Evaluation of the Conflict Resolution Questionnaire

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ATTESTATION OF AUTHORSHIP

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which, to a substantial extent, has been accepted for the qualification of any other degree or diploma of a university or other institution of higher learning, except where due acknowledgement is made in the acknowledgements."

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ABSTRACT

Many questionnaires used in the measurement of conflict are expensive and difficult to obtain. In addition, instruments of this kind are usually associated with diagnosis rather than intervention and education. The present thesis evaluates the recently developed questionnaire that is easily accessible through the Internet, the Conflict Resolution Questionnaire (CRQ). The CRQ was developed as a measure of the conflict resolution ideas presented by Weeks (1994), and Fisher and Ury (1991). It has been used to measure a person's ability to create mutually beneficial resolutions to conflict for all participants. In addition, the CRQ items measure respondents' perceptions regarding how often they engage in certain conflict-related behaviours, and their level of awareness regarding conflict issues. The CRQ is also designed to promote understanding of conflict, and has been used as an educational tool.

Participants were asked to fill in the CRQ alongside an established questionnaire, the Rahim Organisational Conflict Inventory, part two (ROCI-II) (Rahim, 1983a). The responses of 338 participants to the CRQ and ROCI-II were statistically analysed. Hypotheses were tested regarding the CRQ's reliability and validity. CRQ reliability was statistically appraised through exploration of internal consistency and split-half reliability scores. CRQ validity was examined by evaluating the CRQ in terms of content, construct and concurrent validity. Establishing content validity was a qualitative process. Corroborating construct validity essentially relied on factor analysis procedures. Decisions regarding CRQ's concurrent validity were based upon correlation measures between the CRQ and the ROCI-II, which was used as an established standard measure of conflict.

The results confirmed that two of the McClellan's (1997c) factors were reliable and that the CRQ had content validity. There was marginal support of construct validity, whereby from the factor rotation it was shown that two of the CRQ factors were matched by their derived counterparts. In addition, the results showed modest support for concurrent validity based on the comparisons of three CRQ factors against two factors from a well-established questionnaire. These findings also lend support for the methods of conflict resolution presented in the works of Weeks (1994) and Fisher and Ury (1991).

A modified version of the CRQ is presented, the 'CRQ-II'. A posthoc analysis suggests that the CRQ-II can satisfy psychometric requirements, although further research is

recommended to confirm the CRQ-II. Practice implications regarding the development of the CRQ-II are discussed, and future research considerations are explored.

INTRODUCTION

Conflict is a complex and prevalent phenomenon that exists in our society. There are numerous articles and books that have investigated and discussed the area of conflict. For example, conflict issues considered in the literature include dispute resolution practices (Hill, 1995; Pope & Bush, 2000; Verge, 2000; Warters, 2000), international conflict and peace keeping (Langran, 2002), family conflict (Straus, 1979), organisational conflict (Rahim, 2001), human rights (Vorster, 2002), justice and law (Dershowitz, 2002; Whiteman & Mamen, 2002), health (York, 2002), ethics (McCabe & Rabil, 2002), and security and terrorism (Durant, 2002).

Conflict can also be examined in terms of personal and group orientation, such as interpersonal, intrapersonal, intergroup and intragroup conflict (Rahim, 2001). The focus of this thesis is interpersonal conflict. It is a term used to describe the ways in which people interact in terms of affiliation, agreement, or difference of opinion (Rahim, 2001). It is thus of significance that researchers are able to develop devices for measuring such phenomena. Many of the existing instruments focus on the measurement of ways in which people react to conflict situations (Kilmann & Thomas, 1974; Rahim, 1983a). Other instruments centre on the evaluation of communication behaviours and interpersonal strategies, or ways of coping with interpersonal conflict within the family (Putnam & Wilson, 1982; Straus, 1979). Few instruments focus on the frequency of behaviour related to general conflict resolution practices and on linking this information to structured conflict resolution strategies.

McClellan (1997a) developed a new instrument that shows promise, namely the Conflict Resolution Questionnaire, CRQ (see Appendix A). It is used to evaluate the interpersonal conflict resolution strategies described by Weeks (1994), and Fisher and Ury (1991). These three authors considered two similar conflict intervention strategies that aim to promote awareness, monitor behaviour response and generate transformative action in response to a conflict situation. The CRQ purports to measure levels of awareness surrounding the notion of a conflict partnership, and frequency of engagement in activities that could either hinder or promote such a relationship (McClellan, 1997b, see Appendix B).

The CRQ is worthy of investigation as it can be beneficial for the general public in terms of promoting conflict awareness and in providing useful information that can be used to resolve conflicts. The CRQ allows respondents to consider future circumstances, creating a visionary aspect to the questionnaire, while many existing instruments measuring conflict tend to focus on the present and past. It is a free resource and can be accessed without difficulty from the Internet by any person interested in promoting their self-awareness of conflict, and in solving existing and potential conflict situations. It allows participants in a conflict situation an avenue for reflection and the ability to create ideas that can be used for developing intervention strategies. It may also be useful for professionals working in this area, such as mediators and psychologists.

Nonetheless, the questionnaire requires rigorous psychometric evaluation to confirm its utility. The main purpose of this thesis is to critically review the CRQ. Before confidence in its application can be declared, it is necessary to move beyond an intuitive measure of its effectiveness and to evaluate whether the CRQ will yield the same results in the same situations, which refers to reliability issues. Furthermore, it is pertinent to determine whether the CRQ is actually measuring what it is supposed to measure, this relates to aspects of validity.

In this thesis I appraise the CRQ by first reviewing the theoretical aspects of the literature pertaining to the issue of conflict, its management and measurement. Second, I concentrate on examining a critical benchmark measure for the CRQ, the Rahim Organisational Conflict Inventory, part two (ROCI-II) (Rahim, 1983a). The ROCI-II has been exhaustively evaluated (e.g., Rahim & Bonoma, 1979; Rahim & Magner, 1995) and it is shown that the ROCI-II can be used as a credible standard for the CRQ. In chapter three, I present the study objectives and hypotheses generated after a thorough review of the relevant literature. Chapter four outlines the methodology used to evaluate the CRQ. The results obtained from the statistical analyses are presented in chapter five. In chapter six, I discuss the relevance of the results in terms of the academic literature, the worthiness of the CRQ as a conflict instrument, and make some suggestions for refining the CRQ and extending this area of research.

CHAPTER ONE: LITERATURE REVIEW

1.1 Theoretical foundation

Conflict is an established behavioural phenomenon, and it has been thoroughly reviewed and researched (e.g., Deutsch, 1973; Rahim, 2001). The different approaches to the examination of conflict have changed over the last hundred years. Rahim (2001) stated that the early organisational theorists, for example Taylor and Weber, neglected to view conflict as a phenomenon in itself but as a consequence of poor organisational structures and processes being put in place. The first to view conflict as a phenomenon were social psychologists, such as those involved with the Hawthorne experiments in the 1920s and 1930s, which saw the beginning of a new way of looking at human behaviour (e.g., Mayo, 1945).

This earlier work led to more interest in the study of conflict management. Rahim (2001) presented a detailed review of the background history related to managing organisational conflict. Rahim stated that Mayo, in the 1930s, began to view social systems as integral to the resolution of conflict. Some of the specific seminal empirical work into conflict management began in the late 1940s and 1950s, and was developed in the 1960s and 1970s (Assael, 1969; Blake & Mouton, 1964; Coser, 1956; Deutsch, 1949, 1973).

Rahim (2001) further suggested that in the 1950s, with the development of the study of organisational behaviour and its mechanisms for analysis, conflict was seen more as a significant and unavoidable aspect of an organisation. Rahim (1983b) created an approach to measuring conflict that was based on self-observations and self-perceptions of ways of behaving in response to conflict situations. The 1990s saw an emergence of ways of looking at emotional aspects of responding to situations, such as with the emergence of theories of emotional intelligence (e.g., Cooper, 1997).

Therefore, the shift in thinking regarding conflict changed from one of conflict as a destructive force that needs to be eliminated, to the recognition of conflict as being unavoidable. Conflict was then viewed as a phenomenon that required management through an interactive approach for the benefit of the organisation. The published literature on this also implies that a natural human corollary of the existence of conflict is its management, after which measurement issues surely follow (e.g., Deutsch, 1973; Rahim, 2001). The measure of conflict has also gone

through changes from a behavioural foundation to a more affective one based on description and understanding. The first step to examining and developing instruments used for the purpose of measuring the conflict phenomenon is to examine the definition and nature of conflict.

Definition and nature of conflict. Deutsch (1973) defined conflict as mismatched activities, where one party is hindering or diluting effective behaviour in another party. In general, observable conflict can be found in all areas of human life, for example, business, education, family, politics, the judicial system, the community, within people themselves, and within and between defined groups.

Deutsch (1973) developed a typology of six types of conflict: veridical, contingent, displaced, misattributed, latent and false. Each of these constructs can be described as follows:

(1) Veridical is a conflict scenario that objectively exists and can be accurately perceived.
(2) Contingent is a non-recognised dependent relationship between two parties.
(3) Displaced is a conflict situation in which parties are arguing about the wrong thing.
(4) Misattributed is a conflict situation between the wrong parties.
(5) Latent is when conflict should be occurring but is not.
(6) False is when there is no objective reason for the conflict.

In more recent literature, Deutsch's (1973) six constructs have been narrowed to four phases of conflict. Robbins (1991) viewed the process by which conflict develops as a series of four main stages that is consistent with other literature in this area (e.g., Frazier & Rody, 1991; Johnson, Means, & Pullis, 1998; Larison, 2001; Pondy, 1980). These four main stages are latent, perceived and felt, manifest, and outcome.

The first stage of conflict relates to the recognition that potential opposition exists, that is, when conditional factors determine that conflict is about to happen. This stage is linked to the notion of latent conflict (Frazier & Rody, 1991; Johnson et al., 1998; Larison, 2001; Pondy, 1980; Robbins, 1991). Latent conflict can be viewed as an underlying factor of discontent. The causal mechanisms may be in the form of conceptual differences, reward discrepancies, disenchantment with rules and policies, vying for limited resources and power struggles.

The second stage (Frazier & Rody, 1991; Johnson et al., 1998; Larison, 2001; Pondy, 1980; Robbins, 1991), perceived and felt conflict, is related to cognitive aspects of awareness about the

situation, and the manner in which the participants personalise this awareness. This phase of conflict results in perceived and felt conflict, that is, the level of awareness and emotion connected with the situation when it comes into existence.

The third stage (Frazier & Rody, 1991; Johnson et al., 1998; Larison, 2001; Pondy, 1980; Robbins, 1991) is the overt or manifest phase of the conflict when aspects of the situation can be easily measured. The actual manifestation of the conflict situation can occur at different levels: within self, between individuals, between individuals and groups, and between organisations (Duke, 1995). The methods of handling the conflict behaviour can often be identified during this phase.

The final stage of conflict can be viewed as the outcome phase. This stage centres on the resolution of conflict (Frazier & Rody, 1991; Johnson et al., 1998; Larison, 2001; Pondy, 1980; Robbins, 1991). The outcome can be either positive or negative, which is often determined by the perceived level of satisfaction regarding the consequence of the resolution as held by the conflict participants (Weeks, 1994).

The realisation of the various levels of conflict has an impact on the ways in which a measure of conflict can be obtained. Many questionnaires rely on self-perceptions of conflict thus focussing on stages two, three and four (e.g., Rahim, 1983a). The latent stage of conflict is often neglected in these questionnaires; therefore, an instrument that aims to tap into the affective elements of conflict participation is likely to be a useful resource.

The next section focuses on the theories of interpersonal conflict that attempt to explain the forces that underpin and motivate conflict.

Theories of interpersonal conflict. Schellenberg (1996) suggested that theories of interpersonal conflict are based on certain perspectives. These four perspectives include individual trait theories, social process theories, social structural theories, and logic and mathematics based theories.

Individual trait theories emphasise conflict situations generated between individuals. The Freud-Jung conflict can be used to illustrate this theory (Hall, 1952). Sigmund Freud and Carl Jung began as teacher and disciple respectively, but conflict developed over two central ideas in

psychoanalysis, the nature of sexuality and the concept of the unconscious. The Freud-Jung conflict deteriorated into personal attacks and reciprocal acrimonious disregard.

Second, some theories attend to the process of social interactions, and these theories are referred to as 'social process' theories. A process theory may focus on the relationship between conflict, and competition and cooperation (Schellenberg, 1996).

Third, the formation and structure of organisations regarding conflict can be seen as a focus point for discussion, and these theories are termed 'social structural' theories. These theories look at societal structure, such as Marx's view of the class conflict due to economic inequity (Fischer, 1970).

Finally, some theories look at conflict in a systematic fashion using logical and mathematical means to define and describe the conflict situation. Game theory can be seen as a method of using mathematical structure to describe and explain conflict situations (von Neumann & Morgenstern, 1944). This method determines that games have a set of players that have different opportunities and alternatives connected with assumptions, choices and outcomes. All of these factors can be explained using mathematical reasoning, such as with the zero-sum concept.

Social process theories. In this thesis I focus on social process theories, as they are most consistent with the interpersonal focus of the CRQ. Some key social process theories used to evaluate interpersonal conflict are as follows: (1) the notion of goal interdependence (Deutsch, 2000a; Lewis, French, & Steane, 1997; Wong, Tjosvold, Wong, & Liu, 1999); (2) the perception of justice (Deutsch, 2000b; Rahim, Magner, & Shapiro, 2000); (3) the nature of constructive controversy (Johnson & Johnson, 1996; Johnson, Johnson, & Tjosvold, 2000; Millar & Dreyer, 1996); (4) the importance of trust and empowerment (Conger & Kanungo, 1988; Lewicki & Wiethoff, 2000); and (5) the role of power (Bailey, Schermerhorn, Hunt, & Osborne, 1991; Coleman, 2000; French & Raven, 1959; Johnson & Scollay, 2000; Raven, 1974).

The nature of goal interdependence is a key issue in the development of conflict (Deutsch, 2000a). This interdependent relationship may be cooperative or competitive. The cooperative relationship tends towards mutual satisfaction of parties. In many organisations, competition can

also be seen as a positive attribute, or a healthy inducement for action, especially when this competition is externally focused (Lewis et al., 1997).

Deutsch (2000a) viewed the competitive process as a negative relationship when the focus is internally oriented. That is, when internal competition is excessive it may paralyse the organisation, making it impossible for example to conduct productive meetings. Wong et al. (1999) upheld Deutsch's (2000a) view that a cooperative approach to conflict establishes greater levels of harmony and trust, while a competitive approach generates mistrust that ultimately adversely affects quality.

However, this area of research is often difficult to unravel as there are many confounding factors, such as culture. For example, Fukushima and Ohbuchi (1996) suggested that goals differ across cultural groupings. They suggested that individualistic societies (such as the US) prefer a more adversarial approach to conflict resolution, while collectivist societies (such as Japan) prefer a more collaborative approach.

In reference to the perception of justice, Deutsch (2000b) stated that many negative forms of conflict may be due to a perception that an injustice has occurred. Justice can take many forms. First, distributive justice is concerned with the perception of outcome, while procedural justice focuses on the perception of 'fair procedures'. Deutsch also referred to psychological factors involved in the perception of injustice, that is, the perceived magnitude of injustice and the need to seek retribution and reparation.

Rahim et al. (2000) provided evidence to show that justice perceptions determine the ways in which people handle conflicts. In their study, when perceptions of distributive and procedural justice were high, participants tended to use an integrative style of conflict resolution as described by Rahim and Bonoma (1979). In contrast, participant perceptions of unfair practice produced lower commitment for implementing integrative conflict resolution strategies. Furthermore, Rahim et al. found that when participants were focused on distributive aspects of behaviour but maintained low levels of perceived procedural justice, avoidance behaviours were promoted. This is consistent with Deutsch's (2000b) insistence that perceptions of justice affect the way in which conflict resolution strategies can be implemented and the way in which the effectiveness of such strategies are measured.

In terms of the nature of constructive controversy, Johnson et al. (2000) suggested that intellectual endeavour promotes the development of new ideas and knowledge which is an integrative style of conflict management (Rahim & Bonoma, 1979). Constructive conflict occurs when resolution leads to beneficial outcomes for all parties concerned, as it can be transformative and creative. An absence of conflict within an organisation can signal a dearth of development and low levels of motivation (Millar & Dreyer, 1996). Furthermore, Johnson and Johnson (1996) proposed that intellectual conflict is the basis of academic controversy. This is the very foundation stone of academic research in which researchers present and advocate specific academic positions, that in turn can be refuted or validated, on the basis of further research.

The notion of trust in interpersonal conflict is based upon two main themes: calculus-based trust and identification-based trust (Lewicki & Wiethoff, 2000). The first concept relates to the way in which people weigh up the relationship in terms of costs and rewards and how this affects trust. The second refers to mutual understanding and perceptions of friendship.

In addition, Conger and Kanungo (1988) recognised the significance of the perception of disempowerment and how empowerment processes can be used to develop an enabling process to change perceptions toward a more positive light. A disconnection between staff and management can result in a sense of disempowerment. This sense of disempowerment in students can be witnessed in the university sectors, such as in student alienation and in factors relating to failure to complete a course satisfactorily, or simply when students function below an optimal academic level (Lewicki & Wiethoff, 2000).

The final key factor that needs to be addressed is the role of power (Coleman, 2000). Coleman provides a useful definition of power that summarises many of the dimensions associated with this social phenomenon:

> Power can be usefully conceptualised as a mutual interaction between the characteristics of a person and the characteristics of a situation, where the person has access to valued resources and uses them to achieve personal, relational, or environmental goals, often through using various strategies of influence (Coleman, 2000: 130).

This notion of power is consistent with the organisational behaviour view that emphasises the aspect of behavioural control of one party over another (Bailey et al., 1991). However, in the case of Coleman (2000) there is a greater subtlety in using a relational frame of understanding, and there are distinctions made between sources of resources, use of power and the strategies used to implement power. For example, Coleman suggested that power is generated in a positive sense when a cooperative mode of conflict resolution is employed.

French and Raven (1959) created a framework for studying the bases of power. They determined that there are five bases of power: legitimate, coercive, expert, reward and referent. First, legitimate power refers to a leader's right to make demands. Coercive power refers to the leader's manipulation of punishment while reward power is the level of manipulation of reward. Expert power is related to the leader's level of skill and knowledge. Lastly, referent power is linked to aspects of loyalty and identification. Raven (1974) later added another type of power called informational power, which is connected with the notion that information systems can aid supervisors to gain power over others.

Johnson and Scollay (2000) empirically investigated some of these constructs of power by examining the relationship between principals, teachers and parents within the educational context. They found that low conflict situations were present when principals relied on expert and referent power bases. They also found that the power relationship between principals and teachers was different from that between principals and parents. Parents were seen as more vulnerable to coercive tactics than teachers because of their lack of expert knowledge. In contrast, teachers were more swayed by power based on expertise and were more able to judge inconsistencies in argument formation.

Section summary. The objective of this section was to provide a theoretical background to the area of conflict. The section began with a discussion surrounding the early psychological and sociological research in the area of conflict, which essentially began in the 1920s and 1930s.

The section further provided introductory information on the area of conflict measurement. Prior to the 1990s measurement of conflict tended to focus on perceptual measures of behaviour.

The definition and nature of conflict was discussed in terms of four main stages: the latent, perceived and felt, manifest and outcome stages. The review subsequently presented numerous theories that are used to explain the existence of interpersonal conflict, the area of conflict relevant to the CRQ. Some of the key theories relate to individual traits, social processes, social structures, and logic and mathematics.

In this section my centre of attention was on social process theory as it usefully explains interpersonal conflict and most closely matches the area of conflict being measured by the CRQ. Social process theory can be viewed from several perspectives. First, theories of goal interdependence and perceptions of justice are useful lenses through which to view this theory. Second, other significant standpoints linked to social process theories of conflict are constructive controversy, trust, and power. These theoretical perspectives provide a useful scaffold for understanding issues of management related to conflict.

1.2 Issues of management related to conflict

The practice of conflict management. Conflict management is a process which uses a strategy or series of strategies to support individuals or groups in learning about conflict situations so that transformative action can take place (Tschannen-Moran, 2001). As such conflict management is the integral process in creating programs that can disseminate ideas and skills for averting, overseeing, and amicably resolving conflicts (Warters, 2000). Conflict management often consists of different types of prevention or resolution strategies. Some authors review conflict management in its preventative form (e.g., Warters, 2000) but much of the literature concentrates on resolution. Consequently, conflict resolution programmes can be viewed as procedures operating within the conflict management model. Conflict resolution is of particular interest as the instrument being evaluated in this thesis aims to measure key aspects of this process.

Numerous studies have investigated the process of conflict resolution used by organisations (e.g., Dant and Schul, 1992; Jaffe & Scott, 1998; Melamed & Reiman, 2000; Thompson & Gooler, 1996). They described the different ways that organisations deal with conflict including problem solving, persuasion, bargaining or political reactions to conflict. These

components used in dealing with conflict are considered aspects of mediation, negotiation and arbitration (Warters, 2000).

The components of mediation and negotiation are seen as crucial to the understanding of conflict resolution as it applies to this thesis, and the instrument under scrutiny. These components are the basis of the works of Weeks (1994), and Fisher and Ury (1991). The components of mediation and negotiation sit under the umbrella of dispute resolution, and more specifically alternative dispute resolution.

Dispute resolution and alternative dispute resolution (ADR). Gumbiner (1995) and Mackie (1991) have reviewed some of the key factors linked to the overall approach to conflict resolution. Gumbiner (1995) suggested conflicts traditionally began with discussions that lead to negotiation, followed by litigation and then resolution (in the form of a settlement or trial). Thus, conflict resolution practices were, in general, elaborate systems entrenched in law and legal processes (Mackie, 1991). It is also likely that this approach created win-lose scenarios rather than emphasising mutual benefits. In the case of adversarial conflicts, a lawyer often sought to win the case for his/her client using any tactic that arrived at a successful legal outcome for the client. If not resolved quickly, such processes tended to be costly and at times very disruptive (Gumbiner, 1995). Traditional forms of conflict resolution involving litigation were expensive, not only due to court costs, but because they also tied up key human resources.

As a consequence of the increasing expense involved in resolving conflicts through the legal system, different forms of resolution were developed. ADR emphasises collaborative approaches to resolution as opposed to traditional forms that often devolved into 'win-lose' outcomes. The following sections first look at some fundamental concepts related to ADR, before reviewing the basic tenets of, and links to, the works of Weeks (1994), and Fisher and Ury (1991). This review focuses on conflict resolution within an ADR framework that advocates an optimal or 'win-win' outcome to conflict resolution.

An overview of ADR. Warters (2000) and Hill (1995) examined three significant elements that are at the centre of the ADR approach, namely: interests, rights and power.

The first approach considered by Warters (2000) and Hill (1995), is the interest-based approach. This approach aims to resolve conflicts by promoting critical factors, such as vested

interests, needs and issues. When these factors are considered, an approach can be instigated using this information in determining a mutually agreed outcome. Warters (2000) and Hill (1995) suggested that the two most frequently used strategies associated with this approach involve mediation and negotiation. Both strategies can use a neutral third person to monitor proceedings in a conflict-related case.

Mediation is seen as a process whereby parties involved in conflicts can openly decide to contribute to its resolution. In addition, the parties alone reach decisions regarding the settlement of a conflict. A mediator is a catalyst with no vested interests in the process that facilitates the process of resolution, and is selected by the conflict participants. The mediator can create a structured environment for discussion and is there to promote a conflict settlement agreement (Pope & Bush, 2000). If no mutually agreed settlement can be reached then the participants may need to follow other options. Mediation as such is a very important aspect of ADR, and is very useful if the disputants wish to maintain their relationship (Verge, 2000).

Lampe (2001) investigated the features of mediation in an attempt to characterise some of the strengths of this approach in resolving conflict within the business environment. Lampe suggested that mediation promotes a non-adversarial approach to preventing potential conflict scenarios. Mediative approaches within this context are considered as sensible options in terms of reducing unnecessary costs and time wastage involved in litigation procedures. Lampe also indicated that this approach inculcates a philanthropic and collaborative environment that aims to provide an ethical basis to decision-making processes in which all stakeholders have a voice. This reduces the likelihood of the negative effects of conflict occurring, and promotes a greater chance of eliminating latent conflict as well as the manifest aspects of conflict.

Negotiation is a less controlled aspect of ADR, as the negotiator aims to promote communication between disputants. However, negotiation may be adversarial or collaborative. In this thesis the focus is on collaborative aspects of negotiation as used by Fisher and Ury (1991). In the collaborative case, the negotiator monitors the discussion and is able to provide points of agreement between the parties as the resolution process progresses. As such, the negotiator is able to provide a written contract that demonstrates all points of agreement. As with mediation, the parties can pursue other options, such as arbitration or litigation, if this process does not lead

to adequate resolution. A shortcoming with this process is that it can take a long time, such as in union disputes (Verge, 2000).

