

## SOLUTIONS TO ORGANIZATIONAL PARADOX: A PHILOSOPHICAL PERSPECTIVE

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### Abstract

Organizations face all kinds of paradoxical problems. There exist various solutions to organizational paradoxes. We develop a typology that lists nine possible logical approaches to understanding the relationship between paradoxical opposites, out of which we identify five types of solutions to organizational paradox. Four of the five solutions are explicitly associated with four prominent philosophies. We show the relevance of the five solutions to the real world by applying our scheme to understand different solutions to the generic strategy paradox. Finally, we address the question whether there is a superior solution and point out the paradox of paradox resolving, namely, paradoxes cannot be resolved once for all and we have to live with them.

### 1. Introduction

Since the publication of Peters & Waterman's (1982) best-selling book *In Search of Excellence* and Van de Ven's (1983) review of it, management and organizational scholars have become increasingly interested in the issue of organizational paradox (e.g., Amason, 1996; cf. Bartunek & Rynes, 2014; Bobko, 1985; Bouchikhi, 1998; Cannon, 1996; Cameron, 1986; Clegg, 2002; De Wit & Meyer, 2001; Demb & Neubauer, 1992; Denison, Hooijberg & Quinn, 1995; Dodd & Favaro, 2006; Eisenhardt, 2000; Evans, 2000; Farjoun, 2010; Feldman, 1989; Koot, Sabelis & Ybema, 1996; Lewis, 2000; McKenzie, 1996; Miller, 1990; Pascale, 1990; cf. Pierce & Aguinis, 2013; Poole & Van de Ven, 1989; Quinn, 1988; Quinn & Cameron, 1988b; Quinn et al., 2003; Seo & Creed, 2002; Seo, Putnam & Bartunek, 2004; Smith, 2014; Smith & Berg, 1987; Smith & Lewis, 2011; Sundaramurthy & Lewis, 2003; Swan et al., 2010; Yukl & Lepsinger, 2004; Zhang et al., 2014).

Different from logical paradox<sup>1</sup> defined as 'an argument with seemingly true premises, apparently correct reasoning, and an obviously false or contradictory conclusion' (Cuonzo, 2014: 111-112; cf. Quine, 1976), organizational paradox is often seen as an observation in which 'two apparently contradictory elements are seen as present or operating at the same time' (Quinn & Cameron, 1988a:

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<sup>1</sup> There are other types of paradox such as linguistic and epistemic paradoxes (Cuonzo, 2014; Lado et al., 2006; Poole & Van de Ven, 1989), which are also different from organizational paradox.

290) or ‘contradictory strategic and organizational demands on firms’ (Smith & Tushman, 2005: 522) need to be attended ‘for long-term organizational success’ (Smith, Binns & Tushman, 2010: 450). Slaatte (1986: 4) well captures the essence of paradox, namely, ‘two opposing thoughts or propositions...however contradictory, are equally necessary to convey a more . . . provocative insight into truth than either factor in its own right’<sup>2</sup>.

Peters & Waterman (1982) and Mitroff (1983) contend that paradox is inherent in the nature of organization. For example, although small is beautiful most organizations aspire to get big; for the sake of growth organizations often diversify, but to be successful they need to focus on their core businesses; and organizations hire a heterogeneous work force but often want homogeneous values. Stroh & Miller (1994: 30) point out that ‘life is full of contradictions that we must integrate’. Hardy (1994) claims that we are living in the age of paradox. Peters & Waterman (1982: 100) show that ‘the excellent companies have learned how to manage paradox’, which is echoed by Price Waterhouse (1996) and Evans (2000).

However, managing organizational paradox is not easy because organizational paradoxes normally involve opposite demands on organizations, such as, change vs. stability (Farjoun, 2010; Leana & Barry, 2000), centralization vs. decentralization (Perrow, 1977; Witesman & Wise, 2009), and localization vs. globalization (Bartlett & Ghoshal, 1989), each of which seems valid and necessary but ‘when juxtaposed, they present a puzzle’ (Poole & Van de Ven, 1989: 565). For example, March (1991) illustrates the difficulties in balancing between exploitation and exploration in organizational learning.

