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Does diversity in team members' agreeableness benefit creative teams?

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Abstract

Although deep-level diversity among team members are often discussed as important catalysts of team creativity, little is currently understood about the impact of diversity in team members' personality on team creativity and team satisfaction. We propose that diversity in team members' agreeableness would reduce the effectiveness of creative teams through its impact on team conflict experienced. To test our hypotheses, we recruited 93 student teams to participate in a laboratory study where each member had their personality traits assessed before engaging in a team creativity task. We found that diversity in team members' agreeableness was positively associated with team task conflict experienced which, in turn, was negatively associated with team creativity. Additionally, we found that diversity in team members' agreeableness was positively associated with team relationship conflict, which, in turn, was negatively associated with team satisfaction. Implications and future directions are discussed.

Keywords: Agreeableness, Diversity, Team, Team conflict, Team creativity, Team satisfaction

1. Introduction

Creativity underpins innovation and continued organizational viability across a wide range of domains (Amabile, 1998, Gong et al., 2013). Collaborative teams of scientists generate novel research hypotheses that yield meaningful and impactful findings; directive teams of managers generate innovative strategies that improve an organization's operating systems; and ad hoc teams of design engineers generate creative concepts that give rise to innovative products (Hargadon & Bechky, 2006). Teams, in particular, have the potential to elicit higher levels of creativity and satisfaction from employees by providing collective access to each team member's unique skillset and knowledge while simultaneously promoting a sense of engagement and contribution (Bechtoldt et al., 2018, Hinsz et al., 1997, Hunter and Cushenbery, 2015). However, due to their tendency to be exposed to diverse ideas and discrepant perspectives, creative teams are prone to experiencing conflicts that can inadvertently hamper both team creativity and team member satisfaction (De Dreu & Weingart, 2003). Therefore, a critical question for today's organizations is how to assemble highly effective creative teams.[1]

A particularly pertinent personality factor for both team performance and team member satisfaction is agreeableness, which is one of the five personality traits in the Big Five personality model (Judge, Bono, Ilies, & Gerhardt, 2002). Agreeableness refers to a dispositional orientation of being trusting, compliant, caring, and gentle. Individuals of high agreeableness are collegial and are oriented towards maintaining positive relationships; in contrast, individuals of low agreeableness are less concerned about maintaining positive relationships and are proactive in voicing out disagreements. One's agreeableness functions as a critical factor in social settings, in which decisions about whom to befriend and trust and whom to avoid and distrust are made (Funder & Dobroth, 1987). Also, due to its associated attribute of collegiality, one's agreeableness levels is easily detectable by others. This is evinced in studies showing that when others rate an individual's agreeableness levels (vs. self-rated by the individual), it still remains a significant predictor of the individual's job performance as well as his/her organizationally-relavant behaviors and attitude (e.g., organizational citizenship behaviors; Connolly et al., 2007, Oh et al., 2011). As such, for jobs that entail social settings such as interacting with clients or working in teams, agreeableness has been shown within meta-analytic studies to be an important,

[1] Effective teams are defined as teams that exhitbit high levels of both task performance and team member satisfaction, because team researchers generally agree that it is important for teams to not only perform well on the current task, but also on future tasks when called upon to reconvene (Bell & Marentette, 2011; Hackman, 1987; Sundstrom, De Meuse, & Futrell, 1990). In the context of ad hoc creative teams in the workplace, this potentially translates into sustained innovation, whereby the organization can reliably depend on these teams for creative purposes whenever the need arises. As such, consistent with the established team literature, we refer to team effectiveness as a construct consisting of team creative performance and team member satisfaction in this paper.

significant predictor of job performance and employee satisfaction (Barrick, Stewart, Neubert, & Mount, 1998; Ilies, Fulmer, Spitzmuller, & Johnson, 2009; Oh, Wang, & Mount, 2011).

Although past studies on team personality composition have found that agreeableness is generally positively related to team performance and team member satisfaction (Bell, 2007; Peeters, Rutte, van Tuijl, & Reymen, 2006), the underlying mechanisms of this relationship remain unclear and have largely been unexamined empirically (Driskell & Salas, 2013; LePine, Buckman, Crawford, & Methot, 2011). Furthermore, team scholars have also highlighted that the relationship may significantly depend on the characteristics of the given team task (Bell, 2007; Driskell & Salas, 2013).

When it comes to creative teams specifically, there is considerable ambiguity regarding the implications of team member agreeableness on team performance and team member satisfaction due to the unique task characteristics involved in creative idea generation. The team creativity literature suggests that while having critical members who proactively challenge others' opinions—a behavior characteristic of those with low agreeableness—may benefit the production of creative ideas, it may also result in increased aminosity and erode team member satisfaction (Beersma & De Dreu, 2005; Hunter & Cushenbery, 2015). In light of such double-edged effects of agreeableness in creative teams, researchers and practitioners have postulated that mixing those of higher agreeableness and those of lower agreeableness may address this trade-off and produce optimal levels of team effectiveness (Anderson, 2009; Mannix & Neale, 2005; Reilly, Lynn, & Aronson, 2002; Schrage, 2014; Wang, Chen, Tjosvold, & Shi, 2010). Such a value proposition for taking advantage of different personalities in teams is commonly used and difficult to dispute, since effective creative teams are posited to be those that achieve close collaboration among members with differing characteristics.

From a scientific perspective, however, this presents an important empirical question that has, surprisingly, received little attention. Previous studies have focused primarily on the effects of mean/average team member agreeableness, while within-team diversity in agreeableness has typically been overlooked (e.g., Baer, Oldham, Jacobsohn, & Hollingshead, 2008). Furthermore, most studies have studied the effects of team member agreeableness on team conflict (e.g., Bono, Boles, Judge, & Lauver, 2002) and the effects of team conflict on team creativity as separate streams of research (e.g., Chen, 2006). Such piecemeal findings preclude us from gaining a holistic and nuanced understanding of the effects diversity in team member agreeableness may have on the effectiveness of creative teams. Hence, by adopting an input-process-output (I-P-O) framework of team research (Hackman, 1987; Mathieu, Gallagher, Domingo, & Klock, 2019), our study aims to provide a deeper, richer, and more nuanced understanding of the effects of diversity in team members' agreeableness on the effectiveness of creative teams by delineating its simultaneous impact on team creative performance and team member satisfaction (i.e., team effectiveness) via task and relationship conflict experienced while working with one another (Fig. 1).

Our study aims to empirically investigate whether having greater diversity in team member agreeableness helps or hurts creative teams and elucidate the underlying mechanisms involved by considering task and relationship conflict levels experienced. Two perspectives on diversity in team member agreeableness in the team personality literature are discussed, by which diversity in members' agreeableness is conceptualized in terms of either compatibility or complementary at the team level (Driskell & Salas, 2013; Tett & Murphy, 2002). The compatibility perspective emphasizes the benefits of homogeneity in team members' agreeableness and argues that diversity in team members' agreeableness would hamper knowledge coordination and interpersonal harmony in creative teams (Alipour, Mohammed, & Raghuram, 2018; Barrick et al., 1998). In contrast, the complementary perspective emphasizes the benefits of heterogeneity in team members' agreeableness, arguing that diversity in team members' agreeableness would elicit both positive team functioning from the prescence of members high in agreeableness and creative edge from the prescence of members low in agreeableness (Kristof-Brown, Barrick, & Kay Stevens, 2005).

Using a controlled experimental setting, this study is able to provide greater theoretical insights into the team-level mediating processes that drive the effects of agreeableness diversity in creative teams. Specifically, the use of random assignment when forming ad hoc teams and a standardized task widely employed in creativity studies enable us to perform a much more robust and rigorous empirical assessment of the effects of team member agreeableness on team creativity and its underlying mechanisms (e.g., De Dreu, Baas, & Nijstad, 2008; Bechtoldt, De Dreu, Nijstad, & Choi, 2010). In the following section, we delineate how we predict diversity in team members' agreeableness would impact team creativity and team member satisfaction based on its proposed influence on team task and relationship conflict.

