TEAM ROLE PREFERENCE AND CONFLICT MANAGEMENT STYLES

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In the context of the widespread and extensive use of team work in organizations this study analyses the relationship between individual team role preference and styles of managing interpersonal conflict. Data were collected from 26 work teams containing 169 individuals at two times four months apart. Results show that team role preference is related to Dominating, Integrating, Avoiding, Compromising and Obliging conflict management styles. Moreover, two different effects were observed over time. Firstly, at Time 2 an increase in the role clarity (reduction of role ambiguity) of team members was observed. Secondly, time pressure and team learning processes moderated the relationship between team roles and conflict managing style. Results have theoretical as well as practical implications for team building programmes in search of integrative solutions to conflict.

Keywords: Team Roles, Conflict Managing Styles, Role Clarity, Team Learning

Given current organizational imperatives that rely upon team working, innovation and change, the formation of high performing work teams is of ongoing interest (West & Markiewicz, 2004). One way of building high performing team is by identifying individual preferences to approach tasks and interact with others, that is to say, identifying individual team role preferences.

Research on the relationship between team roles and cognitive styles (Fisher, Macrosson, & Wong, 1998) has shown that team role preference is related to the way in which team members approach problem solving in groups. Similarly, team role preferences have been shown to be differentially related to the level of control accepted by individuals while interacting with other team members (Fisher, Macrosson, & Semple, 2001). Accepting attempts at control is indicative of high concern for the achievements and results of others. Following Rahim (1983), high concern for others relates to an integrating or an obliging conflict managing style depending on the level of concern for one's own results.

As any work team is organized around a specific task, in performing the task team members usually face relationship problems (West, 1994). As both team roles and conflict managing styles are defined by the type of relationship that team members have with each other, analysing the associations between them should help to better understand team dynamics in problem solving situations.

The aim of this study, therefore, is to explore the relationship between team role preference and an individual's preferred way of handling interpersonal conflict. The study also serves as an indicator of the convergent validity of two different but interrelated models not jointly explored until now. These are Belbin's (1993) team role model and the conflict management model (Rahim, 1983). In addition, following classical theories of group development (Gersick, 1988) it is expected that team role preference will change over the course of teamworking as work teams get used to the nature of their tasks and to team dynamics. Ambiguity in team role behavior occurs in the early stages of team forming and working (Cook, Hepworth, Wall, & Warr, 1981) such that team role clarity does not begin to clarify until after a certain time has passed. Hence, this study also looks at the moderating effect that time and role clarity have on the relationship between team role preference and conflict managing styles.

While the study of conflict in organizations has been extensive (Callister & Wall, 2001; Earley & Erez, 1997; De Dreu & Van de Vliert, 1997; Guttman, 2004; Leung, 1997; Shaw, 2004) we could not find studies relating individual team role preferences to conflict managing styles or studies that analyse the moderating effect that time and learning processes in teams may have on individual role clarity and/or the relation between team role preferences and conflict managing styles.

Team Roles and Conflict Managing Styles

Team Roles

Belbin's (1981) team role model was proposed after conducting a nine-year study on team building and team effectiveness with a multimethod technique combining personality, critical thinking inventories, and observational methods (Dulewicz, 1995). A team role was defined as a pattern of behavior characteristic of the way in which one team member interacts with another in order to facilitate the progress of the team as a whole. The team role model (Belbin 1981, 1993, 2001) proposes nine team roles to reflect the way in which individuals behave, contribute,and interrelate with others in a work team. These team roles are named Plant (PL), Resource Investigator (RI), Co-ordinator (CO), Shaper (SH), Monitor

Evaluator (ME), Teamworker (TW), Implementer (IMP), Completer-Finisher (CF) and Specialist (SP).

Belbin's understanding of the team role concept has both similarities and differences when compared to the classical psychosocial approach which defines a role as an expected pattern or set of behaviors (Biddle, 1979; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964) usually associated with the position an individual occupies (Sarbin & Vernon, 1954). In fact, the difference in Belbin's approach is that the expected behavior does not come solely from the position occupied by the individual, but from a constant negotiation process between team members. It reflects a negotiation process between individual competencies and the team's needs that defines the way in which each team member adjusts to the team by displaying a specific team role. In this sense, Belbin's model constitutes a flattening of the group structure which gives individuals the scope and freedom to define their own team roles. Therefore, although organizational hierarchy tends to be replicated in teams, Belbin's team roles are not directly related to the position an individual occupies in the hierarchy, but are defined by a constant communication process between team members in order to better integrate individual preferences with the way team objectives are tackled.

By seeing the team as autonomous Belbin's team role model overcomes three classical distinctions derived from leadership styles proposed by Bales (1950). First, in the team role model task roles and socio-emotional roles are not separated but are jointly considered as necessary for the performance of the team. Second, group processes (typically linked with task fulfilment) and interpersonal processes (typically associated with socio-emotional conflict resolution) are also not considered separately. Thirdly, there is a joint consideration of active roles (classically considered as the only roles contributing to task achievement) and passive roles (classically considered as impairing team objective achievement). If socio-emotional processes are separated from task processes then team development and capacity for innovation may be impaired as it is by negotiation and communication that teams can improve their ways of working.

In this context, a person's team role, which refers to preferences regarding behavior with other members of a team while performing tasks, should be distinguished from their functional role, which refers to the technical skills and operational knowledge relevant to their job. Consequently, several people may have the same functional role but have markedly different team roles.

Table 1 illustrates the characteristics and the strengths and weaknesses of the nine team roles. Some of these characteristics can be linked, at a basic level, with confronting or withdrawal behavior in problem solving situations (see discussion below).

