully adjustable camera and three or four fixed cameras. Valley, White and Iacobucci (1992) state that video recordings are highly reliable tools for thoroughly analysing interactions. Our notion behind the multiple recordings was to capture both verbal and non-verbal cues from the participants, to observe the body language of the participants (this helped during the coding process to clarify the participants' intentions behind dubious verbal interactions) and to understand who was speaking from which team to code the interactions separately for each team.

3.1.1 Importance of Simulation Role-Plays for this study

Simulations have long been used to analyse communications and negotiations (Bales, 1950; Donohue, 1981; Keys and Wolf, 1990; McGrath and Julian, 1963; Morley and Stephenson, 1978; Wall and Adams, 1974). Researchers from as early as the 1950s have used various simulation techniques to analyse negotiations (Adler and Graham 1989; Bales 1950; Donohue 1981; Drunkman 1967; McGrath and Julian 1963; Putnam and Jones 1982; Wall and Adams 1974).

Simulations are described under different terminologies, such as 'symmetry acting' (Weiss, 2003) and 'role plays' (Bales, 1950; Morley and Stephenson, 1970). Keys and Wolf (1990) describe simulations as simplified and artificial situations created to conduct an experiment

and containing enough illusion of reality to generate real-world responses from participants. In this study, we utilise role-play simulations because it is a reliable method and its use over many decades in investigating communications and negotiations (Weiss 2003; Lewicki 1997; Wall and Adams 1974).

3.1.2 Background of Participants

The participants in the study were postgraduate level business students from a reputed, long-established British university. Our reasons for choosing Masters' students was because the criteria for their admission was to have a minimum of two years of work experience in a managerial position, which would have exposed them to business negotiations in many ways. The participants were from a multicultural background with majority of students from USA, UK, Europe and Asia (China, India, Middle East, Vietnam, Indonesia, Malaysia and Singapore).

3.2 *Stages of the Study*

The study was carried out in two stages and there was a total of 40 business negotiation simulations that were recorded.

First Stage

In the first stage, 16 dyads participated in eight business negotiation simulation sessions. A total of 1770 face-to-face interactions were coded using the IPA model (Bales, 1950) to understand how to use the model for categorising interactions and to gain a level of familiarity from using the model, the latter helped in the development of our modified coding scheme. *Table 3* shows the correspondence between the IPA model and our proposed coding scheme and Figure 2 shows the 24-category typology flowchart-based model.

The 1770 interactions were coded using our proposed coding scheme to check for consistency in the coding process. During this time, any difficulties associated with coding face-to-face interactions using the proposed scheme were ironed out to further enhance its

features. Most of these hitches were associated with renaming some categories and sub-categories to simplify the flowchart-based coding scheme. For example, instead of the sub-categories ‘emotional’ and ‘rational’ we initially thought of sub-categories ‘emotional’ and ‘unemotional.’ Similarly, instead of sub-categories ‘positive’ and ‘negative’ we initially thought of sub-categories ‘favourable’ and ‘unfavourable.’ The verification of the coding process was carried out by a second coder who was trained on the coding activity and was a scholar in the field of management. We found the person competent to carry out the coding activity.

Table 3 about here

Second stage

In the second stage, 64 dyads participated in 32 business negotiation simulation sessions. There were 4303 face-to-face interactions that were transcribed and coded using our proposed 24-category typology, and this was done to verify the viability of the scheme. The aim at this stage was to ensure every interaction could be assigned a category.

3.3 Overview of our Proposed Coding Scheme

‘Coding schemes are important research tools for studying interactions and communication processes’ (Poole and Folger 1981).

Our proposed 24-category typology (Figure 2) adopts a flowchart-based structure comprising of 24 categories and is an extension of the IPA model. One of the reasons for expanding from 12 to 24 categories is to ensure that every verbal interaction is appropriately assigned a category and to eliminate problems associated with multiple interpretations for the same interaction. This was one of the challenges encountered in the first stage of our study, when four trained coders attempted to categorise the same set of transcribed interactions. Additionally, the extensive range of categories helped to keep uncertainties to a minimum, during the assignment of categories. Our proposed scheme can be used to identify

interactions at individual-interaction level and focuses on face-to-face business interactions that occur in real-time.

Figure 2 about here

3.3.1 Explication behind our Coding Design

There are three steps followed in the coding process.

Step 1

Each transcribed interaction exchanged within the business negotiation role-play setting would be classified as either '*Content-Related*' or '*Relational*'. Here, '*Content-related*' interactions are those that only include information about the contract or agreement and hence are of a business nature. '*Relational*' interactions are those interactions that are executive in nature and are associated with managing the business activities and interactions (refer to **Figure 3**). Poole and Hirokawa (1996) in their studies pointed out that group work broadly falls into two main categories: task-related and executive activities. The former refers to the design and approach in carrying out the task itself, and the latter refers to the activities involved in managing these task-related interactions, such as deciding what to do next, orchestrating the tasks and so on. Putnam (1981) corroborates this thought.

This reaffirms the need to have categories for both task-related interactions and management-related interactions, which is what our flowchart-based coding scheme proposes.

Figure 3 about here

Step 2

The '*Content-related*' interactions are further classified into '*emotional*' and '*rational*' and the '*Relational*' interactions are further classified into '*positive*' and '*negative*.' These four sub-categories were introduced to also consider the problem-solving nature of interactions, and to account for most types of face-to-face interactions exchanged between negotiators (see **Figure 4**). These design features were added after observing 6073 face-to-face dyadic

interactions. Further, our thoughts are supported by studies to show that business interactions generally follow a transactional protocol, making them impersonal in nature (Brislin, Worthley and Macnab 2006), and emotional interactions on the other hand, are more personal in nature and cause friction and personality clashes (Rose and Shoham 2004). And, with regards to the positive and negative nature of interactions, the IPA model also accounted for positive and negative interactions (Bales, 1950; Fahy, 2006). For instance, Categories 1, 2 and 3 in the IPA model categorised interactions that belonged to the positive emotional area, and categories 10, 11 and 12 categorised interactions that belonged to the negative emotional area (Bales, 1950).

