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Difficult Differences: A Socio-cultural Analysis of How Diversity Can Enable and Inhibit Creativity

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ABSTRACT

The relationship between diversity and creativity can be seen as paradoxical. A diversity of perspectives should be advantageous for collaborative creativity, yet its benefits are often offset by adverse social processes. One suggestion for overcoming these negative effects is perspective taking. We compared four dyads with low scores on trait perspective taking with four dyads who were high on trait perspective taking on a brainstorming task followed by reconstructive interviews. Trait-based perspective taking was strongly associated with greater creativity. However, contrary with expectation, interactional perspective taking behaviors (including questioning, signaling understanding, repairing) were associated with lesser creativity. The dyads that generated the fewest ideas were most likely to get stuck within ideational domains, struggling to understand one-another, having to elaborate and justify their ideas more. In contrast, the dyads that generated many ideas were more likely to recognize each other's ideas as valuable without extensive justification or negotiation. We suggest that perspective taking is crucially important for mediating diversity in the generation of new ideas not only because it enables understanding the perspective of the other, but because it entails an atmosphere of tolerance, playfulness, and mutual recognition.

Keywords: creativity, diversity, perspective taking, mutual recognition, interaction.

In today's swiftly changing and globalizing world, the workforce is becoming increasingly diverse in terms of nationality, gender, ethnicity, functional roles, educational background, age, and religion (Hoever, Van Knippenberg, van Ginkel, & Barkema, 2012; van Knippenberg & Schippers, 2007). The accompanying ideological view has become known as the value in diversity hypothesis, suggesting that disparate perspectives are beneficial to organizational creativity and innovation (Mannix & Neale, 2005). But diversity can also lead to miscommunication, fragmentation and possibily even identity conflict.

Considering that the creative process entails a recombination of previously existing and culturally available elements into novel arrangements (Glăveanu, 2010), it should follow that heterogeneous groups with a wealth of diverse perspectives would perform more creatively than homogeneous groups. However, as the accumulation of inconsistent results attests, that is not always the case (Srikanth, Harvey & Peterson, 2016; Williams & O'Reilly, 1998). The effect of diversity on group creativity has been conceptualized as a "double-edged sword": simultaneously offering informational benefits and leading to interpersonal conflict and reduced cohesion

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix S1. Information about participants.
Appendix S2. Codebook: Interactional perspective taking.

(Harvey, 2013; Milliken & Martins, 1996). Bassett-Jones (2005) concluded that companies in the 21st century face the paradox of diversity management, creativity, and innovation – either they embrace diversity and risk workplace conflict, or avoid diversity and risk lesser creativity and consequent decreased competitiveness. But is managing diverse teams necessarily a balancing act between maximizing cognitive advantages and minimizing social cohesion costs, or can the two work in unison instead of opposition?

INTERPERSONAL DIVERSITY: INHIBITING CREATIVITY?

Groups that are diverse often have less cohesion, less information sharing, less motivation to engage with other's ideas, more coordination problems, and more interpersonal conflict (Srikanth et al., 2016; van Knippenberg & Schippers, 2007), which can undermine the creatogenetic benefits of diversity. These outcomes are commonly theorized as resulting from social categorization, which posits that people favor in-group members over dissimilar out-group members (Williams & O'Reilly, 1998). However, most studies examining the paradoxical relationship between diversity and creativity employed only outcome measures without studying the processes. In recent years, there has been increasing focus on observing the social dynamics of creative processes in diverse groups and identifying disadvantageous interactional patterns (Cronin, Weingart, & Todorova, 2011; Harvey, 2013, 2015).

Srikanth et al. (2016) reviewed the group diversity–creativity literature through a temporal lens and concluded that unfavorable social outcomes do not stem from a priori intergroup biases but from the failure to coordinate different perspectives. Diversity of perspectives can produce representational gaps that result in team members struggling to integrate their information in creative tasks, even if they are motivated to do so (Cronin & Weingart, 2007; Dougherty, 1992). Such divergences of perspective often persist despite attempts at information sharing and engender negative social effects associated with diversity (Srikanth et al., 2016).

PERSPECTIVE-TAKING: UNLOCKING THE POTENTIAL OF DIVERSITY?

Hoever et al. (2012) found that diverse teams performed more creatively when instructed to take others' perspectives, which led participants to elaborate their distinct information more frequently. The critical difference from previous studies was the inclusion of perspective taking manipulation, which helped participants overcome the opposition between the informational benefits of group diversity and hindering social dynamics. This finding is potentially important for overcoming the paradox of diversity and creativity. The aim of our study is to explore in greater detail how perspective taking interacts with group creativity.