The second approach briefly discussed by Warters (2000) and Hill (1995) relates to the rights-based approach to conflict management. This approach aims to establish the extent of each party's involvement in the conflict situation and determines which party's claims have the greater validity. In general, this approach tends to lead to processes involving judicial hearings, grievance hearings, arbitration and litigation. A third party, such as an arbitrator, determines decisions regarding the claim. Arbitration is often approved in advance by a legal hearing or agreement, and is thus a more formal process than mediation or negotiation (Hill, 1995; University of Colorado, 2000; Warters, 2000).

Lastly, the power-based approach to resolving conflicts centres on the reality of the situation in terms of who has the greater power (Hill, 1995; Warters, 2000). This aspect of power can be linked to French and Raven's (1959) power types. These power types may be negative in form, such as those implying coercion and manipulation. In other conditions it can be in a positive form representing more positive aspects of power, such as expertise and referent bases. The decision-making approaches using the power-based approach tend to favour those with greater access to resources that can create a particular advantage. The manifestation of this type of power can be viewed in different ways: (1) access to greater material resources, such as wealth and military might; (2) ideological, political and religious sway, such as leadership, union action and crusades; (3) a competitive scenario that inevitably leads to a fight for supremacy; and (4) the use of extreme violence, such as in terrorism (Bailey et al., 1991; Hill, 1995; Warters, 2000).

Consequently, the three approaches that need to be considered in any discussion regarding ADR are interests, rights and power. The main processes used in the ADR approaches of interests and rights are mediation, negotiation and arbitration. ADR is a well-recognised system for conflict resolution, and as such an appraisal of Weeks (1994), and Fisher and Ury (1991) as credible authors in the area of ADR requires some comparative consideration. This comparative analysis is required as McClellan (1997c, see Appendix C) suggests that the CRQ is based upon the works of Weeks (1994), and Fisher and Ury (1991). The following discussion involves an examination of these two sources by comparing them with the literature on the interest-based approaches to resolving conflicts, namely mediation and negotiation (in its collaborative form).

This review is used in this study to establish one main consideration regarding CRQ content validity.

Weeks' (1994) approach to the conflict resolution process. The CRQ is predominantly based upon Weeks' (1994) book, 'Eight Essential Steps To Conflict Resolution'. Before Weeks presented his eight steps he created a theoretical backdrop that promoted his method for resolving conflict.

His rationale for creating this eight-step system was based on his perception that there is a need for a complete system to resolve conflict. This system aims to extend methods based on unitary mechanisms for resolving conflict such as focussing on identifying conflict management styles (Rahim, 1983a). To establish his viewpoint, Weeks' (1994) conveyed an understanding of what he sees as the key components of conflict.

Many of these components are consistent with social process theories of conflict. Weeks' (1994) first line of discussion considered negative and positive forms of conflict (Deutsch, 2000a; Johnson et al., 2000). He then considered aspects of communication, such as the goal of interdependence, the nature of trust and empowerment, and the notion of constructive controversy (Deutsch, 2000a; Johnson et al., 2000; Lewicki & Wiethoff, 2000). Weeks followed this discussion by asserting the importance of power (Coleman, 2000).

According to Weeks (1994) effective conflict resolution is reliant upon an understanding of how these components impact on a conflict situation, and isolating the factors driving conflict (Weeks, 1994). Weeks then developed the concept of conflict partnership which is a process that aims to profit all parties (Deutsch, 2000b; Johnson et al., 2000). The ideas posed by Weeks in his theoretical backdrop do have credibility as they clearly relate to social process theories mentioned earlier in this chapter.

On completion of his theoretical backdrop, Weeks (1994) then embarked on presenting his eight essential steps to conflict resolution. These eight steps are the theoretical foundation stones on which the CRQ factors are placed. The following review considers these steps in light of whether the literature supports their use as accepted skills and techniques incorporated in mediation and negotiation.

Weeks' (1994) eight steps consist of: (1) creating an effective atmosphere; (2) clarifying perceptions; (3) focussing on individual and shared needs; (4) building shared positive power; (5) looking to the future, and learning from the past; (6) generating options; (7) developing 'doables'; and (8) making mutual benefit agreements.

The first step, creating an effective atmosphere, considers that certain factors need to be adhered to in order to promote an effective ambience for resolution. This aspect of mediation is well documented as a necessary aspect of any mediation process (Boulle, Jones, & Goldblatt, 1998; Mitchell & Banks, 1996). Some essential factors for an effective atmosphere are personal preparation, convenient timing of the resolution sessions, choosing a suitable place, and considering sensitive initial comments and openings. One of the primary aims of creating an effective atmosphere is to encourage a sense of trust and confidence in the proceedings and among participants.

The second step involves clarifying participant perceptions regarding the problem, with the aim of minimising prior and existing assumptions. This clarification process allows all participants to understand each other in terms of different viewpoints regarding the conflict issue. This aspect of Weeks' (1994) model is clearly linked to the notion of reframing as presented in Boulle et al. (1998). Although reframing may have a directive edge to it, the mediator is often able to reword phrases to clarify the issue at hand. In using reframing, a mediator aims to open up the way in which disputants view their conflict situation.

The aim of clarifying perceptions is to explore underlying issues in addition to reframing. As such the elements of the conflict issue can be explored with the aim of distinguishing between the real and fabricated issues. This process of clarifying perceptions considers how the values of each participant impact on the conflict issue. Furthermore, clarification of each participant's perceptions regarding themselves and others is crucial to resolving the conflict issue. As such, barriers to communication need to be identified and, if present, addressed. These barriers include stereotyping, and ineffectual communication skills. These aspects of communication are well documented in developing problem-solving approaches to conflict (Boulle et al., 1998; Dant & Schul, 1992; Lampe, 2001).

The third step is to focus on individual and shared needs. This step is concerned with the requirement for participants to present and process their own and the conflict partner's needs regarding the situation. It further requires all participants to deal with the needs of the relationship. This process leads to the development of shared needs; needs that the participants have in common. Lampe (2001) states that to find an effective solution to a conflict situation the needs of all concerned have to be addressed.

The fourth step is concerned with the impact that power has on the relationship between the parties. This step partially addresses the concerns of the power-based approaches to conflict resolution (Warters, 2000). Weeks (1994) suggested that parties need to develop positive power, which encompasses the notion of expert power, power that is generated from a leader's level of skill and knowledge (Coleman, 2000). In this process of developing power, Weeks suggested it is helpful to be aware of negative power and how this power dynamic can be a contributing factor in creating win-lose scenarios, such as coercive power (cf. Raven and French, 1959).

In contrast, positive power creates empowerment and trust between participants, thus strengthening the notion of conflict partnership (Lewicki & Wiethoff, 2000). Positive power involves developing a positive self-image and awareness, and being able to apply positive communication skills to the resolution process. Positive power also involves recognition of the influence by each conflict participant of their level of power over each other, such as power levels allocated to a manager as compared to an employee in a dispute.

Step five centres on future orientation and learning from past experience. Weeks (1994) suggested that participants need to resolve any past negative experiences before they can resolve present issues. Mediation can be used to resolve existing conflicts with the aim of rebuilding relationships and alleviating future conflict situations (Conti, 1985). Some ways of dealing with this resolution process are to review past events and experience by appraising relevance, removing blame, and considering other modes of dealing with issues. The learning from past conflicts involves delineating how past events impact on participants, and considering alternatives, reviewing any positive aspects of past relationships and considering future opportunities. This notion of growth from adversity is consistent with Pope and Bush's (2000) idea of mediation with a transformative orientation, that is, past events presenting an opportunity for change in the future.

This leads to step six, which concentrates on how participants in a conflict scenario can generate options. This step includes a preparation phase in which alternatives are considered as possible solutions to the problem at hand. In developing alternatives the participants need to be cognisant of the trap of creating preconceived answers, that is, solutions that one party may consider appropriate without checking with the other party. Generating alternatives involves considering all solution scenarios presented by each of the participants, and thus is similar to generating common ground (Boulle et al., 1998). It is also consistent with the notions of goal interdependence, cooperation and integrative modes of management (Deutsch, 2000a; Lampe, 2001; Rahim, 2001). This step may involve the use of 'free-flowing' options, whereby participants create possible strategies that could lead to resolution. This process tends to be iterative, starting with a broad spectrum of ideas leading to a more specific list of key alternatives. This list of key alternatives needs to be viable and consistent with what worked in the past.

Steps one to six tend to be preparatory phases that lead to the action phases of steps seven and eight. Step seven involves the development of 'Doables' which are the "Stepping-Stones to Action" (Weeks, 1994: 203). Doables are realistic actions and behaviours that are likely to lead to a successful outcome in the form of a win-win solution and are linked to the idea of establishing an organisational culture based on trust and cooperation (Clarke & Lipp, 1998; Hellriegel, Jackson, & Slocum, 1999; Thompson & Gooler, 1996).

These actions are congruent with the notions of procedural and distributive justice, in that all conflict participants need to agree that procedures used for creating a solution and the resulting outcomes are perceived to be fair (Deutsch, 2000b; Rahim et al., 2000). This evaluation of process and outcome also involves perception of whether shared needs have been met, and considers levels of shared empowerment (Lewicki & Wiethoff, 2000).

Step eight is the definitive step in which participants arrive at making mutual benefit agreements. This concept is consistent with the anecdotal literature on win-win scenarios (e.g., Bailey et al., 1991; Shelton, 1999). This idea is also emphasised in other works, such as in the area of mediating conflict between business and stakeholders (Hellriegel et al., 1999; Lampe, 2001), or in the area of mediator training (Pope & Bush, 2000). This step aims to generate beneficial agreements that are consistent with shared goals and needs. It builds on the previous steps, and creates solutions whereby all participants are caretakers that are actively involved in promoting

the conflict relationship. As such, participants need to acknowledge that there are certain facets that "cannot be altered or compromised" (Weeks, 1994: 229). In addition, the conflict relationship requires clarity regarding participant responsibility in terms of expectations. As such, achieving a mutual-benefit agreement is an interest-based approach (Warters, 2000) involving an active process that aims to keep the conflict partnership alive and sustainable.

Weeks (1994) also looked at difficult conflict aspects that often create critical barriers to resolution. The aspects of personal behaviour discussed include anger management, denial of conflict, and fixed viewpoints regarding resolution. Consideration of these affective components of a resolution strategy is common in the literature (Boulle et al., 1998). He also considered further aspects of injustice and how to view seemingly unresolvable conflicts. Finally, he suggested indicators when a third-party facilitator may be appropriate.

Fisher and Ury's (1991) approach to negotiation. Fisher and Ury's (1991) book, 'Getting to Yes: Negotiating Agreement Without Giving In', was used as a further resource for generating the CRQ. The main topic in this book is the notion of principled negotiation, which can be easily placed within the domain of the interest-based approach to conflict resolution (Boulle et al., 1998; Walters, 2000). Rahim (2001) likened the principled negotiation process to an integrating style of management. Boulle et al. (1998) stated that principled negotiation has made a major impact on modern ways of viewing negotiation.

The process of principled negotiation emphasises four main guidelines:

(1) Focussing on the problem not the people

(2) Considering interests, not positions

(3) Creating numerous solutions before making a decision

(4) Ensuring any agreement is based upon certain objective criteria

The first guiding principle emphasises separating the conflict participants from the problem, through focussing on the problem not the people. It is concerned with looking at the

issues generated by participants and the significant conflict problem independently. Rahim (2001) suggested that this principle is particularly useful in guiding people to work together on problems, which is similar to Weeks' (1994) notion of conflict partnership.

Human issues are often related to aspects of perception, emotion, and communication. Perceptions are connected to a person's views regarding a conflict situation, which may differ from objective reality. Emotions can include aspects of anger, fear, lack of trust and anxiety. Communication problems can occur when there are no verbal interactions or when people misinterpret information. Stahl (2000) has applied this principle to dealing with conflict in manufacturing. He suggests that conflict participants should address any prior emotional concerns explicitly so that the problem at hand can be dealt with in an open and truthful way. In addition, this method of disclosure requires sensitive assertion so that conflict participants are not offended and resentment is avoided (Gatchalian, 1998).

The second principle emphasises the consideration of interests rather than positions. This focus on the interest of all parties involved in conflicts is common practice in problem-solving approaches to resolving conflicts (Mitchell & Banks, 1996; Stahl, 2000). Interests in an organisation may include concerns about productivity, efficiency or cost (Rahim, 2001). This process entails discussing objectives that participants actually need rather than what they say they need. Participants need to look at resolving the differences by concentrating on mutual interests and moving away from the possibility of taking extreme positions. For example, one area cited as a mutual concern for management and employees is health and safety in the workplace (Gatchalian, 1998). The focus is thus more on finding out why participants take certain positions, and investigating underlying issues, such as needs and interests, so that areas of compatibility can be reviewed.

The third principle is directly linked to Weeks' (1994) steps six and seven, and is concerned with creating numerous solutions before making a decision. This principle recommends that negotiators review alternatives to a conflict that may promote a win-win scenario (Gatchalian, 1998). This option is concerned with generating options before action, and is consistent with developing an action plan, which is in line with the mediation and negotiation notions of

developing goals and options (Boulle et al., 1998). These options are also consistent with the notions of procedural and distributive justice (Deutsch, 2000b; Rahim et al., 2000).

The final principle is concerned with ensuring that any agreement is based upon objective criteria. Objective criteria can be gleaned through methods such as benchmarking (Stahl, 2000), or through examining well-recognised indicators, such as cost-of-living indices, inflation rates and market prices (Gatchalian, 1998). Objective criteria aim to create a sense of fairness in discussions regarding resolution. However, there are times when objective data is not always available. This principle has been criticised, by Marken (2002) who stated that it is difficult to analyse situations independent of disputants' perceptions, attributions and relationships, and consequently gathering objective data by removing the hidden personal data may create misleading interpretations. Even so, evidence-based decision-making is the desired process.

Evaluating Weeks (1994) and Fisher and Ury (1991). Both the Weeks (1994) and the Fisher and Ury (1991) approaches are linked to problem-solving approaches to conflict resolution. Boulle et al. (1998) suggested that these approaches have strengths and shortcomings.

The strengths include: (1) they focus on problems linked to the interests and needs of the disputants; (2) they are creative and efficient in dealings with issues and lead to value laden outcomes for all parties; (3) they create strong relationships; (4) they often develop into a set of guidelines that are appreciated by all disputants (Boulle et al., 1998).

The shortcomings include: (1) they are often unable to develop equal commitment to the partnership process from all disputants; (2) they fail to consider the human predisposition for competition; (3) they fail to adequately consider the power inequity in most resolution processes; (4) they are often unable to ensure full honest disclosure from all disputants, especially when disputants have a financial or resource-based interest in the outcome; (5) there is often a difficulty in obtaining objective criteria to measure resolution processes; (6) there is often a lack of empirical data to support the claims made by these approaches; and (7) problem-solving approaches to conflict resolution are suitable for some but not all conflict situations, for example positional bargaining may be more suitable in cases where issues are financially based and when disputants have little knowledge of each other (Boulle et al., 1998).

Section summary. This section began with a discussion on the various types of conflict management strategies, before focussing on the notion of dispute resolution as compared with alternative dispute resolution (ADR). The ensuing review of ADR and the strategies used by Weeks (1994), and Fisher and Ury (1991) indicates strong links between the ADR interest-based approaches, Weeks' (1994) eight-step approach, and Fisher and Ury's (1991) four guiding principles. These approaches to conflict resolution do have strengths and shortcomings. However, there is ample evidence to suggest that the ideas presented by Weeks (1994), and Fisher and Ury (1991) are credible and supported by the ADR literature and social process theories. By implication, the CRQ has similar links to ADR and substantiated theory in the area of conflict resolution. Therefore, establishing psychometric credibility of the CRQ may create greater empirical credence to the notions of Weeks' (1994) eight-step resolution process and Fisher and Ury's (1991) principled negotiation.

After a review of the theoretical considerations underpinning the evaluation of the CRQ, the next logical step is to appraise the mechanisms that aim to measure such theoretical notions. In the next section the emphasis is on examining some of the existing conflict instruments that have an empirical pedigree.

1.3 Measurement of conflict issues

The following section reviews some of the key instruments that measure conflict issues. The following questionnaires have been selected as key instruments used to measure conflict issues as they have, in their development, utilised a psychometric process which has been published in journal articles thereby demonstrating their empirical credence. The list also refers to many of the established questionnaires that can be found from reputable publishers such as the Consulting Psychologists Press (CPP, 2003) or Psychometrics.com (2003).

The key psychometric instruments are reviewed with respect to the following components: (1) author and title of questionnaire; (2) aspect of conflict being measured and the purpose of the instrument; (3) methods used in measurement; (4) populations and context; (5) strengths and weaknesses; and (6) psychometric properties. I also evaluate how these conflict instruments accomplish measurement, and what populations and context they are designed for.

The list of instruments being reviewed consists of: (1) the Organizational Conflict Communication Instrument (OCCI) (Putnam & Wilson, 1982); (2) the Conflict Tactics Scales (CTS) (Straus, 1979); (3) the Interpersonal Negotiation Strategies (INS) (Selman, Beardslee, Schultz, Krupa, & Podorefsky, 1986). (4) Rahim Organizational Conflict Inventory I and II (ROCI-I and ROCI-II) (Rahim, 1983a); (5) the Management-of-Differences Exercise (MODE) (Kilmann & Thomas, 1974); (6) the Rosenthal-Hautaluoma (RH) (Rosenthal & Hautaluoma, 1987); and (7) the Decision Conflict and Cooperation Questionnaire (DCCQ) (Dalton & Cosier, 1989).

Other questionnaires (e.g., Communication Patterns Questionnaire developed by Heavey, Larson, Zumtobel, & Christensen, 1996, and the Inventory of Interpersonal Problems designed by Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) were considered as comparative mechanisms, but following review it was deemed that these questionnaires did not add value to the investigation because they were not focused on the issue of measuring conflict. Other questionnaires (e.g., the Conflict Management Survey, Teleometrics, 1996) were considered but not reviewed, as they were not cited in academic publications.

In addition, there are some Internet-based instruments that measure aspects of conflict management (e.g., Psychtests.com, 2002) that claim to possess psychometric credibility. Nonetheless, they have major psychometric flaws linked to the problem of controlling duplication response error due to multiple responding. Therefore, these types of tests were not considered to be credible as a frame of reference because they would likely not have proven reliability and validity.

The first instrument under review, the OCCI (Putnam & Wilson, 1982), is used to evaluate verbal and nonverbal communicative choices in the management of conflict in a variety of organizational contexts. Its intention is to move away from the conflict styles approach and to focus on communication behaviours and interpersonal strategies.

The second instrument, the CTS (Straus, 1979), is designed to measure the use of three ways of coping with interpersonal conflict within the family, namely reasoning, verbal aggression and violence. The purpose of the instrument is to gain insight into the way people choose tactics

when faced with a conflict situation, and how this choice of tactics is linked to the "catharsis theory of violence control" (Straus, 1979: 77).

The third instrument, the INS (Selman et al., 1986), is a structured situation-discussion interview method used to appraise interpersonal negotiation strategies. Eight imaginary dyadic interpersonal scenarios are created to differentiate between three situational factors: generation, negotiation position and type of relationship. Subject responses to questions regarding certain aspects of a conflict scenario can be rated according to several factors such as the essence of the problem, coping methods, actions, outcomes and occurrence of emotions. The purpose of this instrument is to measure negotiation strategies, and to evaluate the extent to which young people use 'mutual collaboration'.

The fourth set of instruments, ROCI-I and ROCI-II (Rahim, 1983a), is used to measure two facets of conflict. First, ROCI-I measures the ways in which an organisation's employees perceive their interaction in the workplace (intrapersonal aspects of conflict); the way employees interact within groups (intragroup features of conflict), and the way in which groups interact (intergroup facets of conflict). Second the ROCI-II measures five styles of handling interpersonal conflict: avoiding, obliging, compromising, dominating and integrating. The ROCI-II is used as the benchmark for the CRQ and this is discussed in more depth in the next chapter on benchmarking.

The fifth instrument, the MODE (Kilmann & Thomas, 1974), and the sixth instrument, RH (Rosenthal & Hautaluoma, 1987), also measure five similar interpersonal conflict-handling modes to those cited for the ROCI-II. These include: competing, collaborating, compromising, avoiding and accommodating.

Finally, the seventh questionnaire, the DCCQ, aims to capture two components of the decision-making process: the extent of constructive conflict and the level of participation by individuals.

The method of capturing data is different across the instruments. The ROCI-I, ROCI-II, OCCI, CTS and DCCQ use self-report forms incorporating a Likert response structure. The INS uses a rating of responses to structured questions, while the MODE and RH use a forced choice option.

Each instrument has its owns strengths and weaknesses. A summary of the strengths of the instruments include: (1) the OCCI, ROCI-I, ROCI-II, MODE, DCCQ and RH are quick and easy to administer; (2) the instruments are generally well documented and comprehensively evaluated; (3) they can be adapted for many types of contexts, for example, the RH has been used with a high school population (Watson, Bell, & Chavez); and (4) the ROCI-I and ROCI-II have been extensively tested using large samples:

The limitations of these instruments include: (1) two of the seven instruments have considerable psychometric flaws. That is, INS is a face-to-face interview, which creates particular methodological problems related to internal validity, while the DCCQ has been only tested on a small sample; (2) The OCCI, ROCI-I, ROCI-II, MODE and RH are used mainly in organisational contexts; (3) the DCCQ has not been well documented and comprehensively evaluated; and (4) the CTS can be used under a variety of conditions, including personal interviews and mail surveys, but it is usually confined to the family context.

Psychometric data, measures of reliability and validity, are available on all seven of the cited instruments. The concepts of reliability and validity are discussed in more depth at the end of this chapter. With reference to reliability, the OCCI, ROCI-I, ROCI-II, CTS, DCCQ and MODE have internal consistency data, as measured by Cronbach's alpha. The ROCI-I, ROCI-II, MODE, and RH have used a test-retest reliability check. In terms of validity, the OCCI, ROCI-I, ROCI-II, CTS and DCCQ have developed statistical measures that confirm construct validity using factor analysis. The OCCI has confirmation of predictive validity, while the CTS has evidence of concurrent validity.

The main similarity between the instruments is that they all attempt to measure some aspect of conflict. The OCCI and INS focus on methods of communication in conflict situations, while the CTS concentrates on the methods family members use to resolve conflict, that is, reasoning, verbal aggression and violence. The CTS could thus be considered a subset of the handling styles questionnaires described by Rahim (1983b). The ROCI-II, MODE, and RH all measure the ways in which people react to conflict situations.

Section summary. In this section seven key instruments used to measure issues of conflict were appraised. The instruments were reviewed in terms of a set of criteria. The OCCI,

ROCI-I, ROCI-II, MODE, CTS and RH were considered as well established instruments. Most instruments were used in organisational settings, although some instrument could be adapted for other settings. The CTS is generally used to assess conflict in the family context. All seven instruments have been psychometrically evaluated. Chapter two aims to justify the selection of the ROCI-II as a comparative instrument for the present thesis. In the next section the process of establishing instrument credibility is reviewed.

1.4 Mechanics of establishing psychometric credibility

This section aims to establish a methodological framework for investigating the CRQ, through inspection of key current literature regarding instrument design and development. Followed by a more detailed discussion of the nature and importance of reliability and validity.

Systems used in evaluating questionnaires. Questionnaires using quantifiable response options have been developed in many areas of social science (e.g., Mikklesen & Gronhaug, 1999). Some examples of this research are found in areas such as social work (Okamoto, 2001), organisational behaviour (Kraimer, Seibert, & Liden, 1999; Parry & Proctor-Thomson, 2002), conflict management (Cheng, 1998; Rahim, 1983b; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), and learning (Fox, McManus, & Winder, 2001). In this section, I review some of the examples cited, to illustrate the process of questionnaire validation and development.

Most studies follow a systematic process of evaluation, which includes the following five components: (1) a thorough and relevant literature review to establish a theoretical foundation; (2) consideration of the domain(s) of interest; (3) a statistical analysis of the questionnaires; (4) a stage whereby decisions regarding the credibility of the questionnaires are made based on the statistical results; and (5) a discussion regarding the usefulness and convincing nature of the questionnaire as it compares with other instruments of its kind.

In the first instance, it is of paramount importance that a strong theoretical overview is established, after inspection of the literature, before systematic appraisal of an instrument is employed. For example, Straus et al. (1996) suggested that the CTS was developed after reviewing the literature concerned with conflict theory. This theory acknowledges that conflict is

unavoidable in human interaction, but that violence as a consequent behaviour used to resolve conflict is avoidable. A further example of establishing a theoretical framework is linked to the work of Rahim (1983b) and the development of the ROCI-II. This inventory was based on the theory of management styles (Blake & Mouton, 1964).