Figure 4 about here

Step 3

The four sub-categories – ‘*Emotional / Rational, Positive / Negative*’ are each further divided into ‘*Giving*’ and ‘*Asking*’ gestures, to account for interactions that are both giving in nature (examples – giving opinion, giving information or giving direction) and asking in nature (examples – asking for reaffirmation, asking for direction or asking for suggestions/opinions). Under ‘*Content-related*’ interactions, the codes for ‘*Giving*’ gestures that are emotional in nature are 4A, 5A and 6A; and the codes for ‘*Asking*’ gestures that are emotional in nature are 7A, 8A and 9A. The codes for ‘*Giving*’ gestures that are rational in nature are 4B, 5B and 6B; and the codes for ‘*Asking*’ gestures that are rational in nature are 7B, 8B and 9B.

Similarly, under ‘*Relational*’ interactions, the codes for ‘*Giving*’ gestures that are positive in nature are 1A, 2A and 3A; and the codes for ‘*Asking*’ gestures that are positive in nature are 1B, 2B and 3B. The codes for ‘*Giving*’ gestures that are negative in nature are 10B, 11B and 12B; and the codes for ‘*Asking*’ gestures that are negative in nature are 10A, 11A and 12A (refer to **Figure 5**). Some examples on coding face-to-face interactions using the 24 category proposed coding scheme can be found in **Figure 6**.

Figure 5 about here

Figure 6 about here

4 Findings and Discussion on the novelty of our methodological Contribution

The viability of our proposed coding scheme was verified in two stages. Our 24-category typology seemed to *reduce the coding time* per negotiation session by half when compared to the IPA model (refer to *Table 4* for a comparison on coding time between the two coding models). For example, where coding took 40 to 60 minutes for a 30-minute simulation session using the IPA model, the coding time was brought down to 20-30 minutes from using our 24-category proposed scheme. Both coders mentioned that the revised coding scheme comparatively *easy to use* and this was reflected in their coding activity (refer to *Table 4* and *Table 5* for an overview on coding time for all the 40 negotiation simulations).

Furthermore, *higher accuracy rate* was achieved using the proposed scheme and this was approximately 98% (with 36 identified discrepancies) when compared to the accuracy rate achieved using the IPA model, which was approximately 93% (with 120 identified discrepancies). This was based on coding the same number of interactions (1770 interactions) (refer to *Table 4* for a comparison on accuracy rate between the two coding models).

Table 4 about here

Table 5 about here

4.1 Validity and Reliability

The two parameters that define the level of usefulness of a coding instrument are validity and reliability (Fisher 1980; Poole and Folger 1981). Validity is extent to which the measuring procedure represents the intended, to understand if we are measuring what we want to measure (Babbie, 2013; Carmines and Zeller, 1979; Neuendorf, 2016). It encompasses the criteria of reliability, accuracy (freedom from biases) and precision (Neuendorf, 2016). Reliability on the other hand, is the extent to which a measuring procedure can yield the same

results on repeated trials (Carmines and Zeller, 1979; Neuendorf, 2016). Existing studies state that achieving reliability in a coding scheme greatly depends on the construct that is being coded (Beers et al. 2007; Rourke et al. 2001). In the following section, we discuss the validity of our proposed coding scheme before we move on to understanding reliability and inter-rater agreeability.

4.1.1 Representational Validity of our Proposed Coding Scheme

Existing studies state that a coding scheme should have discreet and well-defined categories and should be straightforward and reliable to use, as this can allow coders to apply a consistent protocol during the coding process, especially when coping with large amounts of data (Garrison et al., 2006; Neuendorf, 2016). Our proposed coding scheme has conventional meanings attached to the constructs, which in turn meets the requirements of representational validity (Poole and Folger, 1978; Poole and Folger, 1981). What we mean by ‘conventional’ here is that the meanings assigned to these categories are clear and limits subjective interpretation of the results. In other words, the classification of codes is consistent with the participants’ interpretation of the results (Poole and Folger, 1981).

This was verified in three steps in the second stage of data analysis. The first step involved the first trained coder to carry out the coding process using the new scheme. At this point, it was observed that codes were assignable to all verbal interactions (4303 verbal interactions). The second step involved a second trained coder to carry out the coding process on the same interactions. Again, it was observed that codes were assignable to all the verbal interactions. The third step involved identifying the number of discrepancies during the coding process carried out by the two coders. The disagreements between the coders can be seen in *Table 5* along with the number of dyadic interactions exchanged in each session.

4.1.2 Reliability through Kappa's measure of Inter-rater reliability

For this study, we use Cohen's (1960) Kappa statistic is used to measure inter-coder agreeability for the qualitative categories in order to determine the extent to which the results produced by two coders are reproducible and reliable. While literature on inter-coder agreement has been extensive over the last two decades (Banerjee et al 1999; Conger 2017; Vanbelle and Albert 2009; Warrens 2008), a defined system for measuring levels of agreement in qualitative contexts is still an underexplored area.

Kappa's coefficient is a measure of statistical calculation considers agreements that occur by chance, which makes for a robust estimation than the percentage agreement estimations (Cohen 1960). Guggenmoos-Holzmann (1996) further states that Kappa's procedure is an unbiased measure of reliability of qualitative text coding.

Our manifest content, which are the conscious and obvious social actions (Graneheim and Lundman 2004), were the transcribed interactions, and these were relatively easy to code as there was little need for subjective interpretations. On the other hand, the latent content, which is the subtle and unclear social actions (Graneheim and Lundman 2004), that seemed ambiguous in some respects and required subjective interpretations was decoded from the non-verbal behaviour, which we could repeatedly observe from the video-recordings.