Manipulating participants' attention to others' viewpoint is only one aspect of the complex and multifaceted phenomenon of perspective taking. Perspective taking is most commonly studied as a cognitive ability closely associated with Theory of Mind and assessed in laboratory settings (Baron-Cohen, 1997; Frith & Frith, 2005). Another approach views it as a personality trait that represents a general tendency to adopt another's point of view and can be measured using questionnaires (Davis, 1980). In both approaches, perspective taking is a quantifiable variable that pertains to individuals separated from their socio-cultural context and which is stable in time.

In contrast, socio-cultural psychology conceptualizes perspective taking as a dynamic interactional process of simultaneously coordinating perspectives to achieve intersubjective understanding (Fernyhough, 2008; Gillespie & Cornish, 2010). As such, it is always socially and relationally situated and motivated; instead of *individual ability*, the focus is on *social activity* that emerges between people and is guided by cultural practices and mediated by symbolic and material cultural elements. Collaborative creativity entails a dynamic interplay of perspectives – *interactional perspective taking*, which can only be studied using methods that emphasize the process instead of outcomes. The present study uses mixed methods to investigate how different aspects of perspective taking (trait-based and interactional) facilitate or hinder joint idea generation between diverse individuals.

METHOD

PARTICIPANTS

We formed two groups of dyads that were equally diverse but differed in trait-based perspective taking; of 64 participants who completed a screening questionnaire, we selected 16 (50% male, M_{age} = 28.25, SD = 5.86) and formed two contrasting groups: four pairs of participants who scored low (below 25th percentile) on Perspective Taking Scale (PTS) and four pairs with high PTS scores (above 75th percentile). Participants in each dyad were of different nationalities and had comparable scores on Multicultural Experiences Questionnaire.

INSTRUMENTS

We designed an online screening questionnaire composed of general demographic questions, a measure of multicultural experience and perspective taking. Multicultural Experiences Questionnaire (Narvaez, Endicott, & Hill, 2009) was used to assess intrapersonal diversity. MEQ is a 15-item two-factor self-report scale comprised of two subscales: multicultural experience and multicultural desire. We used Davis's (1980) PTS to enumerate perspective taking. The 7-item self-report scale assesses a general tendency to "adopt the perspectives of other people and see things from their point of view" (Davis, 1980, p. 2).

To evaluate dyad creativity, we designed a task based on Torrance Tests of Creative Thinking (Torrance, 1966) that asked participants to list as many consequences of an improbable situation as they can ("what would happen if people no longer travelled to foreign countries?"). Its correlation with the well-established Brick task ($n = 45$; $r = .813$; $p < .001$) indicates adequate convergent construct validity.

PROCEDURE

After receiving instructions, participants first performed the brainstorming task in dyads for 10 minutes. Their interaction was audio recorded. Second, because social situations can also inhibit free expression of ideas, participants were separated for reconstructive interviews (Lahlou, 2011). The interviews were carried out simultaneously in adjoining rooms. Researchers asked participants to reflect on the interaction as they listened to the recording and prompted them with questions such as "Where did you get this idea? Did you understand the other person's idea? Do you think the other person related to your idea?" A recording device was placed between participant and researcher so that each could pause it at any time. Reconstructive interviews lasted about 20 minutes. Participants received £5 for taking part in the study.

METHODS OF ANALYSIS

Audio recordings from the brainstorming task and reconstructive interviews were transcribed. First, the transcripts from the brainstorming task were coded in terms of perspective taking, based on ideas from dialogism (Linell, 2009) and conversation analytic studies of how intersubjectivity is achieved in communication (Schegloff, 1992). Specifically, we coded seeking the perspective of the other (asking questions about the other's point of view), sharing one's own perspective (e.g., demonstrating understanding and initiating repairs), and negotiating perspectives (agreeing, disagreeing, and defending an idea). We enumerated the frequencies of these interpersonal perspective taking behaviors by performing a content analysis. Second, we examined the brainstorming transcripts in terms of "domain shifts", that is, the way in which the dyad broke from one semantically related associative stream and began a new one, belonging to a different semantic category. Three independent coders indicated domain shifts and highlighted all subsequent turns within the same domain ($ICC = .947$, $p < .001$).

