Sequentially rotating co-leadership and membership: a multi-level model of creativity and innovation for organisations

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Abstract: In fluctuating economic and technological times, leadership is vital to fostering creativity and innovation for organisational prosperity. Researchers have illustrated how the particular form of co-leadership has been associated with the development of novel products and services, yet they have not elucidated how it can be applied for multi-level organisational creativity and innovation. This conceptual article contributes a new multi-level model of sequentially rotating co-leadership and membership to advance organisational and management theory by filling in theoretical gaps and challenging conceptions with its proposition of a reverse progression of steps from convergence to divergence for expediting group creativity and innovation to enhance organisational financial growth and societal comfort.

Keywords: sequentially rotating co-leadership and membership; co-leadership; membership; creativity; innovation; convergence; divergence; dyads; teams; organisations; management; multi-level model.

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Biographical notes: Rukhsar Sharif earned her Doctorate from Binghamton University in New York, USA. Her research and professional passions coalesce around creativity and innovation, acculturation and creativity and acculturation and innovation in our society and world.

1 Introduction

Historically, people across nations have looked to their emperors and empresses, kings and queens and leaders to guide them through adversity and challenges to stability and ease. Similarly, in current times of economic and technological changes, leadership is a critical variable for adapting to such shifts and kindling creativity and innovation for organisational prosperity (Cook, 2016; Khalili, 2016; Kim, 2019; Tung, 2016). Leadership has been defined as a process that influences members of an entity to prod

them towards common goals or objectives (Bryman, 1992; Den Hartog and Koopman, 2002; Rauch and Behling, 1984; Yukl, 1998). This definition of leadership as an influence over members urging them towards common goals is applied in this article. Certain scholars have noted how leadership is vital to this changing climate, in bringing about organisational aims (Avolio et al., 2009; Cox et al., 2003; Dinh et al., 2014). In particular, leadership has been found to contribute to organisational creativity and innovation (Davis and Eisenhardt, 2011; Jaussi and Dionne, 2003; Johne and Harborne, 2003; Mumford et al., 2002; Redmond et al., 1993; Reese-Dukes and Reese-Dukes, 1983), which facilitate organisations, firms and businesses to adapt to the current fluctuating environment and generate profits from new products and services.

Researchers have explored the influence of different types of leadership on organisational members' creativity and innovation. Creativity has been defined as novel idea generation and innovation as the implementation of those novel ideas into new products and services (Agars et al., 2008; Baer, 2012). These definitions of creativity and innovation are retained in this article. The following examples illustrate the diverse forms of leadership that positively relate to members' creativity and innovation in organisations, such as companies or firms. In his quantitative study of 1,172 employees working across industries in Iran, Khalili (2016) found that transformational leadership, via employees' notions of a conducive climate for innovation, positively and significantly impacted or enhanced employees' creativity and innovation. Similarly, Tung (2016) reported that transformational leadership as well as ambidextrous leadership, through the mediating effect of employees' psychological empowerment and promotion focus, led to a greater improvement in employee creativity in his quantitative study of 427 employees of electronics companies in China. In her quantitative study of 163 supervisor and subordinate pairs from various firms in South Korea, Kim (2019) discovered that high empowering leadership facilitated greater creativity from proactive personality type employees. In his qualitative article, Cook (2016, p.294) expounded on his findings that members of 'Brain Based Enterprises (BBEs)' or information-based businesses expected a collaborative style of leadership to engender their derivation of creative ideas and innovative outputs for global sustainability. Thus, the general construct of leadership has been found in research to be crucial to organisational creativity and innovation because it provides the encouragement and impetus for organisational members to invent new products and services that are helpful and financially profitable to them and of comfort to society.

The particular leadership form of co-leadership has been emerging in research as an inducer of organisational creativity and innovation (Davis and Eisenhardt, 2011; Johne and Harborne, 2003; Reese-Dukes and Reese-Dukes, 1983). Despite the co-leadership research, greater theoretical elaboration is essential for understanding how co-leadership can expedite group creativity and innovation for enhancing organisational financial growth and societal ease. This conceptual article thus seeks to advance organisational and management theory on leadership, creativity and innovation in its propagation of a seminal sequentially rotating co-leadership and membership model of creativity and innovation at multiple organisational levels of analysis. This model is novel in that it fills in theoretical gaps through its clarification of how sequentially rotating co-leadership and membership can generate creativity and innovation at multiple organisational levels. Moreover, the model challenges theoretical ideas on the divergent to convergent progression of steps for group creativity and innovation to occur in organisations, businesses, companies and firms through propositions supporting the reversal of this

progression or movement from convergence to divergence to accelerate group creativity and innovation for increasing organisational financial growth and societal comfort.

This article contains the following sections. Section 2 of the article sets forth a literature review of the relationships between individual leadership and innovation, co-leadership and innovation, rotating co-leadership and innovation and rationale for a sequentially rotating co-leadership and membership model of creativity and innovation. The literature review illustrates how research has not yet adequately addressed how the specific form of co-leadership contributes to creativity and innovation at multiple organisational levels. Section 3 presents a sequentially rotating co-leadership and membership conceptual model of creativity and innovation at multiple organisational levels of analysis. It also depicts the various stages of the model for the dyad, team and organisational levels through figures. Section 4 is a discussion of the main contributions of the model. Section 5 concludes with the unique contributions of the sequentially rotating co-leadership and membership model to organisational and management theory, its implications and limitations, as well as future research directions.

2 Literature review

This literature review presents an examination of empirical research and theoretical or conceptual scholarship on the impact of individual leadership and co-leadership forms on creativity and innovation. It specifically focuses on the effects of individual leadership, shared leadership, co-leadership and rotating co-leadership on creativity and innovation and reveals that the literature has not yet adequately addressed how leadership contributes to creativity and innovation at multiple organisational levels. The review culminates with a rationale for a sequentially rotating co-leadership and membership model in its application for tackling of salient management issues specified in current literature.

2.1 Individual leadership and creativity/innovation

Three key articles examine how leadership behaviour can result in individual, team, or organisational creativity and innovation. In ‘Putting creativity to work: effects of leader behaviour on subordinate creativity’, Redmond et al. (1993) studied the effects of leader behaviour on follower creativity in a sample of 56 male and 40 female undergraduate students from a large south-eastern technical university in the United States of America (USA). This study’s results indicated that leaders can influence followers to develop more creative solutions through their behavioural emphasis on problem construction and strengthening of self-efficacy. However, the study is limited in its findings because the sample is small and comes from a university instead of an organisation where the results could differ. Furthermore, the study only explores creativity and not innovation as the students must work on ideas for a fictional television product instead of actually producing it. It also does not take into account levels of analysis as it only involves an individual level of analysis where an individual leader’s behaviour on follower creativity is assessed.