Cohen's (1960) Kappa coefficient (**K**) is defined as:

$$K = (Fa - Fc) / (N - Fc),$$

Where:

Fa is the observed frequency of interactions that were agreed upon;

Fc is the frequency of interactions based on chance;

N is the total number of interactions.

As Kappa leans towards '1', agreement between coders tends towards perfect congruence; as Kappa leans towards '0', a low level of agreement prevails (Viera and Garrett 2005).

Although most of the transcribed face-to-face interactions were relatively easy to code, there were few ambiguous interactions inferred from the non-verbal behaviour in the video-recordings. As previously mentioned, the statistical procedure for determining the magnitude of agreement between the two coders was performed on a total of 1770 transcribed face-to-face interactions that were part of the first stage of the study. These comprised of eight dyadic negotiation simulations. These sessions were initially coded using the IPA model and subsequently by our proposed new coding scheme. The Kappa coefficient was calculated separately for each of these sessions (refer to **Table 4**). While the agreement between the coders seemed to be high ($K_{\text{new scheme}} \geq 0.96$) in all sessions, in the last session (session 8), the two coders had perfect agreement ($K_{\text{new scheme}} = 1$). The aggregate for the 8 negotiation sessions increases from 0.92 (K_{IPA}) to 0.98 ($K_{\text{new scheme}}$) indicating higher agreement between coders under our proposed scheme.

To test the significance of the difference between two independently-measured Kappa, we use the normal curve, the 'z' coefficient is indicated below:

$$z = (K_1 - K_2) / ((\sigma_{K1})^2 + (\sigma_{K2})^2)^{1/2} \quad (3)$$

Where:

K_1, K_2 are Kappa coefficients calculated independently;

σ_{K1}, σ_{K2} are the standard deviation of respectively of K_1 and K_2

Using formula (3) from above, we see that the significance of the difference between K_{IPA} and $K_{\text{new scheme}}$ is less than 0.01% (refer to **Table 4**). This indicates a very low probability of arriving at these different Kappa values by chance alone. **Table 4** shows the Kappa

coefficients, standard deviation and z scores separately for the coding using both the IPA model and our proposed scheme.

The calculation of accuracy rate (number of agreements between coders / total number of interactions) for each of the eight negotiation sessions from the first stage is indicated in **Table 5**. As indicated, the observed interactions were coded to understand the observed cases of agreement (Banerjee et al 1999). Thus, none of the cases of agreement was left to chance. Disagreements between coders were discussed before concluding on the coding category, and when required a third trained coder was consulted before proceeding to the next step.

Additionally, we validated the viability of our proposed scheme by coding interactions from the remaining 32 negotiation sessions in the second stage. This can be seen in **Table 6**, along with an overview on the duration of each session, time taken for coding, the number of interactions, the number of disagreements between the coders, and the accuracy rates. This additional step was carried out to attest the viability of our proposed scheme.

Table 6 about here

4.2 Limitations of our Study

Using our proposed coding scheme, we were able to categorise all 6073 verbal interactions (from the first and second stages of empirical analysis). Our limitation here is that we sometimes relied on non-verbal cues to interpret subtleties and to minimise ambiguity when multiple coding was possible. On the other hand, we did not have a “sink” or “catch-all” category as in the IPA model (Bales, 1970) to classify all the ambiguous and uninterpretable interactions. In other words, our coding scheme had well-defined, conventional categories that could be easily interpreted. While we have not validated our coding instrument for specific non-verbal cues, we are open to the scheme undergoing further development as required. Secondly, we acknowledge that most coding systems can be idiosyncratic in nature since they can be used only in certain laboratory settings. While our proposed coding scheme

has been verified in a dyadic business negotiation setting, future studies can be conducted to attest the viability of the scheme in multi-party negotiation settings and perhaps other negotiation settings, for example – employer-employee, doctor-patient, parent-child and so on.

5 Discussion and Conclusion

The purpose of this research is to propose a validated, viable and user-friendly coding instrument that can help negotiation scholars further their empirical studies. To do this, we provided an overview of existing coding instruments and schemes that were developed over the last five decades to indicate to the readers that there has been a decline in coding instruments since the 1970's (Futoran, Kelly and McGrath, 1989; Kelly, 2000), despite its significance as research tools or translation devices for organising data into categories (Angelmar and Stern 1978; Poole and Folger, 1981; Schermuly and Scholl 2012) and for accurately measuring communication (Siminoff and Step, 2011)

While this study like any other study has its limitations, we would like to point out two things - studies of this nature are at an infancy stage (Kelly, 2000; Poole and Folger, 1981; Putnam and Jones, 1982); and our research has implications for conflict management and negotiation scholars as well as for third parties. Furthermore, our proposed coding scheme used the sound and reliable IPA model (Fahy, 2006) as the root for its development. Schermuly and Scholl (2012) state that the IPA model has the strongest influence on existing coding schemes used in small group research and is frequently regarded as the mother of most group interactions coding schemes, which is why the IPA model was adopted by many scholars to develop their coding schemes (eg:- Bales and Cohen, 1979; Bonoma and Rosenberg, 1978; Borgatta, 1961; Fisch, 1994; Leather, 1969; Kauffeld, Freiling and Grote, 2002; Kettunen and Pyy, 2000; Polley, 1987).

The scheme was validated to understand if it can be used accurately for its intended purpose, which is to categorise face-to-face interactions, and the reliability of our proposed scheme was verified through Kappa statistic of inter-rater reliability (Cohen, 1960), to understand if the same results can be consistently produced during the coding process.

To conclude, our proposed coding scheme can be practically applied with immediate effect to studies relating to negotiation and small group interactions. We plan to use this proposed scheme in our future studies, to examine interaction trajectories that can successfully and unsuccessfully impact negotiation outcomes.