In the extant literature, there exist various solutions to organizational paradox<sup>3</sup>, such as the ambidexterity approach (e.g., Duncan, 1976; Tushman & O’Reilly, 1986). Several taxonomies were proposed to categorize different solutions to organizational paradox (Poole & Van de Ven, 1989; Seo, Putnam & Bartunek, 2004; Stroh & Miller, 1994). There are similarities as well as important differences between these taxonomies, which render problematic Poole & Van de Ven’s (1989: 565) claim that their taxonomy represents ‘a logically exhaustive set of relationship opposing terms can take in the social world’. While these solutions are practical in nature, what is overlooked is that some of the solutions can be associated with different logics or philosophies.

Our purpose in the present paper is two-fold, on the one hand, we unveil the explicit or implicit logics or philosophies underlying the various solutions to organizational paradox; on the other hand, we propose a logically-exhaustive typology to incorporate and integrate the existing taxonomies of solutions to organizational paradox. The rest of the article is organized as follows. We first propose a 3x3 typology of nine possible logical approaches to understanding the relationship between opposites, out of which we identify five types of solutions to organizational paradox. Four of the five solutions are explicitly associated with four prominent philosophies. Then, we show the relevance of the five types of solutions to the real world by applying our scheme to understand different solutions to the generic strategy (cost leadership vs. differentiation) paradox. We also address the question whether there is a superior solution and point out the paradox of paradox resolving, namely, paradoxes cannot be resolved once for all and we have to live with them.

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2. Although Slaatte talks about philosophical paradox, his argument is helpful for understanding the nature of organizational paradox.

<sup>3</sup> While solving philosophical paradox means ‘to show how something in the paradox is mistaken’ due to which the paradox emerges (Cuonzo, 2014: 127), a solution to organizational paradox is a strategy to understand (the cognitive aspect) and manage (the behavioral aspect) paradoxical demands or forces.

## 2. Nine logical systems for understanding opposites

There exist different logical systems for conceiving of opposites that ‘frequently manifest themselves as paradoxes’ (Ford & Backoff, 1988: 82). The most recognized logical systems include Aristotle’s formal logic, Chinese Yin-Yang philosophy, and Hegel’s dialectics. According to Ford & Backoff (1988: 103-104), under Aristotelian formal logic, paradoxes are something to be avoided by selecting or valuing one element over the other in the opposite pair. In sharp contrast, the Chinese Yin-Yang philosophy, according to Moore (1967: 6-7), is a ‘somewhat difficult-to-understand attitude of “both-and”’ – as contrasted with the Western tendency to think in terms of “either/or,” such that the fine lines of distinction and exclusiveness so typical of Western life and thought and even religion are not common to the Chinese mind’. In Moore’s view, such a ‘both-and’ concept treats things ‘non-black-or-white’, coupled with which is Chinese doctrine of ‘mere eclecticism’ that is represented by an attitude of tolerance and a spirit of *harmony*. Albeit some similarities, Hegelian dialectics differs significantly from Chinese Yin-Yang philosophy in the way of embracing paradox for its emphasis on the *struggle* between the opposites, the result of which is a synthesis that ‘contains the two but yet is different from them’ (Ford & Backoff, 1988: 103).

Oscar Ichazo (1982), a Bolivian-born philosopher, proposes a new logic, *trialectics*, that ‘goes beyond formal logic and dialectics’ (Bahm, 1984: 205), which is viewed as a practical<sup>4</sup> logic of unity by Horn (1983). Although Ichazo (1982: 62) associates his trialectics to ‘physics of Plank, Einstein, and Bohr’<sup>5</sup>, in our view, this new logical system has, in many respects, resemblance with the ideas of cyclical change of Chinese classical book *I-Ching* (the Book of Change) from which Chinese Yin-Yang philosophy was derived. This is evident from following viewpoints: ‘Everything is the seed of its apparent contrary’ (Ichazo, 1982: 63); ‘everything is in change’ (p. 72) ‘all changes...are cyclical’ (p. 72); ‘Fundamental to trialectics is the notion that all is process; there are no things in the universe other than processes’ (cited in Ford & Backoff, 1988:99); ‘Energy moves in a universe with pre-established laws...The perpetual motion of all creation is due to the interchange of energy...[The] universe is permanently changing, and the laws of change never change’ (cited in Bahm, 1984: 205).