Similarly to the Redmond et al. (1993) study, Jaussi and Dionne (2003) researched a sample of students at a large university, though it was a north-eastern public university in the USA. However, in their study, ‘Leading for creativity: the role of unconventional

leader behavior', Jaussi and Dionne investigated the effects of unconventional leader behaviour on follower creativity using a sample of 364 undergraduate business students divided into 79 groups. They found that unconventional behaviour moderates the positive correlation between the leader role modelling creativity, and the students actually performing creatively. However, this study is also circumscribed in that the sample comes from a university instead of an actual organisation. Furthermore, Jaussi and Dionne note that the study does not suggest a causal relationship between unconventional leader behaviour and creative follower performance due to several factors, such as the study taking place at one specific moment in time instead of over a longer time span where the effects of the unconventional leader on follower creativity could be verified and the ambiguity of the term 'unconventional' as it does not concretely clarify leader behaviours that cause specific followers to perform creatively. Moreover, Jaussi and Dionne (2003, p.482) explain that the two trained leaders in the experiment were similar in their traits of 'age, height, gender (both were male), and ethnicity'. Therefore, the experiment could have had different results if leaders with diverse demographic traits were selected.

In 'Explaining the heterogeneity of the leadership-innovation relationship: ambidextrous leadership', Rosing et al. (2011) created a model to exemplify how ambidextrous leadership mediates the relationship between innovative tasks and outcomes. They explain that the combination of the different behaviours of exploration and exploitation by leaders is conducive to the process of innovation occurring as exploration increases variance, and exploitation reduces it in follower behaviour on tasks. The result is enough variation to produce new products, while a limit on it ensures the actual creation and development of the new products. However, unlike Redmond et al.'s (1993) and Jaussi and Dionne's (2003) studies, Rosing et al. (2011) present a model of ambidextrous leadership that has not been empirically tested and thus, may not actually result in innovative products. Furthermore, their model is vague and does not stipulate how ambidextrous leadership, through exploration and exploitation, engenders innovative outcomes. Their model also does not specify how ambidextrous leadership would work with multiple leaders as an alternative possibility at multiple organisational levels. As the aforementioned three articles provide no specified assurance that individual leaders can produce innovation over prolonged time periods, exploring how multiple leaders can contribute to innovation has been empirically found, particularly in the case of co-leadership.

2.2 Shared leadership and creativity/innovation

Shared leadership has been conceptualised as a model of leadership that induces innovation. In their conceptual model of shared leadership, Cox et al. (2003, p.55) illustrate how 'shared leadership', as an 'independent variable', is reinforced by both 'vertical leadership' (team formation, leadership support, empowerment, etc.) and team aspects (team size, ability, diversity, tenure, etc.) and moderated by 'interdependence' and 'task complexity' which results in the 'dependent variables' of 'team responses' and 'team effectiveness' in new product development team contexts. However, this model does not clearly delineate how shared leadership is involved in creative idea formation and innovative product implementation. Furthermore, the level of analysis of the model is limited to the team level and does not extend to other organisational levels. In particular, the model does not elaborate on how shared leadership, "the condition in which teams

collectively exert influence" [Cox et al., (2003), p.53], divides the decision-making processes and organises the implementation of new products and services. In other words, it needs to explicate the traits and processes of shared leadership that specifically lead to creativity and innovation. Furthermore, the notion of shared leadership implies multiple leaders, and having multiple leaders in creativity and innovation decision-making can hinder the development of a shared team mental model (Dionne et al., 2010) that facilitates the development of a new product or service. Additionally, the shared leadership model does not account for how all these leaders would resolve team conflicts. However, research has empirically illustrated how a special case of shared leadership, co-leadership, has been found to precipitate creativity and innovation.

2.3 Co-leadership and creativity/innovation

Co-leadership is a form of shared leadership where "two individuals simultaneously share one leadership position" [Pearce and Conger, (2003), p.8]. It has been noted to allow for power symmetry or power sharing between two members ever since ancient Rome (Sally, 2002). In two empirical studies (Johne and Harborne, 2003; Reese-Dukes and Reese-Dukes, 1983), co-leadership was emphasised in the production of novelty. In a study of female-male co-therapy, Reese-Dukes and Reese-Dukes (1983, p.99) found that co-leadership, through having one female and one male co-therapist for each team, led to 'therapeutic change' and the novelties associated with it. In their study of co-leadership in project management and new service development, Johne and Harborne (2003) discovered that co-leadership between the project and senior or business leaders resulted in the creation of new products through the active participation and extensive communication of both co-leaders. However, neither the Reese-Dukes and Reese-Dukes (1983) study nor the Johne and Harborne (2003) study addressed how co-leadership works over multiple organisational levels of analysis. Moreover, both studies did not take into account that fixed co-leadership, co-leaders who remain fixed in working together or with the same teams, would not ensure long-term creativity or innovation as the stability of team membership leads to less creativity (Guzzo and Shea, 1992). Thus, changing team membership would invite participation from new members and instigate creativity and innovation. Instead of a fixed co-leadership model, a rotating co-leadership model would help introduce creativity and innovation through new and different insights from changing leaders.

2.4 Rotating co-leadership and creativity/innovation

In a unique study, Davis and Eisenhardt (2011) revealed how rotating leadership between two partner organisations in the technology field leads to the development of innovative products. In a 'multiple-case inductive study' [Davis and Eisenhardt, (2011), p.164], Davis and Eisenhardt examined how eight collaborations between ten organisations rotating leadership in the computer and communications industries produced more innovative products. The researchers explained that both collaborating organisations rotate leadership by zig-zagging their objectives or alternating their goal setting, engaging in both broad and deep searches for innovative products and assembling different employees to pool their expertise in the creation of new products. However, this study is limited to ten organisations in the computing and communication industries and may not

illustrate whether such rotating leadership generates innovation in other computing and communication organisations as well as other industries, such as banking, finance or health. Moreover, the Davis and Eisenhardt study is confined to the organisational level of analysis and does not explain how rotating leadership occurs at levels below the organisational level, i.e., individual, dyad and team levels. The study also does not clearly illustrate how rotating leadership works as it is vague about the exact length of time that it takes organisations to rotate leadership and is ambiguous about how decision-making occurs between collaborative leaders for innovation implementation.