In the second instance, after a theoretical framework is established, instrument development and validation has some basis for defining a domain of interest. For example, Fox et al. (2001) looked at an overall domain of interest in the form of student learning when they examined the Study Process Questionnaire (SPQ). They also investigated the sub-domains of this area of learning. These resulting scales include three orientations to learning: surface, deep and achieving. Each scale possesses two sub-scales. Therefore a total of six scales with three first-order and two second-order factors were established. The aim of the study was to appraise the authenticity of these scales, and to consider whether the original SPQ of 42 items could in fact be reduced to a more manageable set of 18 items.

In the third instance, establishment of the domain of interest provides a structure from which extensive statistical analysis can by implemented. Two commonly used statistical techniques are correlation and factor analyses (e.g., Fox et al., 2001; Straus et al., 1996). These statistical techniques aim to evaluate a questionnaire's reliability and validity; these concepts will be explained in more depth in the next two sub-sections.

In the fourth instance, resulting from the statistical work is the necessity for interpretation in which decisions need to be made with regard to the statistical results. Interpretation incorporates statistical decision theory that is often based on level of significance criteria. Statistical decision theory can be used to determine the level of effectiveness of a given item in a questionnaire in terms of acceptance or rejection (Anastasi & Urbina, 1997). This particular decision theory is likely to have a mathematical basis. Each of the decision alternatives can be linked to a mathematical model utilising a probability framework.

In the fifth instance, discussion of the meaningfulness of the results is made. This approach may need to embark on using qualitative decision-making processes in addition to the consideration of the statistical interpretations (Doyle & Thomason, 1999). The qualitative approach is concerned with contextual factors that impact on the decision-making process, by

concentrating on decisions with respect to some of its components like planning, collaboration and learning.

Incorporated within this decision-making process of analysis is the comparative method. In the discussion of the questionnaire in terms of its usefulness and credibility, the comparative method is one of the most defining elements of any systematic examination of a questionnaire. For example, Mikkleson and Gronhaug (1999) used established measures of job stress, job satisfaction and organizational commitment as criterion values in their evaluation of the learning climate questionnaire.

In short, this sub-section has provided a template from which I can broadly evaluate the CRQ. The systematic approach begins with theory establishing a definition of the domain of interest, followed by extensive statistical analysis, interpretation and discussion. This overall procedural approach, however, requires a detailed understanding of reliability and validity, which is now discussed in more depth.

The concept of reliability. Anastasi and Urbina (1997), and the American Educational Research Association, American Psychological Association and National Council on Measurement in Education (1985) provided a detailed overview of reliability as it applies to psychological and educational testing. Essentially, reliability involves the extent to which a questionnaire is measuring some attribute in a systematic and reproducible way. In test theory, the concept of reliability is defined using three assumptions. These are: (1) every outcome measure can be described as a 'true' measure; (2) that error exists in such a statement; and (3) the idea that the observed measure is a mixture of a true measure and error. Therefore,

Observed measure = 'true' measure + error

Error is the first consideration in the development of an instrument. The objective of developing reliable questionnaires is to minimise the extent to which error can influence the true measures. A key factor that creates error in questionnaires is the response strategies used by respondents. Some respondents may use random or fixed response strategies, as in the case of respondents who have little interest in the questionnaire. Other factors that affect the quality of responses are the way the questionnaire is administered, the data collection environment and time constraints. Also, ambiguity of questions and the depth of content may confuse

respondents (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1985; Anastasi & Urbina, 1997; Casey, Gentile, & Bigger, 1997; Dessler, 1999). Moreover, some researchers have considered the order of items as a possible threat to this aspect of reliability. Straus et al. (1996) suggest that an interspersed item order removes the likelihood of a fixed response pattern.

Sampling is the second major consideration in instrument development. Sampling error and flawed interpretation of resultant data are two critical threats to reliability (New Zealand Department of Statistics, 1992). Two of the main sources of error regarding sampling methods refer to using small samples and sourcing data from a uni-dimensional source (Casey et al., 1997).

Also, reliability of an instrument is threatened if researchers make conclusions when the domain of interest is ambiguous and an inappropriate research design is used (New Zealand Department of Statistics, 1992). In order to offset these threats, researchers can develop rigorous research designs that incorporate defined target groups and sample all areas of interest.

Furthermore, in a scenario whereby several tests are being administered, the order of questionnaire administration and its affect on the reliability of the outcome measures has been explored. There is no indication in the literature that this may be problematic (e.g., Cheng, 1998; Mikklesen & Gronhaug, 1999). In addition, experts in psychological and educational instrument development adhere to this view (Anastasi & Urbina, 1997; Lezak, 1995). Lezak suggested that the order of arrangement of tests in a battery of psychological instruments has no significant effect on the way in which respondents will answer the items within particular tests.

There are several ways to measure the reliability of a questionnaire. First, test-retest reliability is an assessment of the degree to which measures are similar or stable over time versus the degree to which measures change or fluctuate upon repeated response sessions (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1985; Anastasi & Urbina, 1997; Davidson & Keating, 2002). The time interval between assessments should be at least one week in duration. The reliability coefficient is the correlation between the two sets of measures, that is, the correlation of the scores obtained at time one with those obtained from the same individual at time two. In order to interpret the value of this correlation measure, it is important to know the duration period

between the response collections. For example, a coefficient score of 0.8 is a more stable measure if the inter-response time is one year compared to an inter-response time of one week. A major problem with this type of reliability check is the loss of subjects over time between the first and second response sessions.

Second, in order to avoid two testing situations mentioned in the test-retest scenario, the split-half method involves splitting a questionnaire into two halves, after this a measure of correlation is computed between the two half-measures. Hopkins and Stanley (1981) suggested that split-half reliability can be appraised by inspecting the Spearman-Brown coefficient. A simplified version of the Spearman-Brown, where r_{tt} is the estimated reliability of full test and r_{hh} is the Pearson correlation between the odd-even items, is given below:

$$r_{tt} = \frac{2r_{hh}}{1 + r_{hh}}$$

This method is particularly useful when it is assumed that the questionnaire has uni-dimensional properties. A common approach to this method is to correlate the odd and even numbered items, using the Spearman-Brown formula (Anastasi & Urbina, 1997). The main source of error associated with this method is how to split the questionnaire items in order to obtain comparable halves. The strength of this method is that it presents a measure of the uniformity of content sampling.

A third test of reliability considers how well the questionnaire measures a particular dimension or characteristic. This test looks at the degree to which each item in a questionnaire is measuring the same thing as compared with each other item. This inter- item consistency is known as internal consistency, or homogeneity (Anastasi & Urbina, 1997). A test is internally consistent, or homogeneous, to the extent that an individual's response to one item is related to his/her responses to all of the other items in the questionnaire. Internal consistency reliability (or inter-item consistency) is computed using several formulas, the most common reliability measures being Cronbach's alpha coefficient and the Kuder-Richardson-20 (K-R 20). The K-R

20 formula is appropriate for dichotomously scored items (right-wrong, yes-no), while Cronbach's is most appropriately used for non-dichotomous items (Likert scale options).

Fox et al. (2001) examined SPQ reliability using internal consistency measures, such as Cronbach's alpha. Cronbach's alpha reliabilities were generated for the six subscales. These coefficients were used to check consistencies within and between factors. Fox et al. thus generated a path analysis model to illustrate the different inter-correlations. In a further study, Straus et al. (1996) also generated an alpha matrix in their study to evaluate the contribution of certain items to the CTS. They were able to revise their original version of the CTS by eliminating items that made non-significant contributions to the measure of conflict.

Hopkins and Stanley (1981) suggested that, further to approximating internal consistency from the average correlation, Cronbach's alpha also incorporates the number of items. This implies that the more items loaded into the formula the greater the reliability of the estimation. This impacts on the coefficients by yielding higher scores. Cronbach's alpha scores can be computed using the following formula, where s_i^2 is the variance of the scores on part 'I' of the test, I is the number of parts in the test, and s^2 is the variance of the total scores. One important caution in the use of internal consistency reliability coefficients is that they are inappropriate for use with assessments having highly restrictive time limits (Anastasi & Urbina, 1997; Hopkins & Stanley, 1981).

$$r_\alpha = \frac{I}{I-1}\left(1 - \frac{\sum s_i^2}{s^2}\right)$$

In terms of interpreting the reliability coefficients, the most often used method involves one of comparison. However, as a guideline, Anastasi and Urbina (1997) suggest that reliability coefficients of greater than 0.8 are highly desirable, although Ferguson and Takane (1989) suggested that in psychology and education, values below 0.5 are not uncommon. In social science and organisational behaviour it is less easy to narrowly define phenomena than it is in the natural sciences. For example, a measure of temperature is more precise than a measure of the magnitude of conflict. Therefore, coefficient values below 0.8 may have value in understanding links between social science constructs, such as conflict. Table 1 below presents some

comparison literature for reliability coefficients. Some low estimates have been recorded in the literature, as shown in Table 1, which are consistent with Ferguson and Takane's (1989) claim that low scores are often acceptable in a social science context.

TABLE 1

Examples of Published Works that Cite Reliability Coefficients

Type of test	Reference	Magnitude of coefficients
Test-retest reliability	Myles, Weitkamp, Jones, Melick, & Hensen (2000)	0.92
	French, Irwin, Fletcher, & Adams (2002)	0.75 to 0.91
	Kilmann & Thomas (1974)	0.61 to 0.68
	Rahim (1983a) – ROCI-I	0.74 to 0.85
	Rahim (1983a) – ROCI-II	0.60 to 0.83
Split-half reliability	Myles et al. (2000)	0.83
	Kruger & Mace (2002)	0.92
	Klonoff & Landrine (2002)	0.79 to 0.87
Internal consistency (alpha) measures	Kilmann & Thomas (1974)	0.43 to 0.71
	Straus (1979)	0.50 to 0.88
	Putnam & Wilson (1982) – Form A	0.48 to 0.71
	Dalton & Cosier (1989)	0.73 to 0.84
	Klonoff & Landrine (2002)	0.94 to 0.95
	Rahim (1983a) – ROCI-I	0.79 to 0.82
	Rahim (1983a) – ROCI-II	0.72 to 0.77

The concept of validity. The term validity refers to the extent to which a data collection instrument measures the characteristic or dimension that it is supposed to measure (Anastasi & Urbina, 1997; Casey et al., 1997). For example, if a questionnaire is designed to measure conflict

perception and in fact measures something else, then it is not a valid questionnaire. The American Educational Research Association, American Psychological Association and National Council on Measurement in Education (1985) stated that validity is the most important consideration in the evaluation of psychological and educational tests. They emphasised that the notion of validity "refers to the appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores" (American Educational Research Association, American Psychological Association and National Council on Measurement in Education, 1985: 9).

In questionnaire design and development there are three aspects of validity that require investigation. These aspects are related to the concepts of content, construct and criterion-related (predictive and concurrent) validity. The American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (1985) stated that these forms of validity are not mutually exclusive and the evidence collected to substantiate one form of validity can often be used to substantiate another.

Content validity. Content validity is described as the degree to which test items are representative of some defined content area (Anastasi & Urbina, 1997). In terms of evaluating the usefulness of items within a questionnaire, content validity is often the first aspect of consideration (Hinkin, 1995). Items need to encapsulate the domain of interest but they must not gather extraneous information by deviating from the task at hand. It is difficult to quantify this aspect of validation, and often qualitative approaches are used (Hinkin, 1995). A constant challenge in the balancing act of achieving content validity in questionnaires is to balance between a questionnaire that is concise enough to be applicable to the content area being appraised but long enough to adequately sample the area of content being evaluated (Straus et al., 1996).

Hinkin (1995) described two approaches to establishing content validity: deductive and inductive. Deductive reasoning occurs when a classification system or schema is established before the items are generated in the first place. As such, this approach requires a detailed knowledge of the area being investigated. In contrast, the inductive approach determines items from individual response data and then aims to establish suitable constructs. For example, subjects may describe a scenario and through content analysis a construct is derived (Engs, 1996).

The deductive approach relies on a strong theoretical basis and thus appears to create greater credibility and accuracy in defining the domain of interest. Giles and Mossholder (1990), for example, developed a strong theoretical understanding of performance appraisal mechanisms. From their theoretical background they developed measures that estimated facets of performance appraisal.

Construct validity. Construct validity can be seen as the degree to which certain psychological and theoretical constructs are actually represented by test performance (Anastasi & Urbina, 1997). It refers to the extent to which dimensions with similar names on different tests relate to one another.

There are several threats to construct validity relevant to questionnaire evaluation. These include the inadequate definition of constructs under question, inappropriate number of constructs being defined, and insufficient level of independence between constructs (Colosi, 1997).

Establishing construct validity entails three phases: (1) identifying the conceptual relationship between ideas; (2) analysing the correlations between concepts; and (3) examining the results to determine whether the theoretical constructs are actually represented by outcome measures (Carmines & Zeller, 1979; Nunnally, 1978).

Phase one can be evaluated by considering a questionnaire's factors in terms of whether they theoretically link with the ideas supposedly being measured in the questionnaire. This aspect of construct validity is also evaluated when considering the CRQ's content validity.

Phase two can be assessed by considering the questionnaire's factors with respect to how well they correlate with similar factors being represented in other questionnaires. These comparative questionnaires need to have credible validity and reliability. Anastasi and Urbina (1997) have discussed the notions of convergent and divergent (or discriminant) validity. Convergent validity is concerned with how well theoretical constructs are related to each other. In contrast, divergent validity is concerned with how poorly theoretical constructs are related to each other. The level of convergence or divergence is measured by using the correlation coefficient and examining the inter-correlations between measures.

Anastasi and Urbina (1997) stated that convergence could be witnessed in obtaining 'high' correlations whereas divergence can be found in 'low' correlations. There is some debate as to what constitutes a 'high' or 'low' correlation (Trochim, 2002). Cronbach and Meehl (1955), and Eatwell (2003) proposed that values of greater than 0.5 indicate convergence, however an extremely high score (e.g., 0.95 or greater) can suggest duplication. In current research, coefficient values of 0.4 were considered high enough to demonstrate convergent validity (Kruger & Mace, 2002; Parry & Proctor-Thomson, 2002).

Phase three can be evaluated by implementing factor analysis. Anastasi and Urbina (1997) stated that factor analysis is a useful technique in terms of identifying traits as it creates a statistical picture of the inter-relationships within a particular questionnaire. Factor analysis aims to develop meaning with respect to a complex multivariate data set by condensing patterns of inter-correlation within such data sets to a smaller number of variables, called factors (Ferguson & Takane, 1989).

One key method of factor analysis that can be used to establish construct validity is exploratory factor analysis (EFA). EFA can be used to check whether the factors in an instrument actually emerge through statistical analysis or not (Ferguson & Takane, 1989). Moreover, EFA is a well-recognised statistical procedure for investigating untested factor structures (Hair, Anderson, Tatham, & Black, 1998). This system of analysis can be computed within SPSS 11.0 for Windows (Green, Salkind, & Akey, 2000).

Hair et al. (1998) emphasised two elementary statistical models used in conjunction with EFA, principal components analysis and principal factor analysis. Principal components analysis aims to use the minimum number of factors to explain the maximum proportion of the variance allotted to the original set of factors. The central idea in principal components analysis is data reduction. This method uses an orthogonal (uncorrelated) framework for analysing data. Engs (1996) used this method of factor analysis in evaluating the underlying constructs of the Health Concern Questionnaire. More specifically, Engs determined constructs by using SPSS (Norusis, 1987), and setting eigenvalue constraints incorporating the orthogonal rotation (varimax) procedure.

In contrast, principal factor analysis (or principal axis factoring) aims to define the patterns of common variation among a set of variables. In this case, variation unique to a factor is disregarded. This method often uses an oblique (correlated) framework for analysing data. Harris (2001) in a validation study of the Life Regard Index-Revised used an oblique rotation (promax, with a Kappa value of 4) procedure due to the likelihood of high inter-factor correlation.

Hair et al. (1998) suggested three steps for implementing EFA when applied to investigating a factor structure. Step one involves a preliminary analysis of the data set. Step two focuses on factor extraction. Step three reviews factor rotation details of the data set.

Step 1. ***Preliminary analysis.*** In this step, data is screened in terms of appropriateness for factor analyses. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) and Bartlett's Test of Sphericity are tests that examine the entire matrix. Hair et al. (1998) suggest that if the MSA > 0.7 and the Bartlett's test yields a result of $p<0.05$, then the matrix is appropriate for Factor Analysis. In addition, Hair et al. (1998) suggest that the diagonal correlations for the anti-image correlation matrix need to be inspected to ascertain whether all correlations are over 0.3. If there is a correlation lower than 0.3 then factor analysis is likely to be inappropriate.

Step 2. ***Factor extraction***. Factor extraction involves generating some useful measures for determining the usefulness of the derived factors. First, one of the key measures used in factor analysis for determining the variance of a factor, the eigenvalue, is generated. Eigenvalues provide useful information regarding the importance of a factor in describing the data set and thus determining whether it should be retained or not (Hair et al., 1998). Factors with eigenvalues of greater than one are considered significant (Engs, 1996; Hair et al., 1998). Second, the percent of variance is a useful indicator of how well the derived factors are explaining the variance in the data. In the natural sciences 95% variance is desired, whereas in the social sciences 60% is considered ideal (Hair et al., 1998). Nevertheless, values as low as 32% are considered acceptable in the social science literature (e.g., Rokach & Brock, 1998). Finally, a Scree plot can be used to discern any trends over the derived factors by noticing any points of inflexion.

Step 3. ***Factor rotation***. Factor rotation incorporates either an orthogonal or oblique rotation depending upon the rationale for analysing the data set. The factor loadings derived using EFA can then be interpreted in terms of whether the resulting patterns are consistent with the 'a priori' expectations. In principal axis factoring, Hair et al. (1998) suggested that inspection of the pattern matrix is usually preferred. Interpretation of the factor rotation matrix can be based on four broad criteria (Cudeck, 2000; Hair et al., 1998; Suwa, 2002): (1) setting a minimum acceptable magnitude of the loading (between 0.3 to 0.45 depending on sample size); (2) deletion (or amendment) of dual loadings; (3) ensuring an acceptable number of items loading on each factor (the recommended minimum number is 5); and (4) considering the theoretical sense of the factor items in terms of inclusion or deletion.

These three steps can also be used when forming decisions with regards to a totally untested and speculative instrument and its factor structure. However, 'a priori' notions of the data, and any other relevant theoretical issues need to be considered before preliminary analyses can be put into operation (Hair et al. (1998).

EFA is thus a useful tool in inspecting relatively untested instruments, however in some cases the instrument being evaluated has already been psychometrically evaluated so that the research question at hand is one of confirmation rather than exploration.

Fox et al. (2001) used a systematic empirical method to appraise the authenticity of the scales used in the SPQ by incorporating a statistical method known as confirmatory factor analysis (CFA). In addition, Rahim and Magner (1995) used a confirmatory factor analysis procedure incorporating the LISREL 7 computer programme (Jöreskog & Sörbom, 1989). CFA is a well-recognised procedure for investigating data that are suitable for factor analysis. It can be used to analyse the dimensions and structure of questionnaires (Fox et al., 2001). CFA can appraise the validity of 'a priori' scales that can then be examined by using goodness-of-fit indices (cf. Rahim & Magner, 1995). This allows the researcher to conclusively confirm whether construct validity has been maintained.

Criterion-related validity. Criterion-related validity relates to the level to which measures are related to a set of outcome criteria. That is, "How accurately can criterion

performance be predicted from scores on the test?" (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1985: 11).

There are two aspects of criterion-related validity: predictive and concurrent. Predictive scores are used as estimates of future experience, whereas concurrent validity interprets data about an outcome measure and a criterion simultaneously. Rust and Golombok (1999: 72) defined concurrent validity as, "the correlation of a new test with existing tests that purport to measure the same construct". It is usual to establish concurrent validity using an inter-correlation matrix between a questionnaire that is being appraised and an established questionnaire (Neuman, 1997; Simourd & Van De Ven, 1999; Vaughn & Baier, 1999; Warr, 1999).

Dawis (2000) suggests that there is some debate as to the difference between construct and concurrent validity. If the focus of interest is in finding out if the same factor underlies corresponding scales of the two instruments (the new and established one) then this method would be called construct validation. If, however, the intent of the investigation is to use an established questionnaire as the comparison standard (equivalent, to the WAIS-III in IQ testing), and the aim is to find out how the CRQ measures up to this questionnaire in domain coverage, then this can be called criterion-related validity ("criterion" means "standard").

Cheng (1998) used the correlation method to authenticate the criterion-related validity of a conflict-related questionnaire. Cheng evaluated product-moment correlations (r-values) between two scales the Family Conflict Scale and the Friend Conflict Scale, and a set of criterion measures (Appraisal Scale of Social Relations, Beck Depression Inventory, and T-Anxiety Scale).

Cheng (1998) presented significant results in the range of |0.15| to |0.64| between the two scales and the criterion measures. Norbeck, Lindsey and Carrieri (1981) also found significant correlations in establishing criterion-related validity, in the range of |0.33| to |0.56|. Cheng implies that low scores are appropriate within the social psychology context due to the difficulty in measuring complex human behaviour. The minimum significant correlations (using the $p<0.05$ cut-off) range from 0.11 to 0.14 for samples of 300 and 200 respectively (Chang, 2000).

In evaluating concurrent validity in a new instrument, two aspects of comparison can be employed. First, the factors of the instrument can be compared to another established instrument that is being used as a standard measure. Second, the items within the factors often yield information more revealing than merely focussing on the factors (Piedmont & Hyland, 1993). The item correlations provide a more microscopic view of the factors (Bohle, Tilley, & Brown, 2001) and are usually completed within a factor to assess the uni-dimensionality of that factor. However, in addition to the internal consistency measures outlined in the reliability discussion, the accuracy of an instrument could be established through inspecting external consistency of measurements based on a standard, with the assumption that the standard and the comparison are theoretically measuring the same domain of interest. Use of external criteria enables the researcher to evaluate how effectively the new questionnaire at an item level is able to capture information about a factor compared to a standard measure, thus revealing possible redundant and ambiguous items.

Section summary. This section was primarily focussed on methods of instrument evaluation. The section began with presenting a suitable methodology for establishing instrument development and validation. The method entailing five components was discussed in line with some useful studies in the area of instrument design and development.

The next part of the section centred on reviewing the key systems, reliability and validity, that are used to evaluate questionnaires. The two main techniques used in establishing reliability, relevant to this study, were internal consistency and split-half procedures. The three main methods of validity were content, construct and concurrent validity. Content validity can be established through a thorough qualitative process. Construct validity entails a quantitative assessment of correlation measures and detailed factor analysis. Concurrent validity is a subset of criterion-related validity and can be used to assess the CRQ with an established instrument. In chapter two, I examine and review a critical benchmark measure that is used to establish concurrent validity for the CRQ, as well being used to either strengthen or weaken the argument for construct validity.

CHAPTER TWO: BENCHMARK MEASURE

In the literature there are many different forms of measuring conflict. In chapter one, I examined several examples of the quantitative method of appraising conflict. Each instrument (OCCI, CTS, INS, ROCI-I, ROCI-II, MODE, RH and DCCQ) was reviewed as a possible benchmark measure. After detailed inspection of the CRQ items and the available instruments, the ROCI-II was considered the most intuitive fit in terms of correspondence.

The decision-making process in terms of selecting the ROCI-II was reliant on satisfying several criteria. First, the ROCI-II is the most recognised and empirically established measure of conflict available (e.g., Rahim & Magner, 1995; Rahim et al., 2000). Second, the ROCI-II is a popular instrument that is often used by researchers (e.g., Corcoran & Mallinckrodt, 2000). Third, the items and factors of the ROCI-II were considered the most useful for comparative analyses with the CRQ. Fourth, the ROCI-II has been embraced by many organisations as their instrument of choice with regard to evaluating conflict (McKenna & Richardson, 1995). Fifth, the ROCI-II has stimulated further investigation in terms of its theoretical framework (e.g., Sorenson, Morse, & Savage, 1999). As such, the ROCI-II appeared to be a logical choice as a benchmark for the present study.

In the following sections I review the aspect of conflict that the ROCI-II measures, and I present some relevant literature that establishes the ROCI-II has one of the dominant measures of conflict available. I also focus on the key components of the CRQ. Finally I compare and contrast the theoretical intentions of the ROCI-II and CRQ.

2.1 Background to the ROCI-II

The ROCI-II is a mechanism for measuring five ways in which individuals respond to conflict. The five conflict handling styles identified stem from the work by Blake and Mouton (1964) and their notion of the management grid. Early research on conflict management styles examined the characteristics or habitual ways that individuals use to cope with conflicts (Blake & Mouton, 1964). Blake and Mouton identified five ways to view management styles that are moderated by two variables: concern for self and concern for others.

Blake and Mouton's (1964) five management styles were later modified into five conflict handling styles: avoiding, compromising, dominating, integrating, and obliging (Rahim, 1985; Rahim & Bonoma, 1979). Rahim et al. (2000: 10) stated that the five handling styles are summarised as:

1. Integrating: This style is consistent with the idea of high concern for self and others. It is linked to the notions of problem solving, collaboration, cooperation, solution-orientation, win-win, or positive-sum style.