Peter P. Li (2012) compares and contrasts three basic cognitive frames, i.e., Aristotle’s formal logic, Hegel’s dialectics, and Chinese Yin-Yang philosophy. It is worth noting that Peter P. Li does not treat Niels Bohr’s thinking as a distinct logical system like what Ichazo (1982) did due to his belief that Bohr’s complementarity principle is best represented by Chinese Yin-Yang<sup>6</sup>. Disagreeing with Peter P. Li’s treatment of Bohr’s complementarity principle and Chinese Yin-Yang philosophy, Xin Li (2014) clearly distinguishes four common logical systems by a 2x2 typology, including, Aristotle’s formal logic, Hegel’s dialectics, Bohr’s complementarity principle, and Chinese Yin-Yang philosophy. He names these four logical systems as Either-Or, Either-And, Both-Or, and Both-And, respectively, based on the combination of ontology and epistemology embedded in each of these four logical systems.

<sup>4</sup> It is indeed proposed with practical reason as Ichazo (1982: 65) argues ‘Only a common logic that works in our surrounding universe, that works in society, and that works for individuals, will achieve the real purpose of history – to accomplish happiness for all’.

<sup>5</sup> Bobko (1985:105) takes Bohr’s (1934) notion of complementarity as an example of non-bipolar resolution to wave-particle paradox of light.

<sup>6</sup> For this, see ‘Niels Bohr and the Yin-Yang symbol’ written by Peter P. Li who is the lead guest editor of *Management and Organization Review* Special Issue on ‘Indigenous Management Research in China’ (vol. 8, issue 1).

In addition to abovementioned logical systems, we argue, there are other *possible* approaches to understanding the relationship between opposites such as being vs. nothing, good vs. bad, internal vs. external, etc. Here, we propose a 3x3 typology (see Figure 1) to classify nine possible logical systems<sup>7</sup> representing nine possible combinations in a two dimensional space<sup>8</sup> of the three basic attitudes toward opposites, i.e., either/or, both/and, and neither/nor thinking. The combinations can be made in different formats, such as, a combination of ‘on the one hand, they are..., but on the other, they are...’, or a ‘means-end’ combination, or a ‘point of departure and point of arrival’ combination, and so on. Here we adopt the last format.

In Figure 1, each cell is associated with a particular combinative attitude and a unique label, which is a term that combines the first word of the corresponding basic attitude listed on the vertical (point of departure) axis and the second word of the corresponding basic attitude listed on the horizontal (point of arrival) axis. We adopt this particular way of labeling the combinative attitude for simplicity sake. In doing so, we treat some terms such as either-both, either-and, or-both, and or-and the same for cell 2, for example. The merit of this way of labeling is that the three cells on the top-left to right-bottom diagonal line corresponding to the three basic attitudes are still labeled as Either-Or, Both-And, and Neither-Nor. Now, we briefly explain each cell in Figure 1 in a non-sequential order.

**Figure 1. A typology of logical systems for understanding opposites**

		Point of arrival		
		either/ <u>or</u>	both/ <u>and</u>	neither/ <u>nor</u>
Point of departure	either/ <u>or</u>	(1) Either-Or (Aristotle)	(2) <b>Either-And</b> (Hegel)	(3) Either-Nor (n/a)
	both/ <u>and</u>	(4) <b>Both-Or</b> (Bohr)	(5) <b>Both-And</b> (Yin-Yang)	(6) <b>Both-Nor</b> (n/a)
	neither/ <u>nor</u>	(7) Neither-Or (n/a)	(8) <b>Neither-And</b> (Hui-Neng)	(9) Neither-Nor (Nagarjuna)

<sup>7</sup> The first author of the present paper conceived of the idea of nine possible combinative logics first in November 2008 when taking his Ph.D. course on ‘Philosophy and Management’ at Copenhagen Business School. He got the inspiration after reading Barbara Johnson’s (1989) book *A World of Difference* that writes ‘Instead of a simple “either/or” structure, deconstruction attempts to elaborate a discourse that says neither “either/or,” “both/and” nor even “neither/nor,” while at the same time not totally abandoning these logics either’.