QUANTIFYING CREATIVITY

The common indices of creativity (Guilford, 1950; Torrance, 1966) were quantified as follows: (a) *Fluency*, the total number of ideas. (b) *Flexibility*, the number of conceptual categories that ideas belong to. The consequences of no longer travelling were classified in nine categories based on which sphere would be affected (e.g., politics, environment, communication). (c) *Originality*, we calculated the frequency of ideas based on which each idea was scored from 1 (most frequent) to 10 (most unique). Dyads' originality was the average infrequency of their ideas. (d) *Quality*, calculated as the average quality of participants' ideas based on three independent raters who evaluated their quality on a 1–10 scale ($ICC = .835$, $p < .001$). (e) *Elaboration*, operationalized as the average number of characters per idea (recoded on a 1–10 scale with equal intervals).

ANALYSIS

CREATIVITY AND TRAIT-BASED PERSPECTIVE TAKING

As Table 1 shows, we found a dramatic difference between the number of ideas generated by dyads with low ($M_{low} = 10.00$) and high ($M_{high} = 24.75$) scores on PTS. All high-PTS dyads produced at least twice as many ideas as an average low-PTS dyad. Their ideas belonged to a greater number of conceptually distinct categories ($M_{low} = 4.50$; $M_{high} = 7.25$), and were more original ($M_{low} = 5.98$; $M_{high} = 7.07$). The difference between groups on quality was slight ($M_{low} = 5.39$; $M_{high} = 5.48$), while ideas of low-PTS dyads were more elaborated ($M_{low} = 5.04$; $M_{high} = 4.06$). These findings are supportive of Hoever et al.'s (2012) proposal that perspective taking moderates the relationship between diversity and creativity.

TABLE 1. Dyad Creativity Scores

	Low perspective taking scale dyads					High perspective taking scale dyads				
	L1	**L2**	**L3**	**L4**	***Mean* (*SD*)**	**H1**	**H2**	**H3**	**H4**	***Mean* (*SD*)**
Fluency	12	8	12	8	10 (2.31)	20	21	32	26	24.75 (5.50)
Flexibility	6	4	5	3	4.5 (1.29)	8	7	7	7	7.25 (0.50)
Originality	4.83	5.88	7.08	6.13	5.98 (0.92)	6.00	7.20	7.22	7.85	7.07 (0.77)
Quality	5.33	5.46	4.61	6.17	5.39 (0.64)	5.51	4.80	5.44	6.18	5.48 (0.56)
Elaboration	4.38	5.34	4.93	5.53	5.04 (0.51)	4.13	3.85	3.65	4.60	4.06 (0.41)

INTERACTIONAL PERSPECTIVE TAKING

In accordance with Hoever et al.'s (2012) finding that perspective taking leads to more creative ideas in diverse groups via information elaboration, we expected that dyads with high PTS scores would demonstrate a greater frequency of interactional perspective taking behaviors (e.g., questioning, elaborating, providing explanations). Table 2, however, shows that high-PTS dyads displayed less interactional perspective taking on all indices except for agreeing, defending idea, and providing explanation. Though initially counter-intuitive, it is possible that the dyads with lower PTS scores relied on more explicit verbal communication to achieve shared understanding and thus spent many conversational turns asking questions about the other's idea, signaling and repairing understanding, or thinking aloud so that their partner could follow their stream of thought. In short, each idea in the low-PTS dyads tended to entail more negotiation of perspectives. The question is, how do interactional perspective taking processes affect whether dyads will capitalize on individuals' unique experiences or be hindered by diversity?

Example 1: Perspective seeking

1.1 *Idea-generating dialogue*[1]

L1B: Maybe crime will actually decrease as well, because a lot of people target like tourists… pick-pockets.

L1A: So like–

L1B: But I'm not sure.

L1A: –petty criminality, or?

L1B: Yeah, yeah… petty.

1.2 *Idea written down*

Less pick-pockets (tourists)

1.3 *Reconstructive interview: L1A*

R: Do you think this was a good idea?

L1A: Well at first when she said it, I was a bit offended, because I thought does she think that it's only immigrants who are criminals, cause I don't like people who think that way. At first I thought "oh, she's just one of those people who are for Brexit."

R: Did you think that […] influenced the interaction further?

L1A: I see what you mean, in the sense that you don't really connect with the other person so you don't want to exchange ideas anymore … yes, I think so.