2.5 Rationale for a sequentially rotating co-leadership and membership conceptual model

At its heart, a sequentially rotating co-leadership and membership multi-level conceptual model involves the alternating influence of diverse co-leaders guiding group members on generating creativity and innovation in organisations. This conceptual model would be helpful when applied for instructing organisations on successfully tackling salient management issues specified in the current literature, such as organisational and management risk (Mishra et al., 2018), ethical fallout (Mishra and Agarwal, 2018), member engagement (Khatri and Raheja, 2018), incentive systems (Wickelgren et al., 2018) and service innovation (Manohar, 2018).

A sequentially rotating co-leadership aspect of the model fits with Mishra et al.'s (2018) paired managerial risk evaluation approach for organisations where expert pairs provide their feedback on risks to organisational or business continuity and propose solutions to them. The implementation of such a model in organisations can thus mean that each organisation's diverse co-leaders would apply Mishra et al.'s organisational risk evaluation method by both participating in assessing their organisation's risks and contributing their divergent ideas to addressing those risks for the continuous success and financial growth of their organisation. For example, ethical fallout is a risk to organisations as illustrated by Mishra and Agarwal's (2018) study of an Indian business school's business management students, who were found to readily jeopardise ethical decision-making for professional benefit in case scenarios. The contrasting co-leaders from an implemented sequentially rotating co-leadership model would be able to counter the risk of this ethical fallout by serving as checks in organisations and holding their members as well as each other accountable to ethical decision-making in favour of the safety, well-being and success of all members and the organisation as a whole instead of the sole benefit of select individuals. In addition, a sequentially rotating co-leadership and membership model can induce member engagement, through diverse co-leaders' encouragement as well as differing members' rotations, which is important for the viability of organisations as exemplified in Khatri and Raheja's (2018) research on alumni giving behaviour for the continuity of universities in India. Moreover, such a model constitutes a form of an incentive system for creativity through organisation co-leaders' and members' brainstorming of novel ideas, similar to the incentive systems that arose from travelling ideas or the ghost myths in Sweden discussed in Wickelgren et al.'s (2018) research article.

Finally, a sequentially rotating co-leadership and membership multi-level model provides an internal structure of human resource, distinctive co-leader and member, arrangements that are conducive to innovation analogous to Manohar's (2018) identification of a firm's internal structure and human resources as integral to its service

innovation. The model's human resource groupings can serve to foster innovation in service industries, such as service delivery (Dharamdass and Fernando, 2018) and public healthcare (Chiarini et al., 2018). For example, in their conceptual article, Dharamdass and Fernando (2018) highlighted the importance of human resource factors, such as team structure and cross-functional coordination of staff members, that need to be examined for their effects on contact centre service excellence. Team structure and cross-functional grouping elements are endemic to a sequentially rotating co-leadership and membership multi-level model, which consists of such larger formations of organisational members contributing to creativity and innovation, outcomes that relate to excellence in that they comprise the highest level of cognitive thought (Anderson and Krathwohl, 2001). Therefore, this type of model can be applied for setting up human resource groupings to innovate contact centre client services, such as a new service where customer service agents text clients elated emojis with verification of their completed services, which exemplifies excellent customer service as the aim is to positively impact clients' emotions via the ecstatic emojis. The human resource formations from the model can similarly be applied to innovate public healthcare services through training of hospital staff members, as recommended by Chiarini et al. (2018), to collaborate on developing novel technologies for patient care, such as apps that hourly update on patients' required dietary intake and the continuity of their biorhythms. Hence, development of a sequentially rotating co-leadership and membership multi-level conceptual model is vital for the innovation and advancement of service industries.

3 Sequentially rotating co-leadership and membership multi-level model of creativity and innovation

3.1 Overview of the conceptual model

This article advances organisational and management theory in its generation of a new sequentially rotating co-leadership and membership multi-level conceptual model of creativity and innovation for organisations, businesses, companies and firms. The novel model revolves around its kernel, specifically sequentially alternating co-leadership and membership based on the homogeneity followed by heterogeneity of surface and deep level traits, at multiple organisational levels: dyad, team and organisation (Dansereau et al., 1999; DeChurch et al., 2010; Dionne et al., 2012; Yammarino and Dansereau, 2009). This model of sequentially rotating co-leadership and membership moves beyond the concept of rotating co-leadership that Davis and Eisenhardt (2011) solely investigated at the organisational level by specifying how sequentially rotating co-leadership and membership generates and expedites creativity and innovation from micro- to macro-organisational levels, thereby facilitating the actual implementation of the model within organisations for increasing organisational wealth and societal ease.

3.2 Model at the dyad level of analysis

The model begins at the most basic organisational level known as the dyad, which signifies a two-person group or pair (Yammarino and Dansereau, 2009). On the first day at this dyadic level, co-leaders or co-leading managers, with diverse gender, race, demographic location and functional characteristics from one another and who have

previously been successful in guiding the development of one or more innovative products or services to their completion, each individually collaborate with an organisational staff member or employee who shares similar gender, race, demographic location and functional background traits to them. The theoretical rationale for the pairing of co-leaders with members who share homogeneous traits with them is 'similarity-attraction theory' (Berscheid and Walster, 1978; Byrne, 1971; Derue et al., 2011; Mannix and Neale, 2005) where people are more likely to interact with those they perceive as similar to them in terms of attitudes and beliefs. Facility in sharing attitudes and beliefs transpires from possessing common surface level traits, e.g., gender, race, or demographic location, and deep level traits, e.g., functional background, because similar attitudes and beliefs develop from common experiences involving such traits (Bantel and Jackson, 1989; Hambrick and Mason, 1984; Mannix and Neale, 2005).

Moreover, pairing based on common surface and deep level characteristics eases communication between the co-leaders and their members within dyads as they would be more inclined to relate with one another's familiar thinking styles stemming from those common characteristics. These homogenised dyads of co-leaders and respective members are thus readily able to converge on creative ideas that they can implement into innovative products or services due to 'shared mental models' [Mumford and Hunter, (2005), p.33] where they have mutual understanding of the innovative product or service and how to produce it. Convergence has been emphasised as a key aspect of the group creative process in Leonard and Swap's (1999) theoretical model as it is necessary for forward momentum on implementing a single creative idea into a product or service. In their study, Nouri et al. (2013) found that such convergence of mental models through pairing individuals of homogeneous cultural backgrounds led to greater creativity within a brief ten-minute time period compared to heterogeneous culturally paired individuals who spent more time clarifying and establishing mutual understanding of their communications instead of generating creative ideas. This previous research (Mumford and Hunter, 2005; Nouri et al., 2013) suggests that creativity and innovation are expedited through a convergence of mindsets resulting from homogenised demographic and functional pairings.

