

Paradoxes and Creativity in Organizations: A Theoretical Exploration

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Abstract: Following the expansion of innovation as a research topic, scholars have discussed or proposed new approaches and theories. Within the field of public sector innovation, the hypothesis about the positive impact of collaboration (or co-creation) on public sector innovation has been studied or advocated. Within the field of diversity management, the positive influence of different types of diversity on innovation is explored. Within the field of organizational paradox studies, several have argued for a positive link between adopting paradoxical frames and generating creative or innovative solutions (Smith and Tushman, 2005; Miron-Spektor, Gino and Argote, 2011; Lewis and Smith, 2022). Although all three examples could be topics of theoretical exploration, the focus of this paper will be on the third example. While several refer to the idea of working with paradoxes (paradoxical frames) and Albert Rothenberg's idea of janusian thinking as a central reference, few studies have focused on this idea *per se* and its cross-disciplinary travel and use in organization and management studies. Motivated by this observation, this paper asks: What are the empirical and theoretical arguments behind the theoretical idea—and how is it relevant to contemporary organizations? To answer this question, this paper focuses on the sources, development, diffusion, use, and relevance of the idea of paradoxical frames. The theoretical discussion is based on a selection of publications in two areas: (i) publications that cover the spread of theoretical ideas of paradoxical thinking and (ii) literature from the field of organizational paradox studies that discuss the idea. The discussion could be of interest to those interested in creativity and/or organizational paradoxes.

Keywords: Organizational Paradoxes, Novelty, Creativity, Innovation, Paradoxical Frames, Janusian Thinking, Janusian Institutions

1. Introduction

The expansion of innovation as a research topic has generated explorations of new theories and hypotheses about what fosters creativity and innovation, for example co-creation (Ansell, Sørensen and Torfing, 2024), different types of diversity (Østergaard, Timmermans and Kristinsson, 2011) and adopting paradoxical frames (mental templates). This paper explores the third example. A paradox is persistent contradictions between interdependent elements (Lewis and Smith, 2022), where such contradictions are also called opposites, competing demands, tensions, and opposing forces. Tensions and paradoxes are double-edged swords. They may lead to paralysis (Watzlawick, Bavelas and Jackson, 1967) but also novel and creative ideas (Rothenberg, 1971, 1979a; Cameron, 1985; Smith and Tushman, 2005). The latter idea has been taken up by several scholars who share the assumption that tensions and paradoxes are not obstacles but opportunities (occasions) for creativity and innovation (Lewis and Smith, 2014; 2022; Smith and Tushman, 2005; Smith, 2014): "Extent paradox theory suggests that adopting paradoxical frames (...) result in superior firm performance" (Calić et al., 2019, p. 347), that is, about an actor's cognitive juxtaposition and active embracing of competing forces, tensions or contradictions (Smith and Tushman, 2005). Hence, in the literature, there are expressions such as "embracing inconsistent contradictions simultaneously" (Smith and Tushman, 2005, p. 529), and "individuals with higher paradox mindset are more creative" (Miron-Spektor et al., 2018, p. 33). Adopting a paradoxical frame means embracing opposite poles instead of choosing between them (as either-or decision): "Doing so invites us into both/and thinking, embracing tensions to enable more creative, effective, and sustainable solutions" (Lewis and Smith, 2023, p. 16). When this idea is discussed, it is often referred to Rothenberg's (1979a) research on creative individuals and his concept of janusian thinking: "the capacity to conceive and utilize two or more contradictory ideas, concepts, or images simultaneously" (1971, p. 195).

Though the connection to janusian thinking is referenced by several, few have studied the travel of this idea into organization and management research. Motivated by these observations, this paper asks: What are the empirical and theoretical arguments behind the theoretical idea—and how is it relevant to contemporary organizations?

The purpose of the paper is not to advocate a specific theoretical idea but to analyze the theoretical idea itself, its travel into organization and management studies. Further, the relevance in contemporary organizations is discussed through five examples in relation to a simple analytical framework of three keywords: theoretical source, main findings and limitations (see section 4). The idea goes under different labels, such as paradoxical thinking, paradoxical frames, and janusian thinking. The latter term is an idea from individual problem solving

(Rothenberg, 1979a) that has been adopted in organizational contexts and called paradoxical frames – or used as theoretical argument for paradoxical frames. Thus, this paper contributes to studies that conclude that new theories come from borrowing from the outside of the discipline or research field (Oswick, Fleming and Hanlon, 2011). This paper will use the term paradoxical frames when it is discussed in relation to organizations. The idea can be seen as a thought mechanism (Rothenberg, 1979a), a problem-solving idea that involves working with opposites.