2. Obliging: This style is consistent with the idea of low concern for self and high concern for others. It is connected with the modes of communication described as accommodation, non-confrontation, yielding, or the lose-win style.

3. Dominating: This style is consistent with the idea of high concern for self and low concern for others. Other concepts that describe this style are competing, control, contending, win-lose, or zero-sum style.

4. Avoiding: This style is consistent with the idea of low concern for self and a low concern for others. Other words or phrases used to describe this concept are buck-passing, sidestepping, or "see no evil, hear no evil, speak no evil" situations.

5. Compromising: This style is consistent with the idea of moderation in terms of both self and others. This concept can be seen as give-and-take or sharing. In this situation both parties lose something so that mutually acceptable resolution is achieved.

Rahim and Bonoma's (1979) five conflict styles have been extensively used and validated in all areas of social science research. For example, Corcoran and Mallinckrodt (2000) investigated the extent to which levels of attachment influenced conflict styles. They found that the Rahim and Bonoma (1979) styles correlated with similar styles to adult attachment such as levels of self-confidence, intimacy, self-disclosure and emotional expressiveness. Corcoran and Mallinckrodt concluded that the jointly determined conflict styles of integrating and compromising were positively correlated with secure facets of attachment, such as confidence and security. Meanwhile, the 'non-secure' aspects of adult attachment significantly corresponded with less mutual styles of conflict resolution, such as avoidance.

In addition, this conflict style typology has been used to analyse methods for dealing with conflict in major organisational centres, such as in companies in Singapore (McKenna & Richardson, 1995). McKenna and Richardson evaluated different strategies for dealing with conflict, which were akin to Rahim and Bonoma's (1979) conflict styles, and extended this framework by looking at cognitive and behavioural elements of dealing with conflict. McKenna and Richardson found that Singaporean managers tended towards a compromising strategy to resolving conflict, with noticeable levels of non-assertiveness and uncooperativeness.

Recent research has also considered the two moderating variables, concern for self and concern for others (Blake & Mouton, 1964; Rahim & Bonoma, 1979). Sorenson et al. (1999) investigated links between the two moderating variables and how these links impact on preference of conflict strategies. The results of this study suggested the dual concern model (self and other) proposed by Blake and Mouton (1964) could not be easily replicated in practice. They were unable to validate the notion of integrating and avoiding, with respect to the two moderating variables. This is consistent with other literature that failed to find an association between the dual concern model and the factors, compromising and integrating (Van de Vliert, 1997). Nevertheless, Sorenson et al. ascertained that the factors, obliging and dominating, could match the dual-concern model.

Overall, the theory of conflict handling styles has been the basis of many instruments (e.g., Kilmann & Thomas, 1974; Rahim, 1983a; Rosenthal & Hautaluoma, 1987) that can be used by individuals and organisations to improve communication and develop awareness.

Hence, the ROCI-II is a well-recognised and widely utilised instrument for appraising various aspects of responding to conflict within organisations. It is both based on theoretical foundations and has been rigorously tested not only by the original author, but also by other researchers.

2.2 Key components of the CRQ

Essentially, the higher the respondent score on any item within the CRQ suggests that the respondent is successful at creating resolutions to conflict that satisfy everyone's needs and that will likely enhance the relationship between conflict participants. Low scores may indicate areas where a respondent can look at, in terms of increasing their effectiveness in resolving conflicts (McClellan, 1997b, 1997c).

The CRQ factors have been derived from class discussion regarding Weeks (1994) and Fisher and Ury (1991). The CRQ factors proposed by McClellan (1997c) were: (1) view of conflict; (2) atmosphere; (3) clarification of perceptions; (4) needs; (5) power; (6) future; (7) options; (8) 'doables'; (9) mutual-benefit agreements, and (10) extra considerations. In this sub-section, I present a description of the factors as presented by McClellan (1997c).

The first factor, 'view of conflict', refers to how people view conflict as a natural product of diversity among people. If respondents yield high scores then their view of conflict is more likely to be one that promotes the notion of win-win situations that aims to strengthen relationships.

The second factor, 'atmosphere', suggests that high scores are related to respondents recognising the significant effect of creating a therapeutic atmosphere. That is, an effective atmosphere promotes partnership and problem solving.

The third factor, 'clarification of perceptions', recognises the need to create unambiguous communication about conflict issues. Thus, respondents with high scores recognise that they need to separate people from the problem as well as accept emotions as reasonable.

The fourth factor, 'needs', emphasises that people must identify their essential needs that have to be met when resolving conflicts.

The fifth factor, 'power', refers to how people can produce a positive partnership through creating positive power. High scores to the items suggest that these respondents believe that relationships built on positive power will inevitably lead to longer-lasting relationships, and thus create a longer-lasting resolution to conflict. High scores are also akin to Raven and French's (1959) ideas of certain types of power relationships, such as expert power, while low scores are more akin to coercive power tactics.

The sixth factor of the CRQ, 'future', emphasises the need to learn from past events, to focus on future orientations.

The seventh factor, 'options', suggests that respondents who score highly recognise the need to create options to optimise the chance of achieving mutual gains for both parties caught up in a conflict situation.

The eighth factor, 'doables', suggests that realistic goals have to be developed in order to create methods of obtaining something tangible.

The ninth factor, 'mutual-benefit agreements', is the notion that all parties achieve a sense of partnership in the conflict resolution process and thus have their needs met.

Finally, the notion of 'extra considerations' as a construct indicates that the other nine factors may not cover all facets of conflict resolution. In this category, the items broach subjects such as anger expression, emotional legitimacy and alternatives to agreements.

2.3 Comparing the CRQ with the ROCI-II

Both the CRQ and the ROCI-II measure some aspect of conflict management. The ROCI-II measures the way in which people react to conflict situations. The CRQ considers the communication of ideas related to conflict situations and the frequency with which people adhere to conflict ideas and respond to conflict situations. It also aims to measure participants' perceptions of reality and affective responses concerning conflict situations. This is evident in the two factors termed 'view of conflict' and 'clarification of perceptions'. As such, the CRQ tends to create an umbrella under which the ROCI-II could directly sit.

Two of the handling styles found in the ROCI-II, 'dominating' and 'integrating' can be conceptually and intuitively linked to three of the CRQ factors: 'power', 'options' and 'mutual benefit agreements'. Furthermore, the CRQ attempts to look at additional factors that are not directly covered in the ROCI-II, such as 'atmosphere', 'needs' and 'future'. The CRQ endeavours to consider future scenarios, which creates a sense of forward momentum, while the ROCI-II items tend to focus on the here and now.

One evident value of the CRQ is in the way it has been developed, through classroom discussion with direct reference to specific mediation and collaborative negotiation strategies (Fisher & Ury, 1991; Weeks, 1994). As such its potential as a diagnostic and evaluative instrument is immense. The initial aim of the design of the CRQ was to measure levels of student awareness, knowledge, frequency of engagement and competency with regard to resolving conflicts. Therefore, it can be easily applied to the learning environment, and it can be used to determine the extent to which students learn certain conflict resolution strategies. There is thus a direct connection between the scores obtained from the CRQ and an intervention strategy (Fisher & Ury, 1991; Weeks, 1994), whereas the purpose of the ROCI-II, in contrast, is to focus on diagnosis.

Furthermore, the CRQ attempts to evaluate affective reactions to conflict possibilities, by creating 'emotionally-laden' statements that need to be referenced in terms of frequency of occurrence. In contrast the ROCI-II tends to elicit responses related to statements based upon perceptions of levels of agreement. There is a distinct shift from purely cognitive responding, based on understanding in the ROCI-II, to capturing responses related to both feelings and perceptions presented in the CRQ.

In review, the CRQ appears to have several strengths. These include: (1) it is able to evaluate a wide range of conflict resolution practices related to mediation and collaborative forms of negotiation; (2) it aims to measure actual frequencies of behaviours as well as respondent perceptions and feelings about conflict in relation to mediation and negotiation; (3) it can be used as an educational tool for teaching these conflict resolution strategies, and measuring respondent awareness regarding those strategies; (4) the structure of 40 items within ten factors (plus one overall item) makes it a manageable and a relatively short questionnaire; (5) it is available to both professionals and the layperson, so accessibility is not problematic and use is of

minimal cost to the consumer. However, this may also be a limitation as discussed below; (6) it adds new dimensions to the measure of conflict, such as future orientations and acknowledging the needs of individuals; and (7) it is relatively easy to score and it connects well with the ideas presented by Weeks (1994), and Fisher and Ury (1991).

The CRQ also has some limitations. Its major limitations consist of: (1) the lack of psychometric evaluation and its reliance on face validity; (2) the small number of items within each factor; (3) The ill-defined nature of those factors; (4) the lack of use and mention by the academic community, as it is not represented in academic publications; and (5) its accessibility may make it open to misuse by practitioners unskilled in the art of psychological interpretation.

Nevertheless, in weighing up the CRQ's strengths and limitations, the CRQ could in all likelihood add-value to the area of conflict measurement. To achieve this possibility several investigations need to be completed. The major problem with the CRQ is the lack of psychometric data. However, it appears that the strength of the CRQ is in its breadth, while instruments such as the ROCI-II focus on specific aspects of conflict.

Nevertheless, the ROCI-II has considerable empirical credibility, and as such can be used to appraise the validity of some of the factors and items used by the CRQ. Consequently, in this thesis the ROCI-II is used as a benchmark.

The comparison measures between the CRQ and ROCI-II can be used to evaluate the argument for both construct and concurrent validity. In establishing construct validity, I can review the extent to which similar factors underlie corresponding scales of the two instruments. In establishing concurrent validity, I can use the ROCI-II as the comparison standard and evaluate how much the CRQ measures up to the ROCI-II in domain coverage.

2.4 Chapter summary

In this chapter the ROCI-II was examined as a benchmark for the CRQ. First, the background of the ROCI-II was discussed. The ROCI-II has five main scales, integrating, obliging, dominating, avoiding and compromising. The ROCI-II has been exhaustively evaluated in the literature which establishes it as a credible standard.

Second, the key components of the CRQ and their descriptions were presented. There are ten components: view of conflict, atmosphere, clarification of perceptions, needs, power, future, options, doables, mutual benefit agreements and extra considerations.

Third, comparisons were made between the ROCI-II and CRQ. The CRQ attempts to measure aspects of conflict from a perceptual and affective viewpoint, while ROCI-II is mainly concerned with perceptions. In addition, the CRQ appears to have a strong educational orientation while the ROCI-II is centred on diagnosis.

Fourth, the strengths and limitations of the CRQ were presented. The strengths of the CRQ indicate its potential value as an instrument and thus worthy of investigation.

Therefore, the chapter focussed on how the ROCI-II could help in determining the CRQ's level of validity. This can occur on two levels, assessing underlying constructs (construct validity) and using the ROCI-II as an exemplary standard (concurrent validity). In the next chapter I present the objectives of this thesis with the aim of presenting this study's hypotheses.

CHAPTER THREE: STUDY OBJECTIVES

The primary objective of this thesis is to evaluate the CRQ. In order to accomplish this objective, certain aspects of this questionnaire's design and development need to be examined. The conceptual aspects of the psychometric procedures used to appraise such an instrument have been discussed in chapter one, namely reliability and validity. In this section my aim is to develop a set of hypotheses that can be used to bridge these conceptual notions and the methodology. The section examines each psychometric method in turn, thus producing a set of hypotheses that direct the thesis in its endeavour to examine the credibility of the CRQ.

3.1 Reliability systems: Relevant hypotheses

Table 2 below sets out the various aspects of reliability presented in the literature, and the reliability tests required in establishing this psychometric property. It also describes the different tests used and the various reliability coefficients generated. It further presents the decision rules for acceptance of the coefficients as being reliable, as based on the research described in the literature review. Finally, reliability measures are appraised in terms of their viability for this thesis. Collected data is then evaluated with the Table 2 guidelines in mind.

TABLE 2

Reliability Deliberations

Reliability Tests	Testing Considerations			
	Tests	**Statistical Computations**	**Decision Rule**	**Aspects of Viability**
Test-retest	Correlation of same test over time	Pearson Product-Moment method	$r_{AA}>0.5$	Beyond the scope of this thesis
Split-half	• Correlation of same test split in two • Correlations for each factor	Spearman-Brown	$r_{tt}>0.5$	Within the scope of this thesis
Internal consistency	Inter-item and/or inter item/total correlations • Whole test • Within each factor	Cronbach's alpha	$r_{alpha}>0.5$	Within the scope of this thesis

With Table 2 in mind, two outcomes are possible from the interpretation of the data. First, the instrument presents split-half reliability and second the instrument has internal consistency. This leads to hypotheses 1a and 1b.

Hypothesis 1a. The CRQ demonstrates reliability via split-half analysis.

Hypothesis 1b. The CRQ is internally consistent.

3.2 Validity systems: Relevant hypotheses

Table 3 below sets out the different aspects of validity, and the tests required to determine these psychometric properties. It also displays the considerations required for this analysis, such as statistical methodology and decision cut-off points, and the viability for this thesis to

implement these components. In addition, the suggested cut-off points are consistent with those cited in the literature review section.

TABLE 3

Validity Deliberations

Validity Tests		**Testing Considerations**		
	Tests	**Statistical Computations**	**Decision Rule**	**Aspects of Viability**
Content	Qualitative	Nil		Within the scope of this thesis
Construct	1. Multiple correlations between factors on two tests	1. Spearman correlations	1. Level of significance, $p<0.05$	Within the scope of this thesis
	2. Factor analyses	2. (i) Preliminary analyses	2. (i) MSA >0.7 Bartlett <0.05 Anti-image inspection	
		(ii) Factor extraction	(ii) Eigenvalues > 1 Percent of variance Scree plot	
		(iii) Factor rotation	(iii) Factor loadings >0.35 Dual loadings Number of items per factor Theoretical sense	
Criterion-related	Correlation analyses between relevant • Scales • Items	Spearman Correlations	Level of significance, $p<0.05$	Only concurrent validity

With Table 3 in mind, the following hypotheses were formulated related to establishing content, construct and concurrent validity.

Hypothesis 2a. The CRQ demonstrates content validity.

Hypothesis 2b. The CRQ demonstrates construct validity.

Hypothesis 2c. The CRQ demonstrates concurrent validity.

In order to test hypothesis 2a, a systematic appraisal of the literature review is required. To assess hypothesis 2b, both a correlation analysis and an exploratory factor analysis are required to either accept or reject this hypothesis. Evaluation of hypothesis 2c requires a more tentative and intuitive 'a priori' method in which predicted correlations are proposed between the factors and items for the CRQ and ROCI-II.

3.3 Proposed comparisons of CRQ and ROCI-II factors to assess hypothesis 2c

Comparison of factor-by-factor similarity was initiated to find out the likelihood of factors being significantly correlated across the two instruments, CRQ and ROCI-II. Each of the CRQ factors were compared with ROCI-II items in terms of the likelihood of a similar response-set from respondents. In this case, the ROCI-II was used as a standard measure and the CRQ was evaluated in terms of how it measured up to this standard. Table 4 below indicates the likely significant inter-factor correlations. The ROCI-II factor, 'dominating', appeared to be a good standard for the CRQ factor, 'power'. However, the CRQ notion of power is likely to be negatively correlated to the ROCI-II dominating values. Whereas, the ROCI-II factor, 'integrating', appeared to be a good standard for two CRQ factors, 'options' and 'mutual-benefit agreements'.

TABLE 4

Proposed CRQ-Factor by ROCI-II Factor Correlations

CRQ Factors	ROCI-II Factors
Power factor refers to how people can produce a positive partnership through creating positive power. High scores to the items suggest that these respondents believe that relationships built on positive power will inevitably lead to longer-lasting relationships, and thus create a longer lasting resolution to conflict	**Dominating factor** is consistent with the idea of high concern for self and low concern for others. Other concepts that describe this style are competing, control, contending, win-lose, or zero-sum style.
Options factor determines that respondents who score highly recognise the need to create options to optimise the chance of achieving mutual gains for both parties caught up in a conflict situation.	**Integrating factor** is consistent with the idea of high concern for self and others. It is linked to the notions of problem solving, collaboration, cooperation, solution-orientation, win-win, or positive-sum style.
Mutual-benefit agreement factor is the notion that all parties achieve a sense of partnership in the conflict resolution process and thus have their needs met.	**Integrating factor** - as above

The following three propositions were derived from the CRQ-factor-by-ROCI-factor comparisons presented in Table 4.

1. CRQ Factor 5, 'power' is likely to be negatively correlated with ROCI-II factor, 'dominating'.
2. CRQ Factor 7, 'options' is likely to be positively correlated with ROCI-II factor, 'integrating'.
3. CRQ Factor 9, 'mutual benefit agreements' is likely to be positively correlated with ROCI-II factor, 'integrating'.

3.4 Proposed comparisons of CRQ and ROCI-II items to assess hypothesis 2c

Each of the CRQ items within each CRQ factor mentioned in section 3.3 (power, mutual benefit agreements, options) were compared with the relevant ROCI-II items within the two selected ROCI-II factors (dominating and integrating). This aspect of concurrent validity aimed at evaluating external consistency of identifiable CRQ items that could likely be related to the domain coverage of the ROCI-II items. The three possible CRQ item-set relationships with ROCI-II are: (1) CRQ items within the Factor 'power' compared to ROCI-

II items within the factor, 'dominating' (Table 5 below); (2) CRQ items within the factor, 'options' compared to ROCI-II items within the factor, 'integrating' (Table 6); and (3) CRQ items within the factor 'mutual benefit agreements' compared to ROCI-II items within the factor, 'integrating' (Table 7).

TABLE 5

CRQ Power Items are Compared to All Combinations of ROCI-II Dominating Items

CRQ-items for Power	ROCI-II items for Dominating
17. I share my positive attitude, hoping they will do the same.	8. I use my influence to get my ideas accepted
18. I find it necessary to overpower others to get my own way.	9. I use my authority to make a decision in my favour
19. I am aware of the other person may need to feel in control of the conflict	18. I use my expertise to make decisions in my favour
20. In a conflict, I believe there should be no upper-hand.	21. I am generally firm in pursuing my side of the issue
	25. I sometimes use my power to win a competitive situation

TABLE 6

CRQ Options Items are Compared to All Combinations of ROCI-II Integrating Items

CRQ-items for Options	ROCI-II items for Integrating
25. I listen with an open mind to alternative options.	1. I try to investigate an issue with others to find a solution acceptable to us
26. I feel there is just one way to solve a problem.	4. I try to integrate my ideas with those of others to come up with a decision jointly
27. When dealing with a conflict, I have preconceived notions about the other party that I am unwilling to let go of.	5. I try to work with others to find a solution to a problem which satisfy our expectation
28. I can accept criticism from others.	12. I exchange accurate information with others to solve a problem together
	22. I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way
	23. I collaborate with others to come up with decisions acceptable to us
	28. I try to work with others for a proper understanding of a problem

TABLE 7

CRQ: Mutual Benefit Agreements Items are Compared to All Combinations of ROCI-II: Integrating Items

CRQ-items for Mutual Benefit Agreements	ROCI-II items for Integrating
33. If I had my way, I win, you lose.	1. I try to investigate an issue with others to find a solution acceptable to us
34. When in a conflict with someone, I ask them to explain their position.	4. I try to integrate my ideas with those of others to come up with a decision jointly
35. I bargain to resolve conflict.	5. I try to work with others to find a solution to a problem which satisfy our expectation
36. At the end of a conflict, it matters to me that the other person's needs have been met as well as my own.	12. I exchange accurate information with others to solve a problem together
	22. I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way
	23. I collaborate with others to come up with decisions acceptable to us
	28. I try to work with others for a proper understanding of a problem

The following three sets of propositions were derived from the inter-item comparisons proposed in Tables 5-7.

1. Correlations exist between CRQ 'power' items and ROCI-II 'dominating' items.
2. Correlations exist between CRQ 'options' items and ROCI-II 'integrating' items.
3. Correlations exist between CRQ 'mutual benefit agreements' items and ROCI-II 'integrating' items.

3.5 Chapter summary

This chapter aimed to create a bridge from the literature review and benchmark chapters into the method chapter. The two main systems for evaluating the CRQ are discussed, producing a set of hypotheses that can direct the thesis. The first system relates to reliability, and the use of split-half reliability and internal consistency. Therefore, two hypotheses were generated related to demonstrating both. The second system relates to validity and the use of content, construct and concurrent validities. The three hypotheses were related to demonstrating each of these validity components. The concurrent validity was broken into three likely scale comparisons between the CRQ and ROCI-II, and the comparison between the items within the scales. In the next chapter the methods used to appraise the CRQ is presented.

CHAPTER FOUR: METHODS

4.1 Sample

Three hundred and thirty eight university students, drawn principally from a Business Faculty, participated in the study. Demographic information was collected from each participant. The average age of the sample was 23 years. Fifty eight percent were female and 42% male. Several ethnic groups were represented with 52% 'European', 4% 'Maori', 6% 'Pacific Island', 23% 'Asian' and 15% 'Other'.

4.2 Measures

Two questionnaires were distributed to students, the CRQ and the ROCI-II. The CRQ aims to evaluate a respondent's level of awareness with regard to conflict resolution. The ROCI-II aims to determine a respondent's style with regard to managing conflict.

The CRQ has 41 items incorporating ten factors, the 41st item not being part of the ten-factor configuration. Each CRQ item measured responses on a five-point response format ranging from 'Almost never' to Almost always'.

The ROCI-II has 28 items embedded in five factors. Two of the available three forms were used: 'Form A' for appraising conflict with tutors and 'Form B' for peer evaluation. Each ROCI-II item also measured responses on a five-point response format ranging from 'Strongly agree' to 'Strongly disagree'.

Collection of data occurred under exam conditions during class time. The author collected participants' completed questionnaires.

4.3 Analysis

This study's analysis was split into two main parts. Part A was concerned with the existing psychometric properties of the CRQ. Part B, the second phase of investigation centred on exploring a refined version of the CRQ, the CRQ-II.

Reliability. In part A, measures were obtained for 36, 40 and 41 item sets. The rationales for appraising reliability for the 36, 40 and 41 item sets were to: (1) eliminate the extra considerations factor from the data set (36 item set); (2) appraise the reliability for the original ten-factor claim (40 item set); and (3) consider the additional item (41 item set).

Spearman-Brown coefficients were generated to appraise split-half reliability. Cronbach's alpha coefficients were generated to appraise internal consistency. Both, overall and within-factor reliability measures were generated to evaluate hypotheses 1a and 1b. In Part B, the focus was on exploration and thus using the reliability measures as probes.

Validity. Three areas pertinent to the CRQ were considered, content, construct and concurrent validities, as summarised in Table 3.

Content validity. In part A, content validity for the CRQ and investigation of hypothesis 2a were assessed following detailed qualitative analysis. First, the literature review of the two books, considered the main basis for the CRQ, was appraised (Fisher & Ury, 1991; Weeks, 1994). The literature review provided a methodical and rigorous evaluation of the two books. It also provided groundwork from which further analysis is provided in the Results chapter (chapter five). A second part to the qualitative analysis was to consider whether the ideas found in the two books (Fisher & Ury, 1991; Weeks, 1994) were adequately represented within the CRQ (Anastasi & Urbina, 1997). In part B, content validity procedures were used to guide the theoretical and interpretation aspects of the analysis.

Construct validity. Establishing construct validity incorporated two of the three phases (phase two and three) recommended in chapter one. Phase one involving the identification of conceptual relationships between ideas was primarily addressed using content validity procedures. Phase two entailed an analysis of the correlations between underlying constructs.

Phase three focussed on examining the results to determine whether the theoretical constructs are actually represented by outcome measures, using factor analysis.

In part A, evaluation of psychometric properties of the CRQ, construct validity was first assessed through an analysis of the scale correlations between the ROCI-II and CRQ, by focussing on the extent to which the underlying constructs are similar. The levels of convergence and divergence between the ROCI-II factors 'dominating' and 'integrating', and the CRQ factors 'power', 'options' and 'mutual benefit agreements' were assessed by inspecting a multiple correlation matrix for the factors of the two instruments.

Nonetheless, the main focus of analysis for evaluating construct validity was in the form of carrying out a factor analysis using three steps as recommended by Hair et al. (1998). The first step involved a preliminary analysis followed by inspection of factor extraction data and finally appraising factor rotation information.

The factor rotation system incorporated principal axis factoring using an oblique method (promax). This system was chosen as it permits the expected inter-correlations of the underlying factors to be observed and allowed to shape the analysis. In this way the factors as proposed by McClellan (1997c) were not assumed to be independent. These three steps set out in more depth in chapter one (cf. Hair et al., 1998) incorporated the use of EFA were the predominant procedural and statistical mechanisms used to evaluate level of construct validity within the CRQ, thus evaluating hypothesis 2b.