1.1. Hypothesis development

Task conflict, which is one of the two main types of team conflict, refers to the precipitation of conflicting or opposing task-related viewpoints, thoughts, or ideas (Huang, 2010; Simons & Peterson, 2000). When team members report having experienced a high level of task conflict, it suggests that the team argued to a great extent on differing ideas and perspectives, and had marked difficulty achieving a common understanding (De Dreu & Weingart, 2003). In contast, when team members report having experienced a low level of task conflict, it suggests that the team did not have major clashes in terms of diverse task-related ideas and perspectives.

Based on the compatibility perspective discussed in the person-team fit literature (also termed "supplementary fit"; Kristof-Brown et al., 2005) and team personality literature (Driskell & Salas, 2013), we argue that diversity in team members' agreeableness would negatively impact team functioning and increase task conflict. For instance, consider two three-member teams, Team Alpha and Team Beta, with the same mean level of team member agreeableness but different levels of diversity in agreeableness. All members of Team Alpha have an average level of agreeableness (low diversity), while Team Beta has one member of low, one member of average, and one member of high level of agreeableness (high diversity). When members share similar levels of agreeableness, such as Team Alpha, their perceptions and behaviors are mutually reinforcing for each other, and members would experience less conflict and more coherence. On the other hand, when members differ in their levels of agreeableness, such as in Team Beta, the development of such coherence and mutual understanding is hampered. While agreeable members may initially appear indifferent or even supportive of divergent ideas suggested by others, disagreeable members would remain critical and consistently challenge any emerging mutual understanding. Agreeable members may then appraise these members as being rude and disruptive to the team's collegiality and, by attempting to quell disagreement, intensify task conflict.

In corrobation, research has shown that the presence of a single team member with lower levels of agreeableness would substantially increase the occurrence of dissenting opinions and perspectives being voiced within a team (De Dreu & West, 2001). In addition, studies on interpersonal interaction indicate that indiviuals are highly sensitive to the manifest behaviors of agreeableness (i.e., warmth, trust, friendliness), and those chracteristics tend to

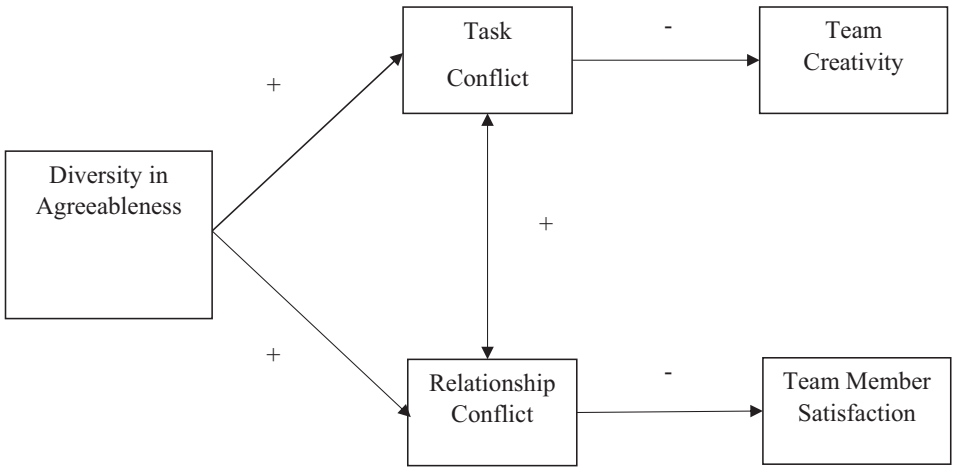

Fig. 1. Proposed relationships between diversity in team members' agreeableness, and team creativity and team member satisfaction via task and relationship conflict.

be reinforced and amplified through social interactions in groups (Hales, Kassner, Williams, & Graziano, 2016; Kiesler, 1983). Furthermore, research has also shown that differences in conflict resolution style preference exist between those with higher versus those with lower levels of agreeableness. For example, Graziano, Jensen-Campbell, and Hair (1996) found that individuals who had lower levels of agreeableness preferred to resolve conflict via power assertion, while individuals with higher levels of agreeableness favored amicable negotiations. Similarly, Park and Antonioni (2007) found that individuals with higher levels of agreeableness were significantly adverse to competing types of conflict resolution strategies and strongly preferred cooperative ones, while those with lower levels of agreeableness exhibited the opposite preference. With such stark differences between those of higher versus those of lower agreeableness that may hamper the development of a coherent and shared understanding pertaining to how the team should work and function, we propose that higher levels of within-team diversity in agreeableness would precipitate more task-related clashes.

H1. Diversity in team members' agreeableness is positively associated with team task conflict.

Extending beyond task conflict, past research also suggests that the presence of individuals who are low in agreeableness tends to engender interpersonal frictions and tensions (Bono et al., 2002; Jensen-Campbell, Gleason, Adams, & Malcolm, 2003; Moynihan & Peterson, 2001). Studies have shown that agreeableness is one of the most perceptible personality traits, by which disparities between one's own agreeableness level and that of others are often quickly perceived as an interpersonal incompatibility. This, in turn, often precipitates defensive or even contentious forms of communication that further harm interpersonal relations (Barrick et al., 1998; Bradley, Klotz, Postlethwaite, & Brown, 2013; Graziano et al., 1996). Similarity-attraction theory suggests that similarity on attributes such as agreeableness facilitates mutual attraction and liking (Byrne, 1971). Differences in levels of agreeableness among team members would generally be perceived by members themselves as being interpersonally incompatible; in turn, this may potentially result in a rift between members of higher agreeableness and members of lower agreeableness, impeding communication between these members and increasing contentiousness and negative emotionality (Barrick et al., 1998; Bradley et al., 2013; Graziano et al., 1996).

Studies also suggest that having a single disagreeable member is often enough to destroy the team's positive rapport. Bradley (2008) showed that the argumentative nature of individuals with lower agreeableness often elicits negative affect and stress within other team members, engendering feelings of dislike and aversion within the team. Studies have shown that people tend to report an increased sense of frustration when dealing with a disagreeable individual and feel justified in ostracizing disagreeable team members (Hales, Kassner, Williams, & Graziano). Hence, with higher levels of within-team diversity in agreeableness, wherein team members of higher and lower levels of agreeableness would be working together, we propose that increased relationship conflict would be experienced.

H2. Diversity in team members' agreeableness is positively associated with team relationship conflict.

Further, task conflict and relationship conflict precipitated may potentially feed back into one another (i.e., mutually reinforcing), resulting in an overall increase in team conflict experienced. Studies have shown that this may occur when teams fail to manage conflict in a cooperative manner (e.g., Huang, 2010; De Dreu & Weingart, 2003). Huang (2010) argues that such inefficiencies in conflict management prevent team members from taking dissenting views in stride; opposing views are perceived as interpersonal acrimony rather than constructive input, which further aggravates interpersonal discord and prevents team members from being receptive to one another's inputs, resulting in even greater levels of task conflict. In other words, dissenting opinions actively articulated by members lower in agreeableness may be viewed as a threat to the team's harmony—which is prized by members with higher levels of agreeableness—and thereby serve to aggravate interpersonal discord. The increased social animosity may then further undermine team members' receptiveness in considering each other's task-relevant inputs and perspectives, resulting in even higher levels of task conflict and effectively establishing a vicious cycle between the two types of conflict. Therefore, in a team composed of members with diverse agreeableness levels, where we expect conflict management inefficiencies as outlined above to occur, we expect a significant bidirectional relationship between task conflict and relationship conflict.

H3. Task conflict levels and relationship conflict levels is positively correlated.