Methodologically, the paper is based on a selection of 30–40 publications in two areas: (i) 15 publications that cover the spread of the theoretical idea of paradoxical frames, and (ii) literature (25 publications) from the field of organizational paradox studies that discuss the idea. In both areas, the selection is made from a larger body of literature. The search and selection process in the first area involved tracing ideas and checking other literature and sources. Examples noted in such other literature are Eastern thinking, such as Lao Tsu in the 6th century BC on the integration of opposites (Krippendorff, 1982/2009, p. 297), Polanyi's juxtaposition of tacit and explicit knowledge (Calic et al., 2019). In addition, several deal with embracing opposites (Collins and Porras, 1994; Osono, Shimizu and Takeushi, 2008; Martin, 2009) without explicitly building on Rothenberg. Finally, some of Mary Parker Follett's ideas in the 1920s on "the value of embracing conflict, diversity and opposites" are referred to (Lewis and Smith, 2022, p. 542; see also Smith and Tushman, 2005; Smith and Lewis, 2022; Smith and Lewis, 2011). However, the important information came from Rothenberg's large scholarly production on janusian thinking between 1969–2024 and early organizational paradox literature from the 1980s (e.g., Cameron, 1984).

The search process in the second area was in organizational paradox literature, especially the part of paradox literature that advocates *both-and* thinking/approaches and builds on Rothenberg. The main criterion was to find literature that fits the purpose of the paper, for example the use of the theoretical idea of paradoxical frames as well as examples of use in relation to organizations (see Section 4).

The author is aware of possible limitations of concentrating on one route into organizational research and only building on part of a large body of organizational paradox literature. The author is also aware that this literature represents only one of several perspectives on creativity (Simonton, 2004; Harvey and Berry, 2023). That creativity is often defined in terms of novelty and usefulness (Harvey and Berry, 2023) or that "creativity is novelty that is subsequently judged successful" (March, 2010, p. 75).

This paper is organized as follows: Section 2 gives a brief history of the travel of the idea into organization and management research, followed by Section 3 on contemporary use. The last main section 4 discusses the idea in relation to organizational contexts using five examples of how the idea might be relevant to contemporary organizations. Section 5 concludes and suggests future discussions and studies.

2. The Sources and Travel of the Theoretical Idea in Brief

As noted in the previous section, the idea or similar ideas can be found in different organizational literature and under different labels. However, one important source is Rothenberg's work on creative individuals. Rothenberg (1969, 1971) mentions several sources of partial inspiration when he formulated the idea of oppositional thinking in 1969. However, the main source was his discovery of Eugene O'Neill's revision of the stage play *The Iceman Cometh* from 1939. More precisely, he first described or discovered this thought mechanism in connection with an intensive study of the revision process of this stage play (1969, 1971), five prepublication drafts on *The Iceman Cometh* at the Beinecke Rare Book Library at Yale University and stage set drawings and outline notes in O'Neill's own hand. Rothenberg argued, "It is extremely likely that O'Neill was aware of the similarities and some of the opposing notions when he decided to use the iceman idea" (1969, p. 582). Rothenberg (1969) first discusses the creation of the play, its title and metaphor in terms of oppositional thinking. For example, that O'Neill's central idea in the play, which led him to the creation of the iceman symbol, was, "by means of *simultaneous* conceptualization of opposites" (Rothenberg, 1971, p. 197). Although O'Neill was one primary source, Rothenberg also noted that the idea was not totally new:

Many of the great conceptions in the history of man consists of dualisms which are actually opposites: (...) They are products of an early phase of creative thought only in the total context of the religion or theory which has been worked out around them (p. 581).

In 1971, Rothenberg reformulated the concept of oppositional thinking to janusian thinking (1971, p. 197). He now defines ideas as "the capacity to conceive and utilize two or more opposite or contradictory ideas, concepts, or images simultaneously" (1971, p. 195) or later as "actively conceiving two or more opposites or antitheses

simultaneously" (1979a, p. 55; 1983a, p. 938). He adds, "Opposites or antitheses are conceived as existing side by side or as equally operative and equally true" (1979a, p. 55). Recently, he noted that this process is "most commonly operative in the early or inspiration phase of creative production" (Rothenberg, 2024, p. 34).