In example 1.1 (low-PTS dyad), L1B proposes that there will be a reduction in crime. L1A seeks to understand this perspective by questioning the idea ("so like […] petty criminality, or?"). The reconstructive interview (1.3) shows that this questioning is borne out of stereotyping the partner as "one of those

[1] Transcription conventions: participants are labeled as belonging to a high/low PTS group (H/L), proceeded by the number of dyad (1–4) and interactant (A/B). R denotes researcher, RA is research assistant. Pauses are indicated by ellipses (…), interruptions by dashes (–), and edits by bracketed ellipses ([…]). Ideas written down are underlined within the idea-generating dialogue.

TABLE 2. Interactional Perspective Taking

	Low perspective taking scale dyads					High perspective taking scale dyads				
	L1	**L2**	**L3**	**L4**	***Mean* (*SD*)**	**H1**	**H2**	**H3**	**H4**	***Mean* (*SD*)**
Seeking perspective	13	2	20	17	13.00 (7.87)	9	6	1	6	5.5 (3.32)
Idea-related question	11	2	20	14	11.75 (7.50)	7	5	1	5	4.50 (2.52)
Task-related question	2	0	0	3	1.25 (1.50)	2	1	0	0	0.75 (0.96)
Sharing perspective	66	25	41	61	48.25 (18.89)	31	21	29	44	31.25 (9.54)
Thinking aloud	22	10	14	28	18.50 (8.06)	9	4	5	7	6.25 (2.22)
Providing explanation	19	5	16	14	13.50 (6.03)	11	9	9	27	14.00 (8.72)
Signaling understanding	21	10	14	15	15.00 (4.55)	11	6	15	10	10.50 (3.70)
Repairing understanding	4	0	1	5	2.50 (2.38)	0	2	0	0	0.50 (1.00)
Perspective negotiation	28	21	17	11	19.25 (7.14)	24	19	26	30	24.75 (4.75)
Agreeing	21	19	12	9	15.25 (5.68)	22	11	26	30	22.25 (8.18)
Disagreeing	6	2	3	2	3.25 (1.89)	1	3	0	0	1.00 (1.41)
Defending idea	1	0	2	0	0.75 (0.96)	1	5	0	0	1.50 (2.38)

people who are for Brexit" because of the assumption that immigrants bring crime. What is interesting here is how the interactional marker of perspective taking (questioning) is indicative of L1A and L1B potentially inhabiting very different political discourses. Thus the questioning, rather than bringing L1A and L1B closer together, actually reinforces a rift between them, which then feeds forward into disengagement in the interaction. This supports Williams and O'Reilly's (1998) proposition that social categorization can lead to disputes and reduced motivation to work together.

Example 2: Seeking, sharing, and negotiating perspectives

2.1 *Idea-generating dialogue*

L4A: People will not be able to have so many languages maybe, I mean, I don't know about you, but I learned English because I travelled to another place–

L4B: Same thing.

L4A: Okay, so languages will be less, uh...

L4B: Won't be, uh... languages won't be taught anymore...

L4A: Mhm.

L4B: Languages will become useless, maybe that will be...

L4A: Well, they won't become useless, because people will still be communicating by different technologies, but if people aren't able to...

L4B: Okay, then maybe it would be...

L4A: Less learned or something like that.

L4B: Okay, so... People will learn less languages. I would say that there would be–

L4A: Well, no more languages.