Task conflict and relationship conflict engendered are expected, in turn, to impact team creativity and team member satisfaction levels respectively. Task conflict, which involves the precipitation of task-relevant opinions and divergent viewpoints, has the

potential to be beneficial for team creativity as it could broaden a team's range of perspectives (De Dreu & West, 2001; De Dreu, 2006; Farh, Lee, & Farh, 2010). However, studies have suggested that for task conflict to translate into team creative gains, teams must first be able to resolve such conflicts amicably so that they may advance ideas and solutions by integrating the dissenting viewpoints expressed effectively (Behfar, Peterson, Mannix, & Trochim, 2008; Lovelace, Shapiro, & Weingart, 2001). Otherwise task conflict may harm the team's creative performance instead, because such teams would not be able to fundamentally agree on which direction, from a wide range of options, to adopt and further develop on (De Dreu & Weingart, 2003).

As outlined earlier, teams composed of members diverse in agreeableness are posited to experience marked difficulties in managing and resolving conflict that arises from the expression of divergent viewpoints, because they would be unable to agree on how task-relevant dissenting views should be managed and addressed. Therefore, we postulate that task conflict experienced in such teams would be detrimental to the team's creative performance. Group discussion studies have shown that when a dissenting opinion uttered was attributed to the dissenter's personal characteristics, such opinions are less likely to be taken seriously and more likely to elicit defensive responses by team members (Nemeth, 2018; Pelled, 1996). When members perceive that they have sharply different personalities, task conflict could easily be interpreted as a derivative of such individual differences (i.e., "We are just different types of people to begin with, so we hold different opinions") rather than a reflection of the complexity of the issue (i.e., "Maybe there are more perspectives to be considered and integrated into our idea"). Accordingly, we posit that task conflict stemming from diversity in team members' agreeableness would be more likely to elicit exasperation and resistance from team members, which would further harm the team's capacity to perform well. Corroborating this notion, *meta*-analyses have revealed that task conflict is especially harmful for the general performance of a team when it co-occurs with relationship conflict (De Dreu & Weingart, 2003; De Wit, Greer, & Jehn, 2012).

Relationship conflict arising from discrepancies in agreeableness among team members, on the other hand, is expected to harm team member satisfaction. Research has shown that interpersonal discord is significantly detrimental for team member satisfaction, because it renders team members highly dissatisfied with working with one another as a team (Simons & Peterson, 2000; Wall & Nolan, 1986). This may, in the long run, threaten the team's viability, whereby team members are likely to fall out with one another and refuse to work together as a team for future ad hoc tasks (Behfar et al., 2008; De Dreu & Weingart, 2003; Shaw et al., 2011). Furthermore, the expected rousing of both task conflict and relationship conflict within teams composed of members diverse in agreeableness is postulated to further harm both team creativity and team member satisfaction, since opposing views expressed are more likely to be perceived as personal attacks rather than meaningful contributions, which would elicit negativity and defensiveness from team members that further strain the team's already-limited capacity to process information and handle conflict effectively (De Dreu & Weingart, 2003; De Wit et al., 2012; Huang, 2010). As such, taken together, we hypothesize that diversity in team members' agreeableness would result in decreased team creativity and team member satisfaction via increased task conflict and relationship conflict, respectively.

H4. Diviersity in team members' agreeableness is negatively associated with team creativity via its positive association with task conflict experienced.

H5. Diversity in team members' agreeableness is negatively associated with team member satisfaction via its positive association with relationship conflict experienced.

2. Method

2.1. Statistical power analysis

As no study thus far has examined the effects of diversity in team members' agreeableness specifically in the context of team creativity, we consulted studies on general team performance. We found that Halfhill, Nielsen, Sundstrom, and Weilbaecher (2005) conducted one of the few studies that explicitly examined the effects of diversity in team member agreeableness and reported its effect size. Accordingly, we conducted an a priori power analysis based on the estimated effect size of $\rho = -0.34$ reported by Halfhill et al. (2005). Using G*Power, with the specifications of $\alpha = 0.05$ and power = 0.90, an estimated minimum sample size of 83 is required. We managed to recruit a total of 93 teams for our study, with 89 teams having complete data. As such, we are confident that sufficient statistical power has been achieved in our study.

2.2. Procedure

A total of 279 undergraduate students (123 males and 156 females) from a large university in Singapore participated for one course credit. Participants were randomly assigned to groups of three, yielding a total of 93 teams. Teams were dropped from analyses when any team member had missing data on any variable. This resulted in the removal of four teams (i.e., 12 participants) from our analyses, leaving 89 teams.

Interested students registered to participate via an online portal. Upon successful registration, we arranged experimental sessions such that 6 or 9 participants would come for each session. Upon arrival, participants were instructed to sit individually at designated desks and complete the Big Five Inventory (BFI), which assesses personality, online. Participants then randomly drew index cards to determine their team assignments before being escorted to their respective team rooms.

For the first 5 min, participants introduced themselves to their teammates and selected a team name to be used throughout the experiment. This was done to formalize the conception of their teams and is consistent with current ad hoc team research paradigm (Galegher, Kraut, & Egido, 2014). Following this, the idea generation task was presented. Within their respective team, participants were told that the rising student population is affecting the university's quality of education. In response, teaching and administrative staffs are soliciting potential solutions that would improve the university's quality of education (e.g., De Dreu et al., 2008). Participants were instructed to generate as many ideas as possible as a team within 8 minutes and to write their ideas on a sheet of paper provided. Upon completion, participants were led back to their original individual seats and instructed to complete the remaining part of the online survey, which consisted of items that assess task conflict, relationship conflict, and team member satisfaction. Teams were also informed that the top 10 performing teams would be rewarded with an additional cash bonus of S$10 per member (approximately equivalent to $7 U.S. dollars).

2.3. Measures

2.3.1. Team member agreeableness

Team member agreeableness was measured using the BFI, which is a 44-item scale that assesses personality in terms of

openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (see Appendix). Cronbach's α was 0.807, 0.790, 0.863, 0.735, and 0.815, respectively. This has been evaluated and deemed to be a valid and reliable measure of the Big Five personality dimensions, and has demonstrated convergence validity with the Revised NEO Personality Inventory (Soto & John, 2009).

2.3.1.1. Diversity in agreeableness. Previous studies on team personality composition have operationalized team personality diversity by computing the standard deviation of team members' personality scores (cf. separation, Harrison & Klein, 2007). It is important to consider, however, that there are multiple ways to conceptualize and operationalize diversity of attributes in teams, with each bringing a distinctive theoretical approach. Harrison and Klein (2007) posited that there are three distinct ways to conceptualize diversity on any team-relevant attribute.

The first is *separation*, otherwise known as horizontal variability, which conceptualizes diversity in terms of discrepancies along a single continuum and is typically associated with differences in values and opinions. No valence is attached to either end of the continuum, and homogeneity at either the high or low end of the continuum is generally beneficial for the team. An example of a construct that may be conceptualized in this manner is trait personality diversity. Team members may differ in their levels of conscientiousness, agreeableness, openness to experience, neuroticism, and extraversion (McCrae & Costa, 1987), but being high or low on any of these traits is neither entirely good nor bad. Under the separation framework, minimum diversity occurs when all team members occupy the same position along the continuum, such as in the case whereby all team members have the same level of conscientiousness. Maximum diversity occurs when team members are equally split at the two opposing ends of the continuum, such as in the case in which half of the team members are extremely low in extraversion and the other half are extremely high in extraversion. Separation is one of the most popular approaches to understanding diversity in teams and is generally operationalized by computating standard deviation (*SD;* Bell, Villado, Lukasik, Belau, & Briggs, 2011).

The second is *variety*, otherwise known as categorical variability, which conceptualizes diversity in terms of categorical differences and is typically associated with functional background differences and informational diversity. High diversity in this case is expected to be beneficial for the team. An example of a construct that may be conceptualized this way is expertise diversity. Team members with different expertise possess different experiences that result in them having qualitatively different preferences or ideas. Variety is generally operationalized by computating Blau's index, with higher levels indicating greater variety (Bell et al., 2011).