Consequently, the model in this article starts out with a co-leader or co-leading manager and member who share demographic and functional traits with one another in each dyad because the similarity of demographic and functional traits translates into a convergence of the individuals' mental models, which accelerates dyad creativity for organisational financial growth and societal comfort. Furthermore, based on previous research (Desplaces et al., 2007; Sharif, 2019), the co-leaders would only need a maximum of 40 minutes to work with their members to brainstorm creative ideas that would be implemented into concrete innovative products or services by organisational teams. Towards the end of the 40 minutes, the co-leader and member would select one creative idea that the teams would implement into the innovative product or service. The 40-minute time frame allows each co-leader to collaborate with more than one member in a dyad as the co-leader would spend 40 minutes with one demographically and functionally similar dyad member to derive a creative idea for implementation before spending the next 40-minute segment with another comparable dyad member brainstorming and settling on a different creative idea for a product. This scenario of co-leaders working in pairs with members who share corresponding traits to them is a case of homogeneous wholes based on organisational theory where there are no differences within the dyads, but differences between them since each co-leader

possesses different traits from one another (Dansereau et al., 1999; Yammarino and Dansereau, 2009).

The idea of the homogeneous wholes dyad can be understood with the following symbolic notation: a co-leader or co-leading manager with a particular gender (G1), race (R1), demographic location (D1) and functional background (F1) would collaborate with a member with such similar traits (G1, R1, D1 and F1) to derive a creative idea for a product. For example, a co-leader, who is male (G1), European-American (R1), from New York, USA (D1) and an information technology (F1) manager of a company, would work with a member, who shares similar traits of being male (G1), European-American (R1), from New York, USA (D1) and an information technology (F1) specialist of a company, to conceive of creating a new easy to carry mini wallet-sized compact computer with printing capability as they both come from technologically driven demographic locations and functional backgrounds. This mini wallet-sized compact computer, especially if affordable to numerous people, would contribute to an increase in the organisation's or company's finances as many people would purchase it for the ease that they derived from it. Therefore, when co-leaders or co-leading managers begin by working with dyadic members who are of analogous gender, race, demographic location and functional backgrounds to them, they would be more likely to establish a shared mental model (Mannix and Neale, 2005; Mumford and Hunter, 2005; Nouri et al., 2013) to rapidly generate creative ideas for products and services that would contribute to organisational financial growth and societal comfort.

Proposition 1: Co-leaders or co-leading managers beginning by collaborating with members sharing similar demographic and functional background traits to them in dyads (homogeneous wholes) allows for convergent thinking that expedites the conception of a creative product or service idea that would be of financial benefit to the organisation and ease to society.

Figure 1 Homogeneous wholes co-leader dyads

Notes: G1 = gender 1, R1 = race 1, D1 = demographic 1, F1 = functional background 1
G2 = gender 2, R2 = race 2, D2 = demographic 2, F2 = functional background 2.

Following the first day of creative brainstorming, the co-leaders or co-leading managers would rotate the next day to pair with members who have different gender, race, demographic location and functional background traits from them. After rotation, the co-leaders would spend the same amount of time, 40 minutes, as the previous day to enhance the creativity of the product or service idea with their heterogeneous dyadic members since researchers have previously found 40 minutes to be adequate for creative idea brainstorming and implementing (Desplaces et al., 2007; Sharif, 2019). The sequential rotation of co-leaders with disparate demographic and functional traits further increases the originality of the creative product or service idea generated the day before due to their diverse traits engendering divergent thinking (Barron and Harrington, 1981; Guilford, 1950; Koestler, 1964; Mumford and Connelly, 1991) where these different co-leaders contribute their alternative product or service ideas and combine them with the

previously conceived creative product or service idea. Divergence in thinking is another vital aspect for creativity based on Leonard and Swap's (1999) group creative process theoretical model since it fosters novelty through the generation and combination of multiple distinct ideas. Furthermore, sequential rotation of leaders, such as from homogeneous to heterogeneous dyads as in this model, results in creative idea and innovative product or service generation because researchers have found sequential processes to be conducive to the resolution of socially innovative problems (Mumford et al., 2007) or organisational innovation. The collaboration of co-leaders in pairs with members who possess diverse traits from them is a case of heterogeneous parts as specified in organisational theory where there are differences within the dyads, but no differences between them since both are comprised of heterogeneous members (Dansereau et al., 1999; Yammarino and Dansereau, 2009).

The case of the heterogeneous parts dyad can be understood with the following example of symbolic notation. A co-leader or co-leading manager, with a particular gender (G2), race (R2), demographic location (D2) and functional background (F2), would rotate and work with a member with a different gender (G1), race (R1), demographic location (D1) and functional background (F1) to increase the creativity of the product or service idea. For instance, building on the aforementioned example, the mini wallet-sized compact computer idea generated by the homogeneous wholes dyad the day before would be enhanced in originality when the new rotating co-leader, who shares differing traits of being female (G2), African-American (R2), from Louisiana, USA (D2) and a jewellery sales (F2) manager of a business, suggests to the male (G1) member, of European-American (R1) background from New York, USA (D1) and information technology (F1) specialist of a company, to create a mini compact computer bracelet that people could comfortably wear and readily access in any location. Therefore, she incorporates her distinct jewellery-making expertise into enhancing the novelty of the product. If priced affordably, the new computer bracelet would attract a large number of clients who would readily purchase it for comfort, thereby augmenting the organisation's or business's finances.

Proposition 2: Sequentially rotating co-leaders or co-leading managers to collaborate with members having different demographic and functional characteristics from them (heterogeneous parts) at the dyad level facilitates divergent thinking towards enhancing the creativity of a product or service idea generated by homogeneous dyads that would be financially advantageous to the organisation and of comfort to society.

Figure 2 Heterogeneous parts co-leader dyads after sequential rotation

Notes: G1 = gender 1, R1 = race 1, D1 = demographic 1, F1 = functional background 1
G2 = gender 2, R2 = race 2, D2 = demographic 2, F2 = functional background 2.