Interestingly, Ichazo (1982: 90) claims that ‘In reality, humanity has developed nine types of logic. We only know the seventh and eighth: formal (Aristotelian) logic, and dialectical (Hegelian) logic. Now with trialectics, which is the ninth, we reach the top’. Unfortunately, Ichazo did not explain what the other 6 logics are except saying that ‘before the logic of Aristotle...humanity had already been thinking...with a different logic, the logic of magic’.

<sup>8</sup> One can imagine a more complex 3x3x3 typology based on 27 combinations in a three-dimensional (e.g., ontology-epistemology-methodology) space of the three basic attitudes toward opposites. Due to the extreme complexity of such a 27-item typology, we do not consider using it in the present paper.

The first cell is the Either-Or logical system that is a combination of either/or as point of departure and either/or as point of arrival as well. We attribute Aristotle's formal logic to this approach because its point of departure is an either/or attitude, namely, it treats two opposites (e.g., A and non-A) as mutually exclusive (i.e., the law of identity and law of non-contradiction), and its point of arrival is also an either/or attitude, namely, any concept X in Aristotle's formal logic should be either A or non-A but not both A and non-A (i.e., the law of excluded middle).

The fifth cell is the Both-And logical system that is a combination of both/and as point of departure and both/and as point of arrival as well. We attribute Chinese Yin-Yang philosophy to it for aforementioned reason<sup>9</sup>. In sharp contrast to Aristotelian formal logic, Yin-Yang asserts that every object ontologically *is* and epistemologically *can be seen* a combination of two opposite elements or forces that are so-called yin and yang (Li, X., 2014)<sup>10</sup>. For example, every human being has in his or her body both estrogen (so-called female hormones) and testosterone (so-called male hormones); what makes male and female different in appearance is the difference in the ratio between these two opposite hormones in human body. Due to this ontological fact, epistemologically, if carefully observed, every human being can be found to have both male and female features *simultaneously*. Therefore, the difference between male and female is in degree not in kind.

The fourth cell is labeled Both-Or that is a combination of both/and as point of departure and either/or as point of arrival. We attribute Niels Bohr's complementarity principle to it because its point of departure is a both/and attitude, namely, opposite elements, no matter how contradictory to each other, are both needed to give a complete description of the thing we observe; while its point of arrival is an either/or attitude, namely, contradictory opposites, despite their complementarity, are mutually exclusive and 'belongs to several "planes of objectivity", and we must be careful not to allow them to glide from one plane of objectivity to another' (Rosenfeld, 2008).

The second cell is labeled Either-And that is a combination of either/or as point of departure and both/and as point of arrival. Hegel's dialectic<sup>11</sup> can be said one example of the Either-And logical

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<sup>9</sup> We can distinguish two types of Both-And, one naive and the other sophisticated. The naive both-and sees only complementarity without contradiction between the two opposites, whereas the sophisticated both-and sees complementarity as well as contradiction between the two opposites. For example, De Meyer et al. (1989: 140) argue 'One can argue that the decade 1975-85 can be labelled as an era where manufacturers discovered that there was no trade-off to be made between quality of product and service and the efficiency of the production system, but rather that guaranteeing quality and dependability were a prerequisite to become cost-efficient. The international comparison of the Manufacturing Futures Survey suggests at this point that the decade 1985-95 has the potential of becoming the era where manufacturers will discover that flexibility in all its aspects is not necessarily contradictory with the pursuit of costefficiency'.

While Chinese Yin-Yang philosophy is sophisticated in theory it has bias toward naive both-and in practice by overemphasizing on harmony and deemphasizing on conflict between opposites. This may explain why most of Chinese are familiar with the Yin-Yang philosophy but nevertheless not many of them can be always balanced when dealing with practical issues.