Third and last is *disparity*, otherwise known as vertical variability, which conceptualizes diversity in terms of the extent an attribute is unevenly distributed among members and is typically associated with status and prestige differences. Teams differ in how a valued asset or attribute is distributed among their members, and equal distribution is expected to be beneficial for the team. Diversity as disparity differs from diversity as separation, in that there is clear valence attached to the construct in question, such that having more of a particular attribute (e.g., longer tenure or more monetary resource) is more beneficial than having less of it. Disparity is high when only a small percentage of team members possess a great deal of the resource, and low when all members possess similar, moderate amounts of the resource (DiTomaso, Post, & Parks-Yancy, 2007). Disparity is generally operationalized by computating Gini coefficient, with higher levels indicating greater disparity (Bell et al., 2011).

Our primary focus is on separation. This is because our main aim is to empirically examine the tenability of the assumption that having members who are diverse along the agreeableness spectrum is beneficial for the effectiveness of creative teams, which in itself implies a separation conceptualization of diversity. Accordingly, to assess diversity in team member agreeableness in terms of separation, we computed the standard deviation (*SD*) of agreeableness scores among members of a team. That being said, we still computed Blau's index (cf. Bantel & Jackson, 1989; Harrison, Price, Gavin, & Florey, 2002) and Gini coefficient (cf. Ong, Benson, Zautra, & Ram, 2018) of team members' agreeableness scores. Further analyses were later conducted using these two indices of diversity in team member agreeableness to examine whether differential results are observed when these alternative operationalizations are adopted.[2]

2.3.2. Team creativity

Consistent with past creativity studies that use such creative idea generation tasks (e.g., De Dreu et al., 2008; Diedrich, Benedek, Jauk, & Neubauer, 2015), team creativity was assessed by rating of solutions generated in terms of novelty and usefulness. Based on these criteria, two independent judges assigned each team a rating from 1 to 5, with 5 indicating that the ideas generated were extremely novel and useful. These judges, consistent with previous studies on team creativity (e.g., Bechtoldt et al., 2010; De Dreu et al., 2008), were psychology research assistants from the same university who did not participate in the study and were blind to the study's hypotheses. Mean r_{wg} (using a uniform null distribution), ICC(1), and ICC(2) values were 0.865 (median r_{wg} = 1.000), 0.700, and 0.702, respectively.

2.3.3. Team member satisfaction

Team member satisfaction was measured using the three-item scale adopted from Shaw et al. (2011). Team members were directed to rate their experience of working in their team on a scale from 1 (*not at all*) to 5 (*a lot*) via the following items: "All in all, I am satisfied with my team"; "In general, I don't like my team" (reverse scored); and "I am satisfied with the friendliness of my team members." These scores were then aggregated to the team level by averaging scores among members of the same team, which yielded an overall indicator of each team's members' level of satisfaction with regard to working with one another. Mean r_{wg} (using a uniform null distribution), ICC(1), and ICC(2) values were 0.902 (median r_{wg} = 0.926), 0.435, and 0.432, respectively.

2.3.4. Team task conflict

Team task conflict levels were assessed using the three-item task conflict subscale of the team conflict scale adopted from Jehn and Mannix (2001). Team members were directed to rate their team discussion experience while working on the team creativity task on a scale from 1 (*not at all*) to 5 (*a lot*). A sample item is, "How much conflict of ideas is there in your work group?" These

[2] To ascertain that it is solely diversity in the agreeableness facet of the Big Five personality traits that is driving any observed effects—and not diversity in other personality dimensions that may co-occur—we computed *SD*, Blau's index, and the Gini coefficient for all four other personality scores for team members to be accounted and controlled for in our analyses. This would allow us to determine whether diversity in team member agreeableness specifically exhibits incremental validity on our measured variables above and beyond diversity in all other personality dimensions.We also computed the mean (i.e., average) of all personality dimensions, including agreeableness, to be accounted for within our analyses. This follows the additive compositional model that is typically the primary focus of current studies (Chan, 1998). Accounting for these mean scores would allow us to observe their main effects (if any) and examine whether diversity (specifically, diversity in team member agreeableness), which instead subscribes to a dispersion compositional model (Chan, 1998), exhibits incremental validity above and beyond such an additive approach. All relevant within-group agreement indices are summarized in Table 1.

Table 1
Summary of r_{wg} and ICC(1) Values for All Five Dimensions of Personality Measured.

Measure	Mean r_{wg} (Median r_{wg})	ICC(1)	ICC(2)
Openness to Experience	0.842 (0.888)	0.130	0.142
Conscientiousness	0.883 (0.912)	0.206	0.201
Extraversion	0.771 (0.852)	0.142	0.121
Agreeableness	0.894 (0.920)	0.081	0.091
Neuroticism	0.823 (0.872)	0.040	0.035

scores were then aggregated to the team level by averaging scores among members of the same team, which yielded an overall indicator of each team's level of task conflict experienced during the creativity task. Mean r_{wg} (using a uniform null distribution), ICC (1), and ICC(2) values were 0.775 (median r_{wg} = 0.833), 0.285, and 0.286, respectively.

2.3.5. Team relationship conflict

Team relationship conflict levels were assessed using the three-item relationship conflict subscale of the team conflict scale adopted from Jehn and Mannix (2001). Team members were asked to rate their team discussion experience while working on the team creativity task on a scale from 1 (*not at all*) to 5 (*a lot*). A sample item is, "How much relationship tension is there in your work group?" These scores were then aggregated to the team level by averaging scores among members of the same team, which yielded an overall indicator of each team's level of relationship conflict experienced during the creativity task. Mean r_{wg} (using a uniform null distribution), ICC(1), and ICC(2) values were 0.939 (median r_{wg} = 1.000), 0.131, and 0.138, respectively.

3. Results

Table 2 provides preliminary statistics, such as the correlation coefficients of all variables measured, along with their means and *SDs*. To test Hypothesis 1, we first examined the relationship between diversity in team member agreeableness and task conflict levels experienced within a team via hierarchical regression analysis. We first regressed the overall mean level of team members' agreeableness on task conflict levels experienced in step 1, followed by specifying an additional predictor variable of diversity in team members' agreeableness, operationalized in terms of separation (i.e., *SD*), in step 2 as shown in Table 3. While mean team members' agreeableness was not found to be significantly associated with task conflict levels experienced, B = 0.086, $t(87)$ = 0.461, p = .646, diversity in team members' agreeableness was significantly, positively associated with task conflict levels experienced, with B = 0.543, $t(86)$ = 2.544, p = .013. Operationalizing diversity in team members' agreeableness in terms of variety (i.e., Blau's index) and disparity (i.e., the Gini coefficient) yielded similar results, as shown in Tables A1 and A2, with B = 0.697, $t(86)$ = 2.661, p = .009 for Blau's index, and B = 4.689, $t(86)$ = 2.596, p = .011 for the Gini coefficient.

We also examined whether the effects of diversity in team members' agreeableness on task conflict were contingent on the mean level of team members' agreeableness by specifying an interaction term between these two variables as an additional variable in the abovementioned models. Evidence for such an interaction effect was not found for any of the three operationalizations of diversity in team members' agreeableness, with the respective interaction terms being nonsignificant in all three models (Table 3, Tables A1, and Table A2). In addition, even after controlling for the respective means of all five dimensions of personality and diversity in the other four dimensions of personality (with corresponding operationalizations), all operationalizations of diversity in team members' agreeableness remained significantly, positively associated with task conflict levels in their respective models, with B = 0.454, $t(78)$ = 2.058, p = .043 for *SD*; B = 0.650, $t(78)$ = 2.273, p = .026 for Blau's index; and B = 3.957, $t(78)$ = 2.088, p = .040 for the Gini coefficient.

To test Hypothesis 2, we examined the relationship between diversity in team members' agreeableness and relationship conflict levels experienced within a team via a separate hierarchical regression analysis. We first regressed the overall mean level of team members' agreeableness on relationship conflict levels experienced in step 1, followed by specifying an additional predictor variable of diversity in team members' agreeableness, operationalized in terms of separation (i.e., *SD*), in step 2 as shown in Table 4.