Between 1969 and today (e.g., Rothenberg, 2024), he publishes much on the idea, uses it in studies, using different methods such as interviews, controlled experiments (1983a), "research psychiatric interviews" with highly creative individuals in different disciplines (1979a), interviews with prize-winning authors (Rothenberg, 2014), word association tests on nine Nobel Prize laureates (Rothenberg, 1982), documents, and research accounts (1995). He also studied creative thinking in science by focusing on Albert Einstein (1979b, 1987), Niels Bohr (1983b, 1987), and August Kekulé (Rothenberg, 1995). In several publications over the years, Rothenberg also tried to explain how the theoretical idea was different from other theoretical ideas, such as dialectical thinking, unconscious interchangeability of opposites, bisociation, and associational processes (e.g., Rothenberg, 1996).

In the early 1980s, the idea was adopted in organization and management studies by scholars interested in organizational paradoxes (e.g., Cameron, 1984, 1985, 1986), though others were also partly into similar ideas (Van de Ven 1983). Cameron was later one of the editors of 'Paradox and Transformation,' where others articulated the idea and referred to Rothenberg (Cameron and Quinn, 1988, pp. 4, 13; Bartunek, 1988, 141, 143, 147) or the idea via Cameron (Eisenhardt and Westcott, 1988, p. 191), for example. Eisenhardt and Westcott (1988) agreed that paradoxes have the "power to generate creative insights and change" (Eisenhardt and Westcott, 1988, p. 170). This was later followed by several studies (Lewis, 2000; Smith and Tushman, 2005), which will be discussed in the next section.

3. The Idea in Contemporary Research and Literature: Two Examples

Organizational paradox research is diverse and has several debates. Most paradox approaches are *both-and* approaches rather than *either-or* (dilemmas) approaches. Within this main approach, several see tension and paradoxes as opportunities for generating novel and creative ideas. Hence, these scholars have worked with concepts such as accommodating competing demands simultaneously, embracing paradox, frames, or paradoxical tensions (Lewis, 2000), paradoxical frames and paradoxical thinking (Smith and Tushman, 2005), paradoxical mindset, navigating paradox (Lewis and Smith, 2022; Smith and Lewis, 2022), paradoxical mindset (Miron-Spektor et al., 2018), paradoxical frames (Smith and Tushman, 2005; Miron-Spektor, Gino and Argote, 2011; Miron-Spektor et al., 2022), collective paradoxical frames (Miron-Spektor and Paletz, 2017), and paradoxical leadership (Smith and Lewis, 2012).

Furthermore, these authors refer to Rothenberg in several publications. Smith and Lewis were explicit early on this connection (Lewis, 2000, p. 764; Smith and Tushman, 2005, p. 529). Together or alone, they are involved in a high number of publications; many of their most important studies and theoretical discussions refer to Rothenberg as their inspirational source (Lewis, 2000; Smith and Lewis, 2011, 2012, 2022; Lewis and Smith, 2022, 2023; Smith, 2014; Andriopoulos and Lewis, 2010). Indirectly to Rothenberg through the examples of Bohr and Einstein (Smith, Lewis and Tushman, 2016, p. 69). The positive effects of reframing the relationship between polarized elements (Bartunek, 1988; Smith and Lewis, 2011) in the latest book are seen as "opportunities for learning, growth, creativity" (Smith and Lewis, 2022, p. 27).

Another example is Ella Miron-Spektor, who has authored several publications, and different constellations of authors, referred to three Rothenberg publications, sometimes both 1971 and 1979a (Miron-Spektor et al., 2018; Miron-Spektor and Paletz, 2020; Miron-Spektor, Emich, Argote and Smith, 2022; Sparr, Miron-Spektor, Lewis and Smith, 2022). In these, there is a belief in the positive relation between embracing and creativity-enhancing effects or positive outcomes (Miron-Spektor et al., 2018). For example, in an early laboratory study of the effect of paradox on creative performance, they said that in their four studies "using different manipulations for activating paradoxical frames and different creativity tasks" (Miron-Spektor et al., 2011, p. 238), they "demonstrated the positive effect of paradoxical frames on creativity" (p. 238). The data material has been reanalyzed by others (Calic et al., 2019).

In summary, the examples illustrate that the idea is adopted into parts of contemporary paradox research. Paradoxical frames are connected to different types of positive effects. When it is discussed in relation to creativity, it is referred to as Rothenberg. These authors are especially interested in *both-and* approaches, not *either-or* approaches (e.g., dilemmas). They argued for exploring tensions, contrasting and integrating opposing elements using paradoxical frames, and that leaders should encourage paradoxical thinking. However, the idea is not clarified and made explicit as a theory or hypothesis, as also noted by others: "The creativity mechanism

of paradox theory is limited by a few propositions and a rough underlying theoretical logic” (Calic et al., 2019, p. 347). The next section briefly discusses some examples (important publications).