Table 1
Team Role Descriptive Adjectives, Strengths and Weaknesses

Team Roles	Description	Strengths	Weaknesses
Completer Finisher (CF)	Anxious, conscientious, introvert, self-controlled, self-disciplined, submissive and worrisome.	Painstaking, conscientious, searches out errors and omissions, delivers on time.	Inclined to worry unduly and reluctant to relegate.
Implementer (IMP)	Conservative, controlled, disciplined, efficient, inflexible, methodical, sincere, stable and systematic.	Disciplined, reliable, conservative and efficient, turns ideas into practical actions.	Somewhat inflexible and slow to respond to new possibilities.
Team Worker (TW)	Extrovert, likeable, loyal, stable, submissive, supportive, unassertive, and uncompetitive.	Co-operative, mild, perceptive and diplomatic, listens, builds, averts friction, calms the waters.	Indecisive in crunch situations.
Specialist (SP)	Expert, defensive, not interested in others, serious, self-disciplined, efficient.	Single-minded, self-starting, dedicated; provides knowledge and skills in rare supply.	Contributes on a narrow front and dwells on technicalities.
Monitor Evaluator (ME)	Dependable, fair-minded, introvert, low drive, open to change, serious, stable and unambitious.	Sober, strategic and discerning, sees all options, judges accurately.	Lacks drive and ability to inspire others.
Co-ordinator (CO)	Dominant, trusting, extrovert, mature, positive, self-controlled, self-disciplined and stable.	Mature, confident, a good chairperson, clarifies goals, promotes decision making, delegates well.	Can be seen as manipulative and offloads personal work.
Resource Investigator (RI)	Diplomatic, dominant, enthusiastic, extrovert, flexible, inquisitive, optimistic, persuasive, positive, relaxed, social and stable.	Extrovert, communicative, explores opportunities, develops contacts.	Over-optimistic and loses interest after initial enthusiasm.
Plant (PL)	Dominant, imaginative, introvert, original, radical-minded, trustful and uninhibited.	Creative, unorthodox, solves difficult problems.	Too preoccupied to communicate effectively.
Shaper (SH)	Abrasive, anxious, arrogant, competitive, dominant, edgy, emotional, extrovert, impatient, impulsive, outgoing and self-confident.	Challenging, dynamic, thrives on pressure, has drive and courage to overcome obstacles.	Prone to provocation and tend to offend people's feelings.

Source: Belbin (1981, 1993)

During the last two decades many studies have looked at the team role model in relation to team performance and team building (Aritzeta & Ayestaran, 2003; Park & Bang, 2000; Partington & Harris, 1999; Prichard & Stanton, 1999; Senior, 1997; Shi & Tang, 1997), to the presence of secondary team roles (Fisher, Hurter, & Macrosson, 1998), to the exercise of control (Fisher, Macrosson, & Semple, 2001), to cognitive styles (Aritzeta, Senior, & Swailes, 2005; Fisher, Macrosson, & Wong, 2001), and to the presence of Machiavellism (Macrosson & Hemphill, 2001). The model has also been analysed in relation to the predominance of team roles in private and public sectors (Arroba & Wedgwood-Oppenheim, 1994) and gender differences (Baldenson & Broderick, 1996). Other studies have interpreted the psychometric properties of the Belbin Team Role Self Perception Inventory (TRSPI) which is used to assess a person's team roles (Broucek & Randell, 1996; Fisher, Macrosson, & Sharp, 1996; Furnham, Steele, & Pendleton, 1993; Senior, 1998; Senior & Swailes, 1998; Swailes & McIntyre-Bhatty, 2002, 2003) and have analyzed the team role model in terms of personality dimensions (Dulewicz, 1995; Fisher, Hunter, & Macrosson, 2001).

As team roles refer to the way in which individuals interact with one another while performing a task in a team, team building activities based on members' team role preferences may determine the way in which conflict is handled in a team and how successfully conflict is solved. Consequently, as conflict is unavoidable in work teams, looking at the association between individual team role preference and conflict managing styles is a fundamental issue in our understanding of high performing teams.

Conflict Managing Styles

Because problems and conflict occur widely in team-oriented organizations the way in which conflict is managed may determine the success or failure of team outcomes. Organizations are constantly relying on teams to increase competitiveness and solve conflict and so team members must be able to manage intragroup conflict effectively and constructively (Cohen & Ledford, 1994; Ilgen, 1999; Lovelace, Shapiro, & Weingart, 2001).

At a basic level, a conflict exists when confronting interests or incompatible activities exist between the parties involved in social situations (Deutsch, 1973). Thomas (1992) emphasized three basic themes underlying common definitions of conflict. First, a conflict exists only if it is perceived as conflict by the actors involved. Second, there is a level of interdependence between the actors such that they have the ability to influence each other. Finally, in any conflict, scarcity of resources (such as money, power, and prestige) may generate tensions among the actors.

Different theoretical models have been proposed to analyze the way in which individuals approach and handle conflict. Taxonomies and meta taxonomies have been anticipated using a unidimensional approach of cooperation and competition styles (Deutsch, 1949; Tjosvold, 1998), a bidimensional approach involving four styles of conflict management behavior (Pruitt, 1983), a bidimensional approach involving five styles (Blake & Mouton, 1964; Rahim & Bonoma, 1979), and even

a tridimensional model of moving away, moving toward and moving against (Horney, 1945).

The most extended model is that of Blake and Mouton (1964) who proposed a bidimensional grid for classifying the modes in which individuals handle interpersonal conflict. These two dimensions relate to the extent that individuals show high or low concern "for production" and "for people." Later, Thomas and Kilmann (1974) and Rahim (1983), using this theoretical approach, redefined the dimensions as "concern for self" and "concern for others." The "concern for self" dimension reflects the degree in which an individual tries to satisfy his/her personal concerns or needs. The "concern for others" dimension has the same meaning but is centred on others' needs or concerns. Combining these two dimensions, five different styles of managing interpersonal conflict are obtained as shown in Figure 1.

Figure 1
A Two-Dimensional Model of the Styles of Handling Interpersonal Conflict
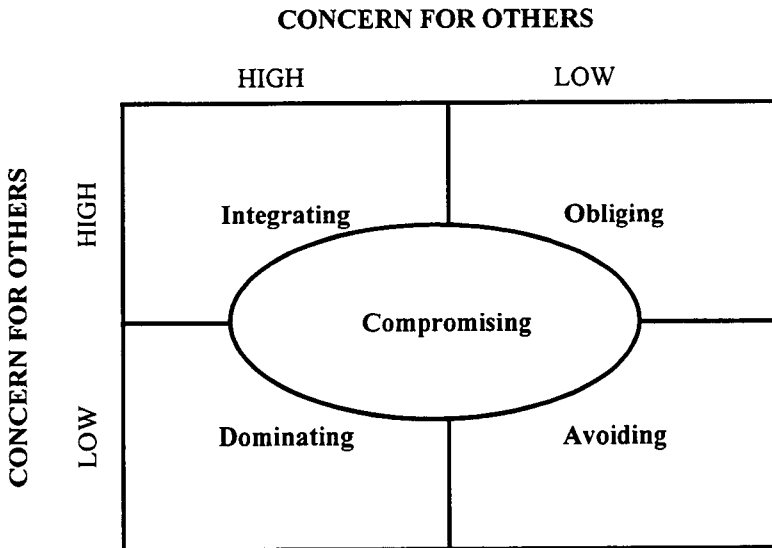
CONCERN FOR OTHERS

Source: Adapted from Rahim and Magner (1995, p. 123). Copyrights © 1995 by the American Psychological Association. Reprinted with permission.