Table 2
Correlations and Descriptive Statistics.

Variables	*M* (*SD*)	1	2	3	4	5	6	7	8	9
1. Team Creativity Rating	2.865(.741)	–								
2. Team Member Satisfaction	4.370(.340)	<.001	–							
3. Number of Ideas Generated	7.618(4.086)	−.130	.193	–						
4. Extraversion (Mean)	3.044(.366)	−.117	.115	−.045	–					
5. Agreeableness (Mean)	3.720(.255)	.060	.233*	.111	.052	–				
6. Conscientiousness (Mean)	3.291(.314)	−.088	−.304*	−.040	.039	.125	–			
7. Neuroticism (Mean)	2.912(.337)	−.071	−.020	.007	−.240*	−.201	−.341**	–		
8. Openness to Experience (Mean)	3.257(.306)	.141	.097	.016	.205	.066	.166	−.165	–	
9. Extraversion (*SD*)	.599(.319)	.019	.013	−.040	.308**	−.294**	.017	−.080	.150	–
10. Agreeableness (*SD*)	.407(.216)	−.186	.040	−.076	.258*	.023	.084	−.049	.060	.198
11. Conscientiousness (*SD*)	.430(.223)	.036	−.029	.083	−.082	−.105	−.037	−.111	−.016	.177
12. Neuroticism (*SD*)	.523(.287)	−.067	.063	.033	−.026	.115	.110	−.404**	.204	.071
13. Openness to Experience (*SD*)	.498(.264)	−.037	−.107	−.100	.045	.110	.041	−.023	.066	.036
14. Team Relationship Conflict	1.267(.288)	−.149	−.339**	.010	−.003	−.071	.138	.129	−.021	−.055
15. Team Task Conflict	1.501(.443)	−.281**	−.089	−.004	.241*	.049	.043	−.023	−.019	.175

Variables	10	11	12	13	14	15
10. Agreeableness (*SD*)	–					
11. Conscientiousness (*SD*)	.030	–				
12. Neuroticism (*SD*)	.081	.270*	–			
13. Openness to Experience (*SD*)	.039	.014	.023	–		
14. Team Relationship Conflict	.277**	.013	−.091	−.044	–	
15. Team Task Conflict	.265*	−.012	−.167	.223*	.396**	–

* p < .05.
** p < .01.

Table 3
Hierarchical Regression Analysis—Diversity in Agreeableness (SD) and Task Conflict.

Model	*B*	*SE (B)*	*t*	*p*	R^2
Step 1					.002
Mean Agreeableness	.086	.186	0.461	.646	
Step 2					.072
Mean Agreeableness	.075	.180	0.417	.678	
Diversity in Agreeableness (*SD*)*	.543	.213	2.544	.013	
Step 3					0.077
Mean Agreeableness	.352	.441	0.797	.428	
Diversity in Agreeableness (*SD*)	2.808	3.305	0.850	.398	
Mean Agreeableness X Diversity in Agreeableness (*SD*)	−.608	.885	−0.687	.494	

* $p < .05$.

Table 4
Hierarchical Regression Analysis—Diversity in Agreeableness (SD) and Relationship Conflict.

Model	*B*	*SE (B)*	*t*	*p*	R^2
Step 1					.005
Mean Agreeableness	−.080	.120	−0.662	.510	
Step 2					.083
Mean Agreeableness	−.087	.116	−0.747	.457	
Diversity in Agreeableness (*SD*)*	.371	.138	2.696	.008	
Step 3					0.092
Mean Agreeableness	−.331	.285	−1.163	.248	
Diversity in Agreeableness (*SD*)	−1.626	2.130	−0.763	.447	
Mean Agreeableness X Diversity in Agreeableness (*SD*)	.536	.571	0.939	.350	

* $p < .05$.

Similarly, while mean team members' agreeableness was not found to be significantly associated with relationship conflict levels experienced, $B = -0.080$, $t(87) = -0.662$, $p = .510$, diversity in team members' agreeableness was significantly, positively associated with relationship conflict levels experienced, with $B = 0.371$, $t(86) = 2.696$, $p = .008$. Operationalizing diversity in team members' agreeableness in terms of variety (i.e., Blau's index) and disparity (i.e., the Gini coefficient) yielded similar results, as shown in Tables B1 and B2, with $B = 0.571$, $t(86) = 3.447$, $p = .001$ for Blau's index and $B = 3.004$, $t(86) = 2.560$, $p = .012$ for the Gini coefficient.

We further examined whether the effects of diversity in team members' agreeableness on relationship conflict were contingent on the mean level of team members' agreeableness by specifying an interaction term between these two variables as an additional variable in the abovementioned models. Evidence for such an interaction effect was not found for any of the three operationalizations of diversity in team members' agreeableness, with the respective interaction terms being nonsignificant in all three models (Table 4, Table B1, and Table B2). Even after controlling for the respective means of all five dimensions of personality and diversity in the other four dimensions of personality (with corresponding operationalizations), all operationalizations of diversity in team members' agreeableness remained significantly, positively associated with relationship conflict levels in their respective models, with $B = 0.403$, $t(78) = 2.752$, $p = .007$ for *SD*; $B = 0.557$, $t(78) = 3.027$, $p = .003$ for Blau's index; and $B = 3.431$, $t(78) = 2.738$, $p = .008$ for the Gini coefficient.

In Hypothesis 3, we proposed a possible bidirectional relationship between team task conflict and relationship conflict, such that these two forms of conflict would be significantly correlated. Consistent with this prediction, we observed a statistically significant, positive correlation between team task conflict and team relationship conflict that is of moderately strong magnitude ($r = 0.396$, $p < .001$). This significant correlation held even when the proposed common antecedent factor of diversity in team members' agreeableness was accounted for within a single path model, as will be detailed later on (Fig. 2, Fig. E1, Fig. E3).

In Hypotheses 4 and 5, we proposed two distinct mediation pathways specifying that diversity in team members' agreeableness would negatively impact both team creativity and team member satisfaction levels via increased task conflict and relationship conflict aroused, respectively, as illustrated in Fig. 2. To test these hypotheses, mediational analyses were conducted using the SPSS PROCESS macro (Hayes, 2017). It should be noted that even though mean level of team members' agreeableness was not found to be significantly associated with either task conflict or relationship conflict, it was nonetheless still accounted for as a covariate in all mediation analyses conducted below.

First, a mediation analysis was performed to examine the hypothesized relationship between diversity in team members' agreeableness and team creativity via task conflict (i.e., Hypothesis 4). As shown in Table 5, mean team members' agreeableness level was specified as a covariate and diversity in team members' agreeableness (*SD*) as the predictor variable, while task conflict level experienced was specified as the mediator variable and team creativity as the outcome variable. In support of our hypothesis, we found that diversity in team members' agreeableness was significantly, positively associated with task conflict levels, which, in turn, was significantly, negatively associated with team creativity. A bootstrap estimation approach with 5000 samples (Shrout & Bolger, 2002) indicated that this negative indirect effect was statistically significant, with $B = -0.229$, SE = 0.132, 95% C.I. = [−0.542, −0.023].