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Tables and Figures

Table 1 – Coding Schemes inspired by the IPA model (Bales, 1950)

S. no.	Coding Schemes inspired by Bales IPA model	Pros	Cons
1)	Interpersonal Diagnosis of Personality System (Leary, 1957)	(a) Inspired by the IPA model and consisting of 16 categories (Bonoma and Rosenberg, 1978)	(a) Designed to aid clinicians in diagnosing personality functions (Leary, 1957; Bonoma and Rosenberg, 1978) (b) Not a content analysis tool (Bonoma and Rosenberg, 1978)
2)	Interactions Process Scores (IPS) (Borgatta, 1961)	(a) Used to examine face-to-face interactions in general (Borgatta, 1961)	(a) Used to study only behavioural characteristics of participants in role-play interactions (Borgatta, 1961) (b) Not used to study interactions specific to business negotiations (Borgatta, 1961)
3)	‘Sign Process Analysis’ model (Mills, 1964)	(a) Used grounded theory construction to develop his model (Mills, 1964) (b) Inspired by the IPA model (Thery, 2018)	(a) Used to study group interactions in a learning environment (b) The interactions were grouped into what men say about women and what women say about men (c) Falls short in not providing validated evidence to support his observations (Poole and Folger 1981) and was hardly used
4)	Behavior Scores System (Borgatta and Crowther, 1965)	(a) A reconstruction of Bales IPA model (Bonoma and Rosenberg, 1978)	(a) Describes group interactions in terms of peer assessments (Bonoma and Rosenberg, 1978) (b) The categories tend to act like sinks for coders to use (Bonoma and Rosenberg,
5)	Feedback Rating Instrument (Leathers, 1969)	(a) Based on Bales IPA model (Leathers, 1971)	(a) It measures discussant’s contributions in small group communication
6)	Rackham’s coding system (Rackham, Honey and Colbert 1971)	(a) Used to examine face-to-face interactions (Rackham, Honey and Colbert 1971) (b) Based on Bales IPA model (Rackham, Honey and Colbert, 1971)	(a) Limited set of task-oriented categories and a miscellaneous category to fit in all the residual interactions (Thery, 2018)
7)	Social Influence Rating System (Bonoma and Rosenberg, 1978)	(a) Inspired by the IPA model (Bonoma and Rosenberg, 1978)	(a) Consists of a four-fold contingency that may constrain options for coding (Bonoma and Rosenberg, 1978)
8)	SYMLOG - System for the Multilevel Observation of Groups (Bales, Cohen and Williamson 1979)	(a) Theoretical-based framework considers both verbal and non-verbal behaviours and has two main methods of use (Bales, Cohen and Williamson	(a) First method of scoring is complex and requires the coder to be trained (Bales, Cohen and Williamson 1979) (b) Mostly used to make group to group comparisons (Bales, Cohen and (c) Computer-based model that can be time-consuming and expensive (Keyton and Wall 1989)
9)	‘Group Field Dynamics’ (Polley, 1987)	(a) A unifying model based on Bales’ SYMLOG and Lewin’s field theory (Polly (b) Computer-assisted method with an automated report writer to produce results (Polley, 1987)	(a) It was used to predict team effectiveness
10)	Conference Coding Scheme (Fisch 1994)	(a) Based on the IPA model (Fisch 1994)	(a) Focused more on content-related interactions (Breuer, 2010)
11)	‘Speech Act Coding’ (Kettunen and Pyy, 2000)	(a) Based on the IPA model (Kettunen and Pyy, 2000) (b) Consists of eleven elements (Kettunen and Pyy, 2000)	(a) To analyse communication within the nuclear plant sector (Kettunen and Pyy,

Table 1 Continued on next page...

12)	Act4teams (Kauffeld Frieling and Grote 2002)	(a) Based on the IPA model (Kauffeld Frieling and Grote 2002) (b) Used to study group behaviour and team interactions in a business environment (Kauffeld Frieling and Grote 2002)	(a) Not tested in an inter-cultural environment (Kauffeld Frieling and Grote 2002)
13)	An extended speech act coding system (Min, Chung and Yoon, 2004)	(a) Based on the IPA model (Min, Chung and Yoon, 2004)	(a) Used to analyse verbal communication of main control room operators during emergency conditions (Min, Chung and Yoon, 2004)
14)	Multimodal coding scheme (Falcon, Leonardi, Pianesi and Zancanaro, 2005)	(a) For annotating group behaviour and influenced by the IPA model (Falcon, Leonardi, Pianesi and Zancanaro, 2005) (b) Generates a multimedia relational report based on audio-visual analysis of human-to-human interaction (Pianesi et al., 2008)	(a) Used to study team performance in dysfunctional teams (Pianesi et al., 2008)
15)	Discussion Coding Scheme (DCS) (Schermuly and Scholl, 2012)	(a) Been validated in several studies (Schermuly and Scholl, 2012) (b) To examine face-to-face interactions in real time or in video-supported formats (Schermuly and Scholl, 2012)	(a) The grids focus on particular kind of interactions or on the characterisation of behaviours that individuals reflect through their interactions (Schermuly and Scholl, 2012) (b) A software-based model that not everybody will be able to familiarise with, as it requires the coder to define the units of analysis before proceeding with the coding (Schermuly and Scholl, 2012) (c) There is the hindrance of limiting the functional categories during the coding (Schermuly and Scholl, 2012)
16)	Act4teams (Kauffeld and Lehmann-Willenbrook, 2012)	(a) To study verbal behaviour in small-group team meetings (Kauffeld and Lehmann-Willenbrook, 2012) (b) Inspired by the IPA model (Kauffeld and Lehmann-Willenbrook, 2012)	(a) This system could not be verified on interactions present in an inter-cultural environment (Kauffeld and Lehmann-Willenbrook 2012).
17)	Macro-ergonomic model (Ghosh and Dickerson, 2015)	(a) Influenced by the IPA model (Ghosh and Dickerson, 2015)	(a) Use to analyse communications within a construction work setting (Ghosh and Dickerson, 2015)