The Dominating style involves high concern for self and low concern for others reflecting win-lose behavior involving efforts to obtain favourable solutions for oneself regardless of others. The Integrating style involves high concern for self and high concern for others, reflecting a collaborating style between the parties in conflict where individuals seek to exchange information, examine differences, understand the problem, and show openness to each other. An integrative solution that is acceptable for both parties is sought in this style which echoes the problem solving strategy proposed by Van de Vliert and Euwema (1994) as well as the

approach to integration in group dilemmas proposed by Trompenaars (2004). The Avoiding style is related to low concern for self and low concern for others. This style is related with withdrawal behavior, hiding disagreement, and sidestepping confrontations with the other party involved in the conflict. The Obliging style reflects low concern for self and high concern for the other party in the conflict. This style is related to behavior that tries to satisfy the needs of others and make concessions during the course of the conflict. Both Obliging and Avoiding styles seek to reduce discrepancies between parties but in a very different manner. While Obliging shows a high concern for others and attitudes to accommodate and accept their wishes, Avoiding does not judge the other party as deserving any concern and thus it may hide higher levels of aggressiveness. The Avoiding style may also be used when there is a lack of awareness of interdependency and it may hide a lack of interest. Finally, Compromising depicts a moderate concern for self and for others. It takes a middle ground in solving conflict where both parties should "give something" in order to "take something" (Rahim & Magner, 1995, p. 123). This bidimensional approach of five styles has been widely supported (Chanin & Schneer, 1984; Goodwin, 2002; King & Miles, 1990; Lee, 1990; Rahim, Antonioni, & Psenicka, 2001; Van de Vliert & Kabanoff, 1990).

Common Backgrounds

If high performing teams are to be built, the way in which conflict is handled in teams is of fundamental importance. Highly interdependent contexts are defined by constant controversy. Controversy may be constructive or destructive depending on the cooperative or competitive goal structure of the team (Tjosvold, 1998). However, if other factors influencing behavior are considered, the way in which individuals manage conflict in a team may be determined by their personal preferences (Drenth, Thierry, Willems, & Wolf, 1984).

From this point of view, previous studies have related team role preferences to the exercise of control in interpersonal relations. Fisher, et al. (2001) found that some team roles showed a higher propensity to exert control than others. Shapers and Resource Investigators, for example, displayed behavior related to attempts to control more so than accepting control.

Similarly, team role preferences have been related to the cognitive styles that individuals possess while making decisions and solving problems (Aritzeta et al., 2005; Fisher et al., 1998). These studies, reported that team roles like Resource Investigator, Shaper, and Plant showed a positive relationship with an innovative cognitive style. While solving problems, individuals high in innovative cognitive style tend to manipulate problems and challenge rules and do not need consensus to maintain confidence in the face of opposition. High innovators are defined as abrasive, creating dissonance, unsound, and who are prepared to shock their opposites (Kirton, 1989). On the other hand, team roles like Team Worker, Completer Finisher, and Implementer show a positive correlation with an adaptive cognitive style. This style is described as being methodical, prudent, disciplined, conforming, and dependable. Generally, a high adaptor is a person concerned with reducing problems and seeking solutions in tried and understood ways. They are vulnerable to social pressure and authority and have a greater need for clarity.

Studies on control and cognitive styles show that different team roles can be differentially related to ways in which team members seek power in groups and approach problem solving. If a team role is related to exerting control behavior it is likely to be related to dominating conflict management behavior. Similarly, if control is accepted then avoiding conflict managing behavior will be more likely. The same can be said for different cognitive styles. As innovative cognitive style is defined by abrasive and shocking behavior, dominating rather than obliging behavior should be expected. In the same way, as adaptive cognitive style is defined by being conforming and dependable, avoiding rather than dominating styles can be predicted. Therefore, as team roles have shown to be differentially related to control behavior and cognitive styles, it can be expected that different team role preferences will also show different correlations with conflict management style.

The theoretical background developed above shows that both team role preferences and conflict management styles share common ground regarding the ways in which individuals relate to one another in a work team context. As conflict will occur in any team and as individuals have preferences regarding the way in which they approach work and interpersonal relations, it should be possible to predict how team role preferences relate to conflict managing styles.

Predictive Relationships Between Team Roles and Conflict Management Styles

As shown in Table 1, each team role is described using a list of seven adjectives along with its strengths and weaknesses. By analyzing the adjectives describing each team role, descriptors associated with items referring to conflict management style can be identified. Therefore, to set up predictions, we looked at the correspondence between each team role's adjectives (Belbin, 1993) and each conflict management style item content (Rahim, 1983). Positive, negative, or negligible correlations were hypothesized for each team role with each conflict managing style (Dominating, Integrating, Compromising, Avoiding, and Obliging). This method has support in the literature (e.g., Aritzeta et al., 2005; Fisher et al., 1998; Fisher et al., 2001). Predictions for the nine team roles and five conflict management styles are shown in Table 2.

As was shown in Table 1, the *Completer Finisher* team role is described as being *submissive* and *self-controlled*. Forceful behavior is not likely in this team role and so a negative correlation with the Dominating style is predicted. These two adjectives, together with *anxious*, *introvert* and *worrisome* echo items from the Avoiding and Obliging styles like "I try to stay away from disagreement" and "I usually accommodate to the wishes of;" therefore, a positive correlation is predicted with the Avoiding and Obliging subscales. No other descriptors could be found to fit the Integrating or the Compromise style and so a negligible correlation was predicted with these two styles.