2.2 *Idea written down*

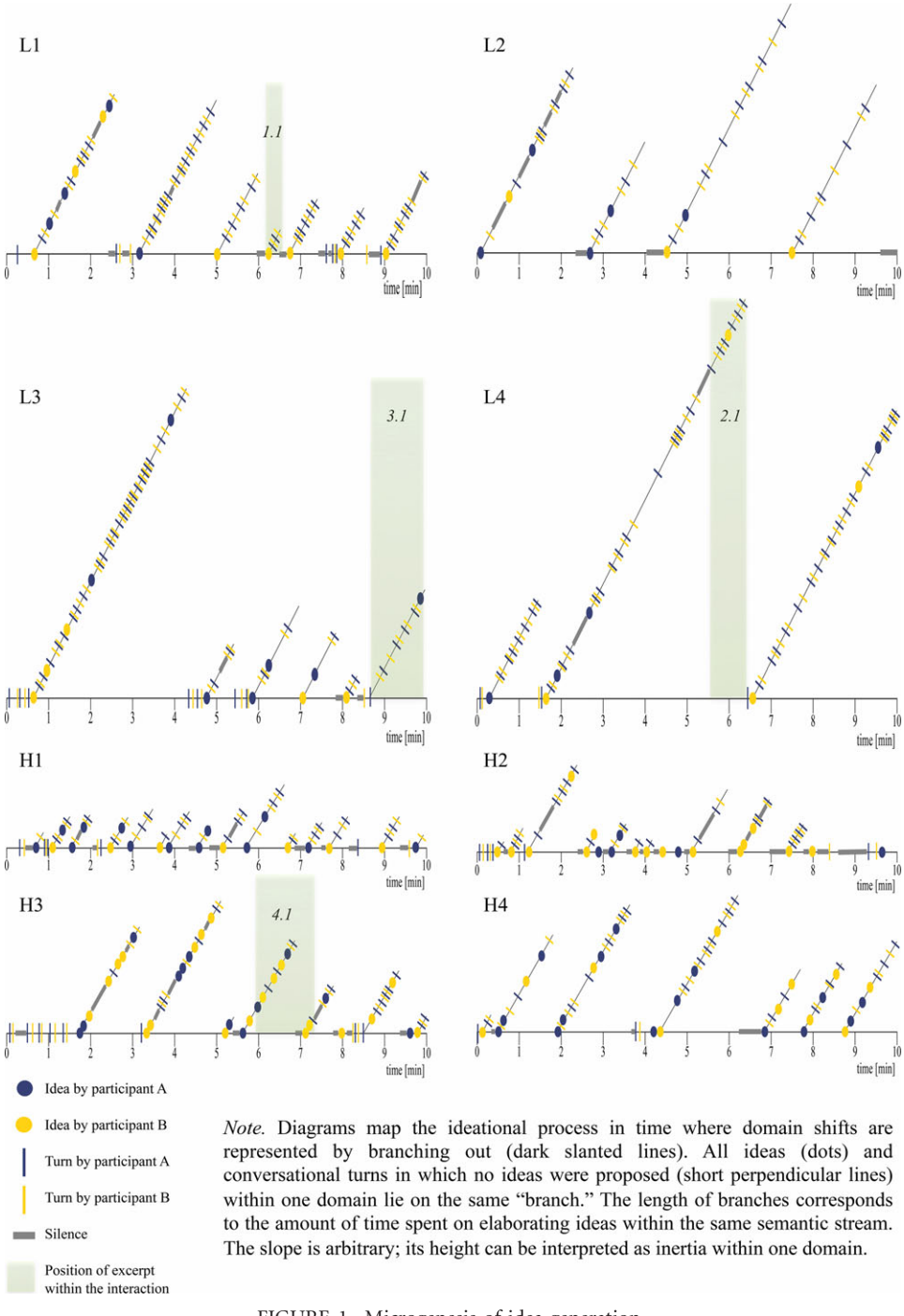
Foreign languages would become useless

2.3 *Reconstructive interview: L4A*

R: And you felt it was important to tell her the reasoning behind your idea?

L4A: Yeah, because she is from the States and the majority of them don't really learn another language.

In 2.1 (low-PTS), L4A struggles to articulate an idea about the impact of no travel on languages. Thinking aloud invites L4B to engage with the idea and elaborate it. Despite a lot of interactional perspective-taking effort, the dyad fails to converge on a clear idea. L4B suggests languages will become useless. L4B



Note. Diagrams map the ideational process in time where domain shifts are represented by branching out (dark slanted lines). All ideas (dots) and conversational turns in which no ideas were proposed (short perpendicular lines) within one domain lie on the same "branch." The length of branches corresponds to the amount of time spent on elaborating ideas within the same semantic stream. The slope is arbitrary; its height can be interpreted as inertia within one domain.

FIGURE 1. Microgenesis of idea generation.

explicitly disagrees ("they won't become useless, because"). Reconstructive interview (2.3) revealed an underlying social categorization issue: L4A (who is Spanish and multilingual) assumed that L4B came from the USA and was monolingual (when she was in fact Belgian and multilingual). This perception created a divergence of perspective that the dyad struggled to overcome – the interactional perspective taking dynamics observed in the interaction are more a symptom of misunderstanding than a means to turn this diversity of perspectives into creative new ideas.

The analysis found that interactional perspective taking behaviors (e.g., questioning, explaining, defending ideas) corresponded to lesser creativity. Examples (1.2) and (2.2) demonstrate how dyads can get stuck when trying to converge on the specifics of an idea; additional information, sharing, and elaboration were not productive for idea generation and often failed to bridge the representational gap between interactants' different perspectives. This seems contrary with Hoever et al.'s (2012) finding that information elaboration is the interactive process that enables creativity in diverse teams; rather, the finding is in line with the view that sharing information is insufficient to overcome divergences of perspective (Cronin & Weingart, 2007). However, differences in perspective did not cause a problem for all dyads.