Part B focussed on examining a new version of the CRQ, the CRQ-II. In appraising the CRQ-II, an untested and speculative instrument, a similar set of steps to those described above were incorporated (cf. Hair et al., 1998), in addition to other research guidelines (e.g., Cudeck, 2000; Suwa, 2002). In investigating step three of the factor analyses, both the orthogonal and oblique methods of rotation were implemented. The rationale being that further to the oblique representation of the data, the orthogonal method of rotation could create a different and potentially useful pattern.

Concurrent validity. In part A, the ROCI-II and the CRQ inter-correlation coefficients on factors and items were compared to ascertain levels of comparability and extent of domain coverage. In this case the ROCI-II was considered a standard from which the CRQ could be

measured against. Tables 4 to 7 (presented in the Study Objectives chapter) were an 'a priori' examination of the CRQ factors and items that were used to test hypothesis 2c. Correlation levels cited in the literature were used as benchmark measures. This study used a measure of coefficient values that were above the level of significance ($p < 0.05$), as a cut-off point for supporting concurrent validity. In Part B, as with the reliability measures, the focus was on exploration and thus using the concurrent validity measures as probes.

4.4 Chapter summary

This chapter has outlined the method that was implemented to test the hypotheses presented in chapter three. The methods are a directive picture with regard to how the two evaluation tools of reliability and validity were put into practice. In the next chapter the study's results are presented.

CHAPTER FIVE: RESULTS

Chapter five is composed of two main parts. Part A examines the existing CRQ (McClellan, 1997a) in terms of its psychometric properties. Part A has several components: (1) a review of data preparation; (2) an examination of CRQ reliability; and (3) an investigation of content, construct and concurrent validities. Part B aims to derive a factor model, which is potentially more psychometrically sound than the existing CRQ.

5.1 Part A: The psychometric properties of the CRQ

Data preparation. First, a total of 338 participant responses were collected. Second, reversals of certain item scores were computed as guided by McClellan (1997b) and Rahim (1983a). Third, all data were checked for accuracy by evaluating descriptive statistics, such as range, maximum-minimum points, means and standard deviations. Fourth, the data were reviewed to negate the possibility of habitual responding (e.g., checking column ticking for subjects using one Likert scale option only). Based on these data preparations the data sets used in the analyses differed depending on how many CRQ items were under analysis. These were, for analysis of 36 items, n= 279; for analysis of 40 items, n= 278; and for analysis of 41 items, n= 222.

Reliability. Overall reliability was evaluated by generating both split-half and internal consistency measures for the 36, 40 and 41 item sets. Two correlation coefficients are presented (see Table 8 below): Spearman Brown for split-half reliability (r_{tt}), and Cronbach's alpha (r_{alpha}) appraising internal consistency. The magnitudes of the coefficients for split-half reliability ranged from 0.67 to 0.75, while the magnitudes of the coefficients for internal consistency ranged from 0.75 to 0.78. These results suggest that the different item sets (36, 40 or 41) are generally reliable, and do not appreciably differ in their overall intention.

TABLE 8

Reliability Coefficients: Spearman Brown for Split-Half Reliability (r_{tt}) and Cronbach's Alpha (r_{alpha}) Coefficients for 36, 40 and 41 Item Sets.

Reliability coefficients	36 items	40 items	41 items
r_{tt}	0.67	0.69	0.75
r_{alpha}	0.75	0.77	0.78

Reliability coefficients were also generated for each factor. Table 9 shows the internal consistency and split-half measures for each of the ten CRQ factors (McClellan, 1997c). The magnitudes of the internal consistency (Cronbach's alpha) coefficients ranged from -0.35 to 0.68, and the coefficients for the split-half measures ranged from -0.39 to 0.61. The low scores (below 0.5) indicate that eight of the ten CRQ factors do not possess intra-factor reliability. However, factors two (atmosphere) and seven (options) do have intra-factor reliability. Therefore, there is marginal support for hypotheses 1a and 1b.

TABLE 9
Cronbach Alpha (r_{alpha}) and Split-half (r_{tt}) Coefficients for Each Factor

Factors	Cronbach's alpha coefficients (r_{alpha})	Split-half coefficients (r_{tt})
View of conflict	-0.35	0.078
Atmosphere	0.68	0.61
Clarification of perceptions	0.36	0.31
Needs	0.37	0.30
Power	0.18	0.19
Future	0.33	0.37
Options	0.52	0.58
'Doables'	0.03	-0.39
Mutual benefit agreements	0.13	0.25
Extra considerations	0.33	0.34

Validity. This aspect of analysis focuses on the validity of the ten-factor model proposed from the 40 items (McClellan, 1997a). The validity components examined in this section are: content, construct and concurrent.

Content validity. Two phases of analysis were incorporated to establish content validity.

First, the literature review established that the two sources used for the foundation of the CRQ (Fisher & Ury, 1991; Weeks, 1994) were consistent with the literature on mediation and collaborative negotiation.

Second, the CRQ factors are consistent with the eight-step programme devised by Weeks (1994) and the ideas posed by Fisher and Ury (1991). All ten CRQ factors are listed below (as described by McClellan, 1997c). Direct links have been made between the CRQ factors, the

eight-step model of conflict resolution (Weeks, 1994), and the four principles of Fisher and Ury (1991):

(1) Factor one (view of conflict) relates to Principle one (separating people from the problem; Fisher & Ury, 1991)

(2) Factor two (atmosphere) is related to Step one (creating an effective atmosphere; Weeks, 1994)

(3) Factor three (clarifying perceptions) is related to Step two (clarifying perceptions; Weeks 1994) and Principles one and four (separating people from the problem and developing objective criteria; Fisher & Ury, 1991)

(4) Factor four (needs) is related to Step three (focussing on individual and shared needs; Weeks, 1994)

(5) Factor five (power) is related to Step four (building shared positive power; Weeks, 1994)

(6) Factor six (future) is related to Step five (looking toward the future and learning from the past; Weeks, 1994)

(7) Factor seven (options) is related to Step six (generating options; Weeks, 1994), and Principle three (generating options; Fisher & Ury, 1991)

(8) Factor eight (doables) is related to Step seven (developing 'doables' or realistic goals; Weeks, 1994)

(9) Factor nine (mutual benefit agreements) is related to Step eight (making mutual benefit agreement; Weeks, 1994) and Principle two (negotiating with regard to interests not positions; Fisher & Ury, 1991)

(10) Factor ten (extra considerations) is related to Special topics (dealing with issues like anger, difficult individuals; Weeks, 1994)

Therefore, content validity was established, confirming hypothesis 2a. Weeks (1994) provided the template for the factor structure, while the CRQ items have been generated after consideration of both the works of Weeks (1994), and Fisher and Ury (1991). Furthermore, McClellan (1997c) ascertained face validity of the CRQ after discussions with students studying conflict resolution and their interpretation of the intention of Weeks (1994), and Fisher and Ury (1991). The content validity check for the CRQ was established for the factor structures. However, the items within the factors were not systematically evaluated, as the statistical analyses using the methods for establishing construct and concurrent validity were conceived as the means to determine their suitability.

Construct validity. Construct validity was examined by implementing two empirical procedures. First, convergent and divergent aspects of the data were explored in terms of detecting a similar factor that underlies the same construct on both instruments. The CRQ factors were compared with the ROCI-II factors, the resultant matrix (see Table 16, Appendix D) revealed that there was no clear evidence in terms of convergence or divergence. Prior expectation of convergence between the three CRQ factors and the two ROCI-II factors (as proposed in Table 4) was not present nor was there clear evidence of divergence.

Second, an exploratory factor analysis (EFA) was implemented. As discussed in chapters one and four, the three guidelines set out by Hair et al. (1998) were used to analyse the data set in terms of determining construct validity and evaluating hypothesis 2b. The following results are categorised according to those three steps.

Step 1. Preliminary analyses. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) for this data set is 0.77, and the Bartlett's Test of Sphericity was significant ($p = 0.000$). All diagonal correlations for the anti-image correlation matrix were greater than 0.55. Therefore, the 40 item dataset is suitable for factor analyses.

Step 2. Factor extraction. First, using EFA the data set was analysed in terms of the level of eigenvalues for each of the ten factors. Table 10 below shows all the derived ten factors and their corresponding values, with all eigenvalues above one. Second, Table 10 also illustrates the percent of variance explained by this initial extraction method is 53.84%. Third, the Scree plot (Figure 1) also illustrates the eigenvalue levels for the ten (and above) factors.

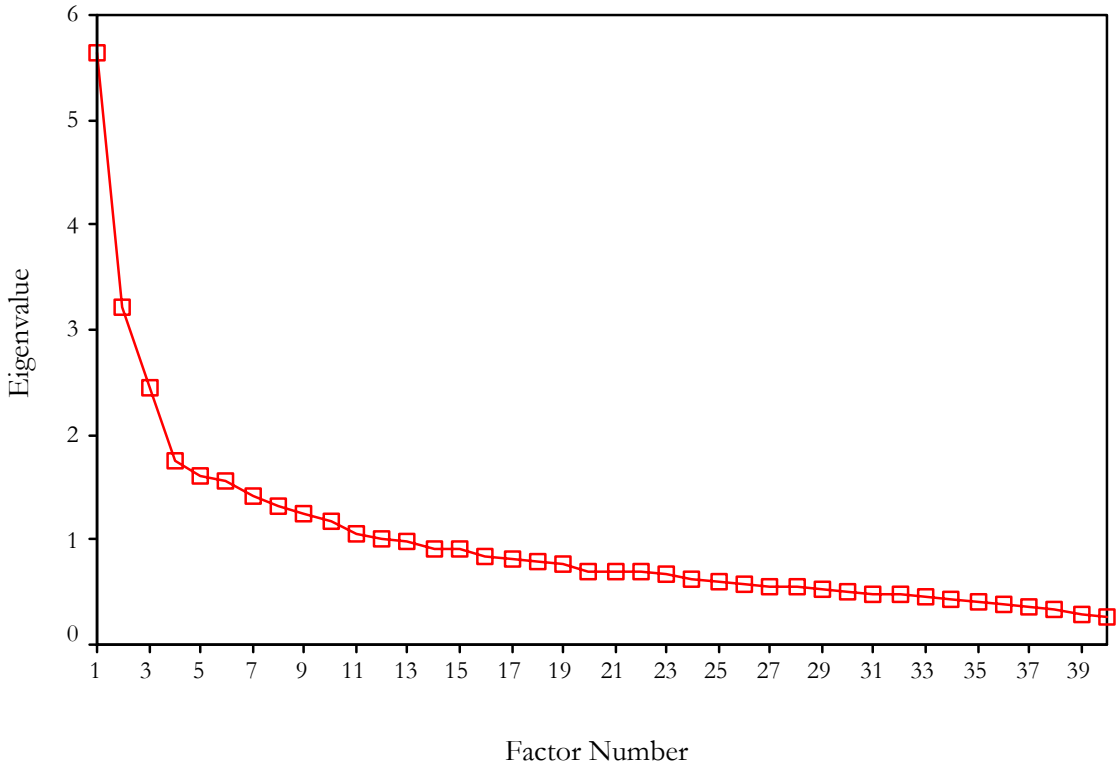
TABLE 10

Ten-factor Model: Total Variance Explained

	Initial Eigenvalues		
Factor	**Total**	**Percent of Variance**	**Cumulative Percent of Variance**
1	5.64	14.11	14.11
2	3.22	8.05	22.16
3	2.44	6.11	28.27
4	1.76	4.40	32.67
5	1.61	4.01	36.69
6	1.56	3.89	40.58
7	1.42	3.54	44.12
8	1.33	3.32	47.44
9	1.25	3.13	50.57
10	1.18	2.95	53.53

FIGURE 1

Scree Plot for the Ten-Factor Solution



Step 3. Factor rotation. The factor loadings show different derived patterns to those postulated by McClellan (1997c). A principal axis factoring method using an oblique rotation (promax) was used to analyse the derived ten-factor solution. Table 11 shows a summary of the derived factors that best approximate the CRQ factor structure, eigenvalues for 'view of conflict' (3.22) and 'atmosphere' (1.61) are provided. Only two derived factors from the EFA (view of conflict and atmosphere) have reasonable similarity with the existing factor structure. Eight factors do not reasonably support the existing CRQ factor structure, that is, items do not present themselves into patterns that resemble the CRQ factor structure (McClellan, 1997c).

TABLE 11

A Summary of the Derived Factors that Best Approximate the CRQ Factor Structure

CRQ Factors	CRQ Items	Derived Factor (and Items)	Eigenvalues
Atmosphere	5, 6, 7, 8	Factor 2 (5, 6, 7, 8)	3.22
View of conflict	1, 2, 3, 4	Factor 5 (1, 3, 4)	1.61

Table 12a below presents the items in full with the magnitude of the factor loadings (the range was 0.35 to 0.87). The abbreviations of the ten CRQ factors associated with each item are presented in parentheses (see Table 12b for key). Hair et al. (1998) recommended a cut-off point of 0.35 for a sample size between 250 and 350. Therefore, all loadings less than 0.35 were excluded to determine a clearer picture. The construct validity analyses suggest some support (two of the eight factors showing strong similarity) for the CRQ factor structure (see Tables 11 and 12a), thus marginally supporting hypothesis 2b.

A similar factor analysis procedure was also completed on the 36 item set and thus removing the influence of the factor 'extra considerations', which is an add-on factor for McClellan (1997c). The results were similar to the 40 item, that is, the factors 'atmosphere' and 'view of conflict' were the only close matches.

TABLE 12a
CRQ Items Fully Explained and their Loadings on Ten Factors*
(see Appendix A for CRQ Items Presented in Full)

CRQ Items (original CRQ factor abbreviations in parentheses, see table 12b)	Factors									
	1	2	3	4	5	6	7	8	9	10
24. (F) In conflict I try to dominate the other party.	0.87									
18. (P) I find it necessary to overpower others to get my own way.	0.75									
32. (D) I feel the need to control an argument.	0.66									
33. (M) If I had my way, I win, you lose.	0.59									
13. (N) I feel that only my needs are important.	0.43									
26. (O) I feel there is just one way to solve a problem.	0.36									
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for ..		0.77								
7. (A) I try to make people feel comfortable when meeting with….		0.70								
6. (A) I feel it is important where a conflict takes place.		0.64								
8. (A) When I start to discuss a conflict with the other party, ….		0.49								
37. (X) I express anger constructively.			0.64							
39. (X) I overlook my partners anger in order to focus on the real ….			0.62							
34. (M) When in a conflict with someone, I ask them to explain ….			0.47							
21. (F) I find it easy to forgive.			0.37							
16. (N) In order not to harm the relationship, I may temporarily ….				0.67						
23. (F) When dealing with a conflict, I consider the future of the ….				0.48						
36. (M) At the end of a conflict, it matters to me that the other ….				0.44						
17. (P) I share my positive attitude, hoping they will do the same.				0.37						
3. (V) I am afraid to enter into confrontations.					0.61					
1. (V) I feel that conflict is a negative experience.					0.58					
4. (V) I feel that in conflicts someone will get hurt.					-0.57		-0.37			
14. (N) I feel for a relationship to last, the needs of both parties ….						0.51		0.39		
40. (X) I feel that it is okay to agree to disagree on specific issues ….						0.46				
35. (M) I bargain to resolve conflict.						-0.37				
25. (O) I listen with an open mind to alternative options.						0.35				
27. (O) When dealing with a conflict, I have preconceived notions ….							0.54			
12. (C) In conflict my reactions are based on how I think the ….							-0.48			
9. (C) I state my true feelings when dealing with conflict.								0.75		
30. (D) I strive for a complete and genuine resolution of a conflict ….									0.58	
19. (P) I am aware of the other person may need to feel in control of ….										0.52

*Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization

Table 12b.
Key for CRQ Factors Presented in Parentheses in Table 12a

CRQ Factors
V - View of Conflict
A - Atmosphere
C- Clarification of perceptions
N - Needs
P - Power
F - Future
O - Options
D - Doables
M - Mutual Benefit agreements
X - Extra Considerations

Concurrent validity. Concurrent validity was investigated by using the ROCI-II as a comparison standard and exploring how well the CRQ measures up to the ROCI-II in terms of domain coverage on three CRQ factors, 'power', 'options' and 'mutual benefit agreements'.

Factor-to-factor considerations. Table 13 presents factor-to-factor ordinal correlations using Spearman's correlation coefficient. The factors analysed were those proposed to be significantly correlated in the Study Objectives chapter. The CRQ factors have been correlated with both ROCI-IIA (perceived conflict with tutors) and ROCI-IIB (perceptions regarding inter-student conflict) factors. Essentially, of the total six comparisons four factor-to-factor comparisons were correlated ($p<0.05$). The range of scores was $|0.03|$ to $|0.21|$. The CRQ factors of 'power' and 'options' appeared to measure up with their ROCI-II comparison standards, 'dominating' and 'integrating', respectively. These correlations are consistent with the 'a priori' factor propositions 1 and 2 presented in chapter three. Thus, there is modest support for a claim of concurrent validity based on the factor-to-factor correlations (hypothesis 2c).

TABLE 13

CRQ Factor-by- ROCI-II Factor Comparisons with Spearman Correlations

CRQ factors	ROCI-II factors	Correlations	
		ROCI-IIA	**ROCI-IIB**
Power factor refers to how people can produce a positive partnership through creating positive power. High scores to the items suggest that these respondents believe that relationships built on positive power will inevitably lead to longer-lasting relationships, and thus create a longer lasting resolution to conflict.	**Dominating factor** is consistent with the idea of high concern for self and low concern for others. Other concepts that describe this style are competing, control, contending, win-lose, or zero-sum style.	-0.15*	-0.12*
Options factor determines that respondents who score highly recognise the need to create options to optimise the chance of achieving mutual gains for both parties caught up in a conflict situation.	**Integrating factor** is consistent with the idea of high concern for self and others. It is linked to the notions of problem solving, collaboration, cooperation, solution-orientation, win-win, or positive-sum style.	0.13*	0.21*
Mutual-benefit agreement factor is the notion that all parties achieve a sense of partnership in the conflict resolution process and thus have their needs met.	**Integrating factor -** as above	0.04	0.03

*$p<0.05$

Item-to-item considerations. In addition, the CRQ items within the selected factors (power, options, mutual benefit agreements) were checked against external criteria in the form of ROCI-II item comparison standards (dominating and integrating). The resulting matrices (Tables 17 to 19, Appendix E) show that the items are generally unrelated. Of the total 152 possible comparisons only 32 were significantly not correlated ($p<0.05$). The range of significant values was $|0.00|$ to $|0.31|$. Therefore, there is little evidence to suggest adequate representation of the factors.

Nonetheless, the CRQ factor five (power) items 18 and 20 produced promising correlations with ROCI-II (dominating factor) items 8 and 9, with values ranging from $|0.14|$ to $|0.31|$, ($p<0.05$). In addition, CRQ item 18 (factor five, power) was also significantly correlated ($|0.19|$ to $|0.22|$, $p<0.05$) with ROCI-II item 18 (dominating factor). Thus, the 'a priori' item proposition 1, presented in chapter three, is confirmed. All other correlations were below $|0.20|$ and generally non-significant ($p>0.05$). There is accordingly only marginal support for concurrent validity (hypothesis 2c) on the basis of the item-to-item comparisons.

Summary of results for part A. Part A was a psychometric evaluation of the CRQ with respect to reliability (hypotheses 1a, 1b) and validity (hypotheses 2a, 2b and 2c).

Reliability was appraised according to correlation measures of split-half reliability and internal consistency. Overall these measures within the factors were unconvincing. However, two of the factors 'atmosphere' and 'options', produced significant reliability measures marginally supporting hypotheses 1a and 1b.

Validity was evaluated by considering component of: content validity (hypothesis 2a), construct validity (hypothesis 2b) and concurrent validity (hypothesis 2c).

Content validity was considered utilising a qualitative process. The qualitative analysis showed that the ideas presented in Weeks (1994), and Fisher and Ury (1991) were present in the CRQ. The literature review (chapter one) had established Weeks (1994), and Fisher and Ury (1991) as credible sources of information related to ADR practices, specifically mediation and negotiation. Therefore, hypothesis 2a was confirmed.

Construct validity was tested using several statistical techniques, the main one being factor analysis. The results from the factor analysis revealed that the CRQ ten-factor structure was not convincing (two of the ten CRQ factors were matched). This suggested that hypothesis 2b was marginally supported.

Concurrent validity was investigated by incorporating comparative correlation matrices (selected factors, and items within those factors), comparing the CRQ with the ROCI-II. The correlation matrices of the factor-to-factor comparisons with the ROCI-II modestly supported hypothesis 2c however, the item-to-item comparisons were less convincing.

5.2 Part B: Developing a 'new' CRQ model

The second set of analyses is a posthoc examination of the dataset entailing the full 41 items. This posthoc analyses centres on developing a more reasonable factor structure for the CRQ concentrating on further EFA. The emphasis in part B is to suggest a model that may

possess more acceptable construct validity and improved concurrent validity. The proposed new version of the CRQ is termed the CRQ-II.

Construct validity. The construct validity analysis of the 41 item set followed the three step guidelines used in Part A (Hair et al., 1998) and detailed in chapter one. The modifying step in preparing a new model is to consider theoretical and interpretation issues related to the CRQ results before the preliminary analyses. This is followed by inspection of factor extraction and factor rotation data.

Theoretical and interpretation considerations. 'A priori' notions of the data, and any other relevant theoretical issues need to be considered. In establishing the CRQ-II, the conceptual aspects of Weeks (1994) and Fisher and Ury (1991) were first considered in deciding what factor model would be most appropriate.

A systematic but intuitive review of Table 12a was considered in relation to the theories of Weeks (1994) and Fisher and Ury (1991). Weeks (1994) considered eight aspects of conflict resolution: atmosphere, perceptions, needs, power, future orientation, options, goals and mutual benefit agreements. Fisher and Ury (1991) focussed on four aspects of principled negotiation: separating the person from the problem, focussing on interests not positions, creating options before actions, and use of objective criteria.

Using these theoretical foundations it can be seen that the ten factor solution (Table 12a) could be reduced to four main themes: influence of power, positive aspects of resolving conflict, the importance of setting the scene, and fearful aspects of reacting to conflict. There is also evidence of 'phantom factors' (a factor that does not make theoretical sense) being generated such as for factors 7 or greater. Therefore the 'a priori' notions regarding the data as linked to the suppositions of Weeks (1994) and Fisher and Ury (1991) suggest that the four-factor solution could be worthy of more investigation. Moreover, a significant break appeared after factor four in the Scree plot in Figure one (for the 40 item set), thus suggesting a four-factor model as a viable option to the ten-factor model.

Further exploratory evaluation closely followed the Hair et al. (1998) recommendation of inspecting different factor solutions using different numbers of factors. Factor solutions ranging from four to nine were examined. Henceforth, the notion of a four-factor model as being a

viable alternative to the ten-factor McClellan (1997c) model was more convincingly illustrated by checking the factor rotations of the models ranging from four to nine (see Tables 20 to 25, Appendix F). As with the ten-factor model all loadings less than 0.35 were excluded.

Following a review of the four to nine factor models, I was able to justify my initial suspicion that the models (for factor reductions from 4 to 9) could theoretically be reduced to the four aforementioned themes: influence of power, positive aspects of resolving conflict, the importance of setting the scene, and fearful aspects of reacting to conflict.

Following on from this theoretical and practical exploration, the three statistical guidelines for factor analysis recommended by Hair et al. (1998) were used to analyse the proposed four-factor model in more detail.

Step 1. Preliminary analyses. First, the MSA for this data set was 0.75. Second, the Bartlett's Test of Sphericity was significant ($p = 0.000$). Third, all diagonal correlations for the anti-image correlation matrix were greater than 0.47. Therefore, the 41 item dataset is suitable for factor analyses.

Step 2. Factor extraction. First, Table 14 below shows four derived factors and their corresponding eigenvalues (all appear to be greater than one, with a range of 1.87 to 5.87). Second, the percentage variance explained for the initial eigenvalues for the proposed four factors is presented in Table 14. The cumulative percent of variance explained for the four factor model is 32.72%. Third, the Scree plot shown in Figure 2 (for the 41 items) indicates that a factor structure for the CRQ-II may indeed start at four, the plot shows that there is a notable levelling after the fourth factor.