Table 2
Hypothesised Direction of Correlations Between Team Roles and ROCI II
Conflict Management Styles

Team Roles	Conflict Management Styles				
	Dominating	Integrating	Avoiding	Obliging	Compromising
Completer finisher	−	0	+	+	0
Implementer	−	+	+	0	+
Team worker	−	0	+	+	0
Specialist	+	0	+	+	0
Monitor evaluator	−	+	−	−	+
Co-ordinator	+	+	−	−	+
Resource Investigator plant	+	+	−	−	+
plant	+	−	−	−	−
Shaper	+	−	−	−	−

Implementers are defined as being *sincere, reliable, controlled,* and *systematic,* but they also are described as being *inflexible* and *conservative.* Implementers typically oppose new ideas and if tensions arise due to new risk taking ideas, they will not try to find integrative solutions to such tensions. Taking into account the nature of our sample which is likely to be exposed to less contextual pressure than managers (Kirton, 1989), which may affect cognitive styles (Aritzeta et al., 2005), it seems less likely that students will propose risk taking innovative ideas. Thus Implementers, based on the first four adjectives, will show a propensity to search for joint solutions and will try to make an effort to understand the problems at work and so a positive correlation with the Integrating style is predicted. Similarly, Implementers, being *sincere* and *reliable* look for open negotiation and will propose middle courses to solving problems, which relates to a Compromising style. These adjectives are negatively related with "striving to defeat others" and "egoistically pursuing one's own goals." Consequently, we expect to find a negative correlation between Implementers and the Dominating style. The practical orientation of Implementers –turning ideas into actions, being efficient, systematic and disciplined with performing tasks– will help them to avoid conflict that might delay finishing the job on time. Therefore, a positive correlation with the Avoiding style is hypothesised. Finally, none of the adjectives or strengths describing the Implementer role reflects an Obliging style, thus a negligible correlation with this subscale is predicted.

Descriptors of *Team Worker* such as *uncompetitive, unassertive,* and *submissive* adjectives contradict items like "I sometimes use my power to win a competitive situation" from the Dominating style. Therefore, a negative correlation is pre-

dicted with this subscale. If Team Workers are *uncompetitive, unassertive,* and *submissive* they would be expected to behave by satisfying the needs of others as well as avoiding direct confrontation. Rather than trying to focus on a problem and find a fair solution for both parties, Team Workers will withdraw and prefer to adapt to what others want. Therefore, a positive correlation with the Obliging and Avoiding styles is predicted. Finally, as there are no specific adjectives associated with the Integrating style and none of the descriptors reflect Compromising style, a negligible correlation with these subscales is predicted.

Specialists are defined as being *defensive, not interested in others,* and *single-minded.* These adjectives are associated with maintaining one's opinion regardless of others and so a positive correlation with the Dominating subscale is hypothesised. As Specialists are interested in their own specific area of knowledge and as they are described as *not interested in others, self-disciplined, efficient,* and *dedicated* they will focus on the task in hand avoiding any conflict that may be a source of distraction and time wasting. Thus, a positive correlation with the Avoiding subscale is hypothesized. Similarly, Specialists may also show Avoiding behaviors when the task in hand is not related to their area of knowledge. In those circumstances, they choose to keep apart from the team. In this sense, Specialists may passively make concessions and go along with other team members' suggestions. Thus a positive correlation with Obliging style is predicted. No other adjectives could be identified to reflect Integrating or Compromising styles, thus a negligible correlation with these two subscales is predicted.

The *open to change, discerning, sees all options, judges accurately* and *fair-minded* descriptors of the *Monitor Evaluator* team role are related to behavior seeking to understand problems, exchange information and, "bringing all concerns out in the open so that issues can be resolved in the best possible way." Thus, a positive correlation with the Integrating style is hypothesised. Similarly, *discerning, sees all options,* and *judges accurately* are seen as characteristics that actively look for middle grounds to solve problems and so a positive correlation is expected with the Compromising style. Monitor Evaluators have been related to behavior trying to build bridges between opposing team roles (Fisher et al., 1998). Their approach of being *discerning, seeing all options,* and *judging accurately* is contrary to behavior reflected in items like "I accommodate or give in to the wishes of others" and a negative correlation with the Obliging style is predicted. Monitor Evaluators who are generally committed to building bridges between, for example, Plants and Implementers, may decide to avoid conflict if one of these two team roles dominates over the other. However, the natural tendency of Monitor Evaluators is to be involved in the team and, being *discerning,* and *seeing all options,* they will show a negative correlation with the Avoiding style. The *dependable, unambitious* and *low drive* adjectives are negatively related with Dominating style and so a negative correlation is predicted.

Co-ordinators are defined as finding middle ways to solve problems by combining *dominance* and *decision making* with at other times *trust, self-control* and ideas clarification. It follows that Co-ordinators, when necessary, may either "use their influence to get ideas accepted" or "bring all concerns out in the open so issues can be resolved in the best possible way" which reflect Dominating and

Integrating styles respectively. Therefore, a positive correlation with the Dominating and the Integrating subscales is predicted. Similarly, Co-ordinators are expected to promote decision making by clarifying goals and to show Compromising behavior when facing interpersonal conflict with peers. The *extrovert, dominant* and *confident* adjectives contradict Avoiding as well as Obliging styles; therefore, a negative correlation with these subscales is hypothesised.

Only the *dominant* adjective of the *Resource Investigator* team role seems to fit with the Dominating style; thus a weak positive correlation is predicted with this subscale. The *inquisitive, extrovert, enthusiastic, flexible, positive, social* and *communicative* adjectives are positively related with items like "trying to investigate," "to integrate ideas" and "trying to bring all concerns out in the open" of the Integrating style. Similarly, *flexible, communicative* and *explores opportunities* are positively related to items like "I try to find a middle course to resolve an impasse" and "I usually propose a middle ground for breaking deadlocks" of the Compromising style. Therefore, a positive correlation is hypothesised with these two styles. Moreover, Resource Investigators are defined as being *persuasive* and *inquisitive*, and so are not expected to use Avoiding or Obliging behavior. A negative correlation with these styles is predicted.

Adjectives defining *Plants* as *dominant* and *radical-minded* are related with items like "I use my influence to get my ideas accepted" of the Dominating style and a positive correlation with this subscale is predicted. Being *dominant, trustful* and *uninhibited* will not easily satisfy the needs of others or accommodate their wishes, so a negative correlation with the Obliging and the Avoiding style is predicted. Finally, if Plants are dominant and averse to unchallenging situations they will not try to find middle ground solutions or satisfy both parties' expectations in solving problems. Therefore, a negative correlation with the Integrating and Compromising styles is predicted.