DOMAIN SHIFTING: WHY DO SOME DYADS GET 'STUCK' IN A DOMAIN?

To compare the dyads that got stuck in a domain with those that shifted domains with ease, we produced diagrams that chart the microgenesis (i.e., step-by-step process; Catan, 1986) of idea creation for each dyad (Figure 1). High-PTS dyads made more domain shifts (39 compared to 20, visible in the greater number of branching out), produced more ideas within each domain (M_{low} = 2.00; M_{high} = 2.54, represented by the density of dots) and spent less conversational turns within one domain (M_{low} = 18.50; M_{high} = 7.85). Greater frequency of domain shifts is congruent with the higher flexibility of high-PTS dyads, since a break from an associative stream results in the new idea belonging to a different domain. Diagrams portray a plausible reason for low-PTS dyads having high elaboration scores; we can observe greater inertia within a domain that does not necessarily lead to new ideas, meaning that more utterances relate to the same idea. These findings raise questions: why did some dyads move fluently from one domain to the next? Conversely, why did the dyads demonstrating lower creativity remain within a domain even when it was not generative? What were the interactional dynamics that enabled or hindered such flexibility?

Example 3: Differences in perspective and getting 'stuck' in a domain

3.1 *Idea-generating dialogue*

L3A: People will probably have like a new language, translation needs will be weaker, and probably there will be new languages.
There will be much more local and new languages, like some kind of dialects [. . .]

L3B: That's the immigrants you think, right?

L3A: Yeah, [. . .] but people in 100 years will probably be having like a kind of dialect that is so different that it became a new language from. . .

L3B: You think it will become much different? I thought it will be the same, or it will get worse [. . .]

L3A: Yeah.

L3B: You know like if you look at the English language, the more technology has grown and the more English meets other languages, English absorbs other languages, right?

L3A: Yeah, yeah, but at this moment, that's. . .

L3B: Yeah, but if you close the borders and they can't leave and no one can come in, English will stagnate. . .

L3A: Yeah, it will change only for the local needs, and. . . yeah.

L3B: Okay, so what did you think about translation?

L3A: Um, that. . . Bilingual people won't be so necessary.

3.2 *Ideas written down*

Bilingual skill will not be necessary.

3.3 *Reconstructive interview: L3A*

R: How did you come up with this?

L3A: I was thinking about my country where there are a lot of regions and people in so many years didn't move much. [. . .]

R: Did you feel like you had to make an effort to understand each other?

L3A: No, just in this moment. Obviously it's a kind of difficult when you're trying to figure out something as abstract as culture and language . . .

R: And did you feel like [. . .] the ideas that were related to your experiences in Colombia were more difficult to get across?

L3A: Definitely, yeah. Yeah. Obviously it's kind of difficult.

3.4 *Reconstructive interview: L3B*

L3B: He said [. . .] something about dialect that I didn't understand.
I felt like he was [. . .] talking Spanish. I thought he was talking from his own perspective [. . .] I'm looking at it like a process, like a domino effect. [. . .] But he was still in his own mode, so I'm there trying to see what I can understand and I think he's going in his way of thinking a little bit.

RA: When you say his way of thinking, can you explain that?

L3B: Well, because he's thinking abstractly.

RA: So if you imagine all of these ideas and to you it was a
bit difficult to. . .

L3B: No, there was no order to them, basically.

Differences in perspective were often reported as an obstacle in low-PTS dyads (L1A, L3A, L3B, L4A). In example 3 we observe two such differences. First, the participants have different nationalities and corresponding experience. In 3.1, L3A is drawing ideas about altered language development from his familiarity with Colombia, a sphere of experience that L3B does not share. This causes a rift in understanding ("I felt like [. . .] he was talking Spanish. I thought he was talking from his own perspective") that L3B tries to mend by referring to the language they have in common – English. Even then, they do not manage to converge on an idea. In the end, L3B thinks that English will stagnate while L3A believes it will continue to change and develop locally. Second, both L3A and L3B reflected on the mode of thinking and reported that they had different cognitive styles in approaching the question. While L3A's approach was more abstract and disorganized, L3B was trying to come up with a systematic sequence of effects. In reconstructive interviews (3.3, 3.4), L3A and L3B disclosed that overcoming these differences in perspective was effortful. Overall, both the difference in their national backgrounds and their approach to the task were seen as problematic and detrimental for creative collaboration. This is congruent with Srikanth et al.'s (2016) proposition that a failure to coordinate perspectives engenders conflicts, demotivation, and negative appraisal of the other.