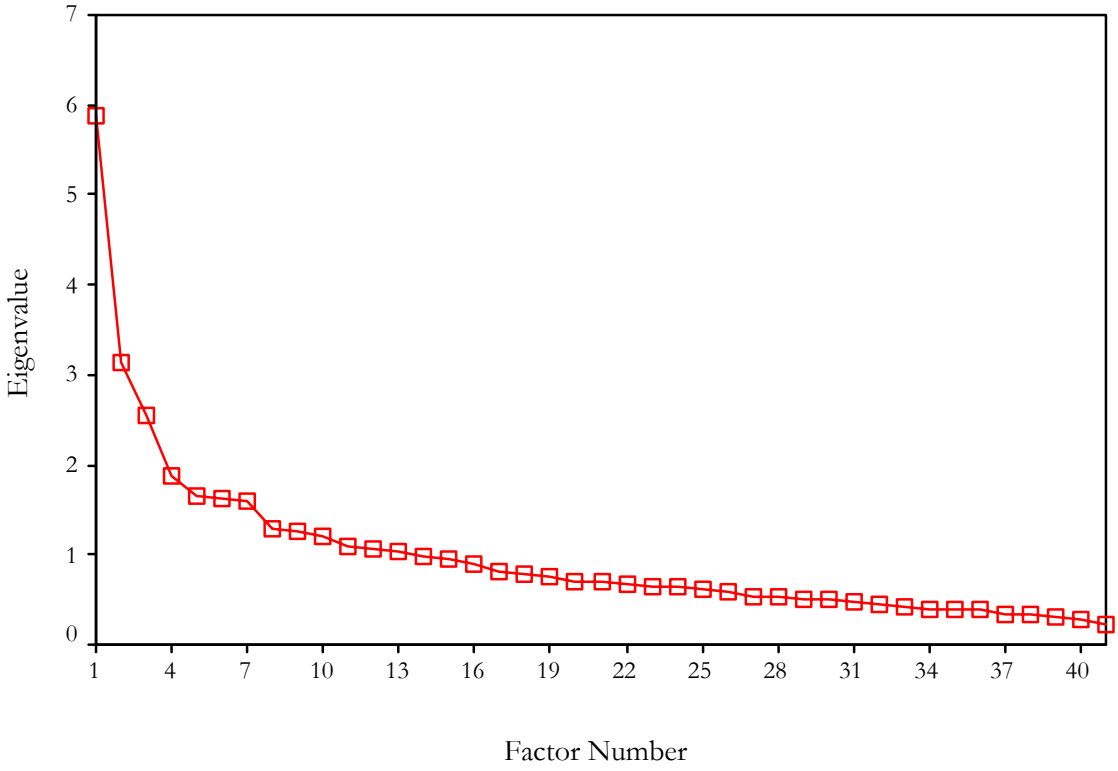
TABLE 14

Total Variance Explained for 41 Items

Factor	Initial Eigenvalues		
	Total	Percent of Variance	Cumulative Percent of Variance
1	5.87	14.32	14.32
2	3.13	7.62	21.94
3	2.55	6.21	28.16
4	1.87	4.57	32.72

FIGURE 2

Scree Plot using the 41 Items



Step 3. Factor rotation. First, given that I was preparing a new version of the CRQ, I felt unconstrained as to whether the CRQ factors need to be correlated or not. Hence both the principal axis factoring and principal components analysis methods were used to determine the most parsimonious and consistent model. Both methods yielded very similar results (Tables 26 and 27, Appendix G). Factor loadings below 0.35 were initially removed as recommended by Hair et al. (1998) and to remove any unnecessary distraction. Second, Dual loadings were removed. Third, the maximum number of items per factor was retained. Fourth, the items with the highest loading drove the theoretical sense of the factors (cf. Hair et al., 1998). Each factor set was investigated for its intra-factor reliability, and items that correlated poorly (or negatively) with the lead items were deleted. The reliability of the proposed factors is computed, the Cronbach's alpha scores for the four values were: 0.45 (factor 3), 0.61 (factor 4), 0.72 (factor 2)

and 0.75 (factor 1). Similar results were obtained for the split-half correlation measures. Table 15 shows a tentative model and items for the four-factor solution (loadings range from 0.35 to 0.74). The same four-factor reduction analysis was computed for the 36- and 40 item sets, these analyses yielded similar results to the 41 item set.

Table 15
Tentative Four-Factor Solution and Revision of CRQ (the CRQ-II)

Proposed CRQ-II items (original CRQ factor abbreviations in parentheses, see Table 12b)	Factor			
	1	2	3	4
24. (F) In conflict I try to dominate the other party.	0.72			
32. (D) I feel the need to control an argument.	0.71			
18. (P) I find it necessary to overpower others to get my own way.	0.67			
33. (M) If I had my way, I win, you lose.	0.66			
13. (N) I feel that only my needs are important.	0.60			
26. (O) I feel there is just one way to solve a problem.	0.50			
22. (F) I bring up old issues from the past during a new conflict.	0.48			
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.	0.44			
34. (M) When in a conflict with someone, I ask them to explain their position.		0.62		
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.		0.57		
25. (O) I listen with an open mind to alternative options.		0.57		
37. (X) I express anger constructively.		0.57		
21. (F) I find it easy to forgive.		0.56		
28. (O) I can accept criticism from others.		0.52		
17. (P) I share my positive attitude, hoping they will do the same.		0.47		
10. (C) During a conflict I ask questions to clarify a statement that I'm not sure of.		0.44		
19. (P) I am aware of the other person may need to feel in control of the conflict.		0.41		
41. How often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?		0.39		
3. (V) I am afraid to enter into confrontations.			0.73	
1. (V) I feel that conflict is a negative experience.			0.48	
9. (C) I state my true feelings when dealing with conflict.			0.46	
27. (O) When dealing with a conflict, I have preconceived notions about the other party that I am unwilling to let go of.			0.37	
6. (A) I feel it is important where a conflict takes place.				0.74
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.				0.71
7. (A) I try to make people feel comfortable when meeting with them about a conflict.				0.60
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.				0.53
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.				0.52

The four factor descriptions for the four-factor solution were determined by consideration of the literature and the lead items in each factor set (cf. Hair et al, 1998). The descriptors for each factor were given the following factor names: (1) factor one, *'power'*, as it relates to aspects of control and influence; (2) factor two, *'consideration'*, as it is connected with the notion of giving

careful reflection to conflict issues; (3) factor three, *'doubt'* as the items within this factor tended to describe features of unsureness; and (4) factor four, *'atmosphere'*, because the items in this factor allude to qualities of environmental significance and its impact on conflict resolution.

Further analyses were computed to check the proposed CRQ-II factors and its concurrent validity by using the ROCI-II factors, 'integrating', 'dominating' and 'avoidance', as the standard measure for comparison. The following results are tentatively presented. When 'power' is correlated with ROCI-II 'dominating' factor the correlations are |0.30| for tutors and |0.39| for peers. When 'consideration' is correlated with the ROCI-II 'integrating' factor the correlations are |0.20| for tutors and |0.19| for peers. When 'doubt' is correlated with ROCI-II 'avoidance' factor the correlations are |0.27| for tutors and |0.28| for peers. All correlations were statistically significant ($p<0.05$). These results establish greater preliminary concurrent validity in comparison with the earlier results presented in part A.

Summary of results for part B. Part B was an investigation of a tentative model that was a refinement of the CRQ, the CRQ-II. The results showed that the CRQ-II had sound properties in terms of reliability, with respect to within-factor coefficients. Furthermore, the CRQ-II maintained a sense of content validity, in that the new factor structure remains consistent with the mediation and negotiation literature. Construct validity was more soundly supported, and concurrent validity showed greater promise than with the CRQ.

CHAPTER SIX: DISCUSSION

McClellan (1997a, 1997b, 1997c) stated that the CRQ is a useful instrument for determining how effective people resolve conflicts and build relationships. McClellan also claimed that the CRQ examines the manner in which people manage conflict. He further maintained that the CRQ items are based on the works of Weeks (1994), and Fisher and Ury (1991). The findings of this study suggest that these claims are partially justified.

In order to address the credibility of the CRQ the following discussion begins with a deliberation on parts A and B of the findings. The first part (Part A) appraised the hypotheses set in the 'Study Objectives' chapter. The second part (Part B) was an exploratory analysis that extended the present research and provided directions for future research. Thus part A was motivated by 'a priori' concerns while part B was a posthoc initiative. Following this discussion on the findings, I present implications for practice and research, and limitations of the study.

6.1 Part A: The psychometric properties of the CRQ

The primary objective of this part of the thesis was to evaluate the CRQ, in terms of its psychometric properties. In order to accomplish this objective, aspects of the questionnaire's reliability and validity were examined.

Reliability. The overall reliability findings (across three item sets, 36, 40 and 41) were not central to this thesis but did show that the different item sets did not alter in the way they measured the conflict resolution dimension. The internal consistency and split-half measures for the ten factors revealed that eight of the ten CRQ factors did not possess acceptable within-factor reliability (Table 8). Consequently, eight of the ten factor reliability values are well below similar results shown elsewhere in the literature (i.e., Dalton & Cosier, 1989; Kilmann & Thomas, 1974; Klonoff & Landrine, 2002; Putnam & Wilson, 1982; Rahim, 1983a; Straus, 1979). The negative alpha value for factor one (view of conflict) is certainly of concern, and is caused by the sum of the individual item variances (items 1 to 4) being greater than the factor variance (Nichols, 1999). These low measures are unlikely to be related to the present study's design, as the sample size was considered appropriate (Hair et al., 1998).

The low scores are more likely related to the item and factor structures of the CRQ (McClellan, 1997a). There are three possible explanations for these low scores. First, the wording of the statements may not adequately represent the factor definitions. Second, the CRQ items were presented in a sequential manner in line with the factors: the first four items were related to factor one, the second four items to factor two, and so on. Therefore, the items in the CRQ were not interspersed which may have caused problems related to fixed responding (Straus et al., 1996). However, McClellan (1997b) did attempt to guard against this problem by inserting twelve items that were scored in the reverse direction to the remaining twenty-eight items. Third, only a small number (four in each case) of items made up each factor. The first CRQ factor 'view of conflict' has a wide area of interest and is difficult to define. Therefore, the negative value for 'view of conflict' may indicate that the four items do not have positive covariances, and therefore are not measuring the same entity (Nichols, 1999).

Nonetheless, two of the ten factors did have substantial reliability. The measures for factor two (atmosphere) and factor seven (options) were below the highly desirable figure of 0.8 (Anasatasia & Urbina, 1997), but above the acceptable value of 0.5 (Takane & Ferguson, 1989). The items in these two factors were measuring their respective factor dimensions in a consistent manner. Therefore, there is marginal support for hypotheses 1a and 1b, that is, the CRQ marginally demonstrates split-half reliability and internal consistency.

Content validity. The findings in this study suggested that the CRQ shows content validity (hypothesis 2a). The review of the two books (Fisher & Ury, 1991; Weeks, 1994) that provided the main theoretical basis of the CRQ was the first step in establishing content validity. This review revealed that many of the concepts presented in Weeks (1994), and Fisher and Ury (1991) were consistent with recognised conflict resolution strategies, namely mediation and collaborative negotiation (Boulle et al., 1998; Pope & Bush, 2000; Rahim, 2001; Walter, 2000). Therefore, the CRQ was driven by a deductive approach whereby a conflict resolution system was used as a point of reference for the creation of the CRQ (Hinkin, 1995). McClellan and his students (McClellan, 1997c) had initially established the content validity of the CRQ through class discussion and reflection of the mediation and negotiation literature.

The second step in establishing content validity was to qualitatively review the items and factors used in the CRQ. In this study, direct links between the factors presented in the CRQ

and the ideas posed by Weeks (1994), and Fisher and Ury (1991), were established. This content analysis showed that a combination of the ideas of Weeks (1994), and Fisher and Ury (1991) were incorporated into the factor structures. Nevertheless, the work of Weeks (1994) was the main reference point with regard to the overall structure of the CRQ. The actual wording of the items themselves lent some clue as to the connections within the factors to Weeks (1994), and Fisher and Ury (1991).

Nonetheless, even though the factors themselves appeared to possess sound content validity, the items within the factors appeared to have some problems in terms of which factor they were nested in. To further investigate the validity of the CRQ and its item structure, a more statistical process was employed involving tests of construct and concurrent validity.

Construct validity. The findings of this study marginally supported construct validity (hypothesis 2b), whereby two of the ten derived factors matched two of the CRQ factors.

The ten-factor structure was investigated by first appraising a multi-correlation analysis intended to assess convergence and divergence. The resulting multiple correlations between factors in the ROCI-II and the CRQ were discouraging and showed little evidence of convergence or divergence. Therefore, no similar factors appear to underlie the expected corresponding scales on the two instruments.

The second, and main, set of analyses followed the Hair et al. (1998) guidelines for exploratory factor analysis (EFA). The outcomes of the preliminary step of analysis were encouraging. The sample size was large enough for factor analyses using the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (Hair et al., 1998). In addition, Bartlett's test of Sphericity was significant, and the anti-image correlations were acceptable.

The next set of analyses involving factor extraction also produced results that were initially encouraging. All ten factors yielded eigenvalues above one, and the ten-factor structure was able to account for 53% of the variance. This is consistent with, albeit marginally lower than, the Hair et al. (1998) 60% guideline, but it is well above other research investigating psychological phenomena, such as the 32% measure presented by Rokach and Brock (1998). However, the Scree plot showed that the curve began to tail off after four factors, giving an indication that a smaller factor set may be desirable.

The final set of analyses incorporating factor rotation produced discouraging results with respect to establishing the statistical credibility of the CRQ. An inspection of the factor loadings showed that there was little similarity between the CRQ factors and the statistically derived factors. Eight of the ten CRQ factors were not established as being statistically credible. In addition, there were factors with dual loadings and factors with very small item numbers.

Therefore, theoretical factors representing certain conceptual aspects of conflict resolution (Fisher & Ury, 1991; Weeks, 1994) were not conclusively borne out by the statistical analyses (Anastasi & Urbina, 1997). This means that the participants' responses in the present study were not consistent with the CRQ theoretical expectations with regards to eight of the ten factors (McClellan, 1997c). Three possible explanations as to why the other eight factors could not also be derived are linked to an inappropriate number of CRQ factors, unsuitable placement of items within the factors and a small number of items per factor.

Nonetheless, there was marginal support for the CRQ factor structure in that two of the CRQ factors (view of conflict and atmosphere) are close approximations to the statistically derived factors.

Concurrent validity. The findings of this study suggest that there is marginal support for concurrent validity (hypothesis 2c), based primarily upon the factor comparisons between the CRQ and the ROCI-II. The factor-to-factor comparisons yielded a reasonable claim of concurrent validity, that is, four of the six selected comparisons are significantly correlated. These results showed that the CRQ factors 'power' and 'options' were respectively correlated with the ROCI-II factors 'dominating' and 'integrating'.

The ROCI-II was used as a standard measure because it has a credible research history and is well established as an instrument for measuring conflict phenomena (Bailey et al., 1991; Corcoran & Mallinckrodt, 2000; Drory & Ritov, 1997; McKenna & Richardson, 1995; Rahim, 1985, 2001; Rahim & Bonoma, 1979; Rahim et al., 2000; Rahim & Magner, 1995).

The significant correlations were generally low in magnitude. Nevertheless, low scores of this magnitude are not uncommon in the literature (e.g., Cheng, 1998). Cheng (1998) implied that low correlation measures are expected in research in the area of social psychology due to the multifaceted nature of this type of investigation.

The low correlation measures for this study are also likely to be linked to the differences between the descriptions of the CRQ and the ROCI-II factors. I initially chose the ROCI-II to be an established standard and intuitively decided that two of its five factors would be useful criteria for the CRQ factors. As a consequence, I considered the ROCI-II factors of 'dominating' and 'integrating' as close approximations of the CRQ factors, 'power', 'options' and 'mutual benefit agreements'. These factors were chosen as possible avenues for establishing concurrent validity. The other CRQ and ROCI-II factors held no such intuitive correspondence.

Nonetheless, the ROCI-II factor 'integrating' overlapped between two CRQ factors 'options' and 'mutual benefit agreements'. This created some statistical concern but, given McClellan's (1997b) intent on establishing a way to measure aspects of conflict management partnership, it is not surprising that some of his factors would appear to be linked to the integrative ideal.

On reflection, the selected factor comparisons did not correspond ideally between the two instruments for several possible reasons. The most obvious difference being that the factors of the CRQ were developed from an educational and academic setting following a review of two conflict resolution sources (Fisher & Ury, 1991; Weeks, 1994). In comparison, the ROCI-II factors were conceived from the management-based literature (Blake & Mouton, 1964). Therefore, the domain coverage of the factors differed between the two questionnaires.

Therefore, for example, the general concept of 'power' in the CRQ subtly differs to the notion of 'dominating' in ROCI-II. McClellan's (1997c) idea of power as measured by the CRQ emphasised the need to develop positive power through enhancing awareness about the different aspects related to the notion of power as suggested by Coleman (2000). Rahim (1983b) considered power purely in terms of win-lose scenarios. It is not surprising then that the two factors 'power' and 'dominating' are not a perfect match. However, because both factors focus on the issue of power, I assumed 'a priori' that there would probably be a significant correlation between the CRQ and ROCI-II factors – 'power' and 'dominating'. I made similar assumptions for the other two factor comparisons between 'options' and 'mutual-benefit-agreements' in the CRQ and 'integrating' in ROCI-II.

Another source of difference lay in the items themselves. This became even more evident when I examined the low inter-item correlations, showing that there is little similarity (with the exception of the CRQ 'power' items and the ROCI-II 'dominating' items) between the items nested in the three CRQ factors and the items nested in their two ROCI-II factor counterparts. The inter-item correlations were not considered as useful as expected. The lack of correlation between the items may be because the items of the CRQ and ROCI-II differ in similar subtle ways to the development of the factor comparisons.

The first of these differences is that the CRQ measures the frequency of engaging in thoughts or behaviours related to conflict, whereas the ROCI-II measures levels of agreement with engaging in certain conflict styles. Second, the CRQ elicits information on the way people think and feel about conflict situations, whereas the ROCI-II elicits information regarding a person's perception regarding how they would behave in certain conflict situations. Third, the CRQ items may not be placed in the most suitable factor sets, for example, some items that appeared to represent factor five (power) appeared in other factor sets such as factors six (future) and eight (doables). This would adversely affect interpretation of factor meaning as well as content and construct validity. Fourth, the CRQ attempts to make connections between recognised conflict resolution strategies, such as, mediation and negotiation (Fisher & Ury, 1991; Weeks, 1994), which creates an educational focus for the instrument, whereas the ROCI-II concentrates on diagnosis in terms of determining a person's particular conflict handling styles. Fifth, the ROCI-II has been tested across cultural groups and therefore, the ROCI-II is liable to be robust in terms of cross-cultural response patterns, whereas the CRQ has only be used in the North American context and therefore may not be applicable to an Australasian context.

The use of factor-to-factor and item-to-item correlations as measures of concurrent validity was also a point of concern. There is considerable debate as to the practical application of concurrent validity and its similarity with convergent and divergent aspects of establishing construct validity (Dawis, 2000). Dawis (2000) stated that initially, criterion related validity was concerned primarily with comparisons with an established standard, but in more recent times "criterion came to mean a socially significant variable that was predicted by a scale score" (Dawis, 2000: 89). Rust and Golombok (1999) also clearly affirmed that concurrent validity can be ascertained if scales on a new test correlates with those similar scales on an established test.

Therefore, in this thesis the ROCI-II was used as an established standard from which two of its five scales, 'dominating' and 'integrating', could be used. However, it was considered reasonable that the ROCI-II could also be used to strengthen or weaken the argument for construct validity.

This line of thought is consistent with the guidelines presented by the American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (1985). These guidelines stated that the forms of validity are not mutually exclusive. As such, the evidence collected to authenticate concurrent validity can be used to strengthen (or weaken) the argument for construct validity, and visa versa.

Overall appraisal of the CRQ. The findings relating to Part A of the analysis produced several outcomes. First, two of the eight factors in the CRQ were reliable. Second, the CRQ demonstrated content validity. Third, the present results suggest that CRQ marginally supported construct validity. Fourth, the CRQ demonstrated some evidence of concurrent validity based on the factor-to-factor comparisons when compared to the ROCI-II, but this was marginal.

These outcomes suggest that the CRQ has possibilities as a measuring instrument of conflict resolution. Many of the strengths of the CRQ cited earlier in the thesis are still relevant. The CRQ is able to evaluate a wide range of conflict resolution practices related to mediation and collaborative forms of negotiation. It can be used as an educational tool for teaching these conflict resolution strategies. It is a manageable instrument (with 40 items within ten scales plus one overall item). It is available to both professionals and the layperson, so that accessibility is not problematic and use is of minimal cost (McClellan, 1997a). It is relatively easy to score and it connects well with the ideas presented by Weeks (1994), and Fisher and Ury (1991). It also adds new dimensions to the measure of conflict, such as future orientations and needs of individuals.

Nevertheless, earlier concerns regarding its psychometric properties have been highlighted in this thesis. The major area of concern is that the ten CRQ factors do not have conclusive construct validity. This lack of construct validity may create problems when interpreting the outcome scores, and thus may lead to misuse by mediators and negotiators as well as the naïve respondent.

Following a deliberation on the CRQ strengths and limitations, I decided that the CRQ could be developed into a more credible instrument, which would have positive implications in

terms of practice and research. Part B was thus an attempt to consider a refined version of the CRQ. The version of the CRQ resulting from the posthoc analysis has been called the CRQ-II, so that it is not confused with McClellan's (1997a) version.

6.2 Part B: The 'new' CRQ: Tentative model

The findings showed that the CRQ ten-factor model (factors are discussed in depth in chapter two) postulated by McClellan (1997c) could be refined to a four-factor model, CRQ-II. The first consideration was whether or not this reduced four-factor set would in fact still represent the ideas of Weeks (1994), and Fisher and Ury (1991). The four main themes of the new factors were: 'consideration', 'power', 'atmosphere' and 'doubt'.

It was argued that the content of the four 'new' factors can be easily related to the notions of Weeks (1994), and Fisher and Ury (1991). First, the factor 'consideration' encapsulates many of the ideas surrounding clarifying perceptions, creating options and realistic goals, presenting needs, considering future concerns and making mutual-benefit agreements. Consideration is also clearly related to Fisher and Ury's (1991) notion of principled negotiation, in particular principles one to three. Second, the factor 'power' is consistent with step four in Weeks (1994). Third, the factor 'atmosphere' is directly compatible with step one in Weeks (1994) intervention startegy. Finally, the factor 'doubt' is related to many negative aspects of conflict resolution that can prevent effective partnership building, such as avoidance, negative views of conflict and focussing on positions, rather than interests.

The initial analyses of the CRQ-II showed critical improvements in psychometric properties. The primary area of concern with the original CRQ was in the area of construct validity. This was improved by reducing the factor set to four. A further area of concern was the internal consistency values within the ten factors. This was improved in the CRQ-II with a new alpha range of 0.45 to 0.75 across the four factors, which is consistent with the criteria guidelines of previous research of this type (Kilmann & Thomas, 1974; Putnam & Wilson, 1982; Rahim, 1983a; Straus, 1979). In addition, the cumulative percent of variance explained in the CRQ-II factor model (32%) is low but consistent with published research (Rokach & Broch, 1998).

An area of concern for McClellan's (1997a) CRQ was in the modest support for concurrent validity. The findings in this study suggest that the new factors in the CRQ-II are

likely to have greater concurrent validity. An initial check on the CRQ-II factor correspondence with three ROCI-II factors showed an encouraging increase in the magnitude of correlation of between the CRQ-II factor 'power' and the ROCI-II 'dominating' factor. Similar significant correlations were obtained for CRQ-II factors, 'consideration' and 'doubt' with ROCI-II factors 'integrating' and 'avoidance'. There was no readily available comparison for 'atmosphere'. No item-by-item comparisons were completed. Nevertheless, much work needs to be done to raise the CRQ-II to a standard whereby it could be convincingly used as measure of conflict resolution practices.

Further refinements of the CRQ-II. Establishing the CRQ-II as a potentially more refined instrument than the CRQ is an extension of the original purpose of the thesis. In order to confirm its scientific credibility, this 27 item, 4-factor model needs to be re-analysed using a systematic method of evaluation. This evaluation will need to begin with an in-depth qualitative appraisal of the items by an expert panel in terms of deletion or amendment of existing items, or addition of supplementary items. In this qualitative appraisal the aim is to satisfy the balancing act of achieving content validity in the factor domains, by making the item lists concise enough for the content area being appraised but long enough to adequately sample the area of content being evaluated (Straus et al., 1996). The guide to a minimum item sample is to ensure that at least five items per factor are available (Suwa, 2002). As a consequence, the number of items within each factor needs to be reduced to about five or six in the case of factors one and two (power and consideration), and increased in the case of factor three (doubt).

The structure and item order of the CRQ was immediately an area for concern. Items in the McClellan (1997a) CRQ were not interspersed, which is likely to create problems. Response inaccuracies, such as fixed response patterns (Straus et al., 1996), can occur if item order is not considered. Straus et al. (1996) proposed that a scattered item order removes the likelihood of a fixed response pattern. In order to remedy the limitation of the CRQ item structure, the twenty-seven CRQ-II items will need to be randomly interspersed to remove the problem of fixed responding.

A further consideration is the essence of the original CRQ and whether that essence is maintained in the CRQ-II, for example, the notion of future orientation was eliminated in the Part B analyses, although three of the items related to the factors 'future' were embedded in

CRQ-II factors one and two. This may indicate that another factor or a second order factors might need to be considered especially given that the future orientation of the CRQ was seen as a potential advantage over existing measures of conflict.