3.3 Model at the team level of analysis

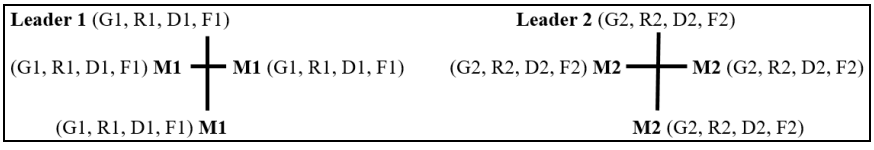
After the heterogeneous dyadic co-leaders and members have settled and agreed on their new product or service ideas during the second day of creative brainstorming, they implement them on the third day at the next organisational level, teams or groupings of more than two members (Yammarino and Dansereau, 2009). In this model, the teams, each comprising a co-leader or co-leading manager and three members, would contain four members in total as this team size is moderate and has the ability to generate the innovative product or service (Mumford and Hunter, 2005). Each co-leader or co-leading manager would begin by collaborating with three team members who share similar gender, race, demographic location and functional backgrounds to them since their common traits would ease their working together based on 'similarity-attraction theory' (Byrne, 1971; Mannix and Neale, 2005) where they would be drawn to each other's familiar thinking styles and convergence of mental models (Dionne et al., 2010). The convergence of mental models facilitates intra-team communication since team members understand each other (Mannix and Neale, 2005; Mumford and Hunter, 2005), which allows for them to smoothly and expeditiously arrive at a consensus on implementing steps for producing the innovative product or service brainstormed during the dyad phase. Moreover, prior research (Mumford and Hunter, 2005; Nouri et al., 2013) has illustrated that creativity and innovation are hastened from the convergence of mental models of individuals with homogenised demographic and functional traits in groups. As predicated on the 40-minute time frame from previous research (Desplaces et al., 2007; Sharif, 2019) explained in the dyad phase of the model, the co-leaders would spend 40 minutes with their respective homogeneous team members to reach consensus on the innovative product or service implementation. This collaboration of co-leaders with team members sharing comparable traits to them is a case of homogeneous wholes as per organisational theory where there are no differences within teams, but differences between them since each team diverges in composition from the other (Dansereau et al., 1999; Yammarino and Dansereau, 2009).

The homogeneous wholes team can be understood by the following example with symbolic notation. A co-leader or co-leading manager, with a particular gender (G1), race (R1), demographic location (D1), and functional background (F1), would work with team members of parallel gender (G1), race (R1), demographic location (D1) and functional backgrounds (F1) to implement the creative idea into a product or service. For instance, the male (G1) co-leader, of European-American (R1) background from New York, USA (D1) and information technology (F1) manager of a company in the example from the dyad section, would collaborate with team members who are also male (G1), European-American (R1), from the north-eastern USA (D1) and information technology (F1) specialists to converge on steps for developing the mini wallet-sized compact computer that is easy for people to carry. If this easy to transport mini wallet-sized computer is reasonably priced, it would most likely be sought after and bought by greater numbers of people who would be investing in the organisation's or company's financial growth.

Proposition 3: Co-leaders or co-leading managers commencing by collaborating with three team members possessing similar demographic and functional background characteristics to them (homogeneous wholes) facilitates a convergence of mental models

which precipitates agreement on steps for implementing an innovative product or service that is profitable to the organisation and provides ease to society.

Figure 3 Homogeneous wholes co-leader and member teams



Notes: M1 = member 1, G1 = gender 1, R1 = race 1, D1 = demographic 1, F1 = functional background 1
M2 = member 2, G2 = gender 2, R2 = race 2, D2 = demographic 2, F2 = functional background 2.

On the day after homogeneous wholes teamwork or on the fourth day, the co-leaders or co-leading managers would randomly select a single team member from the homogeneous wholes teams to rotate along with them where they would both join teams comprised of two members with different gender, race, demographic location and functional backgrounds from them. The random selection of a team member sharing analogous traits to the co-leader would allow for a degree of objectivity and fairness in the team formations as each team member would be given an equal chance to be selected to rotate with the co-leader. Additionally, the rotation of a co-leader along with one member from each homogeneous wholes team to teams with two members of diverse demographic and functional attributes would be conducive to innovation since teams of four members have been known to be innovative (Mumford and Hunter, 2005). Furthermore, such co-leader and member rotations are important for product and service innovation as teams of co-leaders and members with diverse traits engender divergent thinking (Barron and Harrington, 1981; Guilford, 1950) where they provide alternative procedures to team members that enhance the novel or unique attributes of the product or service they are creating. Divergent thinking contributes to creativity and innovation through the combination of disparate ideas or concepts into new insights as exemplified in the divergence process in Leonard and Swap's (1999) group creative process theoretical model.

Akin to the timing in the dyad and homogeneous wholes team phases, the co-leaders or co-leading managers and respective randomly selected members would spend a time span of 40 minutes with two heterogeneous gender, race, demographic location and functional background members from them to build on the innovative product or service. After each 40-minute segment of time, the co-leaders would switch their randomly selected members with alternative randomly selected members sharing similar gender, race, demographic and functional attributes to them to join their collaboration with two other diverse gender, race, demographic location and functional background members from them to enhance the innovation of different products or services. The rotation of co-leaders and members to different teams after every 40 minutes facilitates the implementation of multiple innovative products and services. This team model of co-leaders and members collaborating with other members who possess distinct traits from them is an example of heterogeneous parts in accordance with organisational theory where there are differences within teams, but not between them as the teams are internally heterogeneous (Dansereau et al., 1999; Yammarino and Dansereau, 2009).

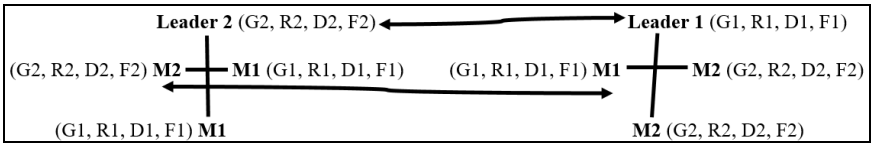
This example with symbolic notation elucidates the heterogeneous parts team. A co-leader or co-leading manager with a particular gender (G2), race (R2), demographic location (D2) and functional background (F2) along with a member sharing similar characteristics (G2, R2, D2 and F2) would rotate to collaborate with two team members of a different gender (G1), race (R1), demographic location (D1) and functional background (F1) to boost the originality and novelty of the product or service by altering its production. Following from the example in the dyad section, the female (G2) co-leader, of African-American (R2) background from Louisiana, USA (D2) and jewellery sales (F2) manager along with a fellow female (G2) of African-Caribbean-American (R2) heritage from Mississippi, USA (D2) and an apparel sales (F2) member would offer their diverse perspectives when rotating to work with the two team members from the homogenised teams, who are males (G1), European-American (R1), from New York, USA (D1) and information technology (F1) specialists. The jewellery sales co-leader and apparel sales member would draw on their aesthetics expertise to suggest the modification of the production of the mini wallet-sized compact computer by adding protruding hooks to its sides for it to be attached in the middle of an interlocking gold and silver bracelet chain that people could wear for their comfort. Therefore, the perspectives of the co-leader and member, influenced by their functional jewellery and apparel sales backgrounds and southern USA demographic traits, diverging from the outlooks of the two information technology team members from New York, USA, would foster the team's combining of diverse ideas to reshape and elevate the product's novelty. This novel wearable mini wallet-sized computer, especially when priced affordably, would allure numerous clients to purchase it for their comfort, which in turn increases the organisation's or business's prosperity.