We observed similar results when this analysis was repeated with diversity in team members' agreeableness operationalized in terms of variety (i.e., Blau's index) and disparity (i.e., the Gini coefficient), with $B = -0.328$, SE = 0.183, 95% C.I. = [−0.781, −0.045] when testing the indirect effect using Blau's index rather than *SD* via the same bootstrap estimation approach (Table C1), and $B = -2.023$, SE = 1.145, 95% C.I. = [−4.880, −0.234] when testing the indirect effect using the Gini coefficient (Table C2). Also,

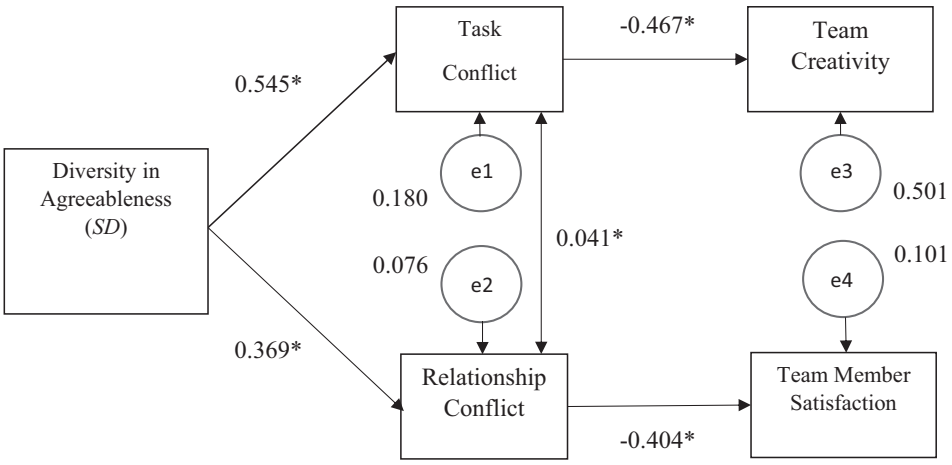

Fig. 2. Path analysis conducted on the relationship between diversity in team members' agreeableness (*SD*) and both team creativity and team member satisfaction via task and relationship conflict. Note that "e" denotes error term. * $p < .05$.

Table 5
Task Conflict as a Mediator between Diversity in Agreeableness (SD) and Team Creativity.

Model	*B*	*SE (B)*	*t*	*p*	R^2
Outcome: Task Conflict					.072
Mean Agreeableness	0.075	0.180	0.417	.678	
Diversity in Agreeableness (*SD*)*	0.543	0.213	2.544	.013	
Outcome: Team Creativity					.098
Mean Agreeableness	0.579	0.480	1.205	.231	
Diversity in Agreeableness (*SD*)	−0.417	0.367	−1.135	.260	
Task Conflict*	−0.422	0.179	−2.358	.021	

* $p < .05$.

even after controlling for the respective means of all five dimensions of personality and diversity in the other four dimensions of personality (with corresponding operationalizations), the negative indirect effect held regardless of operationalization of diversity in team member agreeableness, with $B = -0.223$, SE = 0.140, 95% C.I. = [−0.612, −0.020] when operationalized as *SD*; $B = -0.289$, SE = 0.210, 95% C.I. = [−0.886, −0.012] when operationalized as Blau's index; and $B = -1.865$, SE = 1.192, 95% C.I. = [−5.238, −0.135] when operationalized as the Gini coefficient.

Next, a separate mediation analysis was conducted to examine the hypothesized relationship between diversity in team members' agreeableness and team member satisfaction via relationship conflict (i.e., Hypothesis 5). As shown in Table 6, mean team members' agreeableness level was specified as a covariate and diversity in team members' agreeableness (*SD*) as the predictor variable, while relationship conflict level experienced was specified as the mediator variable and team member satisfaction as the outcome variable. In support of our hypothesis, we found that diversity in team members' agreeableness was significantly, positively associated with relationship conflict levels, which, in turn, was significantly, negatively associated with team member satisfaction. The same bootstrap estimation approach with 5000 samples indicated that this negative indirect effect was statistically significant, with $B = -0.159$, SE = 0.084, 95% C.I. = [−0.366, −0.032].

Likewise, we observed similar results when this analysis was repeated with diversity in team members' agreeableness operationalized in terms of variety (i.e., Blau's index) and disparity (i.e., the Gini coefficient), with $B = -0.235$, SE = 0.122, 95% C.I. = [−0.540, −0.048] when testing the indirect effect using Blau's index rather than *SD* via the same bootstrap estimation approach (Table D1), and $B = -1.286$, SE = 0.716, 95% C.I. = [−3.182, −0.255] when testing the indirect effect using the Gini coefficient (Table D2). Similarly, even after controlling for the respective means of all five dimensions of personality and diversity in the other four dimensions of personality (with corresponding operationalizations), the negative indirect effect held regardless of operationalization of diversity in team members' agreeableness, with $B = -0.150$, SE = 0.085, 95% C.I. = [−0.368, −0.024] when

Table 6
Relationship Conflict as a Mediator between Diversity in Agreeableness (SD) and Team Member Satisfaction.

Model	*B*	*SE (B)*	*t*	*p*	R^2
Outcome: Relationship Conflict					.083
Mean Agreeableness	−0.087	0.116	−0.747	.457	
Diversity in Agreeableness (*SD*)*	0.372	0.138	2.696	.008	
Outcome: Team Member Satisfaction					.176
Mean Agreeableness*	0.272	0.132	2.065	.042	
Diversity in Agreeableness (*SD*)	0.215	0.162	1.327	.188	
Relationship Conflict**	−0.429	0.122	−3.528	<.001	

* $p < .05$.
** $p < .001$.

operationalized as *SD*; $B = -0.225$, SE = 0.118, 95% C.I. = [−0.536, −0.048] when operationalized as Blau's index; and $B = -1.278$, SE = 0.745, 95% C.I. = [−3.243, −0.156] when operationalized as the Gini coefficient. Testing for possible cross predictions of our mediator variables, we found that relationship conflict was not significantly associated with team creativity levels, $B = -0.384$, $t(87) = -1.405$, $p = .164$, and task conflict was not significantly associated with team member satisfaction levels, $B = -0.069$, $t(87) = -0.834$, $p = .406$.

A path analysis was then conducted via Mplus to test all hypothesized paths simultaneously within a single model, as illustrated in Fig. 2 (Muthén & Muthén, 2009), with diversity in team members' agreeableness operationalized in terms of *SD*. This provides us with an even more rigorous test of our hypotheses, such that all relationships postulated are simultaneously specified and tested for within a single model under a maximum likelihood estimation approach, which is typically more robust than a least squares estimation approach in regression analyses (Charnes, Frome, & Yu, 1976; Hox, Moerbeek, & van de Schoot, 2017; Wootton, 1994). Fit indices obtained were indicative of good model fit, χ^2 (4, N = 89) = 3.307, p = .508, CFI = >0.999, RMSEA = <0.001, 90% CI = [<0.001, 0.147], SRMR = 0.042, TLI = 1.047. Similarly, a path analysis was also conducted for the case in which diversity in team members' agreeableness was operationalized in terms of Blau's index (Fig. E1). Fit indices obtained were also indicative of good model fit, χ^2 (4, N = 89) = 0.675, p = .954, CFI > 0.999, RMSEA = <0.001, 90% CI = [<0.001, <0.001], SRMR = 0.018, TLI = 1.228. Lastly, a path analysis was conducted for the case in which diversity in team members' agreeableness was operationalized in terms of the Gini coefficient (Fig. E2). Fit indices obtained were likewise indicative of good model fit, χ^2 (4, N = 89) = 2.436, p = .656, CFI > 0.999, RMSEA = <0.001, 90% CI = [<0.001, 0.127], SRMR = 0.036, TLI = 1.110. All hypothesized paths were found to be statistically significant.

4. Discussion

Team members' agreeableness is deemed to be a crucial predictor of team effectiveness (e.g., Barrick et al., 1998; Driskell & Salas, 2013; Halfhill et al., 2005). Agreeableness is one of the most highly perceptible personality traits which significantly and rapidly influences how people communicate and interact with one another (e.g., Graziano et al., 1996). One's agreeableness bears implications for one's speech and behaviour when working with others in a team (Barrick et al., 1998; Bradley, Baur, Banford, & Postlethwaite, 2013). Consistent with the compatibility perspective of team personality composition, our study further highlights the importance of considering agreeableness when forming creative teams, as diversity in members' agreeableness was found to be associated with increased task and relationship conflict, which were, in turn, associated with decreased team creativity and team member satisfaction.