The next aspect of evaluation will require a new set of response data from a different, larger and more diverse sample. On obtaining a new sample and cleaning the items within the CRQ-II, the new instrument will need to be re-evaluated in terms of its inherent reliability and validity. Reliability confirmation will need to be sought in terms of split-half and internal consistency measures of the items within the factors. Validity confirmation will be required especially in terms of construct and concurrent validity. A principle method for confirming construct validity will be the eventual use of confirmatory factor analysis (CFA), which is an extension of EFA.

CRQ-II and implications for practice. The findings and analysis associated with the CRQ-II indicate that with certain refinements, the CRQ-II could possess credible psychometric properties as well as maintaining content validity. However, it must be noted that the CRQ-II is considered a development of the CRQ. The CRQ-II, as it presently stands, requires more refinement before it can be credibly applied to the measurement of conflict. Therefore, the following discussion considers that, with the refinements and research improvements cited in the previous paragraph, the CRQ-II could benefit practice in the following ways.

The CRQ-II could be used in all organisational areas, such as industry, education, psychology and ADR. Its primary use would be as a measuring device for monitoring the effectiveness of mediation and collaborative negotiation practices, such as those posed by Fisher and Ury (1991) and Weeks (1994). As a measuring device it could be used to build relationships and awareness regarding conflict and its resolution. It is anticipated that the CRQ-II may be able to do this in several ways.

The CRQ-II could determine the basic entities of conflict itself, in terms of how often people see themselves engaging in the certain thoughts and behaviours connected with conflict ideas and situations. The CRQ-II items will be aimed at retrieving information about a person's knowledge and engagement in certain conflict resolution practices. As such, the CRQ-II could

directly focus on three of the four main stages of conflict: the perceived and felt, manifest and outcome phases (Frazier & Rody, 1991; Johnson et al., 1998; Larison, 2001; Pondy, 1980).

Therefore, respondents may potentially be able to heighten levels of awareness and emotion connected with potential and existing conflict situations, which then allows for the possibility of effective measurement. Measurement could then be used as a point of reference for bringing the conflict situation to an outcome. Furthermore, many of the CRQ-II items will aim to measure cognitive and affective elements of behaviour, and as such the CRQ-II may allow respondents to connect with latent aspects of conflict by tapping into hidden aspects of conflict (Frazier & Rody, 1991; Johnson et al., 1998; Larison, 2001; Pondy, 1980).

The next aspect of the CRQ-II that influences practice, in terms of raising awareness and building relationships, is its potential ability to capture information regarding some of the key components related to social processes. First, the CRQ-II could develop a cooperative stance, which has been termed the conflict partnership. This is consistent with the notion of goal interdependence (Deutsch, 2000a), which tends towards mutual satisfaction of parties (Wong et al., 1999).

Second, the CRQ-II should be able to measure levels of awareness with regard to the concept of justice (Deutsch, 2000b; Rahim et al., 2000). In the CRQ-II the factors, 'power' and 'consideration' aim to measure this aspect of conflict consideration (McClellan, 1997a). For example, items related to capturing data with regard to a respondent's ability to acknowledge the justifiable needs of another party do this. Therefore, a perception of fair practices and a perception of fair outcomes, procedural and distributive justice is ideally maintained (Deutsch, 2000b).

Third, the CRQ has already been used as an educational tool (McClellan, 1997a) and is thus a useful mechanism for generating dialogue and constructive controversy around the issue of conflict and its resolution (Johnson & Johnson, 1996; Johnson et al., 2000). Consequently, the CRQ-II could be used in tertiary settings to promote intelligent discourse. This is considered useful not only in an academic setting but also in any organisation interested in growth and in enhancing employee motivation (Millar & Dreyer, 1996).

Fourth, the very nature of the CRQ-II and its focus on developing a conflict partnership with a mutual-benefit agreement does by definition develop a sense of trust in conflict participants (Conger & Kanunga, 1988; Lewicki & Wiethoff, 2000). This is directly related to Lewicki and Wiethoff's (2000) discussion on identification-based trust, which aims to develop mutual understanding and perceptions of friendship.

Fifth, the CRQ-II and the works of Weeks (1994) address the need for conflict participants to be aware of aspects of power. The factor 'power' could be used as a point of analysis for this complex aspect of conflict. The CRQ-II is able to discern power dynamics between people with the view of developing conflict partnership and constructive resolution. The CRQ-II could achieve this through promoting awareness with regard to the various aspects of power, as posed by Coleman (2000). This aspect of the CRQ-II has an interesting application. It is able to measure people's awareness and feelings related to different power dimensions, such as legitimate, coercive, expert, reward, referent and informational aspects of power (French & Raven, 1959; Johnson & Scollay, 2000; Raven, 1974).

The ability of the CRQ-II to connect with the nature of conflict and social process theories about conflict enables it to have definite application for conflict resolution. It also gives further credence to the works of Weeks (1994), and Fisher and Ury (1991). As a consequence, the CRQ-II could be used as a template for developing instruments that could measure other variants of the Weeks (1994) and Fisher and Ury (1991) model.

6.3 Research implications of the study

The methodical evaluation of the CRQ and the development of the CRQ-II has several implications for research. First, in a general sense, the systematic approach used in this thesis relies on an approach that entails the implementation of five components that are well documented (e.g., Cheng, 1998; Rahim, 1983a; Straus et al., 1996). The approach began with a detailed and appropriate literature review, followed by determining the domain of interest. The next component required a thorough statistical analysis of the data followed by a need to make decisions regarding the credibility of the questionnaires based on the statistical data. Finally, there is a discussion regarding the pragmatic nature of the instrument being appraised, and the

research implications of the study. This study's investigative process is useful as it provides a methodological template for research into the area of instrument validation and development.

Second, this study demonstrates a need for research into social science instruments that are easily accessible on the Internet. The CRQ is easily accessible on the Internet as users can simply print off the questionnaire (McClellan, 1997a), respond to it and interpret it using the guide available (McClellan, 1997b, 1997c). Moreover, other Internet questionnaires can be responded to online (e.g., Psychtests.com, 2002). Many of these questionnaires can be scored online (Psychtests.com, 2002), so the respondent receives immediate feedback.

There are websites whereby Internet-based questionnaires present psychometric data (Psychtests.com, 2002), thus promoting a sense of being authoritative. As such, a naive user may be easily convinced of the psychometric data presented that confirms the questionnaire's credibility. Nonetheless, the user needs to be cautious, as there are several problems associated with psychometric data associated with Internet-based instruments.

The primary problem is connected with psychometric data obtained from an electronically acquired sample. This data may be the result of multiple responding and difficult to control. Harper, Slaughter and Norman (1998) have highlighted the next problem. These researchers suggest that it is even more difficult than in conventional research to ascertain the integrity of volunteer samples and their responses collected from the Internet. Therefore, the generalisability of results collected via the Internet needs to be treated with caution.

Third, this study raises concerns related to ethics and the use of Internet-based questionnaires in terms of who the users are, and how the information generated is interpreted and used. This concern is related to the dissemination of possible misleading information through the Internet and thus unintentional deception (Beredjiklian, Bozentka, Steinberg, & Bernstein, 2000; Latthe, Latthe, & Khan, 2000).

As such, this study highlights the problems associated with easy access to information, as this information may be misleading and possibly damaging. This study also shows that users need to be circumspect when interpreting questionnaires presented on the Internet particularly when they have no academic standing, that is they have dubious reliability and validity.

Fourth, this study has explored construct validity using exploratory factor analysis (EFA) as recommended by Hair et al. (1998). This technique could be applied to similar research. This is a technique that is not often used but can be used as a precursor to the usual factor analysis procedure, confirmatory factor analysis (CFA) (e.g., Fox et al., 2001; Rahim, 1983b). In this study, EFA was used to summarise the CRQ items into identifiable groups, thus reducing information into identifiable entities (Hair et al., 1998). Hence EFA appraised the original McClellan (1997a) version of the CRQ, and proposed a revised version of this questionnaire (CRQ-II).

Fifth, if the CRQ-II was to undergo a systematic reappraisal and modification as suggested previously, it could be confidently applied to many areas of empirical research. Such areas may include corroboration of an intervention programme, and/or establishing the levels of awareness respondents may have regarding conflict issues. As such it could be used as a measure of effectiveness regarding an educational programme as well as being used as a consciousness-raising instrument.

Sixth, if with refinements the CRQ-II is established as a reputable instrument it can have pragmatic benefits for researchers. It could allow students to confidently complete research on a cost-friendly basis. Furthermore, students and universities could easily access a useful device that can be used for all manner of research possibilities.

Seventh, the CRQ and CRQ-II centre on measuring aspects of mediation and collaborative negotiation, but there is no reason why other measures could not be generated for other aspects of ADR and traditional dispute resolution, such as adversarial negotiation, arbitration and so on.

In summary, this study has some major implications for research. It was able to present a rigorous method of assessing a social science instrument. This method of analysis is pertinent to the present age of social science where Internet instruments are being presented in abundance, without rigorous validation. Furthermore, the study presents a creative statistical approach using EFA. Finally, in developing the CRQ-II, this study is able to present some credible options for research as an attractive option to using existing instruments. A refined version of the CRQ-II may be able to open up further ways of measuring issues of conflict, thus having potential

benefits for investigating issues related to the prevention and resolution of conflict, and consideration for measuring other aspects of ADR and traditional dispute resolution.

6.4 Limitations of the present study

There are a number of limitations related to the present study. First, mainly business students were used as participants so they may have had prior knowledge of and experience related to dealing with conflict. Therefore, the way they answered the questionnaire may differ from that of the wider population.

Second, a possible limitation to the study is that participants answered the questionnaire in a classroom setting with the experimenter present thus creating an experimenter presence effect. This may have adversely affected the way participants responded. Nevertheless, inviting respondents to participate, and keeping their response anonymous, reduced the experimenter presence effect. A possible alternative, in minimising the experimenter presence effect, was considered but discounted due to the probability of a lowered response rate. The alternative involved posting surveys out to a large population (Parry & Proctor-Thomson, 2002).

Third, students may have chosen moderate options on the questionnaires especially if they lacked interest in the study. However, students were asked to respond as honestly as possible to the statements as the procedure was voluntary and confidential.

Fourth, a qualitative phase of selection could have refined the final item selection of the present CRQ-II. As such, further evaluation of the CRQ-II items could have been undertaken by an expert panel (Okamoto, 2001). This aspect of item evaluation is considered, beyond the scope of this thesis.

Finally, the study is not a complete analysis of the CRQ, as this required further detailed statistical analysis of the CRQ-II and collection of further data, such as those mentioned earlier in the sub-section detailing further refinements of the CRQ-II. This is also considered, beyond the scope of this thesis.

6.5 Conclusion

The purpose of this study was to evaluate the CRQ. The process of evaluation considered both qualitative and quantitative methods of analysis. The present study began by reviewing the generic properties of conflict and its management, before reviewing the two sources (Fisher & Ury, 1991; Week, 1994) that were used to form the theoretical backdrop for the CRQ (McClellan, 1997a). The study then began an implicit process of investigation regarding the CRQ in terms of its inherent reliability and validity.

The review of Weeks (1994) and Fisher and Ury (1991) shows that these two sources have credible ideas that are consistent with the literature regarding ADR, specifically mediation and negotiation. In addition, neither source has been empirically verified, but in evaluating the CRQ the present thesis provides modest empirical support for the ideas presented in the two books. Furthermore, the findings in this study indicate that the CRQ has potential as an instrument for evaluating issues related to conflict resolution. The main concerns regarding the existing CRQ are related to establishing acceptable intra-factor reliability, and aspects of construct and concurrent validity. These analyses reveal that a refined version of the McClellan (1997a) CRQ is more likely to have psychometric rigour. This revised version, CRQ-II, has been explored as a potential 'successor' to the CRQ.

Further development and research of the CRQ-II is required to establish it as a credible measure of conflict resolution. Nonetheless, a refined version of the CRQ-II has major implications for practice in areas related to industry, education, psychology and ADR. Evaluation of the CRQ and development of the CRQ-II, has exposed research issues related to measurement in the social sciences, use of the Internet and the problem of misleading information. Moreover, the research implications for the potential use of the CRQ-II are encouraging, as it could potentially be used as a convincing measurement device in research into the area of conflict resolution.

This study further highlights the need for more research. The primary area that future research could explore is a more rigorous evaluation of the CRQ-II. This comprehensive evaluation will need to look for a new and larger sample of participants. Initial evaluation of the CRQ-II would need to follow a similar pattern used in the present study. A theoretical consideration of the items and their wording would need to be considered by an expert panel. Reliability and validity verification would be required. A principal method for confirming

construct validity is the use of CFA, which is an extension of EFA. In addition, future research will need to address the limitations related to choice of sample selection, experimenter presence, and response motivation and accuracy.

Nonetheless, this study has moved in a direction that allows the CRQ-II the potential to be developed into a recognised and worthwhile instrument benefiting professionals and the public. The main benefit, of a refined version CRQ-II, are that it could be a part of a complete conflict resolution package. This package could involve prevention through awareness raising, diagnosis through identifying strengths and weaknesses, and intervention by presenting solutions to potential and existing problems. If clear instructions regarding its use are presented along with unambiguous guidelines regarding how it can be scored then it can be easily used and interpreted by laypeople. The structure of 27 items within four factors makes it a manageable and a relatively short questionnaire. It is likely to be available via the Internet thus making it readily accessible and inexpensive. This would ensure that it could be a useful therapeutic and educational tool that could be used in numerous settings, such as prisons, schools, universities, business organisations and so forth.

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APPENDICES

APPENDIX A: Conflict Resolution Questionnaire

How Do You Deal with Conflict?

Answer the questions below as a way of examining how you deal with conflict. The survey was designed by members of Jock McClellan's 1993 class on Conflict Resolution. The questions are based primarily on the methods recommended by Dudley Weeks in *The Eight Essential Steps to Conflict Resolution* (Los Angeles: Jeremy Tarcher, 1992), as well as on principles in Roger Fisher's and William Ury's *Getting to Yes* (Penguin Books, 1991).

First, print the survey. Then use the print-out to rate each of the following statements from **1 - 5** using the ratings below to indicate how often you do as the statement says. Please write your responses in the **LEFT** column of dashes. Answer the questions to portray your most usual way of dealing with conflicts like those at home or at work. Do not take long on any question. Give your initial reaction. The more honest your answers, the more useful the results will be. When you are through, go to the pages with instructions for scoring and interpretation.

1. **Almost never**
2. **Occasionally**
3. **Half the time**
4. **Usually**
5. **Almost always**

---

1. _____ / _____ I feel that conflict is a negative experience.
2. _____ / _____ When I resolve a conflict, it improves my relationship.
3. _____ / _____ I am afraid to enter into confrontations.
4. _____ / _____ I feel that in conflicts someone will get hurt.

V ____

5. ____ / ____ When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.
6. ____ / ____ I feel it is important where a conflict takes place.
7. ____ / ____ I try to make people feel comfortable when meeting with them about a conflict.
8. ____ / ____ When I start to discuss a conflict with the other party, I choose my opening statement carefully to establish positive realistic expectations.

A ____

9. ____ / ____ I state my true feelings when dealing with conflict.
10. ____ / ____ During a conflict I ask questions to clarify a statement that I'm not sure of.
11. ____ / ____ I try to be aware of how my negative and positive self-perceptions influence the way I deal with a conflict.
12. ____ / ____ In conflict my reactions are based on how I think the other party perceives me.

C ____

13. ____ / ____ I feel that only my needs are important.
14. ____ / ____ I feel for a relationship to last, the needs of both parties must be considered.
15. ____ / ____ In a conflict I strive to distinguish between real needs and desires.
16. ____ / ____ In order not to harm the relationship, I may temporarily put aside some of my own less important personal wants.

N ____

17. ____ / ____ I share my positive attitude, hoping they will do the same.
18. ____ / ____ I find it necessary to overpower others to get my own way.
19. ____ / ____ I am aware of the other person may need to feel in control of the conflict.
20. ____ / ____ In a conflict, I believe there should be no upper-hand.

P ____

21. ____ / ____ I find it easy to forgive.
22. ____ / ____ I bring up old issues from the past during a new conflict.
23. ____ / ____ When dealing with a conflict, I consider the future of the long-term relationship.
24. ____ / ____ In conflict I try to dominate the other party.

F ____

25. ____ / ____ I listen with an open mind to alternative options.
26. ____ / ____ I feel there is just one way to solve a problem.
27. ____ / ____ When dealing with a conflict, I have preconceived notions about the other party that I am unwilling to let go of.
28. ____ / ____ I can accept criticism from others.

O ____

29. ____ / ____ I feel that winning the war is more important than winning the battle.
30. ____ / ____ I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.
31. ____ / ____ When dealing with a conflict I have a pre-determined solution to the outcome.
32. ____ / ____ I feel the need to control an argument.

D ____

33. ____ / ____ If I had my way, I win, you lose.
34. ____ / ____ When in a conflict with someone, I ask them to explain their position.
35. ____ / ____ I bargain to resolve conflict.
36. ____ / ____ At the end of a conflict, it matters to me that the other person's needs have been met as well as my own.

M ____

37. ____ / ____ I express anger constructively.
38. ____ / ____ In difficult conflicts, I would consider requesting a third party facilitator.
39. ____ / ____ I overlook my partners anger in order to focus on the real issues to conflict.
40. ____ / ____ I feel that it is okay to agree to disagree on specific issues in a conflict.

X ____

Total _____

Using the same **1-5** scale above, how often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?

___ 1 Almost Never
___ 2 Occasionally
___ 3 Half The Time
___ 4 Usually
___ 5 Almost Always

APPENDIX B: Scoring the Conflict Resolution Questionnaire

1. Reverse the scores for the 12 questions that give high scores for unrecommended responses.

Dudley Weeks says some responses to conflict lead to resolutions which build a relationship, and some do not. All **40** questions need to be on the same scale, giving a high number for desirable or effective responses and a low score for ineffective ones. But **12** of the questions are worded so that ineffective answers get a **"5"** instead of a **"1"**.

For example, question **#1** reads "**I feel that conflict is a negative experience.**" Weeks would say that someone who answers **"Almost always"**, a **"5"**, will probably have difficulty approaching a conflict and that this will reduce the person's effectiveness. Therefore that response deserves a low score, and the **"5"** needs to be reversed to a **"1"**. Doing this for the **12** questions will assure that all scores will be consistent, with higher scores going to **"better"** responses.

Please reverse the scores for the following questions: **1**, **3**, **13**, **18**, **22**, **24**, **26**, **27**, **31**, **32**, **33**, and **35**.

Reverse those questions by looking at the response given in the left hand column and writing in a reversed score in the right hand column as follows:

Answer:		**Score:**
5	becomes	**1**
4	becomes	**2**
3	remains	**3**
2	becomes	**4**
1	becomes	**5**

2. For the questions that do not need to be reversed.

For the questions that do not need to be reversed, write the same number given in the left-hand answer column in the right-hand score column.

3. Compute sub-totals and the total.

The **40** questions are in groups of **4**, based on topics in Week's book. Add the scores for each group of **4** and put the result in the blank. (The letter is just an abbreviation for the topic of that group.)

Then add the sub-totals and enter the result in the **"Total"** blank.

4. Interpret the results, and learn from them.

The higher your scores, the more effective you are likely to be at finding resolutions that meet everyone's real needs and that build your long-term relationship. Of the **10** sub-totals, which were the highest? These are probably areas where you are effective. Which sub-totals were the lowest? These are probably areas where you might try a different approach. Use the sheet "Learning from the Survey" to understand where you might improve. Pick **2** or **3** of the questions with the lowest scores, and try out behaviors which might make you more effective at resolving conflicts productively.

APPENDIX C: Guidelines for Conflict Resolution

Learning from the Survey

The higher your score on any question or section of the survey, the more likely you are to be effective at arriving at resolutions that meet both people's needs and that build the relationship. Low scores may indicate areas where you could increase your effectiveness.

For each question on the survey, some advice is given below. The advice was compiled by the Conflict Resolution class and is based primarily on Dudley Weeks' *The Eight Essential Steps to Conflict Resolution*, but also includes ideas from other sources, including *Getting to Yes* by **Roger Fisher** and **William Ury**. The guidelines are given in groups of four, corresponding to the ten lettered groups in the survey, which are in turn based on the topics or steps in Weeks.

For the questions or sections on which you got the lowest scores, read the guidelines and consider tying them. They may help you be more effective.

V. VIEW CONFLICT AS NATURAL AND POSITIVE.

View conflict as a natural outgrowth of diversity among people, which can be addressed in a win-win way that strengthens your relationships. Remember the value of building your long-term relationship. View the resolution of the conflict and the building of the relationship as inter-related parts. Prevention works best.

1. View conflicts as opportunities for growth - for you and the other person, and for your relationship.
2. Handle the differences in a way that strengthens your relationship - together you will find more satisfying resolutions for this and future conflicts.
3. Address differences directly, realizing you are more likely to meet both your concerns and the other's if you discuss issues openly.
4. Separate the people from the problem, so you can protect the relationship while addressing the problem.

A. ATMOSPHERE.

Start by establishing an effective atmosphere that promotes partnership and problem-solving.

5. Meet with the other at a mutually satisfactory time, when you both have plenty of time and are free from distractions.

6. Meet in an equally acceptable place that is tranquil and gives you equal power.

7. Help the other feel comfortable and safe, affirming the importance of the relationship.

8. Start by saying you know the two of you can invent some solutions together that are mutually acceptable.

C. CLARIFY PERCEPTIONS.

Work with the other so both are very clear about what the conflict is really about. Eliminate ghost issues that arise from misperceptions. Separate the people from the problem. Acknowledge emotions as legitimate. Then face the problem together.

9. Be clear with yourself and with the other how you feel and how you perceive the problem Use **"I - Statements"** to tell the other how you feel, rather than **"You - Statements"** that blame. Assert your needs without attacking the other.

10. Ask questions to clarify your perception of the other's perceptions. Listen actively. Acknowledge what the other says.

11. Look at yourself honestly, clarifying needs and misperceptions.

12. Clear up misperceptions and stereotypes. Avoid pushing **"buttons."**

N. Note NEEDS, not wants.

Identify the needs that are essential to you, your partner, and your relationship.

13. Acknowledge the legitimate needs of the other, as well as those of your own. Recognize that there are usually multiple imterests. Fractionate the problem.

14. Recognize that sustaining your relationship requires meeting needs of both.

15. Distinguish between real needs and secondary desires. Identify the other's core goals you can support.

16. Postpone contentious demands that may damage the relationship until you and your partner have worked on meeting needs of the relationship first.

P. Produce Positive Partnership POWER.

Build **"power with,"** shared power which enables lasting resolutions and relations.

17. Be positive; be clear about yourself and your values. Keep reaching for the other's positive power and potential for constructive action. Recognize the power of effectiveness that comes from having the skills to develop the relationship, understand interests, invent options, and agree based on objective criteria.

18. Avoid negative **"power over,"** which wastes energy in seesaw battle, and which may backfire, not achieving your lasting goals. Treat others as you want to be treated.

19. Don't stereotype the other only by their negative power; keep options open for the other's constructive power. Don't ask who is more powerful; be optimistic about outcomes.

20. Work as a team, realizing you need each other's positive power to act effectively. Be unconditionally supportive of the relationship.

F. Focus on the FUTURE first, then learn from the past.

21. Forgive (which does not mean you approve). Acknowledge all fall short. Move beyond negative past; look to positive potential. Be hard on the problem and soft on the people.

22. Focus on the current issue. Don't pick old wounds. Learn from the past; recall good resolutions.

23. Remember the importance of the long-term relationship. Create images of an improved relationship resulting from effective resolution of the conflict.

24. Work as partners for mutually beneficial agreements which will nurture your relationship.

O. Open up OPTIONS for Mutual Gain.

25. Listen with an open mind to alternative options. Ask for the other's options first; learn from them.

26. Prepare for discussions by inventing several specific new options that meet shared needs. Don't view these as final goals, but as starting points. Together, brainstorm new possibilities. Separate inventing from deciding. Postpone critical discussion.

27. Beware preconceived answers. Look for common ground behind seeming oppositions. Avoid stereotypes.

28. Listen actively and acknowledge what is being said (which does not mean agreeing with it).

D. Develop "DOABLES," Stepping-stones to Action.

29. Develop small steps that lead you closer to a mutually healthy decision on larger issues. Chose ones that meet shared needs and that you have shared power to implement.

30. Do not rest with temporary fixes which are not sufficient to meet the long-term problem. As the three little pigs learned, solid construction will last.

31. View this as a cooperative process whose best outcome cannot be foreseen alone at the beginning.

32. You will have a more satisfactory outcome if all factions participate as equals. Understand that the others have interests and needs too.

M. Make MUTUAL-BENEFIT AGREEMENTS.

33. Avoid win-lose solutions, which damage the long-term relationship. Consider the needs of your partner, you, and your relationship, and you both will win. Avoid a contest of wills. Yield to reason, not pressure. Do not be a **"door-mat."**

34. Ask the other to clarify his/her interests; clarify your own.

35. Avoid barganing, posturing, demands, and threats, which kill cooperative problem-solving. Acknowledge non-negotiable elements. Focus on interests, not positions, but do build large agreements on small prior doables.