<sup>10</sup> Strictly speaking, Yin-Yang is primarily a cosmology with an implied ontology and an implicit or taken-for-granted epistemology. Yin-Yang as cosmology describes how the universe is formed and functions. Basically, it argues the universe is filled with two types of energy, i.e., yin and yang, and the interaction between yin and yang energy results in everything in the universe. Chinese philosophy is said to lack ontology (Yu, 1999) because the word of 'being' is never a philosophic category in traditional Chinese philosophy. However, we argue Yin-Yang has an implied ontology in line with its cosmology, which is that everything is a composite object that contains a yin element and a yang element simultaneously. Although Yin-Yang is not concerned about epistemology at all, it can be said to have an implicit or taken-for-granted epistemology, namely, given the ontological yin-yang nature, anything, if *carefully* examined, can be seen as both a yin and a yang simultaneously.

<sup>11</sup> According to Singh (2000), the roots of dialectic as expounded by Kant and Hegel can be found in the dialogues of Socrates. In Socratic dialogue, there is a sophistical use of logic in trying to prove false or ungrounded the opposite

system as Gharajedaghi (1982: 264) points out, whereas an either/or dichotomy is a conflict in both the ends and means, ‘a dialectic is... a conflict of means not ends’. This is evident in Hegel’s trilogy of Being-Nothing-Becoming. Hegel defines Being as pure being that is ‘without any further determination... equal only to itself’ and Nothing as pure nothing ‘simply equality with itself’ and ‘they are absolutely distinct’; however, ‘What is the truth is neither being nor nothing, but that being — does not pass over but has passed over — into nothing, and nothing into being... they are unseparated and inseparable and that each immediately *vanishes in its opposite*. Their truth is therefore, this movement of the immediate vanishing of the one into the other: *becoming*, a movement in which both are distinguished, but by a difference which has equally immediately resolved itself’ (Hegel, 1969: § 132- § 134, italic in original).

Another reason for Hegel’s dialectic being Either-And is that it sees two opposites (i.e., thesis and anti-thesis) as ‘antagonistic or contradictory’ (Ford & Backoff, 1988: 99) or in ‘struggle’ (Ford & Backoff, 1988: 101) but the resulted synthesis ‘contains the two but yet is different from them’ (Ford & Backoff, 1988: 103). Ameriks (1985: 30) points out that Hegel declares ‘both thesis and antithesis can be true... though only as part of a larger truth’, i.e., the synthesis<sup>12</sup>.

The ninth cell is labeled Neither-Nor that is a combination of neither/nor as point of departure and neither/nor as point of arrival as well. We attribute Indian Buddhist philosopher Nagarjuna’s Madhyamaka philosophy to it. To prove his doctrine of the Sunya (or, Void, Emptiness), Nagarjuna adopted Indian principle of four-cornered negation that can be summarized as ‘S is neither P, nor not-P, nor both P and not-P, nor neither P nor not-P’ (Raju, 1954: 694). Like many contemporary deconstructionist philosophers (Cai, 1993; Mabbett, 1995; McEvelley, 1981), Nagarjuna would critique or reject any (opposite) positions or propositions without offering a position of his own. Hence, Nagarjuna’s philosophy is neither to accept any positions nor to offer any.

The eighth cell is labeled Neither-And that is a combination of neither/nor as point of departure and both/and as point of arrival. We attribute Chinese Chan/Zen Buddhism’s Sixth Patriarch Hui-

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views and it often leads the participants in a state of perplexity due to the emergence of contradiction or paradox. Kant contributed hugely to the development of dialectic by discovering antinomies of pure reason. An antinomy is ‘a set of two mutually inconsistent but rational results’ of logical reasoning (Cuonzo, 2014:175). The two mutually inconsistent but rational arguments are called thesis and antithesis by Kant. Kant’s solution to the paradoxical antinomy is a critique of pure reason, namely, by making distinction between the phenomenal world and the noumenal world, Kant argues that, ‘although our knowledge has a priori structure, it is all only phenomenal’ (Ameriks, 1985: 2), ‘it cannot pretend to apprehend what is beyond experience’, i.e., the noumenal world, and if it attempts to ‘overstep the experience’, absurd results of the antinomies will be obtained (Singh, 2000: 264).