First, in support of Hypotheses 1 and 2, we found that higher levels of diversity in team members' agreeableness was significantly associated with increased task conflict and relationship conflict experienced within the team. This lends credence to our notion that the presence of both individuals with higher and lower levels of agreeableness in the same team would result in task-related disagreements and interpersonal friction, as opposed to promoting amicable discussions that allow for divergent opinions to be aired without harming collegiality among team members. This finding is consistent with the compatibility perspective, in that team members with varied levels of agreeableness may be more likely to attribute their experienced difficulty in resolving task-related conflict to interpersonal differences, which decreases their receptibility to divergent opinions and accentuate interpersonal aminosity, thereby precipitating more conflict among team members (Behfar et al., 2008; Graziano et al., 1996; Thomas, 1992).

Second, in support of Hypothesis 3, a significant positive correlation between task conflict and relationship conflict was found. This positive correlation held even when the proposed common antecedent factor of diversity in team members' agreeableness was accounted for, suggesting that this bidirectional relationship does not exist simply because the two types of conflict were roused by a common antecedent. Instead, these results support our notion that task conflict and relationship conflict experienced within teams composed of members diverse in agreeableness may be mutually reinforcing. This is consistent with the notion that for teams experiencing inefficiencies in conflict management, dissenting opinions actively articulated by members lower in agreeableness may be viewed as a threat to the team's harmony, which is prized by members with higher levels of agreeableness, and thereby serve to aggravate interpersonal discord. Such increased animosity may further undermine team members' receptiveness to each others' task-relevant inputs and perspectives, resulting in even higher levels of task conflict and establishing a vicious cycle between the two types of conflict. This finding is particularly notable, as both De Dreu and Weingart (2003) and De Wit et al. (2012) have emphasized that situations in which task conflict and relationship conflict are highly correlated would result in severe detriments to overall team performance. Our finding effectively identifies teams with high diversity in team members' agreeableness as a situation potentially capable of eliciting such a detrimental outcome.

Third, even though diversity in team members' agreeableness did not exhibit a direct, statistically significant correlation with team creativity (as seen in the correlation table), heightened task conflict elicited by increased levels of diversity in team members' agreeableness was found to be significantly associated with decreased team creativity, supporting mediational Hypothesis 4. This finding is consistent with group decision-making studies which suggest that when divergent opinions expressed are attributed to interpersonal differences, such as personality traits or values, teams often fail to reap the creative benefits of having such divergent opinions; this effectively prevents the expression of diverse perspectives from translating into team performance gains (Nemeth, 2018). Overall, we believe that this finding further underscores the importance of considering team processes rather than mere construct-to-construct relationships between antecedents and team outcomes (Grand, Braun, Kuljanin, Kozlowski, & Chao, 2016). That is, if we only studied diversity in team members' agreeableness and team creativity without considering any relevant team process variables, this indirect mechanism would likely have been overlooked.

Collectively, these findings suggest that, contrary to current beliefs (e.g., Reilly et al., 2002; Schrage, 2014), mixing team members with different levels of agreeableness may actually be harmful to the effectiveness of creative teams. Specifically, our findings suggest that forming teams with members who are diverse in agreeableness may result in increased task conflict and relationship conflict, which, in turn, harms team creativity and team member satisfaction respectively. Additionally, our findings held regardless of operationalization of diversity in team members' agreeableness (i.e., separation, variety, and disparity), suggesting that all forms of dispersion in team members' agreeableness may be equally deleterious to the effectiveness of creative teams. This suggests that regardless of the relative distribution or configuration of team members in terms of agreeableness as stipulated by each form of dispersion (Harrison & Klein, 2007), any form of disparity among team members in terms of agreeableness would be likely to engender conflict that harms both team creativity and team member satisfaction levels.

Notably, these findings held even when the respective means of all five personality dimensions and diversity in the four other personality dimensions (i.e., openness to experience, conscientiousness, extraversion, and neuroticism) were accounted for in the relevant models. This indicates that the effects of diversity in team members' agreeableness on task conflict, relationship conflict, team creativity, and team member satisfaction levels are above and beyond that of all other personality dimensions, including the overall mean level of team members' agreeableness itself. We believe that this serves to further underscore diversity in team members' agreeableness as a crucial factor to be considered in the context of managing creative teams. This also highlights the importance of using a proper multilevel conceptualization that can best represent the team-level construct. Conceptualizing team members' agreeableness using a dispersion approach, beyond a simple additive approach (i.e., mean team members' agreeableness score), evidently provided us with a greater level of understanding with regards to the role agreeableness plays in the effective functioning of creative teams. In a similar vein, Kozlowski and Klein (2012) stated that not all team-level constructs can be best represented using the homogeneity assumption, as is assumed when we focus solely on the mean score. For example, for teams in which a leader plays a significant role in coordinating team members' efforts, it would be more appropriate to have the leader's level of ability function as a conjunctive factor indicating the team's ability instead of taking the average of all team members' abilities (LePine, Hollenbeck, Ilgen, & Hedlund, 1997)

Interestingly, the effects of diversity in team members' agreeableness were not found to be contingent on the overall mean level of team members' agreeableness. This indicates that its deleterious relationship with both team creativity and team member satisfaction, via increased task conflict and relationship conflict, respectively, occurs regardless of whether members are, on average, of high or low agreeableness. This suggests that even for teams in which members are, on average, of low agreeableness levels, as long as these members are sufficiently similar to each other in terms of agreeableness levels (i.e., similarly disagreeable), deleterious task conflict and relationship conflict may still be contained. One possible reason for this is that members of similarly low agreeableness may have perceived and are, therefore, cognizant of their similarity in being rather disagreeable individuals, such that a mutual understanding of dissents being inevitable is established. This may have then potentially served to increase their receptiveness (or reduce their aversiveness) toward each others' divergent opinions, thereby preventing the escalation of destructive task and relationship conflict, as when members with dissimilar agreeableness levels work together. Their differences on task-related opinions would be less likely to be attributed to their personality differences, since they are, in fact, similar (at least for the personality trait of agreeableness), which would in turn likely produce more favorable and productive responses to one another.

4.1. Practical implications

Our findings contribute to both research and practice in several ways. First, our study demonstrates that diversity in team members' agreeableness can be detrimental to both team creativity and team member satisfaction. Given the importance of sustained team creativity in today's highly competitive knowledge-based economy (Chen, Williamson, & Zhou, 2012; Galbreath, 1999; Peters, Marginson, & Murphy, 2009; Spence & Hlatshwayo, 2012), these findings present strong implications for how creative teams should be formed. Specifically, with reference to previous findings on the benefits of diversity in team members' knowledge and skills for team creativity (Hoever, van Knippenberg, van Ginkel, & Barkema, 2012), our findings suggest that the same principle does not work when it comes to the personality trait of agreeableness. Instead of composing teams with members diverse in agreeableness, team managers should endeavor to find members with similar levels of agreeableness in order to facilitate smooth information coordination and a greater sense of interpersonal rapport. Therefore, efforts might be better spent on assessing and managing the tradeoffs associated with having generally high or low levels of agreeableness within a creative team, as suggested by Judge and LePine (2007). Overall, these findings underscore the importance of considering the configuration of team members in terms of their agreeableness levels when composing and managing creative teams.