The rotation of co-leaders or co-leading managers along with their respective randomly selected members would occur sequentially on a daily basis where the co-leaders and members of similar demographic and functional traits would spend a day working with a different set of two team members of dissimilar demographic and functional characteristics from them after every 40 minutes and then rotate back on the following day to work with their initial homogeneous team members. Likewise, during each successive homogeneous wholes team formation day, co-leaders would continue to rotate after every 40 minutes to collaborate with various teams of three members sharing their demographic and functional traits to ensure the development of multiple innovative products or services. The daily sequential rotation between homogeneous wholes team formations on one day and heterogeneous parts team configurations the next would occur until the completion of each innovative product or service. However, if the co-leaders and team members from either the homogeneous wholes or heterogeneous parts teams determine that a product is not materialising or the service is not panning out as envisioned within a maximum time of one month, they would return to either redesigning the innovative product or service or developing a completely new one so as not to waste investments of time and money. Thus, the sequential co-leader and member rotation to teams where members have disparate traits from them would allow for alternative product implementation ideas and skills to be shared in modifying the homogeneous team's product or service from the previous day to a unique and novel product or service for organisational financial growth and societal ease.

Proposition 4: Sequentially rotating a co-leader or co-leading manager and member sharing similar demographic and functional attributes to collaborate with two members

possessing dissimilar demographic and functional traits from them (heterogeneous parts) at the team level contributes to divergent thinking and an alteration of the product or service that enhances innovation for organisational financial growth and societal comfort.

Figure 4 Heterogeneous parts co-leader and member teams after sequential rotation



Notes: M1 = member 1, G1 = gender 1, R1 = race 1, D1 = demographic 1, F1 = functional background 1
M2 = member 2, G2 = gender 2, R2 = race 2, D2 = demographic 2, F2 = functional background 2.

3.4 Model at the organisation level of analysis

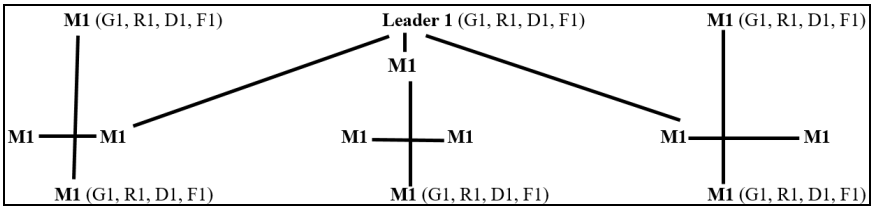
When the innovative product or service is labour-intensive in that it depends on assembly by multiple teams or departments, its production occurs at the organisational level of analysis (Yammarino and Dansereau, 2009). On the first day at this organisational level, co-leaders or co-leading managers would begin by working with several homogeneous wholes teams, each comparable to the other with four members of similar gender, race, demographic location and functional backgrounds, to induce convergence of mental models (Dionne et al., 2010). This convergence of mental models facilitates an acceleration of the construction of the innovative product or service due to mutual understanding and agreement on how to implement it (Mumford and Hunter, 2005; Nouri et al., 2013). When co-leaders or co-leading managers commence by collaborating with multiple teams or departments consisting of members sharing their corresponding gender, race, demographic location and functional backgrounds, they would be eased into integrating their similar expertise and skills through mutual understandings and attitudes with members on how to complete the innovative product or service as per 'similarity-attraction theory' (Byrne, 1971; Mannix and Neale, 2005). These reciprocal understandings and agreements would help speed up the time it would take to create the novel product or service as the homogenised co-leaders and members would synchronise their shared knowledge and skills to complete it. The co-leaders would spend the full day working with their respective multiple homogeneous four-member teams to complete a single innovative product or service. This collaboration between co-leaders and several teams or departments of members sharing common background traits to them exemplifies a case of homogeneous wholes where there are no differences within the organisation, but differences between organisations as each diverges from the other in overall team composition (Dansereau et al., 1999; Yammarino and Dansereau, 2009).

Homogeneous wholes team formations at the organisational level can be illustrated through the following example with symbolic notation. A co-leader or co-leading manager, of a specific gender (G1), race (R1), demographic (D1) and functional background (F1), would work with several teams each of four members who share a comparable gender (G1), race (R1), demographic location (D1) and functional background (F1) to complete the formation of the innovative product or service. For example, the male (G1) co-leader, of European-American (R1) descent from New York,

USA (D1) and information technology (F1) manager from the dyad and team examples, would work with several teams, each of four members who are also male (G1), European-American (R1), from New York, USA (D1) and technicians in the computer industry (F1), to complete the assembly of the mini wallet-sized compact computer bracelet. If this mini computer bracelet was reasonably priced, it would earn the organisation or company a financial windfall with the large numbers of people purchasing it for the ease with which it could be worn.

Proposition 5: At the homogeneous wholes organisational level, co-leaders or co-leading managers collaborate with multiple teams, each comprised of four members with congruent demographic and functional background traits, to synchronise their shared knowledge and skills, thereby accelerating the completion of an innovative labour-intensive product or service that contributes to organisational financial growth and societal ease.

Figure 5 Homogeneous wholes co-leader and member organisation



Notes: M1 = member 1, G1 = gender 1, R1 = race 1, D1 = demographic 1, F1 = functional background 1.

On the day succeeding the homogeneous wholes multiple team or departmental formations or on the second day at the organisational level, each co-leader or co-leading manager would randomly select two members sharing common gender, race, demographic location and functional traits to them from each homogeneous wholes team to rotate to work on innovative products with two members possessing divergent gender, race, demographic location and functional attributes from them in heterogeneous parts teams. Therefore, there would be multiple four-person teams each comprised of two members sharing comparable demographic and functional traits to each other and diverging from the other two members possessing similar demographic and functional characteristics to one another. As indicated in the explanation of the team level of the model, random selection of members for the teams allows for fairness in team assignments. Following random assignment of members to teams, each co-leader or co-leading manager would spend the full day collaborating with one another and all the now diversified teams to enhance the uniqueness of one of the innovative products or services that they anticipate requires the least amount of time to complete before undertaking the completion of the other labour-intensive innovations. At the organisational level, the collaboration between co-leaders and multiple teams or departments of members possessing diverse traits from one another is a case of heterogeneous parts where there are differences within organisations, but not between them as the organisations are analogous in their internal diversity (Dansereau et al., 1999; Yammarino and Dansereau, 2009).