Table 2 – Coding Schemes not inspired by the IPA model (Bales, 1950)

S.No	Coding Schemes not inspired by Bales IPA	Pros	Cons
18)	Decision Proposal Coding System (Fisher, 1970)	(a) Consisted of 11 categories (Fisher, 1970) (b) Used methods of grounded theory construction to generate the coding system (Fisher, 1970, Poole and Folger, 1981)	(a) Did not provided validating evidence to support his observations (Poole and Folger, 1981)
19)	Pattern Variable Coding System (Mabry, 1975)	(a) Used to code every utterance/interaction (Poole and Folger, 1981)	(a) Subject interpretations in this system focused more on interactions relating to conflict, tension and disagreement than on positive interactions (Poole and Folger, 1981) (b) Had less representational validity for decision-making interactions compared to both Bales and Fisher's coding systems (Poole and Folger 1981)
20)	Conversation Exchange Analysis (Thomas, Bull and Roger, 1982)	(a) Four sets of rules for the classification of speech (Thomas, Bull and Roger, 1982) (b) Can be used in a wide variety of situations and relationships (Thomas, Bull and Roger, 1982)	(a) Focusses more on the types of information exchanged (e.g. beliefs, giving examples, telling stories etc.)
21)	Group Working Relationships Coding System (Poole, 1983)	(a) A global coding system employed in multiple track analyses of decision-making in groups (Poole, 2007)	(a) Codes are not assigned to individual acts but to periods of 30-second interactions (Poole, 2007) (b) Designed to gauge the general working atmosphere in a group (Poole, 2007)
22)	TEMPO - Time by Event by Member Pattern Observation (Futoran, Kelly and McGrath, 1989)	(a) Its main strength is to establish strong empirical links between group processes and group productivity (Futoran, Kelly and McGrath, 1989)	(a) A computer programming-based coding system (Futoran, Kelly and McGrath, 1989) (b) High usage cost (Futoran, Kelly and McGrath 1989)
23)	Towers Market Coding Scheme (Weingart, Bennett and Brett, 1993)	(a) Based on existing coding schemes to identify theoretically important negotiation behaviours (e.g. Lewicki, Saunders and Minton, 1985; Pruitt and Carnevale, 1993; Walton and MacKersie, 1965).	(a) Some codes worked and some did not work when coders independently coded sections of the transcripts (Weingart, Smith and Olekalns, 2004)
24)	Group Development Observation System (Wheelan, Verdi and McKeage, 1994)	(a) Based on 7-verbal categories represent group behaviour in conversation (Wheelan, Verdi and McKeage, 1994)	(a) The 7-categories represent verbal interactions associated with various stages of group development (Wheelan and Williams, 2003), so this is not used to analyse verbal interactions in business negotiations.
25)	Turn-and-episode-based Coding System (Jones et al., 1999)	(a) Developed from the communication accommodation theory (CAT) (Jones et al., 1999) (b) Focusses on both verbal and non-verbal behaviour (Jones et al., 1999)	(a) Focuses on content rather than on interactions (Jones et al 1999). (b) Focusses on individuals rather than on the relationship between two members of a dyad (Jones et al., 1999)
26)	Coding Scheme by Olson, carter and Storossen (Olson et al 1999)	(a) Focussed on group's problem-solving activities (Olson et al., 1992)	(a) To classify communication within the information-technology sector (Olson et al) (b) A eleven-element scheme could only evaluate communication at the paragraph level (Olson et al 1999).
27)	Coding Scheme by Schraagen and Rasker (Schraagen and Rasker, 2001)	(a) Consists of 7 elements (Schraagen and Rasker, 2001)	(a) A scheme to analyse communication in fire-fighting simulations (Schraagen and Rasker, 2001)
28)	Generalised Attitude Measure (GAM)* and 'Generalised Belief Measure (GBM) (McCroskey, 2006)	(a) To measure attitudes and beliefs across a range of different topics (McCroskey, 2006).	(a) These had limited use in intercultural studies, for instance attitudes between two countries had to be measured by two separate GAMs used by individuals (McCroskey
29)	A version of speech act coding scheme (Kim, Park, Han and Kim, 2010)	(a) To analyse communication in abnormal conditions (Kim et al., 2010)	(a) To explain communication patterns of operators' conversations in abnormal conditions within a nuclear power-plant environment (Kim, Park, Han and Kim, 2010).

Table 3 – Brief Description of the revised categories in our proposed model

IPA categories	New Codes	Categorisation/Classification
1 - to foster a positive environment, to raise one's status, welcoming and thanking the other party, breaking the ice and expressing sympathy	1A	Relational -> positive -> giving gesture
	1B	Relational -> positive -> asking gesture
2 - to joke around generally or to calm a tensed situation, bantering in a general manner.	2A	Relational -> positive -> giving gesture
	2B	Relational -> positive -> asking gesture
3 - to acknowledge or accept what is being said and to show signs of responsiveness in general	3A	Relational -> positive -> giving gesture
	3B	Relational -> positive -> asking gesture
4 - to give directions/suggestions, to propose solutions and to be persuasive.	4A	Content-related -> emotional -> giving gesture
	4B	Content-related -> rational -> giving gesture
5 - to express opinion and desires, ceremonial performances and other acts of worship or addressing a religious deity.	5A	Content-related -> emotional -> giving gesture
	5B	Content-related -> rational -> giving gesture
6 - to give information/orientation, to summarise and to clarify content related matters in a neutral manner.	6A	Content-related -> emotional -> giving gesture
	6B	Content-related -> rational -> giving gesture
7 - to ask questions expressing confusion and to ask questions that require a 'yes' or 'no' answer.	7A	Content-related -> emotional -> asking gesture
	7B	Content-related -> rational -> asking gesture
8 - to ask open ended questions that do not limit the other party's response and to ask questions exploring the other party's feelings and intentions.	8A	Content-related -> emotional -> asking gesture
	8B	Content-related -> rational -> asking gesture
9 - to ask for direction with a tone of dependence.	9A	Content-related -> emotional -> asking gesture
	9B	Content-related -> rational -> asking gesture
10 - to be aloof, unapproachable, to be difficult to work with or to show explicit dissatisfaction.	10A	Relational -> negative -> asking gesture
	10B	Relational -> negative -> giving gesture
11 - to show frustration, impatience, restlessness and agitation.	11A	Relational -> negative -> asking gesture
	11B	Relational -> negative -> giving gesture
12 - to show autocratic control, to be overbearing and stubborn, to give threats, to ridicule and undermine one's position.	12A	Relational -> negative -> asking gesture
	12B	Relational -> negative -> giving gesture