Second, by adopting an I-P-O framework, we were able to empirically elucidate task conflict and relationship conflict as key intermediary process variables in the relationship between diversity in team members' agreeableness and both team creativity and team member satisfaction. This illuminates potential intervention target points, especially when teams have already been formed and their team member personality composition cannot easily be modulated. Specifically, in light of our findings, team managers may take steps to attenuate any conflict precipitated and prevent it from harming team creativity and team member satisfaction. One potential way would be to install a formal leader to oversee the entire team discussion process, actively communicate with each and every team member, and ensure that different opinions expressed are duly and respectfully considered; this would increase the team's chances of benefiting creatively from any task conflict engendered (Stewart & Johnson, 2009). Alternatively, team managers may endeavor to change the perception of conflict for members of such teams; specifically, team managers may explicitly highlight the value of divergent viewpoints in getting the team to perform better on the task, and thereby encourage greater openness to different views expressed by team members (Tjosvold, Hui, Ding, & Hu, 2003)

Finally, in the actual workplace, it is more likely that one will encounter teams that are heterogeneous, rather than homogeneous, in terms of agreeableness levels among team members. In other words, real-life creative teams are likely to be composed of members with varying levels of diversity in terms of their agreeableness levels. While the laboratory setting used in this study allowed us to disentangle the effects of agreeableness diversity on team effectiveness, in a real-world setting managers should be mindful of other team-level factors that could potentially further influence team members' agreeableness tendencies and their subsequent impact on the team's effectiveness. For example, team structural factors, such as a power hierarchy, could exert some level of influence on an individual's agreeableness (Fiske & Berdahl, 2007; Heller, Komar, & Lee, 2007), by which possessing greater hierarchical power prediposes one to become more disagreeable and less likely to go along with others' opinions and collaborate with others (Graziano & Eisenberg, 1997; Jensen-Campbell et al., 2003). Nonetheless, while the context of the team may exert some level of influence over the agreeableness levels of its members, individual differences in agreeableness levels would still, to a large extent, affect one's propensity to exhibit disagreeable or agreeable behaviors—and thereby bear substantive implications on the team's creative performance and team member satisfaction levels.

5. Limitations and future directions

The nature of our focal construct—personality—precludes us from conducting a full experimental study. Readers should therefore exercise caution in drawing causal conclusions from our findings. Nonetheless, because temporal separation exists between our

predictor variables, process variables, and outcome variables, we can still be fairly confident in the directionality of relationships found among our measured variables. Specifically, the personalities of individual team members were assessed before random assignment to teams, in which they engaged in team discussions to generate creative ideas. The process variables of task conflict and relationship conflict were assessed immediately thereafter on a retrospective basis, before satisfaction ratings were solicited and creativity ratings assigned to the ideas generated. In light of our findings, however, a possible next step would be to adopt a quasi-experimental approach, whereby teams of varying levels of diversity are intentionally formed based on participants' personality scores. This would potentially allow us to further validate the findings of our study.

Also, agreeableness was examined as a holistic trait construct in our study. Agreeableness itself, in accordance to the Big Five model, consists of several sub-facets such as being trusting, straightforwardness, altruism, and compliance. While the broad construct of agreeableness offers an efficient and parsimonious way of testing the research question in our study, other studies suggest that more specific facets may potentially offer greater predictive validity (e.g., Costa, McCrae, & Dye, 1991; Stewart, 1999). Hence, a potential future direction would be to examine whether the impact of agreeableness on team conflict and creative team effectiveness differ based on specific facets of agreeableness. Based on our findings and the literature on team creativity (Harvey, 2013), we expect that the sub-facets of agreeableness that pertain to one's argumentativeness would be more closely related to task conflict and team creativity, whereas those that pertain to one's likeableness would be more closely related to relationship conflict and team member satisfaction.

Future studies should also employ more diverse measures of personality and team conflict. For example, other-rated agreeableness may provide greater validity in predicting actual agreeable or disagreeable behaviors (Oh et al., 2011). Also, while we used established team conflict measures whereby team members are asked to indicate their perceived level of task and relationship conflict experienced retrospectively, future studies may wish to employ the use of behavioral coding that may better capture the ongoing dynamics and conflict among members during the team discussion process. For instance, future studies could examine the impact of ongoing conflict on team information elaboration, which is an online process of team idea generation involving team members actively discussing, building upon, and integrating each other's ideas and opinions to advance creative ideas they could not have come up with independently (Hoever et al., 2012; Homan et al., 2008). Such behavioral coding, when considered in conjunction with task and relationship conflict scores, may allow us to gain a more thorough understanding of the impact of diversity in team members' agreeableness on pertinent team dynamics. Lastly, while this study focused on diversity in agreeableness, other deep-level diversity variables (e.g., affective disposition) may also exert a substantive impact on team creativity and team member satisfaction and future studies may endeavor to identify such other variables using our current approach.

We would like to point out that while the majority of team composition studies are conducted on Western samples, participants in our study were mainly Asian. Therefore, it is possible that our findings, particularly those regarding how conflict negatively impacted our measured team outcomes, may reflect a characteristic of collectivistic values held by our sample. Specifically, Asians are known to hold more collectivistic values, by which relational harmony is highly prized (Li, 1996; Zhang, Lin, Nonaka, & Beom, 2005). Conflicts of any kind are largely discouraged in this culture, and people perceive little value in arguing with others (Kizilcec, Schneider, Cohen, & McFarland, 2014). Comparatively speaking, they may also experience greater difficulty in distinguishing between constructive versus destructive conflict (Leung & Tjosvold, 1998). As such, it is possible that samples from Western countries may exhibit different patterns of outcome. In addition, due to their strong social norm of getting along with others, participants who scored low on the personality dimension of agreeableness may still exhibit some level of agreeable behaviors due to their collectivistic cultural background. Also, our participants may have reacted to dissenting opinions in a disproportionately more negative manner than Western participants holding similar levels of agreeableness would, due to the former's subscription to collectivistic norms that sanction discord and prize harmony (Li, 1996; Zhang et al., 2005). As such, replication studies on non-Asian samples are needed to ascertain the generalizability of our findings.[3]

Future studies should also endeavor to recruit actual work teams and adopt a longitudinal design to examine the external validity of our findings and to assess whether the effects of diversity in team members' agreeableness on team conflict and the effectiveness of creative teams would change over time. In general, previous studies on team personality composition have reported that the effects of team members' traits were more consistent and stronger in field settings, such that laboratory studies on team personality tend to underestimate the true effects of team members' personality on team effectiveness (Bell, 2007; Peeters et al., 2006; Prewett et al., 2009). Therefore, we predict that as members get to know each other's personality better, the discrepancies in their personality traits would become a more apparent and influential feature, thereby augmenting their impact on the team's functioning and outcomes and rendering it more difficult to break the vicious cycle between task and relationship conflict.

Lastly, all teams in our study had three members, precluding an even split between more agreeable and less agreeable team members. We believe that with a bigger team size, more dynamicity among members of differing agreeableness levels would be possible. It would also be interesting to test the formation of subgroups based on team members' agreeableness for even-membered teams, in which a split-half is possible. Additionally, the fault line literature suggests that diversity becomes a particular struggle for teams when it is combined with other demographic variables (Lau & Murnighan, 1998). For example, what if disagreeable members were males and agreeable members were females? Such fault lines may trigger innate gender streotypes for team members and influence team dynamics in diverse ways. For instance, it is possible that disagreeable male members might elicit greater receptivity from agreeable female members and, therefore, exert less disruptive effects on the team's overall functioning. As such, future studies may wish to vary team size and examine its potential effects in conjunction with relevant demographic variables.

6. Conclusion

Our findings underscore both the theoretical and practical importance of considering diversity in team members' agreeableness for creative teams. Consistent with the compatibility perspective of team diversity, our findings suggest that grouping members with differing levels of agreeableness is deleterious for both team creativity and team member satisfaction due to increased task and relationship conflict it potentially rouses. By illuminating task and relationship conflict as key underpinning mediators, team managers of creative teams consisting of members diverse in

[3] While our study was not preregistered, we are willing to share our materials and data upon request. All authors developed the study concept and design. The first author performed the statistical analysis. All authors drafted the manuscript and provided critical revisions.

agreeableness may take steps to moderate any conflict precipitated and prevent it from harming the team's creative performance and team member satisfaction, such as by installing a formal leader to moderate the discussion process. Overall, we hope that our study will spur further research in this important, yet underexplored, area of personality dynamics in teams.

Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jrp.2020.103932.

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