The *abrasive, competitive* and *dominant* adjectives that describe *Shapers* correspond with items like "I am generally firm in pursuing my side of the issue" and "I sometimes use my power to win a competitive situation" of the Dominating style. Thus, a positive correlation with this style is predicted. These adjectives plus *edgy, extrovert, impulsive* and *self-confident* are contrary to items like "I usually avoid open discussion of my differences" from the Avoiding style, "I usually accommodate to the wishes of others" from the Obliging style and "I try to integrate my ideas..." from the Integrating style. Finally these adjectives also contradict items like "I propose a middle ground for breaking deadlocks" from the Compromising subscale. Consequently, a negative correlation with these four styles is hypothesised.

Time and Team Role Clarity

When task ambiguity occurs in a team, a lack of clear information associated with a particular role may emerge, in other words, role ambiguity may emerge. In terms of Bandura (1997), when role ambiguity exists (its opposite being role clarity) self efficacy and performance may be impaired (Beauchamp & Bray, 2001). On these lines, Belbin (1981, p. 132), contends that one principle for building effective teams depends on the extent to which members correctly recognize and

adjust to the relative strengths within the team. Thus, when teams are newly formed team tasks are not clearly or fully defined. Moreover, as team members do not have team working experience and do not know each other, it may be argued that individuals will not have a clear self-perception of their team role preference.

As team members interact with each other, the team develops a shared culture that can reinforce certain team roles. As the team culture grows (Schein, 1993), team roles become differentiated from each other reflecting an interpersonal agreement about the importance and nature of each team role (Aritzeta & Ayestaran, 2003). Team members tend to develop their own unique set of abilities as a way of reinforcing themselves, which enables individuals to adopt different team roles in response to the team's needs depending on the team's life cycle (Gersick, 1988).

Teams analyzed in this study should be considered as project teams with a limited lifespan and a clear deadline to deliver their work (at Time 2). According to Gersick (1988) the stability of a work team and its working routines will change due to time pressures. In this sense, we expect that, at Time 2, when the life of a team is about to end, the use of behavior seeking to agree and finish the work on time will increase, especially for those team roles expected to positively associate with integrative and compromising styles.

As we have argued, team role clarity will not emerge until some time has elapsed in the life of the team. Taking into account that each team member may naturally display more than one team role (Belbin, 1993), when teams are newly formed some initial uncertainty occurs around which team roles better suit a team's task demands. A natural way of reducing this uncertainty is to increase the number of likely roles each member can assume, which is considered as an indication of role ambiguity (Rizzo, House, & Lirtzman, 1970). Role ambiguity refers to the level of uncertainty or lack of clarity surrounding expectations about a single role (Cook, Hepworth, Wall, & Warr, 1981; Ilgen & Hollenbeck, 1991). In these terms, Beauchamp and Bray (2001) found that role ambiguity was negatively associated with role-related efficacy beliefs and that the association between role conflict and role-related efficacy was higher when role ambiguity was low. Similarly, Darlington, Feeney, and Rixon (2004) found difficulties for collaboration between social workers with low levels of role clarity.

Team-based working and interpersonal interaction help members to - understand which roles are useful for the team, which roles can be assumed and to better align team role preferences with team demands (Belbin, 1993). This self-knowledge is intrinsically related to acknowledging which team role better fits with team task requirements and helps to avoid team role conflict (Jackson & Schuler, 1985; Tubre & Collins, 2000). Some studies have shown that at the beginning of team working team members have a less clear self-perception of their own preference. Beauchamp and Bray (2001), for instance, reported that low experience performing a task was related to role ambiguity and that role clarity increased over time. Thus, as time goes by and as team procedures and goals are clarified, at Time 2 higher team role clarity will appear. If there is convergent validity between the team role model and the conflict managing styles model then, the clearer the team role the firmer the association between team roles and conflict managing styles.

Method

Sample

A sample of 169 undergraduate final year students at the University of the Basque Country (Spain) forming 26 work teams took part in the study. Data were gathered over three successive years where an average of 67 students per year voluntarily enrolled in a four month semester on "work teams and team working in organizations." Information on team roles (Belbin, 1994) and conflict management styles (Rahim, 1983) was collected at the beginning and at the end of the semester and could be matched for 108 individuals (16 teams). Team size ranged from five to eight, 85.2% of the sample were female and the sample average age was 23.3 years ($SD = 1.4$).

Research Process

During the four months of team working each team had to complete eight structured tasks. Two different types of exercises were organised. The first two exercises were organised around activities where team members had to analyze and discuss topics previously presented in theoretical sessions. In the next six exercises teams performed more practical activities. Such exercises were used to provide accurate feedback about the way team working was being performed. For example, in one exercise team members had to collectively analyze information given by an external facilitator about their team communication style against their own perceptions. For each of the eight sessions a team assignment had to be completed. After the last practical session each team had to write a report about all eight team exercises, including information about the activities carried out and new knowledge learned. Individual grading was directly related with the team essay. Therefore, although this sample was composed of students, the context was highly interdependent and group characteristics existing in real work teams (team goals, time pressure, outcome interdependency, etc.) were present.

Instruments

The Team Role Self Perception Inventory (TRSPI)[1] (Belbin, 1994) was administered to participants. Although some studies have raised concerns about the reliability of the instrument (Broucek & Randell, 1996; Furnham, Steele, & Pendleton, 1993), more recent research has shown adequate reliability and validity of the questionnaire (Swailes & McIntyre-Bhatty, 2002, 2003). Similarly, recent studies into the convergent and construct validity of this inventory have shown support for the team role model (Aritzeta et al., 2005; Arroba & Wedgwood-Oppenheim, 1994; Balderson & Broderick, 1996; Prichard & Stanton, 1999; Senior, 1997).

The TRSPI contains seven sections each containing ten statements (items). Each section contains one item per team role plus one item to measure social desirability. Items in one section are independent of items in other sections. A sample

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[1]The Belbin Team Role Self Perception Inventory (TRSPI) was used with permission of Belbin Associates.

item is, "I can work well with a very wide range of people." Respondents are asked to distribute ten points between the ten items in each section according to the strength of their belief that the items most accurately reflect their behavior.