The co-leaders and members would continue to sequentially rotate daily between homogeneous wholes multiple team formations on one day and heterogeneous parts multiple team configurations the next until the innovative products or services are completed for organisational financial benefit and societal comfort. This daily sequential rotation from homogeneous whole to heterogeneous part team configurations at the organisational level advances the novelty of products and services due to the influence of divergent thinking from the heterogeneous parts teams, which increases the originality of product or service (Barron and Harrington, 1981; Guilford, 1950) features when implemented. Furthermore, as Leonard and Swap (1999) discovered from their group creative process model, divergent thinking results in innovation when contrasting ideas are merged together and concretised into commodities or services that did not exist before.

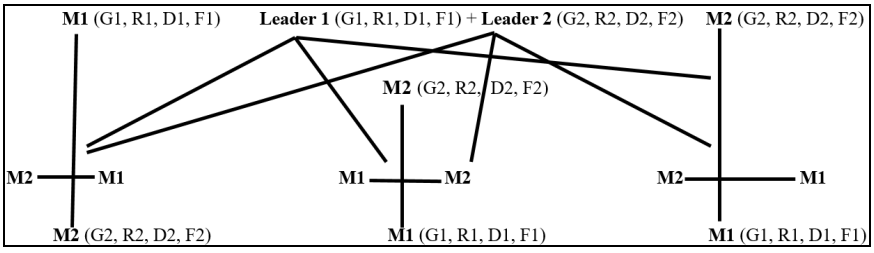
Though the rationale for the creativity and innovation of this sequentially rotating co-leadership and membership model is rooted in Leonard and Swap's (1999) group creative process theory, the model actually charts new theoretical territory in its proposition of a reverse progression of steps from convergence to divergence to expedite group creativity as opposed to Leonard and Swap's divergence to convergence order. This model challenges the theory of divergent idea generation transpiring prior to idea convergence in the group creative process (Leonard and Swap, 1999) by revealing the reverse: that convergence elicited from homogenised groups (homogeneous wholes) takes place before divergence derived from heterogenised groups (heterogeneous parts) to accelerate creativity and innovation. Moreover, the sequentially rotating co-leadership and membership model illustrates that creativity and innovation can rapidly transpire from the process of convergence followed by divergence instead of the other way around because researchers have previously highlighted that the convergence of mental models from homogenised demographic and functional group formations expedites creativity and innovation (Mannix and Neale, 2005; Mumford and Hunter, 2005; Nouri et al., 2013). Thus, beginning with convergence facilitates quicker creative idea generation and selection than divergence which entails added time in reaching a consensus on creative idea selection.

This subsequent example with symbolic notation illuminates the case of heterogeneous parts team arrangements at the organisational level. A co-leader or co-leading manager would randomly select two members with a particular corresponding gender (G2), race (R2), demographic location (D2) and functional background (F2) from each of her or his respective homogeneous wholes teams to rotate and join two members of a diverse gender (G1), race (R1), demographic location (D1) and functional background (F1) to work on adding final alternative touches to make the product or service more innovative. The four members from each heterogeneous parts team would augment the innovation of the product or service because of their reinforced divergence in thinking and approach that they impart to the labour-intensive product. Following from the examples in the dyad and team sections, the African-American female jewellery sales co-leading manager from Louisiana, USA and the European-American male information technology co-leading manager from New York, USA would collaborate with all their heterogeneous parts four-member teams, each comprised of two female (G2) members of African-American or African descent (R2) from the southern USA (D2) in the apparel and jewellery business (F2) and two male (G1) members of European-American or European descent (R1) from the north-eastern USA (D1) in the technology and computer industry (F1), to enhance the uniqueness of the mini wallet-sized compact computer

bracelet. The technology and computer members would create a fold-in computer screen that unfolds to show type or print, and the jewellery and apparel members would coat the entire computer bracelet with the glow-in-the-dark calcite orb gemstone for it to be seen and prevented from damage at night. This novel glow-in-the-dark foldable mini wallet-sized compact computer bracelet, particularly when affordably priced, would captivate many people to buy it for its comfortable portability and increase organisational or business prosperity.

Proposition 6: At the heterogeneous parts organisational level, diverse co-leader or co-leading manager collaborations with each other and with sequentially rotated four-member teams, each comprised of two members with disparate demographic and functional traits from the other two members, reinforce divergent thinking and approaches that enhance the innovation of a labour-intensive product or service for organisational prosperity and societal comfort.

Figure 6 Heterogeneous parts co-leader and member organisation after sequential rotation



Notes: M1 = member 1, G1 = gender 1, R1 = race 1, D1 = demographic 1, F1 = functional background 1
M2 = member 2, G2 = gender 2, R2 = race 2, D2 = demographic 2, F2 = functional background 2

4 Discussion

This article presented a novel sequentially rotating co-leader and member conceptual model of creativity and innovation at multiple organisational levels of analysis for organisational financial growth and societal ease. In the sequentially rotating co-leadership and membership multi-level model, organisational creativity and innovation are expedited through a combination of shared co-leader and member traits, gender, race, demographic location and functional background, which translate into mental model convergence (Dionne et al., 2010), and contrasting co-leader and member traits, gender, race, demographic location and functional background, which elicit divergence in thinking, skills and abilities (Barron and Harrington, 1981; Guilford, 1950). While this model is supported by research on the association between sequential leadership rotation and innovation (Mumford et al., 2007), it is unique in that it fills in theoretical gaps and challenges organisational and management theory.

Firstly, the sequentially rotating co-leadership and membership model is new and unique in that it consists of a comprehensive conceptual framework that elucidates how sequential co-leadership and membership rotation can be applied to generate creativity and innovation at micro (dyad and team) and macro (organisation) levels of analysis

when organisational and management theory and research (Davis and Eisenhardt, 2011; Mumford et al., 2007; Zaccaro et al., 1991) are marked by lacunae on how sequential leadership rotation occurs at micro-organisational (dyad and team) levels. A comprehensive understanding of sequential co-leadership and membership rotation at micro- and macro-organisational levels is important for generating the maximum creativity and innovation at each level for greater organisational financial growth and societal well-being. Furthermore, a thorough illustration of multi-level organisational co-leadership and membership sequential rotation facilitates the actual implementation of the model in organisations. Thus, the multi-level model advances organisational and management theory by filling in the gaps of how sequential co-leadership and membership rotation induces creativity and innovation at each principal organisational level of analysis, thereby contributing to future theory building and testing.