4. Discussion: Relevance for Contemporary Organizations

Rothenberg discussed the idea of janusian thinking in relation to the creative process in art, literature, architecture, music, science, and mathematics, not organizations. This section discusses the idea in an organizational context, which differs from Rothenberg’s studies of individual problem solving. Table 1 illustrates the different contexts, whereas some are related to organizations.

Table 1: The Context of Creativity: Organizations, Individuals, or Groups

Context	Examples
Individuals (groups) outside organizations	Artists, writers, Picasso, O’Neill
Autonomous Individuals in organizations	Scientists, engineers, Einstein, Bohr (in institutes)
Units and departments, leaders, employees within organizations	Higher education, Toyota, Lego, R&D department, Product Design Companies
Organizations participating or collaborating in external projects and solving problems	External engineering or construction projects, Golden Gate Bridge, Charles A. Ellis

The idea is used in organizational contexts. The first example is Cameron’s studies of effectiveness as well as adaptive responses to conditions of decline in higher education (e.g., Cameron, 1984, 1985, 1986). In these publications, he reported from different studies, including 334 four-year colleges and universities (1985, 1986) and one study of 14 small colleges that had undergone a decline in both revenues and enrollments during the 1970s, where half of these had successfully recovered (Cameron, 1986, p. 546). Cameron referred to Rothenberg (1984, 1985, 1986; Cameron and Quinn, 1988) and used the terms janusian thinking and janusian institutions (Cameron, 1984), distinguishing between psychological paradoxes (that can lead to enhanced creativity and cognitive adaptation) and organizational paradoxes—that can lead to improvement in effectiveness (Cameron, 1985). He argued that successful adaptation, especially under turbulence, almost always requires the implementation of simultaneously opposite strategies (Cameron, 1985), “the presence of simultaneous opposites in organizations that are highly effective” (1986, p. 547). He concluded that the institutions that managed paradoxes successfully recovered (Cameron, 1985; 1986, p. 546; Cameron and Quinn, 1988, p. 8).

Later in the 1980s, Eisenhardt and Westcott (1988) explored “the role of paradox in creating innovation and excellence through the example of just-in-time manufacturing” (p. 196), using mostly secondary materials (p. 192n). The Toyota leaders paradoxically framed their goals (p. 191) with juxtaposing goals, such as low costs and high specialization, low or no inventory, yet immediate access to parts (Eisenhardt and Westcott, 1988). Their study of the just-in-time manufacturing process is referred to in later arguments for paradoxical frames (e.g., Smith and Tushman, 2005; Lewis and Smith, 2014; Smith, 2014).

A third example is Osono, Shimizu and Takeushi’s (2008) study of Toyota over six years using documents and 200 interviews between 2003 and 2007, where they identified six contradictory tendencies at Toyota that were helpful in understanding Toyota’s success. These contradictions, opposites, and paradoxes were also self-generated and deliberately imposed: “Management orchestrated contradictions, opposites, and paradoxes” (p. 8). They called Toyota an organization powered by creative contradictions; the company actively embraced and cultivated contradictions instead of passively coping with them (p. 8).

Another example of organizational or management work with oppositions is from an action research project in the Danish Lego Group (Lüscher and Lewis, 2008). This organization launched extensive change efforts in 1998, which involved the reduction of managers and the implementation of self-managed teams. In the manufacturing division they studied (action research process), the changes created a series of dilemmas that paralyzed middle managers. It was only when the middle managers managed to work through paradoxes (with help from the authors to adopt a paradoxical frame) and shift the lens in sensemaking (p. 237) that they were able to creatively reinvent their roles. They reached a new and more enabling understanding of contradictory managerial demands (p. 239). Tensions were connected to the need to control and empower teams. This example involved assistance from action researchers.

Finally, in a four-year study of seven so-called product design companies using 114 informants, Andriopoulos and Lewis (2010) found that several of them managed to be ambidextrous companies that managed to focus on

both short-term survival (exploitation) and long-term adaptability (exploration). Paradoxical thinking (*both-and* thinking) was a key (p. 118). Among the examples above, two did not refer to Rothenberg (Osono et al., 2008), one of them indirectly through Cameron (Eisenhardt and Westcott, 1988), and the other discussed basic characteristics and differences between Western and Eastern philosophies.