To conduct correlations between team roles and conflict managing styles individual raw scores were used instead of norm scores given by the Interplace software (Belbin, 1994). Raw scores where coded into a data matrix together with conflict managing styles scores. The normed values given by the team role software were used to compare team role preferences at Time 1 and Time 2. Normed values locate individual team role preferences in a continuum ranging from 0 to 100. Values between 0 and 30 are considered "rejected roles," values between 31 and 70 are considered "able to be assumed" team roles, and values between 71 and 100 are considered "natural roles." Ranges were converted into a 0 to 10 scale. Team role clarity was operationalised by analyzing normed scores on "natural," "able to be assumed" and "rejected" team roles generated by the Interplace Software. Changes in these categories (a decrease of team roles able to be assumed and an increase of natural and rejected team roles) were considered as an indicator of team role clarity.

The Rahim Organizational Conflict Inventory (ROCI-II)[2] (Rahim, 1983) was administered at the same time. The ROCI-II questionnaire comprises 28 Likert scaled items (strongly agree to strongly disagree) measuring five different conflict managing styles. The ROCI-II questionnaire has shown good internal consistency reliability. Weider-Hatfield (1988) showed an average Cronbach's alpha of .79. Similarly, studies by Rahim (2001), Rahim, Antonioni, and Psenicka (2001), Goodwin (2002), King and Miles (1990) and Knapp, Putman, and Davis (1988) have demonstrated construct validity for the ROCI-II. The internal consistency values for ROCI-II subscales in our sample were .76 for Dominating, .86 for Integrating, .76 for Avoiding, .71 for Obliging and .69 for Compromising.

Results

Spearman rank order correlations were conducted between team role scores and conflict management style scores and the results are shown in Table 3.

In terms of statistically significant correlations, 30 out of 45 predictions were correctly hypothesized. No correlation contradicting our predictions reached statistical significance and no correlations were observed with the opposite sign to what we predicted. Correlations for the 15 unsupported predictions were relatively low (range .10 to −.11), which may have been due to the existence of role ambiguity at the beginning of team working. Results shown in Table 3 can be considered as an indicator of convergent validity between the team role model (Belbin, 1993) and the conflict management style model (Rahim, 1983). The negligible correlations observed for Monitor Evaluators, Co-ordinators and Resource Investigators especially on the dominating and compromising styles are coherent with their

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[2]The Rahim Organizational Conflict Inventory–(ROCI–II) was used with permission from the Center for Advanced Studies in Management. Copyright © 1983 Center for Advanced Studies in Management.

bridge behavior; behavior that mediates between extreme positions (Kirton, 1989). Bridge roles "might be readily open to adapt to different circumstances using conflict styles that better answer to team task demands. These results are consistent with studies on cognitive styles (Aritzeta et al., 2005; Fisher et al., 1998) and control behavior (Fisher et al., 2001).

Table 3
Correlations Between Team Roles and ROCI-II Conflict Management Styles

| Team Roles | Conflict Management Styles | | | | |
	Dominating	Integrating	Avoiding	Obliging	Compromising
Completer finisher	−.09	−.03	.26**	.15*	.00
Implementer	−.23**	.02	.21**	.03	.11*
Team Worker	−.38**	−.04	.23**	.19*	.07
Specialist	.15*	.08	.25**	.30**	−.00
Monitor evaluator	.03	.04	−.28**	−.24**	−.05
Co-ordinator	.05	.19*	−.07	−.11*	.03
Resource-Investigator	.09	.11*	−.15*	−.09	.06
Plant	.11*	−.26**	−.10	−.01	−.14*
Shaper	.34**	.02	−.34**	−.34**	−.06

Notes: Data in table represents the average correlation between Time 1 and Time 2. $* p < .05.$ $** p < .01.$ (one tailed).

To test if team role clarification had occurred at Time 2, we compared the distribution of "able to be assumed," "rejected" and "natural" team roles. The Belbin Interplace team role software classifies individual responses in those three categories. A non parametric Wilcoxon-test was conducted comparing values of "able to be assumed," "rejected" and "natural" team roles between Time 1 and Time 2. Results are shown in Table 4.

"Rejected," "able to be assumed" and "natural" team roles showed different positive and negative ranges at Time 1 and at Time 2. As comparisons between ranges are obtained by subtracting scores at Time 1 from scores at Time 2, positive ranges indicate an increase in the value at Time 2, whereas negative ranges indicate a decrease at Time 2. On this basis, an increase in the number of "natural" team roles and a reduction of the number of team roles declared "able to be assumed" occurred. Although "rejected" team roles increased at Time 2, the increase was not statistically significant. Therefore, at Time 2 the number of "natural" team roles had increased, and the number of "able to be assumed" team roles decreased. These

results can be considered as an indicator of higher role clarity at Time 2 compared to Time 1.

Table 4
Positive and Negative Mean Ranges Comparisons Between Time 1 and Time 2 for "Rejected," "Able to be Assumed" and "Natural" Team Roles

| | Wilcoxon Test | | | | |
Team Roles	Positive range	Median range	Negative range	Median range	z
Rejected	71	65.90	58	63.80	−1.19
Able to be assumed	54	60.60	85	76.00	−3.39***
Natural	78	65.40	48	60.30	−2.75**

Note: $N = 169$.
** $p < .01$. *** $p < .001$.

As we previously argued low correlations in Table 3 may be indicating a change in the association between team roles and conflict styles due to time. To analyze if different correlations appeared at Time 1 and Time 2 a correlational analysis was carried out. Results are shown in Table 5.

Results shown in Table 5 generally support predictions. Twenty three correlations were correctly hypothesized at Time 1 and 29 at Time 2. Different correlations at both times can be explained by team life cycle, time pressures (Gersick, 1988) and team role clarification.

Although Co-ordinators and Resource Investigators were expected to show a positive correlation with the Compromising style, at Time 1, they showed a negative correlation. But, after working in teams for four months and being aware of time pressures to finish their work, the sign of the correlation changed from −.15 to .20 ($p < .05$) and −.10 to .21 ($p < .05$) respectively for Co-ordinators and Resource Investigators. At the beginning of team working, as some overlapping may occur between member characteristics, team roles are not distributed evenly among members of the team. As time goes by, and as interaction between team members occurs a clearer picture of who should do what arises (see Table 4) and thus team roles show a clearer correlation pattern with conflict management styles. The same argument can be used for Plants and Shapers. These two roles were expected to be negatively correlated with the Compromising style but negligible correlation was observed at Time 1. However, at Time 2, these two team roles showed negative correlation with this style −.24 ($p < .01$) and −.14 respectively.