Example 4: Rapid generation of ideas with little interactional perspective taking

4.1 *Idea-generating dialogue*

H3A: Uh, sports, less international players.

H3B: Yes, less international players. . . so lower wages?

H3A: Yeah, that's really good. Lower wages, less popular events like the World Cup for example.

H3B: So the national champions would become a big thing.

H3A: Yeah.

H3B: All the big stars will become bigger in the country.

H3A: World Cup becomes obsolete.

H3B: Yeah, no, that would be fun.

H3A: Imagine that!

[silence]

H3B: Travel industry will shrink to, uh, very significant size.

H3A: Airlines will run out of business.

4.2 *Ideas written down*

Less international players (sports)
Lower wages
National championships become big
Stars become bigger within the country
World cup becomes obsolete
Travel industry shrinks
Airlines run out of business

4.3 *Reconstructive interview: H3A*

H3A: I'm a big fan of Manchester United, I was just thinking about the club and how it would affect the sports teams, because they are all immigrants as well.

4.4 *Reconstructive interview: H3B*

RA: How did you think of the lower wages?

H3B: Because in this case, especially when you have a good soccer player, for instance, in Brazil, and they want to lure this guy into going to Barcelona or a bigger team, usually they have to offer a bigger sum of money to entice the player to leave the country and play abroad.

In contrast with example 3, the idea-generating dialogue in example 4 (high-PTS) shows a rapid bouncing off each other's ideas. "Less international players" leads straight into "lower wages" which in turn leads straight into sporting events becoming "less popular." It is noticeable that at each step there is minimal elaboration of perspectives (perspective sharing) and no perspective seeking (i.e., questioning). In reconstructive interviews, one can see how H3A draws upon his experience as a supporter of Manchester United in order to generate ideas (4.3). H3B, rather than questioning these background resources, builds upon the suggestion by bringing his own experiences from Brazil as resources to generate the idea about wages (4.4). This creates a shared space of tolerance, exploration and playfulness (e.g., about World Cup becoming obsolete: "Yeah, no, that would be fun." "Imagine that!"). After the associative stream of ideas related to soccer comes to a halt, H3B quickly shifts to a new domain (travel industry). Without questions or explanations, H3A follows up with his own idea ("Airlines will run out of business"). Such dynamic accepting of the other's ideas, and building on them were indicative of greater generativity of ideas, and are in stark contrast with the dyads in examples 2 and 3. These rapid shifts are possible because each participant is engaged in his or her own train of thought, using diverse resources related to their knowledge of the world, the media, personal experiences, etc., as well as every proposition of the other without questioning its legitimacy. Hence, each person seems to be open to the perspective of the other, providing more elements to be used as resource to fuel his or her own and joint stream of ideas.

Example 5: Perceiving the value of different perspectives

5.1 *Reconstructive interview: H3A*

H3A: I think we were coming from different angles. Like some of the things that I wrote were very social based, like talking about racism, talking about xenophobia, whereas his approach was more economics, business, politics.

R: But do you think that it was good that you had different angles?

H3A: Oh, I thought it was excellent to have another perspective, oh, one hundred per cent. Because half the things in there were economic and half the things were social.

5.2 *Reconstructive interview: H4B*

H4B: I mean yeah, we have different experiences and backgrounds, but I didn't see us as individuals but working as a team.

R: Did you feel that you were approaching the question from a similar angle?

H4B: Not always. But, uh, we were very open to each other's, like, ideas and [. . .] we got along very well.

When H3A reflected on the brainstorming process (5.1), he observed that he and his interaction partner were approaching the task from different perspectives, or "angles." Contrary with the examples 2 and 3 (and more generally, L1A, L2A, L2B, L3A, L3B, and L4A), he saw this as decidedly positive and productive for interpersonal creativity since both angles were highly generative ("half the things in there were economic and half the things were social"). H4B reports a similar experience (5.2); even though she and H4A were drawing ideas from distinct backgrounds and experience, non-judgmental openness to each other's ideas allowed them to work as a team and engendered a positive interactive atmosphere.

According to Glăveanu and Gillespie (2014), the self-other disjunction is one of the three creatogenetic differences that hold the potential for emergence of novelty. However, the same diversity of perspectives that was so generative in high-PTS group presented a barrier in low-PTS group. While low-PTS dyads were often unsuccessfully trying to close the disjunction between perspectives and converge on a single interpretation, high-PTS dyads recognized the value of the difference and used it as a springboard to the next domain.