Secondly, the sequentially rotating co-leadership and membership multi-level conceptual model in this article is breakthrough in that it challenges organisational and management theory through its proposition of a reversal of the progression of steps in the group creative process to expedite creativity and innovation for increased organisational prosperity and societal comfort. In their group creative process theoretical model, Leonard and Swap (1999) suggested that group creativity in businesses and organisations occurred in the following order: from brainstorming of diverse ideas to converging on a single new idea for implementation. However, this sequentially rotating co-leadership and membership model illustrates that creativity and innovation in organisations can transpire more rapidly by starting out with homogeneous groups converging on a common idea, product or service, since prior research suggests that creativity is precipitated from the shared mental models of homogenised demographic and functional groups (Mumford and Hunter, 2005; Nouri et al., 2013), followed by heterogeneous groups appending alternative ideas or features to the common idea, product or service to shape it into an innovation. Hence, this model contests organisational and management theory, i.e., Leonard and Swap's (1999) group creative process, by illuminating how creativity and innovation can swiftly ensue from the process of convergence followed by divergence of ideas and their implementation at multiple organisational levels.

5 Conclusions

This article presents a new sequentially rotating co-leadership and membership conceptual model at multiple organisational levels of analysis for the rapid generation of creative ideas and innovative products or services that contribute to organisational prosperity and societal comfort. The model is novel and unique in that it challenges organisational and management theory and fills in its gaps by illustrating sequential co-leader and member rotation from homogeneous wholes to heterogeneous parts groups swiftly engendering creativity and innovation through convergence on the conception and implementation of an innovative product or service followed by divergence on or alteration of it at the dyad, team and organisational levels.

5.1 Theoretical and managerial implications

The sequentially rotating co-leadership and membership multi-level model has implications for organisation and management theory and practice. Its proposition that

creativity and innovation in organisations rapidly ensue from a convergence followed by divergence progression of steps indicates that organisation and management group creativity and innovation theories need to broaden in scope to incorporate alternative creativity and innovation processes instead of the widely accepted sole divergence to convergence process delineated in Leonard and Swap's (1999) group creative process theoretical model. Moreover, organisation and management group creativity and innovation theories need to comprehensively elucidate how creativity and innovation occur at micro- and macro-organisational levels, as this sequentially rotating co-leadership and membership model illustrated through sequential rotation between homogeneous wholes (converging) and heterogeneous parts (diverging) group formations at multiple organisational levels, because the thorough clarification facilitates greater managerial understanding on how to apply the theories in practice. For example, managers can apply the sequentially rotating co-leadership and membership multi-level model in their companies, businesses and organisations where they assign co-leading managers and employees to sequentially rotate between homogeneous wholes and heterogeneous parts group formations at the dyad, team and organisational levels to expedite the generation of creative ideas and innovative products and services through the convergence (converging on a common idea, product or service) to divergence (appending alternative ideas or features to the common idea, product or service) progression of steps. This rapid generation of creative ideas and their implementation into products and services would allow for more innovative products and services to be sold for societal comfort, thereby boosting financial growth for companies, businesses and organisations.

The sequentially rotating co-leadership and membership model can further be applied across industries for engendering creativity and innovation to derive solutions to salient management problems. Since the model provides a framework of human resource, distinctive co-leader and member, configurations that are instrumental for innovation, similarly to Manohar's (2018) specification of a firm's human resources as integral to its service innovation, it can be implemented for generating creative and innovative solutions to key management issues, such as organisational and management risk (Mishra et al., 2018), ethical fallout (Mishra and Agarwal, 2018) and member engagement (Khatri and Raheja, 2018). Hence, the sequentially rotating co-leadership and membership multi-level model advances the management field through creativity and innovation for organisational financial growth, societal comfort and solutions to pressing management problems.

5.2 Conceptual model limitations

The sequentially rotating co-leadership and membership multi-level model has limitations. One limitation is that it has not been empirically tested. Furthermore, testing such a model in organisations is challenging as the model rests on the assumption that dyads, teams and organisations begin in homogeneous wholes form where co-leaders and members with similar gender, race, demographic location and functional background traits work together. However, there may be insufficient numbers of members in dyads, teams and departments who possess comparable gender, race, demographic location and functional backgrounds to their co-leaders in naturally occurring organisations, companies and businesses. A second limitation is that the model rests on the assumption

that a combination of specific analogous and divergent surface (gender, race and demographic location) and deep (functional background) level traits of co-leaders and members would contribute to rapid creative and innovative results when this combination has not been tested. Therefore, this model needs initial laboratory testing and its effects on creativity and innovation evaluated to ascertain whether it can be implemented as it is in actual organisations, companies and businesses or whether it needs modification prior to implementation. Testing of the model may reveal a necessary minimum number of combined surface and deep level traits for expediting group creativity and innovation that would facilitate the application of the model in actual organisations. A third limitation is that the application of the model depends on a boundary condition. The boundary condition is that the model can only be implemented in organisations, companies and businesses that contain proportionate or balanced numbers of co-leaders and members who possess comparable and disparate gender, race, demographic location and functional traits for the sequentially rotating convergent to divergent group formations to occur. Thus, the model would need to be applied in organisations, companies and businesses with flexible and fluid human resource policies where staff members or employees could be hired from a myriad of industries and geographic locations to comprise the creativity and innovation groups of equitable numbers of co-leaders and members with similar and different surface and deep level traits at dyad, team and organisational levels.

5.3 Future research directions

Future research needs to confirm through testing whether sequentially rotating co-leaders and members based on homogeneous surface and deep level traits followed by heterogeneous surface and deep level attributes accelerates creativity and innovation at multiple organisational levels. Moreover, researchers can test whether organisational creativity and innovation from such sequentially rotated co-leader and member groupings transpire quicker and to a greater degree than from fixed and randomly rotated co-leader and member groups and whether sequential rotation from convergent (homogeneous wholes) to divergent (heterogeneous parts) group formations results in swifter and increased creativity and innovation compared to sequential rotation from divergent to convergent group configurations. This future research and testing of the sequentially rotating co-leadership and membership multi-level model would elicit deeper understanding of how interplaying human identities within groups in organisations impacts the speed and extent of re-creation into innovation.

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