Table 5
Spearman Rank-Order Correlations Between Team Roles and
Conflict Management Styles at Time 1 and Time 2

	Conflict Management Styles									
	Dominating		Integrating		Avoiding		Obliging		Compromising	
Team	Time	Time	Time	Time	Time	Time	Time	Time	Time	Time
Role	1	2	1	2	1	2	1	2	1	2
CF	−.15	−.06	−.04	−.03	.24**	.30**	.10	.20*	.07	.06
IMP	−.21*	−.27**	−.10	.12	.29**	.18*	.12	−.04	.03	.14
TW	−.45**	−.32**	−.03	−.05	.21*	.26**	.29**	.09	−.11	.14
SP	.18*	.13	.17*	−.02	.26**	.24**	.24**	.37**	.17*	−.17*
ME	−.04	.08	.06	.01	−.27**	−.32**	−.26**	−.24**	.03	−.13
CO	.09	.01	.15	.27**	−.02	−.12	−.08	−.15	−.15	.20*
RI	.25**	−.03	−.02	.27**	−.28**	−.05	−.20*	.00	−.10	.21*
PL	.06	.18*	−.21*	−.32**	−.10	−.12	−.09	.05	−.01	−.24**
SH	.39**	.30**	.07	−.03	−.28**	−.41**	−.29**	−.39**	.02	−.14

Notes: CF =Completer Finisher; IMP= Implementer; TW =Team Worker; SP = Specialist; ME = Monitor Evaluator; CO = Co-ordinator; PL = Plant; SH = Shaper; RI = Resource Investigator.
$* p < .05. ** p < .01$ (one tailed).

Some other interesting results were also observed regarding Dominating style. For example, Plants showed a negligible correlation at Time 1 but, at Time 2, a positive correlation was observed. It seems that Plants are more naturally dominant and radical-minded once the team has been rolling for a while and each individual finds his/her place inside the team. On the other hand, at the beginning of team working as new resources and information are needed, Resource Investigators will be much more dominant in their suggestions and activities and, if any conflict arises, they will strive to impose their point of view $(.25, p < .01)$. When teamwork is about to finish, Resource Investigators will be less dominant and more positive and social, which is reflected in the correlation with the Dominating style (−.03).

The effect of time pressure in teams can also be observed for the Integrating style. For Co-ordinators the correlation level with the Integrating style increased from .15 at Time 1 to .27 $(p < .01)$ at Time 2. This same pattern was observed for Resource Investigators (from −.02 to .27; $p < .01$). This correlation change shows that these two team roles will strongly integrate ideas and exchange accurate information. They will also collaborate with team members when the team has accumulated some experience and needs to deliver high quality work on time.

As far as the Avoiding style is concerned, three interesting correlation changes were observed. Co-ordinators showed an increasing negative correlation with the Avoiding style at Time 2. Thus, consistent with their relation to the Integrating style, they will resolve rather than avoid conflict at Time 2. Resource Investigators show a slightly different pattern. As predicted, at Time 1 they showed a strong negative correlation with the Avoiding style, whereas, at Time 2 due to

their flexibility and openness and time pressures they were less concerned with Avoiding or Obliging while dealing with conflict.

Finally some intriguing results were observed regarding the Obliging style. For example, Completer Finishers, being anxious to finish work diligently, showed a positive correlation with this style only at Time 2 when time pressure is more acute for individuals. This team role shows a correlation increase with the Avoiding style at Time 2 compared to Time 1. Team Workers reduced their correlation with the Obliging style at Time 2. No clear explanation could be found for this result. However, it may be argued that as team role clarity increases (see Table 4) and each individual has a clearer picture of what his/her team role is, what was observed by Team Workers at the beginning as facilitating behavior, is not perceived as such when the team's life cycle nears its end. The same could be argued for Resource Investigators who show a similar pattern with Obliging and Avoiding styles.

Discussion

Results from this study support the description of team roles in the literature and that the Team Role Self Perception Inventory (Belbin, 1994) has convergent validity with the ROCI–II (Rahim, 1983) instrument for handling interpersonal conflict in its peer version.

This study has shown that Completer Finishers, Implementers and Team Workers relate positively to the Avoiding style and negatively to the Dominating style. Similarly, these team roles displayed an adaptive cognitive style (Aritzeta et al., 2005; Fisher et al., 1998). On the other hand, Shapers and Plants showed a positive relationship with Dominating and a negative correlation with Avoiding and Obliging styles. These two team roles were positively related to an innovative cognitive style. Thus, the team role model explored here, shows convergent validity with both cognitive styles theory (Kirton, 1989) and conflict management theories (Blake & Mouton, 1964; Rahim, 1983; Rahim & Bonoma, 1979).

In this study, positive correlations were expected between Co-ordinator scores and Dominating and Integrating scale scores. Similarly, Resource Investigators showed at Time 1 dominating style and compromising style at Time 2. In this sense, contemporary approaches to conflict managing behavior underline the need for both cooperative and competitive behaviors in a team to produce high quality and creative results (Van de Vliert, 1999). As conflict in teams is very complex, both cooperative and competitive behaviors are needed. The joint use of both types of behavior decreases the risk associated with each of them when used separately. Cooperation alone can be interpreted as a weak position and the use of exclusive competition can harm relationships in the team, escalating the conflict to a point where it stagnates (Walton, Cutcher-Gershenfeld, & McKersie, 1994, p. 337).

If both behaviors are used jointly, individuals show that they are ready to fight for basic resources and therefore, there are fewer possibilities to take improper advantage from others. Firm but friendly behavior is very effective if creative results in teams are to be obtained (Rubin, Pruitt, & Kim, 1994). As differ-

ent team roles are differentially related to conflict managing styles, ensuring a diverse representation of team roles will help to balance cooperative and competitive approaches. Thus, results shown in this study also support the team role balance hypothesis (Aritzeta & Ayestaran, 2003; Belbin, 1993; Senior, 1997). If a team has a natural representation of all team roles then a balanced representation of different conflict managing styles will be present which helps to avoid destructive escalation that Plants and Shapers may easily engage in as well as reducing the non-challenging and non-innovative behavior that may result from Team Workers and Completer Finishers.

As was pointed out in the introduction, conflict management literature has defined conflict as a situation where opposing interests, motivation or current aspirations occur between individuals. However, practitioners are reluctant to use the word conflict (e.g., Trompenaars, 2004). Instead, terms like difficulties, tensions or problems reflect such opposing interests. From this point of view, problems become conflicts when ways to integrate them are not found and team members engage in personal accusations that stifle mutual support and accentuate power and recognition differences. Therefore, in order to develop proper strategies to stop problems from becoming potentially destructive conflicts, practitioners should find it very useful to look at the association existing between team role preferences and conflict managing styles or, should we say, problem solving strategies.