What is at stake, we argue, is participants' *mutual recognition* of each other's perspectives. By that we mean the acceptance of propositions originating from unfamiliar perspectives, which demands a suspension of judgment of the idea, as well as an absence of judgment or categorization of the other person. Mutual recognition resolves the paradox of diversity and creativity by recasting the other's different perspective as an advantage instead of a hindrance to creative collaboration.

In the cases where idea generation stalled, we observed: negative categorization that the other is "a Brexit-type" (1.3); disqualifying the other's perspective on languages because of the (incorrect) inference that she is from the USA and thereby likely monolingual (2.3); negative evaluation of the other's different approach and cognitive style (3.4), leading to disqualifying the perspective. Arguably, this non-recognition of the value of the other's distinct perspective creates barriers (Gillespie, 2008) to using the difference introduced by the other as a resource in the creative process.

Conversely, in highly creative, quickly shifting pairs, participants appeared to be open to a plurality of perspectives. They acknowledged the propositions of the other without questioning their legitimacy (examples 4, 5). Moreover, when interactants' perspectives were very different (because of differences in positions, belonging to social groups, or access to cultural elements), the divergences were not perceived as threatening, but rather as exciting opportunities for further ideation.

DISCUSSION: FROM PERSPECTIVE TAKING TO MUTUAL RECOGNITION

The present findings support the idea that diversity combined with perspective taking can enhance dyad creativity. Diversity, as previously reported, can create problems for communication, leading to defensiveness, and disengagement. As expected based on Hoever et al.'s (2012) research, dyads with high perspective taking scores were much better at idea generation. Surprising was the finding that asking questions, elaborating, and negotiating points of view was found most frequently in dyads that demonstrated the least creativity. Our suggestion is that the key is not perspective taking in the sense of information transfer (understanding the perspective of the other); rather, the key ingredient that unlocks the potential of diversity is perspective taking in the sense of mutual recognition. Instead of the paradoxical opposition between cognitive advantages and social cohesion costs, perspective taking allows people to bridge their differences and mutual recognition allows them to overcome differences that are not bridged, thus promoting interactive processes that are conductive to creativity.

The Perspective Taking Scale (Davis, 1980) asks questions that pertain to both the informational and mutual recognition aspects of perspective taking. For example, an item such as "I sometimes try to understand my friends better by imagining how things look from their perspective" points toward the motivation

to understand the informational content of the other's point of view. However, other items, such as "I believe that there are two sides to every question and I try to look at them both" seems to emphasize mutual recognition and withholding judgment. The most creative dyads in our study did not necessarily understand the perspective of their partner any better than the least creative dyads, but they certainly had more acceptance and enthusiasm for the partner's perspective.

Our exploration of how interactive perspective taking processes affect creativity in diverse dyads relied on a small sample, thus we must be cautious about generalizing the results, especially since there was so much variability between dyads. Additionally, the aim of the divergent thinking task was to rapidly produce many varied ideas, thus a good strategy was to quickly move from one idea to the next without much elaboration. If we used a convergent thinking task that would call for an alignment of perspectives to find a single creative solution, we might observe more interpersonal perspective taking behaviors such as questioning and explaining in high-PTS dyads as well. Exploring interactional processes using a more complex creative task with a closer resemblance to the challenges that diverse teams regularly face in the workplace presents an interesting avenue for future research.

The pronounced differences we observed between the two groups in such a small sample suggest that perspective taking has a tangible effect on collaborative idea generation. Our contribution, emphasizing mutual recognition, is congruent with Osborn's (1953) initial guidelines for brainstorming, namely the suspension of judgment. It is also congruent with broader research. Winnicott (1997), for example, suggested that creativity demands playfulness; in pairs, this is achieved when people engage with the other's propositions without evaluating them. An atmosphere of trust and tolerance of ambiguity, in which interactants maintain a plurality of perspectives and playfully engage with them, has been shown to foster idea generation (Tegano, 1990; Zenasni, Besançon, & Lubart, 2008). Similarly, creative explorations are freely shared between students in the classroom when the frame affords conditions for explorative non-judgmental talk (Zittoun, 2014). More fundamentally, these findings reinforce the idea that a precondition for creative dialogue is not just the presence of another person, but recognizing and valuing the sometimes difficult difference of the other (Marková, In press).

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