Table 4 – Cohen Kappa’s statistical calculations for the IPA and the proposed coding scheme

Session	K (IPA)	K (new scheme)	SD (IPA)	SD (new scheme)	z	α
1	0.80	0.96	0.024	0.011	6.063	≤0.01%
2	0.90	0.95	0.025	0.015	1.728	0.05%
3	0.95	0.96	0.017	0.010	0.506	1.14%
4	0.91	0.97	0.031	0.013	1.761	0.83%
5	0.95	0.99	0.019	0.006	2.035	1.11%
6	0.93	0.99	0.020	0.006	2.875	0.08%
7	0.97	0.99	0.012	0.006	1.534	2.14%
8	0.97	1.00	0.018	0.000	1.681	9.30%
Aggregated*	0.92	0.98	0.008	0.003	9.257	≤0.01%

(*) Results for the eight aggregated sessions

Table 5 – Comparison on Timing and Accuracy rates using both IPA and our proposed coding scheme (from initial 8 sessions)

Session	Duration (min.*)	Number of interactions	IPA				New Proposed Scheme			
			Disagreements between coders	Accuracy rate (%)	Coding time (min.*)	Coding time per minute of session duration (min.)	Disagreements between coders	Accuracy rate (%)	Coding time (min.*)	Coding time per minute of session duration (min.)
1	30	329	56	83.0	75	2.5	12	96.4	55	1.8
2	25	183	15	91.8	55	2.2	8	95.7	40	1.6
3	27	259	9	96.5	60	2.2	7	97.4	45	1.7
4	19	130	10	92.3	40	2.1	3	97.7	30	1.6
5	22	174	7	96.0	50	2.2	1	99.4	35	1.6
6	23	221	12	94.6	60	2.6	2	99.1	40	1.8
7	33	311	8	97.4	65	2.0	3	99.0	45	1.4
8	27	163	3	98.2	50	1.8	0	100.0	30	1.1
Mean	26	221	15	93.7	57	2.2	5	98	40	1.6

(*) rounded minutes

Table 6 – Overview on Timing and Accuracy rates using our proposed coding scheme (for the remaining 32 sessions)

Session	Duration (min.*)	Number of interactions	New Proposed Scheme			
			Disagreements between coders	Accuracy rate (%)	Coding time (min.*)	Coding time per minute of session duration (min.)
9	24	123	12	90.2	25	1.0
10	13	124	8	93.5	24	1.8
11	31	156	6	96.2	35	1.1
12	11	129	4	96.9	25	2.2
13	11	135	2	98.5	25	2.2
14	13	159	1	99.4	35	2.7
15	27	108	1	99.1	15	0.6
16	31	177	2	98.9	35	1.1
17	30	142	0	100.0	30	1.0
18	12	74	0	100.0	15	1.3
19	35	133	2	98.5	25	0.7
20	24	110	0	100.0	18	0.8
21	31	146	1	99.3	25	0.8
22	32	133	0	100.0	20	0.6
23	35	154	1	99.4	25	0.7
24	28	135	1	99.3	22	0.8
25	23	94	2	97.9	15	0.7
26	27	145	0	100.0	25	0.9
27	11	93	0	100.0	15	1.3
28	12	128	0	100.0	18	1.6
29	13	138	0	100.0	22	1.7
30	24	109	0	100.0	15	0.6
31	33	131	0	100.0	20	0.6
32	21	121	0	100.0	18	0.9
33	16	100	0	100.0	15	0.9
34	22	134	0	100.0	21	1.0
35	33	192	1	99.5	40	1.2
36	32	227	1	99.6	45	1.4
37	21	82	0	100.0	12	0.6
38	30	152	1	99.3	20	0.7
39	28	166	0	100.0	25	0.9
40	29	154	0	100.0	22	0.8
<i>Mean</i>	<i>23.9</i>	<i>135</i>	<i>1.4</i>	<i>98.9</i>	<i>23.3</i>	<i>1.1</i>