As team members contribute to team-based working and to task achievement and as members become aware of the interdependence and complementarity of their individual contributions to the team goal, team performance rises (Belbin, 1993). Such awareness of interdependence can be reached by analysing a double preference: the team role preference and the conflict management style preference. If tensions and difficulties raised by opposing interests occurring inside the work team are properly integrated, they should not evolve to more destructive levels. Problems and tensions are natural consequences of team working and may offer real opportunities to find creative and shared solutions. Hence rather than trying to reduce them, team members have to learn how to deal with them in order to benefit the team (Alper, Tjosvold, & Law, 2000). When team members offer their own personal skills and abilities to solve a problem and such idiosyncrasies are properly used to find shared solutions, problems and difficulties become excellent opportunities for innovation. Knowing the associations existing between team role preferences and conflict managing styles should help to find integrative solutions allowing each individual to exert his/her own preferences.

Managerial Implications

Our results have interesting practical implications. Taking into account the likely manner in which roles relate to conflict resolution, when conflict in a team has escalated to a level where interpersonal communication is seriously damaged, the escalation process can be reduced reinforcing Co-ordinator, Team Worker and Resource Investigator roles. These roles act by integrating ideas, finding solutions to problems that satisfy each party and exchanging accurate information. Similarly, if a work team is embedded in a conflict where avoiding behavior is predominant, aggressive feelings are hidden and speaking destructively behind peoples' backs is

a frequent behavior, then Completer Finisher, Implementer or Team Worker roles may be dominating team communication and decision taking. In these circumstances Co-ordinators and Shapers should act by speaking out in an effort to unlock the situation.

Interesting results were observed regarding time and interaction processes in teams. Team roles are sensitive to context as they showed different correlation patterns when teams were newly constructed and when they were about to finish. Individuals tended to adapt to contextual contingencies as they perceived that different exigencies are required from them and from the team they work in. Thus, it appears that the team role concept is more flexible to contextual changes than personality traits which are seen as being more stable (Fisher, Macrosson, & Sharp, 1996).

The approach to team role preference and conflict managing styles may help to better understand the dynamics of cognitive and affective conflict. It has generally been argued that cognitive or task conflict in work teams –conflict focused on differences about decisions around tasks –may have positive effects on creativity and team functioning as the team considers all available options. On the other hand, affective or relational conflict –conflict related to interpersonal relations and centred on individuals, not in tasks– is dysfunctional for the team and leads to poor decisions (Brockmann, 1996; Pelled, 1996). However, literature has shown that both types of conflict are highly correlated (De Dreu & Weingart, 2003) and that they may occur in any team (Amanson & Schweiger, 1994; De Dreu & Van Vianen, 2001). Thus knowing the relationship existing between team role preferences and conflict managing styles should help team members to analyze, compare and understand differences on both task and emotional dimensions.

Creating a high performing work team is not just about putting well-trained individuals together and giving them the autonomy to take decisions. Such teams also need to be built in a complementary way where different team role preferences are present and individuals have the abilities to manage conflict. Our results have important implications for team building and team development programmes. When new project teams are built (teams with a defined lifespan) initial conflict, and conflict at the end of the team's life will be differentially handled by Co-ordinators, Plants, Shapers and Resource Investigators. Co-ordinators and Resource Investigators will strongly perform Integrating and Compromising styles as the deadline to accomplish their task draws closer. Knowing how team role preferences are related to conflict management styles will help practitioners to build balanced teams as well as teams being able to constructively solve conflict, which will influence the discussion and decision process affecting team performance and outcomes (De Dreu & Van de Vliert, 1997). However, readers are advised not to consider individual preference and actual behavior as synonymous. Team roles and conflict managing styles are preferences that individuals will seek to exhibit yet, as dynamic processes, factors like team composition, time pressures, contextual changes and group dynamics may determine the behavior shown by individuals. For example, this study has shown that time spent working in teams influences conflict managing preferences as individual team role clarity increases. Therefore,

different levels of analysis (individual, group and organizational) should be combined in order to more accurately predict behavior.

This study also has implications for virtual team building. More and more organizations are becoming knowledge-based institutions with more specialized workers where new technologies allow work to be carried out by geographically distributed employees. Conflict management is a fundamental issue for virtual teams as they face communication and coordination restrictions (Montoya-Weiss, Massey, & Song, 2001). For effective virtual team-based working, knowing team members' team role preferences and their likely approach to handling conflict may help to better solve problems and reduce misunderstandings caused by communication and organizing restrictions.

Limitations and Future Directions

The gender composition of our sample calls for comment as the team role literature has shown some evidence for gender differences. Balderson and Broderick (1996) found higher scores for women compared to men on Monitor Evaluator and Plant. Anderson and Sleap (2004) reported higher values on leadership roles for males (Coordinator and Shaper) and higher scores on social roles for women (Team Worker). Aritzeta and Ayestaran (2003) found that 56% of their mainly female work teams were balanced (all team roles were present in the team). However, using the same criteria, Park and Bang (2000) found that only the 4% of their mainly male dominated work teams were balanced. Thus, gender composition of teams may affect intragroup team role interpersonal adjustment, which helps the team to be balanced in terms of the number of team roles present at their natural level, affecting overall team performance (Senior, 1997). Future research should focus on how gender composition of groups and role adjustment affects team role balance and performance.

Limitations also stem from the sample type and the non-experimental design. Although a context was created for team working, in this type of sample Specialist or Shaper roles are not as common as in teams in work organizations. Similarly the study, as a quasi-experiment, is limited concerning the lack of randomness and control, so limitations related to external validity are noted as is the potential for common method bias.

Finally, future research should focus on analysing how team role composition moderates the way in which team roles relate to conflict management behavior. Questions to be addressed include: How does team role composition affect the level and type of conflict present in a team? Between which team roles is conflict more likely to occur, and under what circumstances? How can such conflict be successfully managed? Do different team role compositions moderate the relationships that, for example, Shapers and Plants show with the Dominating style? Under which team role compositions do Co-ordinators use more Integrating styles? Future research could also explore how the level of role ambiguity influences the relationships between team roles and conflict managing styles.

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