To summarize the relevance in relation to the simple framework presented earlier, the following can be emphasized: One example (Osono et al., 2008) did not build on Rothenberg, which indicates that there other sources of the idea. All five examples illustrate positive output connected to working with paradoxes or using paradoxical frames. However, its possible relevance is not that simple. First, these examples are not representative of organizations in general; they are only examples for illustration. In all these cases, paradoxical frames were connected to positive effects, such as managing to become ambidextrous organizations, janusian institutions, effectiveness, excellence, novelty, implementation of new roles, creativity, and innovation. In most of the examples, the idea was also connected to innovation-related concepts, such as novelty, creativity, and innovation (Cameron, 1984, 1985, 1986; Osono et al., 2008; Andriopoulos and Lewis, 2010). The hypothesis of a positive relationship between paradox and creative output is therefore rough and not nuanced. For example, it may both increase and decrease creative output (Calic et al., 2019). Second, the hypothesis needs to be clarified in relation to the concepts. Novelty is often understood as deviation from established procedures or knowledge (March, 2010), while “creativity is novelty that is subsequently judged successful. Novelty is a necessary, but not sufficient, condition for creativity” (p. 75). Although there are different conceptions in the literature, novelty, and creativity often refer to an earlier phase than innovation (Harvey and Berry, 2023; Rothenberg, 2024, p. 34). Innovation is often understood as the successful implementation (and spread) of something new. As March (2009) noted, most novel ideas are bad ones; that is, “they will subsequently be judged unsuccessful” (p. 75). When novel ideas are generated, it is also difficult “to anticipate which of them will be successful” (p. 75). Studies also show that dealing with paradox is easier said than done (Barker, 1993).

5. Conclusion

The purpose of this paper was to explore the interdisciplinary travel of a theoretical idea that paradoxes are opportunities for creativity and innovation and the empirical and theoretical arguments behind the idea. The focus has been mostly limited to Rothenberg as a source of formulating and developing the idea of janusian thinking. The theoretical and empirical arguments come from his research on creative individuals and were adopted into management and organization research in the early 1980s. The idea of janusian thinking can be seen as a theoretical justification of using paradoxical frames in organizational problem solving. The idea can also be seen as adopted into management and organization research (Cameron, 1984, 1985, 1986).

The relevance of the idea of paradoxical frames in an organizational context is briefly illustrated through five examples of studies. As an analytical lens, it can contribute to understanding problem-solving behavior and outcomes, as, for example, in the Eisenhardt and Westcott (1988) study. It can be seen as a variant of paradox- or problem-driven creativity, occasion, or opportunity of creativity. As a practical tool, the idea is about working with tensions, opposites, and paradoxes. For example, dilemmas (either-or thinking) can be reframed into paradoxes (*both-and* thinking). The chances of generating novel and creative solutions are probably dependent on the capacity and training of those working with tensions and paradoxes in organizations, as, for example, in the Lego example (Lüscher and Lewis, 2008).

As noted, several paradox scholars refer to paradoxes as sources or opportunities for novelty, creativity, or innovation, and some of these refer explicitly to Rothenberg’s studies. It can be seen as a new hypothesis/theory that needs to be clarified. A preliminary conclusion is that the idea is more relevant in relation to novelty and creativity than to innovation.

The five organizational examples (in Section 4) are illustrations of the use of paradoxical frames. They are not representative of organizations in general. Future empirical studies could therefore explore how paradoxes (e.g., competing demands) affect creativity in different types of organizations and levels using case studies and other methods. Future theoretical discussions could, for example, follow up alternative sources of the idea that is not discussed in this paper, as well as theorize the idea.

Rothenberg (1969) also noted that opposites may be “elements drawn from disparate domains” (p. 583). When the just-in-time system in Toyota was created partly with inspiration from the American supermarket (Ohno, 1988, p. 26), a disparate domain, it has certain similarities with combinations of elements, which is also called the combination of diversity of knowledge (Østergaard et al., 2011). Cameron (1984) used the term janusian institutions (incorporating different types of opposites), where opposites are attributes of the organization. This

term janusian institution (a term rarely used today), has some similarities with the much more used concepts of ambidextrous organizations (ability to both exploit and explore) and hybrid organizations. These are two possible areas of future discussion.

Ethics and AI Declarations

An ethical declaration was not required. AI tools were not used in the preparation of this paper.

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