36. Be caretaker of the other's welfare as well as your own. Make agreements that meet objective, reasonable standards of fairness. Make agreements that meet the needs of both, and that build the relationship.

X. EXTRA Considerations.

37. Express anger constructively. Emotions are legitimate and communicate. Channel anger's energy. Focus on the angering behavior, not the person.

38. Define your best alternative to a negotiated agreement. Seek a third party facilitator when you and the other lack needed skills or when there seem to be intractable differences.

39. Hear the other's anger non-defensively. Don't react to emotional outbursts. Look for what is within it you can do something about it together.

40. Agree to disagree on specific value differences. Don't feel you have to agree on everything.

APPENDIX D: CRQ Factor by ROCI-II Factor Correlations

TABLE 16
Spearman Correlation Coefficients between ROCI-II and CRQ Factors

CRQ factors	ROCI-II -factors									
	Integrating		Dominating		Avoiding		Compromising		Obliging	
	A	B	A	B	A	B	A	B	A	B
View of conflict	0.23*	0.10	0.10	0.07	-0.23*	-0.20	0.09	-0.03	-0.03	-0.08
Atmosphere	0.21*	0.21*	0.12*	-0.02	-0.11*	-0.07	0.17*	0.21*	0.10	0.12*
Clarification of perception	0.25*	0.19*	0.10	0.06	-0.10	-0.13*	0.08	0.07	0.03	0.05
Needs	0.11*	0.11*	-0.13*	-0.10	-0.06	-0.09	0.12*	0.19	0.08	0.06
Power	0.15*	0.15*	-0.15*	-0.12*	-0.15*	-0.05	0.20*	0.19*	0.06	-0.04
Future	0.11*	0.03	-0.13*	-0.19*	-0.14*	-0.11*	0.07	0.12*	-0.03	0.01
Options	0.13*	0.21*	-0.14*	-0.15*	-0.17*	-0.21*	0.16*	0.21*	0.07	-0.02
Doables	0.07	0.12*	-0.06	-0.08	-0.07	-0.04	0.11*	0.15*	0.08	0.00
Mutual benefit agreements	0.04	0.03	-0.18*	-0.23*	-0.06	-0.06	0.01	0.10	0.00	0.01
Extra considerations	0.15*	0.16*	0.06	0.10	-0.07	-0.11*	0.18*	0.14*	0.06	0.00

Note: Highlighted correlations were those expected to converge; all others were expected to diverge.

APPENDIX E: CRQ Items by ROCI-II Item Correlations on the Five Comparison Factors

TABLE 17
Item Comparisons using Spearman Correlations between Factors for the CRQ (Power) and ROCI-II (Dominating, for both Peers, A and Tutors, B)

	ROCI-II items for Dominating									
	8. I use my influence to get my ideas accepted		9. I use my authority to make a decision in my favour		18. I use my expertise to make decisions in my favour		21. I am generally firm in pursuing my side of the issue		25. I sometimes use my power to win a competitive situation	
CRQ-items for Power	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**
19. I am aware of the other person may need to feel in control of the conflict.	0.13*	0.06	0.04	0.09	0.09	0.10	0.03	0.03	0.11	0.20*
17. I share my positive attitude, hoping they will do the same.	0.07	0.07	0.05	0.04	0.09	0.08	-0.01	0.06	0.05	0.05
18. I find it necessary to overpower others to get my own way.	-0.27*	-0.24*	-0.26*	-0.31*	-0.19*	-0.22*	-0.06	-0.03	-0.20	-0.28
20. In a conflict, I believe there should be no upper-hand.	-0.16*	-0.16*	-0.16*	-0.14*	-0.03	-0.08	0.07	-0.01	-0.13*	-0.08

***p<0.05**

TABLE 18
Item Comparisons using Spearman Correlations between Factors for the CRQ (Options) and ROCI-II (Integrating, for both Peers, A and Tutors, B)

	ROCI-II items for Integrating													
	1. I try to investigate an issue with others to find a solution acceptable to us		4. I try to integrate my ideas with those of others to come up with a decision jointly		5. I try to work with others to find a solution to a problem which satisfy our expectation		12. I exchange accurate information with others to solve a problem together		22. I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way		23. I collaborate with others to come up with decisions acceptable to us		28. I try to work with others for a proper understanding of a problem	
CRQ-items for Options	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**
25. I listen with an open mind to alternative options.	0.01	0.10	0.05	0.09	0.06	0.15*	0.06	0.07	0.17*	0.14*	0.09	0.16*	0.08	-0.01
26. I feel there is just one way to solve a problem.	0.00	0.04	0.05	0.14*	-0.02	0.09	0.05	0.14*	0.08	0.14*	0.00	0.18*	0.09	0.12*
27. When dealing with a conflict, I have preconceived notions about the other party that I am unwilling to let go of.	-0.05	0.02	0.00	0.13*	-0.04	0.10	0.07	0.01	0.04	-0.01	0.00	-0.04	0.05	0.01
28. I can accept criticism from others.	-0.02	0.04	0.11	0.12*	0.10	0.14*	0.06	0.10	0.12*	0.14*	0.08	0.11	0.09	0.11

***p<0.05**

TABLE 19
Item Comparisons using Spearman Correlations between Factors for the CRQ Mutual Benefit Agreements) and ROCI-II (Integrating, for both Peers, A and Tutors, B)

	ROCI-II items for Integrating													
	1. I try to investigate an issue with others to find a solution acceptable to us		4. I try to integrate my ideas with those of others to come up with a decision jointly		5. I try to work with others to find a solution to a problem which satisfy our expectation		12. I exchange accurate information with others to solve a problem together		22. I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way		23. I collaborate with others to come up with decisions acceptable to us		28. I try to work with others for a proper understanding of a problem	
CRQ-items for Mutual benefit agreements	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**
33. If I had my way, I win, you lose.	0.00	-0.01	0.05	0.08	0.05	0.05	0.04	0.05	0.07	0.06	0.04	0.05	0.09	-0.03
34. When in a conflict with someone, I ask them to explain their position.	0.10	0.12*	0.12*	0.08	0.11	0.03	0.09	0.08	0.12*	0.13*	0.11	0.10	0.00	0.01
35. I bargain to resolve conflict.	-0.07	-0.12*	-0.18*	-0.17*	-0.10	-0.04	-0.03	-0.10	-0.11*	-0.07	-0.10	-0.14*	0.01	-0.06
36. At the end of a conflict, it matters to me that the other person's needs have been met as well as my own.	0.01	0.17*	-0.02	0.04	0.05	-0.02	-0.01	-0.01	0.03	0.06	0.06	0.08	0.01	-0.02

***p<0.05**

APPENDIX F: Factor Loadings for the Four to Nine Factor Models

TABLE 20
CRQ 41- Items Fully Explained and their Loadings on Four Factors

CRQ Items (original CRQ factor abbreviations in parentheses, see Table 12b)	Factor			
	1	2	3	4
34. (M) When in a conflict with someone, I ask them to explain their position.	0.60			
37. (X) I express anger constructively.	0.57			
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.	0.56			
25. (O) I listen with an open mind to alternative options.	0.52			
21. (F) I find it easy to forgive.	0.52			
17. (P) I share my positive attitude, hoping they will do the same.	0.46			
35. (M) I bargain to resolve conflict.	-0.45			
28. (O) I can accept criticism from others.	0.45			
10. (C) During a conflict I ask questions to clarify a statement that I'm not sure of.	0.39			
41. How often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?	0.37			
19. (P) I am aware of the other person may need to feel in control of the conflict.	0.37			
24. (F) In conflict I try to dominate the other party.		0.72		
32. (D) I feel the need to control an argument.		0.69		
18. (P) I find it necessary to overpower others to get my own way.		0.65		
33. (M) If I had my way, I win, you lose.		0.62		
13. (N) I feel that only my needs are important.		0.55		
26. (O) I feel there is just one way to solve a problem.		0.43		
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.		0.39		
22. (F) I bring up old issues from the past during a new conflict.		0.36		
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.			0.74	
6. (A) I feel it is important where a conflict takes place.			0.66	
7. (A) I try to make people feel comfortable when meeting with them about a conflict.			0.58	
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.			0.43	
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.			0.41	
3. (V) I am afraid to enter into confrontations.				0.72
4. (V) I feel that in conflicts someone will get hurt.				-0.61
16. (N) In order not to harm the relationship, I may temporarily put aside some of my own less important personal wants.				-0.39

TABLE 21
CRQ 41- Items Fully Explained and their Loadings on Five Factors

CRQ Items (original CRQ factor abbreviations in parentheses, see Table 12b)	Factor				
	1	2	3	4	5
32. (D) I feel the need to control an argument.	0.71				
24. (F) In conflict I try to dominate the other party.	0.71				
18. (P) I find it necessary to overpower others to get my own way.	0.64				
33. (M) If I had my way, I win, you lose.	0.61				
13. (N) I feel that only my needs are important.	0.54				
26. (O) I feel there is just one way to solve a problem.	0.43				
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.	0.40				
22. (F) I bring up old issues from the past during a new conflict.	0.37				
41. How often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?		0.57			
21. (F) I find it easy to forgive.		0.55			
37. (X) I express anger constructively.		0.50			
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.		0.49			
8. (A) When I start to discuss a conflict with the other party, I choose my opening statement carefully to establish positive realistic expectations.		0.46			
28. (O) I can accept criticism from others.		0.39			
17. (P) I share my positive attitude, hoping they will do the same.		0.38			
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.			0.71		
7. (A) I try to make people feel comfortable when meeting with them about a conflict.			0.63		
6. (A) I feel it is important where a conflict takes place.			0.62		
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.			0.40		
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.			0.37		
35. (M) I bargain to resolve conflict.				-0.58	
34. (M) When in a conflict with someone, I ask them to explain their position.				0.51	
23. (F) When dealing with a conflict, I consider the future of the long-term relationship.				0.41	
36. (M) At the end of a conflict, it matters to me that the other person's needs have been met as well as my own.				0.39	
3. (V) I am afraid to enter into confrontations.					0.72
4. (V) I feel that in conflicts someone will get hurt.					-0.61
16. (N) In order not to harm the relationship, I may temporarily put aside some of my own less important personal wants.					-0.39
1. (V) I feel that conflict is a negative experience.					0.36

TABLE 22
CRQ 41- Items Fully Explained and their Loadings on Six Factors

CRQ Items (original CRQ factor abbreviations in parentheses, see Table 12b)	Factor					
	1	2	3	4	5	6
32. (D) I feel the need to control an argument.	0.70					
24. (F) In conflict I try to dominate the other party.	0.70					
18. (P) I find it necessary to overpower others to get my own way.	0.67					
33. (M) If I had my way, I win, you lose.	0.59					
13. (N) I feel that only my needs are important.	0.54					
26. (O) I feel there is just one way to solve a problem.	0.46					
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.	0.42					
22. (F) I bring up old issues from the past during a new conflict.	0.36					
41. How often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?		0.55				
21. (F) I find it easy to forgive.		0.54				
8. (A) When I start to discuss a conflict with the other party, I choose my opening statement carefully to establish positive realistic expectations.		0.54				
28. (O) I can accept criticism from others.		0.44				
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.		0.44				
37. (X) I express anger constructively.		0.41				
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.			0.68			
6. (A) I feel it is important where a conflict takes place.			0.62			
7. (A) I try to make people feel comfortable when meeting with them about a conflict.			0.60			
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.			0.39			
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.			0.36			
35. (M) I bargain to resolve conflict.				-0.60		
34. (M) When in a conflict with someone, I ask them to explain their position.				0.54		
23. (F) When dealing with a conflict, I consider the future of the long-term relationship.				0.42		
36. (M) At the end of a conflict, it matters to me that the other person's needs have been met as well as my own.				0.41		
3. (V) I am afraid to enter into confrontations.					0.72	
4. (V) I feel that in conflicts someone will get hurt.					-0.60	
1. (V) I feel that conflict is a negative experience.					0.41	
16. (N) In order not to harm the relationship, I may temporarily put aside some of my own less important personal wants.					-0.41	
29. (D) I feel that winning the war is more important than winning the battle.						0.38
14. (N) I feel for a relationship to last, the needs of both parties must be considered.						0.36

TABLE 23
CRQ 41- Items Fully Explained and their Loadings on Seven Factors

CRQ Items (original CRQ factor abbreviations in parentheses, see Table 12b)	Factor						
	1	2	3	4	5	6	7
32. (D) I feel the need to control an argument.	0.70						
24. (F) In conflict I try to dominate the other party.	0.70						
18. (P) I find it necessary to overpower others to get my own way.	0.67						
33. (M) If I had my way, I win, you lose.	0.59						
13. (N) I feel that only my needs are important.	0.53						
26. (O) I feel there is just one way to solve a problem.	0.45						
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.	0.42						
22. (F) I bring up old issues from the past during a new conflict.	0.37						
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.		0.71					
7. (A) I try to make people feel comfortable when meeting with them about a conflict.		0.68					
6. (A) I feel it is important where a conflict takes place.		0.64					
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.		0.41					
8. (A) When I start to discuss a conflict with the other party, I choose my opening statement carefully to establish positive realistic expectations.		0.40	0.40				
21. (F) I find it easy to forgive.			0.58				
37. (X) I express anger constructively.			0.52				
41. How often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?			0.52				
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.			0.45				
35. (M) I bargain to resolve conflict.				-0.62			
34. (M) When in a conflict with someone, I ask them to explain their position.				0.56			
23. (F) When dealing with a conflict, I consider the future of the long-term relationship.				0.46			
36. (M) At the end of a conflict, it matters to me that the other person's needs have been met as well as my own.				0.42			
19. (P) I am aware of the other person may need to feel in control of the conflict.				0.38			
3. (V) I am afraid to enter into confrontations.					0.70		
4. (V) I feel that in conflicts someone will get hurt.					-0.59		
1. (V) I feel that conflict is a negative experience.					0.49		
14. (N) I feel for a relationship to last, the needs of both parties must be considered.						0.54	
9. (C) I state my true feelings when dealing with conflict.						0.48	
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.							0.41
29. (D) I feel that winning the war is more important than winning the battle.							0.39
27. (O) When dealing with a conflict, I have preconceived notions about the other party that I am unwilling to let go of.							0.38

TABLE 24
CRQ 41- Items Fully Explained and their Loadings on Eight Factors

CRQ Items (original CRQ factor abbreviations in parentheses, see Table 12b)	Factor							
	1	2	3	4	5	6	7	8
24. (F) In conflict I try to dominate the other party.	0.70							
32. (D) I feel the need to control an argument.	0.69							
18. (P) I find it necessary to overpower others to get my own way.	0.66							
33. (M) If I had my way, I win, you lose.	0.58							
13. (N) I feel that only my needs are important.	0.50							
26. (O) I feel there is just one way to solve a problem.	0.43							
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.	0.40							
22. (F) I bring up old issues from the past during a new conflict.	0.38							
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.		0.58						
41. How often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?		0.58						
37. (X) I express anger constructively.		0.54						
21. (F) I find it easy to forgive.		0.52						
28. (O) I can accept criticism from others.		0.40						
12. (C) In conflict my reactions are based on how I think the other party perceives me.		-0.36						
8. (A) When I start to discuss a conflict with the other party, I choose my opening statement carefully to establish positive realistic expectations.		0.35						
16. (N) In order not to harm the relationship, I may temporarily put aside some of my own less important personal wants.			0.66					
23. (F) When dealing with a conflict, I consider the future of the long-term relationship.			0.65					
36. (M) At the end of a conflict, it matters to me that the other person's needs have been met as well as my own.			0.59					
17. (P) I share my positive attitude, hoping they will do the same.			0.38					
34. (M) When in a conflict with someone, I ask them to explain their position.			0.35					
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.				0.76				
7. (A) I try to make people feel comfortable when meeting with them about a conflict.				0.67				
6. (A) I feel it is important where a conflict takes place.				0.66				
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.				0.38				
3. (V) I am afraid to enter into confrontations.					0.71			
4. (V) I feel that in conflicts someone will get hurt.					-0.61			
1. (V) I feel that conflict is a negative experience.					0.48			
40. (X) I feel that it is okay to agree to disagree on specific issues in a conflict.						0.52		
14. (N) I feel for a relationship to last, the needs of both parties must be considered.						0.51		
35. (M) I bargain to resolve conflict.						-0.36		
9. (C) I state my true feelings when dealing with conflict.							0.72	
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.								0.40
2. (V) When I resolve a conflict, it improves my relationship.								0.36
27. (O) When dealing with a conflict, I have preconceived notions about the other party that I am unwilling to let go of.								0.36
29. (D) I feel that winning the war is more important than winning the battle.								0.35

TABLE 25
CRQ 41- Items Fully Explained and their Loadings on Nine Factors

CRQ Items (original CRQ factor abbreviations in parentheses, see Table 12b)	Factor								
	1	2	3	4	5	6	7	8	9
24. (F) In conflict I try to dominate the other party.	0.69								
32. (D) I feel the need to control an argument.	0.68								
18. (P) I find it necessary to overpower others to get my own way.	0.65								
33. (M) If I had my way, I win, you lose.	0.56								
13. (N) I feel that only my needs are important.	0.49								
26. (O) I feel there is just one way to solve a problem.	0.43								
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.	0.40								
22. (F) I bring up old issues from the past during a new conflict.	0.36								
41. How often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?		0.57							
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.		0.57							
37. (X) I express anger constructively.		0.56							
21. (F) I find it easy to forgive.		0.52							
28. (O) I can accept criticism from others.		0.40							
12. (C) In conflict my reactions are based on how I think the other party perceives me.		-0.36							
8. (A) When I start to discuss a conflict with the other party, I choose my opening statement carefully to establish positive realistic expectations.		0.36							
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.			0.73						
7. (A) I try to make people feel comfortable when meeting with them about a conflict.			0.68						
6. (A) I feel it is important where a conflict takes place.			0.65						
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.			0.37						
16. (N) In order not to harm the relationship, I may temporarily put aside some of my own less important personal wants.				0.68					
23. (F) When dealing with a conflict, I consider the future of the long-term relationship.				0.63					
36. (M) At the end of a conflict, it matters to me that the other person's needs have been met as well as my own.				0.56					
17. (P) I share my positive attitude, hoping they will do the same.				0.39					
3. (V) I am afraid to enter into confrontations.					0.74				
4. (V) I feel that in conflicts someone will get hurt.					-0.63				
1. (V) I feel that conflict is a negative experience.					0.44				
40. (X) I feel that it is okay to agree to disagree on specific issues in a conflict.						0.63			
35. (M) I bargain to resolve conflict.						-0.57			
9. (C) I state my true feelings when dealing with conflict.							0.75		
10. (C) During a conflict I ask questions to clarify a statement that I'm not sure of.							0.46		
29. (D) I feel that winning the war is more important than winning the battle.								0.41	
14. (N) I feel for a relationship to last, the needs of both parties must be considered.						0.37		0.40	
2. (V) When I resolve a conflict, it improves my relationship.								0.40	
20. (P) In a conflict, I believe there should be no upper-hand.									0.45
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.									0.38

APPENDIX G: Factor Loadings for Four-Factor Model using Principal Axis Factoring and Principal Component Analysis

TABLE 26
CRQ 41- items Fully Explained and their Loadings on Four Factors using Principal Axis Factoring*

Proposed CRQ-II Items (original CRQ factor abbreviations in parentheses, see Table 12b)	Factor			
	1	2	3	4
34. (M) When in a conflict with someone, I ask them to explain their position.	0.57			
37. (X) I express anger constructively.	0.51			
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.	0.50			
25. (O) I listen with an open mind to alternative options.	0.50			
21. (F) I find it easy to forgive.	0.47			
17. (P) I share my positive attitude, hoping they will do the same.	0.44			
35. (M) I bargain to resolve conflict.	-0.44			
28. (O) I can accept criticism from others.	0.42			
10. (C) During a conflict I ask questions to clarify a statement that I'm not sure of.	0.38			
41. How often do you feel you are effective at resolving conflicts in a way that builds your long-term relationship with the other parties?	0.35			
19. (P) I am aware of the other person may need to feel in control of the conflict.	0.34			
11. (C) I try to be aware of how my negative and positive self-perceptions influence the way I deal with a conflict.	0.33			
24. (F) In conflict I try to dominate the other party.		0.70		
32. (D) I feel the need to control an argument.		0.66		
18. (P) I find it necessary to overpower others to get my own way.		0.63		
33. (M) If I had my way, I win, you lose.		0.61		
13. (N) I feel that only my needs are important.		0.54		
26. (O) I feel there is just one way to solve a problem.		0.43		
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.		0.36		
22. (F) I bring up old issues from the past during a new conflict.		0.36		
29. (D) I feel that winning the war is more important than winning the battle.		-0.30		
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable time and setting.			0.66	
6. (A) I feel it is important where a conflict takes place.			0.61	
7. (A) I try to make people feel comfortable when meeting with them about a conflict.			0.56	
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.			0.40	
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a temporary agreement.			0.38	
23. (F) When dealing with a conflict, I consider the future of the long-term relationship.			0.34	
3. (V) I am afraid to enter into confrontations.				0.72
4. (V) I feel that in conflicts someone will get hurt.				-0.60
16. (N) In order not to harm the relationship, I may temporarily put aside some of my own less important personal wants.				-0.39
1. (V) I feel that conflict is a negative experience.				0.33
12. (C) In conflict my reactions are based on how I think the other party perceives me.				-0.33
9. (C) I state my true feelings when dealing with conflict.				0.32

*Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization

TABLE 27
CRQ 41- items Fully Explained and their Loadings on Four Factors using Principal Component Analysis*

CRQ items (original CRQ factor abbreviations in parentheses, see Table 12b)	factor			
	1	2	3	4
34. (M) When in a conflict with someone, I ask them to explain their position.	0.62			
25. (O) I listen with an open mind to alternative options.	0.57	0.31		
39. (X) I overlook my partners anger in order to focus on the real issues to conflict.	0.56			
37. (X) I express anger constructively.	0.55			
21. (F) I find it easy to forgive.	0.53			
35. (M) I bargain to resolve conflict.	-0.50			
28. (O) I can accept criticism from others.	0.50			
17. (P) I share my positive attitude, hoping they will do the same.	0.49			
10. (C) During a conflict I ask questions to clarify a statement that I'm not sure of.	0.44			
36. (M) At the end of a conflict, it matters to me that the other person's needs have been met as …	0.42	0.38		
11. (C) I try to be aware of how my negative and positive self-perceptions influence the way I …	0.40		0.37	
41. How often do you feel you are effective at resolving conflicts in a way that builds your ….	0.39			
19. (P) I am aware of the other person may need to feel in control of the conflict.	0.38			
40. (X) I feel that it is okay to agree to disagree on specific issues in a conflict.	0.35			
14. (N) I feel for a relationship to last, the needs of both parties must be considered.				
24. (F) In conflict I try to dominate the other party.		0.73		
32. (D) I feel the need to control an argument.		0.70		
18. (P) I find it necessary to overpower others to get my own way.		0.67		
33. (M) If I had my way, I win, you lose.		0.67		
13. (N) I feel that only my needs are important.		0.61		
26. (O) I feel there is just one way to solve a problem.		0.50		
22. (F) I bring up old issues from the past during a new conflict.		0.43		
31. (D) When dealing with a conflict I have a pre-determined solution to the outcome.		0.40		
29. (D) I feel that winning the war is more important than winning the battle.		-0.35		
20. (P) In a conflict, I believe there should be no upper-hand.				
5. (A) When I prepare to meet to discuss a conflict, I try to arrange for a mutually acceptable ….			0.68	
6. (A) I feel it is important where a conflict takes place.			0.67	
7. (A) I try to make people feel comfortable when meeting with them about a conflict.			0.63	
38. (X) In difficult conflicts, I would consider requesting a third party facilitator.			0.52	
30. (D) I strive for a complete and genuine resolution of a conflict rather than settling for a ….			0.50	
23. (F) When dealing with a conflict, I consider the future of the long-term relationship.	0.33		0.43	
8. (A) When I start to discuss a conflict with the other party, I choose my opening statement ….	0.40		0.41	
15. (N) In a conflict I strive to distinguish between real needs and desires.	0.38		0.39	
2. (V) When I resolve a conflict, it improves my relationship.				
3. (V) I am afraid to enter into confrontations.				0.74
4. (V) I feel that in conflicts someone will get hurt.				-0.67
16. (N) In order not to harm the relationship, I may temporarily put aside some of my ….				-0.48
12. (C) In conflict my reactions are based on how I think the other party perceives me.				-0.46
9. (C) I state my true feelings when dealing with conflict.				0.42
1. (V) I feel that conflict is a negative experience.				0.40
27. (O) When dealing with a conflict, I have preconceived notions about the other party ….				0.38

*Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.