(*) rounded minutes

Figure 1 – Conceptual model of culture, communication and Negotiation

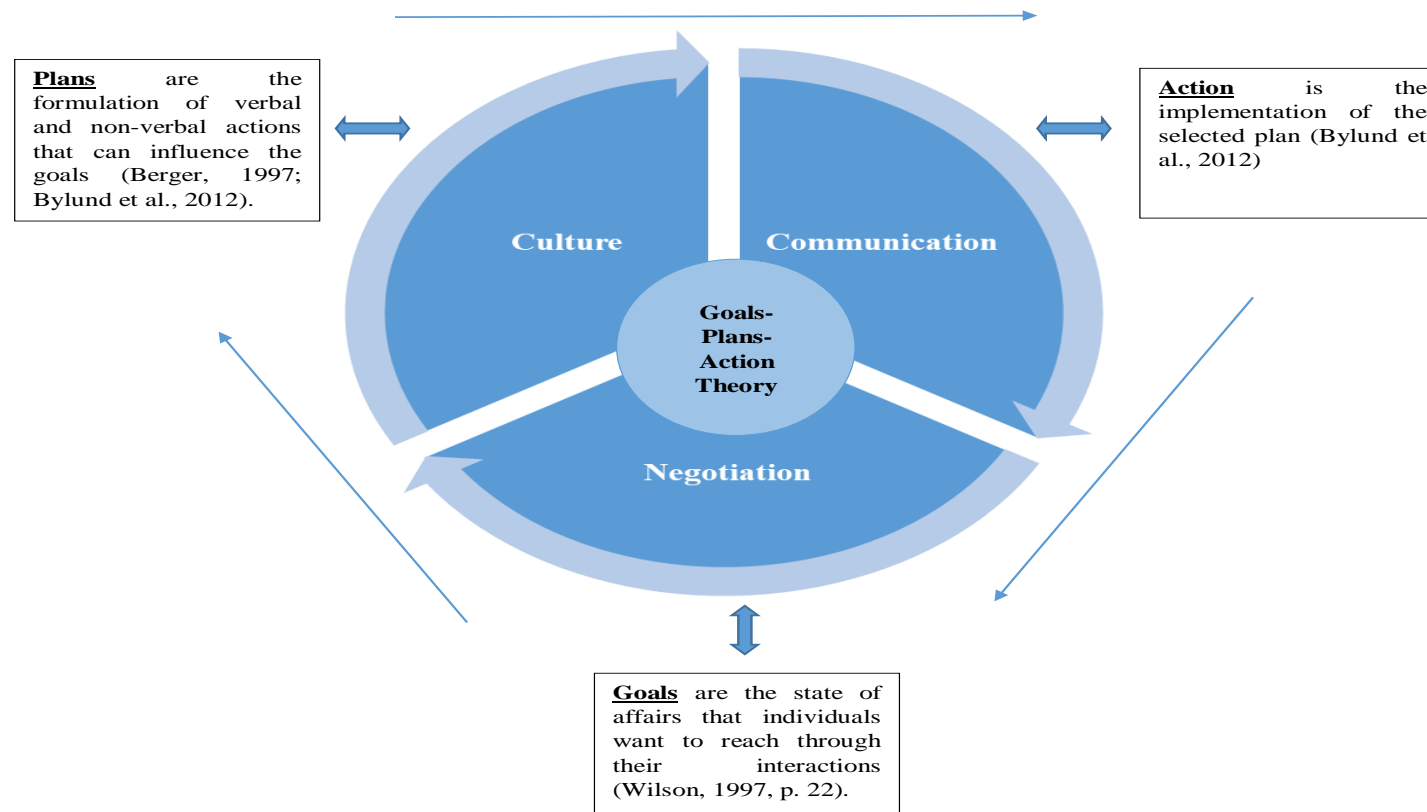


Figure 2 – Proposed 24-category Typology

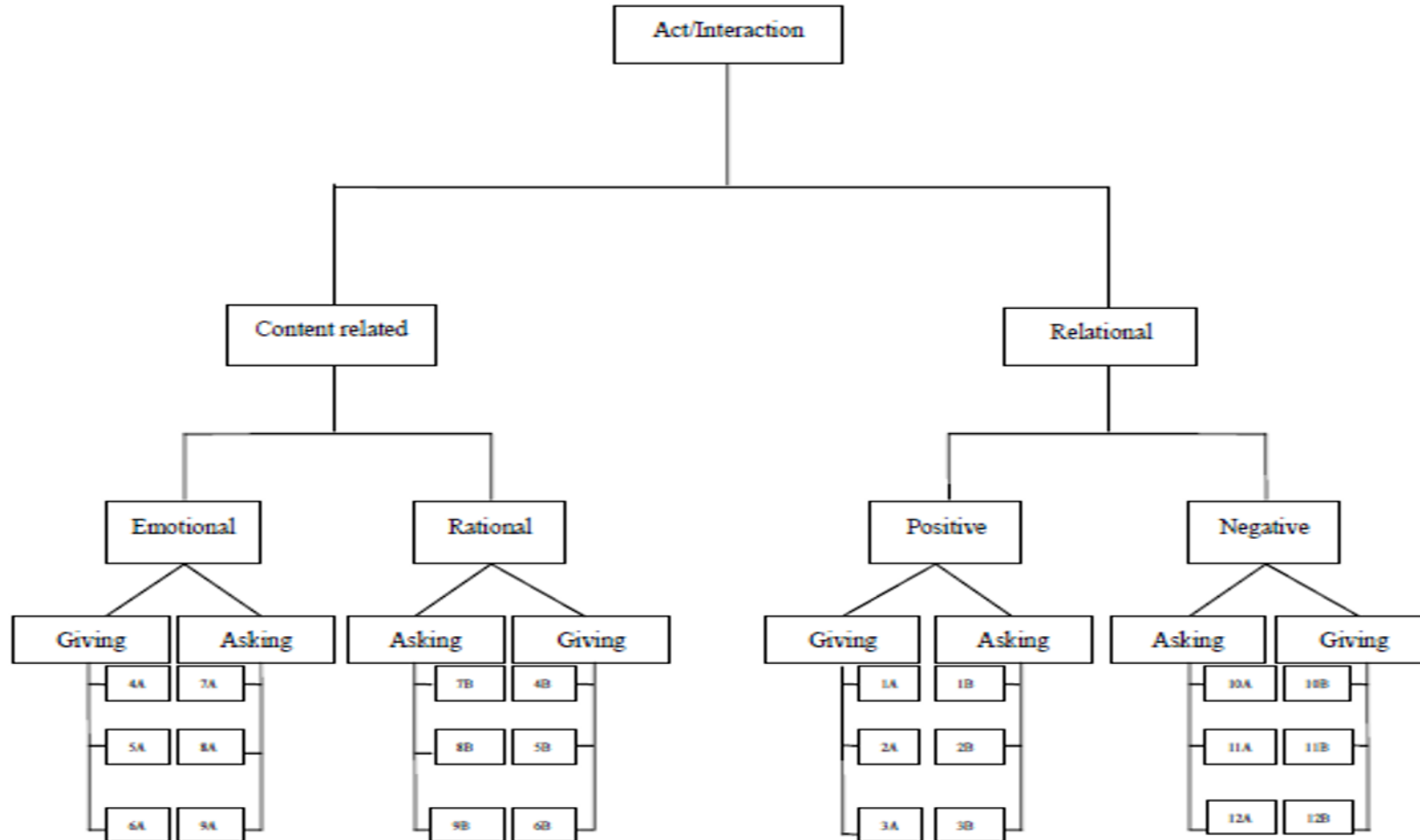


Figure 3 – Coding Procedure step 1

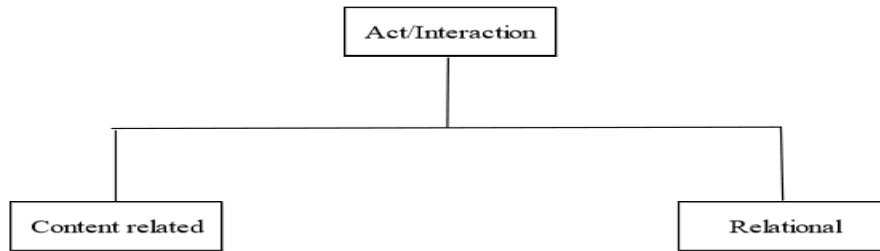


Figure 4 – Coding Procedure step 2

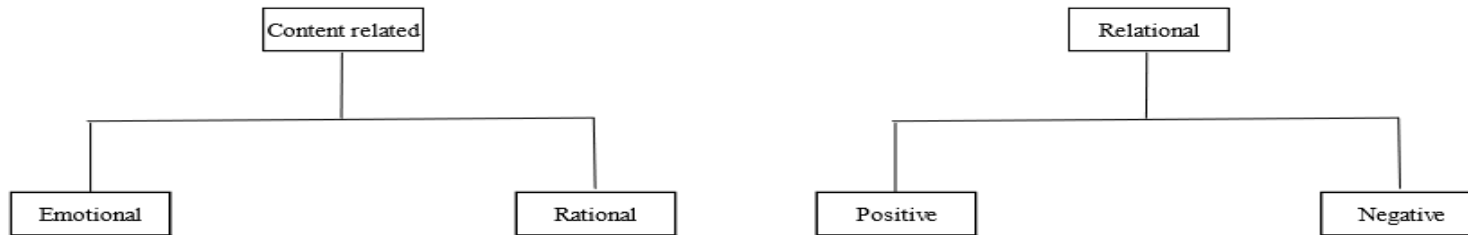


Figure 5 – Coding Procedure step 3

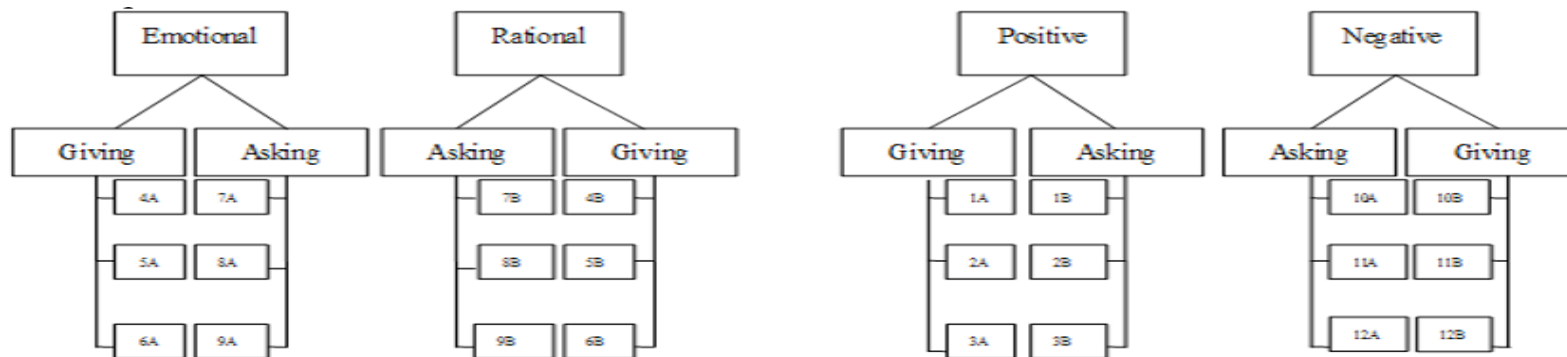


Figure 6 – Some examples on coding face-to-face interactions

<u>Speaker</u>	<u>Interaction</u>	<u>Coded category</u>	<u>Decryption of coding</u>
SA team member	"I hope you enjoy your stay in our beautiful country"	1A	'Relational' -> 'positive' -> 'Giving' interaction
SA team member	" So did you say you have some work experience in the UAE arleady"	1B	'Relational' -> 'positive' -> 'Asking' interaction
SA team member	"How much time do you need from us? As you know, time is money"	8B	'Content-related' -> 'rational' -> 'Asking' interaction
B team member	"Do you mean 20% at the contract signing stage?"	7B	'Content-related' -> 'rational' -> 'Asking' interaction
B team member	"We are fine with giving you 20% in the final instalment, but we cannot give you more rebat	6B	'Content-related' -> 'rational' -> 'Giving' interaction
SA team member	"I wouldn't suggest you to decide on whom we need to buy the plant from"	10B	'Relational' -> 'negative' -> 'Giving' interaction
SA team member	"But now we would like to go back to the issues we have pending"	4B	'Content-related' -> 'rational' -> 'Giving' interaction
*SA means Saudi Arabian			
*B means British			
*Decription of the revised categories can be found in Table 2			
Note - Not all giving interactions are coded as 'A' and not all asking interactions are coded as 'B' so, please follow Figure 2 during coding.			