In contrast to Kant who thought the presence of contradiction indicates our reason or thought was at fault, Hegel’s solution to antinomies is to argue that the contradiction is not due to ‘the misapplication of our reason but is rather a truth about our nature as finite things’ (Ameriks, 1985: 32-33), i.e., ‘all concepts of the sensible world involve contradictions’ (Ameriks, 1985: 27). Hegel argues ‘both thesis and antithesis can be true... [but they are] only as part of a larger truth’, which is the synthesis (Ameriks, 1985: 30). Therefore, in Hegel’s view, the paradox between thesis and antithesis is due to our use of formal logic to categorize things that are intrinsically both/and into either/or identities; if we adopt dialectical logic to restore what have been treated as either/or back into both/and, then we would not see such paradox any more.

<sup>12</sup> There is another practical reason why we associate Hegelian dialectics with the label of Either-And. Namely, Chinese Yin-Yang philosophy is widely accepted to be a dialectical thinking of ‘both-and’; we believe there are similarities and differences between Yin-Yang and Hegelian dialectics; one fundamental difference is that Chinese Yin-Yang philosophy emphasizes more on harmony between and coexistence of opposites while Hegelian dialectics sees more conflict or struggle between opposites which is in turn resolved by a higher level synthesis. So, to distinguish Hegelian dialectics from Chinese Yin-Yang Both-And and Bohr’s Both-Or complementarity principle, we choose to associate Hegelian dialectic with the label of Either-And.

Neng's philosophy to it. From the perspective of development of Chinese Buddhism, we can say that the core of Hui-Neng's Chan teaching was in line with Nagarjuna's philosophy. Both Hui-Neng and Nagarjuna would reject any (opposite) positions or propositions, the only difference between the two Buddhist masters is that while Nagarjuna would only offer a negative (by negating) without constructing a positive, Hui-Neng would not hesitate to give his own positive position. This is evidently shown by the famous story of wind moving-banner moving-mind moving recorded in *The Platform Sutra of the Sixth Patriarch*.

The story goes, 'At that time the wind was blowing and the banner was moving. One monk said that the wind was moving, while another monk said the banner was moving. They argued on and on, so I [Hui-Neng] went forward and said, "It is not the wind that is moving, and it is not the banner that is moving. It is your minds that are moving"' (McRae, 2000: 26). In this story, the two monks thought the moving of banner and moving of wind as mutually exclusive because the former indicates that moving of wind was the cause and the moving of banner the effect while the latter indicates exactly the opposite. However, Hui-Neng accepted neither the banner-moving proposition nor the wind-moving proposition and saw both being unreal but illusions caused by the moving of mind. In this way, Hui-Neng negated or rejected both propositions on the one hand and reconciled or unified them on the other. Hence, we label his logic Neither-And. The ancient Greek mathematician Dionysodorus once gave an answer of 'neither and both' when asked whether all things are silent or they speak (Plato, 1965: 55). However, Dionysodorus did not explain the logic behind his neither-both (treated as same as neither-and here).

Another example of Neither-And logic is Charles S. Peirce's abduction logic that is different from both induction and deduction on the one hand but unifies induction and deduction in a way on the other hand. According to Peirce, "abduction is the process of forming explanatory hypotheses. It is the only logical operation which introduces any new idea" (Peirce, 1974: 172); To Peirce, the only way to generate theories and conceptions is through neither induction nor deduction but abduction. How Peirce's abduction logic integrates or unifies induction and deduction is as follows, one uses abduction to generate an explanatory hypothesis first and then uses deduction and induction to test that explanatory hypothesis, namely, using deduction to derive testable consequences from the explanatory hypothesis generated by abduction, and using induction to finally reach a verdict on the hypotheses, where the nature of the verdict is dependent on the number of testable consequences that have been verified (Douven, 2011).

So far, we have briefly explained six cells. There are another three cells left unexplained. The third, sixth and seventh cells are labeled as Either-Nor, Both-Nor, Neither-Or, respectively. We have not been able to identify any well-known philosophers whose philosophies can be attributed to these three logical systems. However, we argue they are still *possible* logical systems. For example, the Both-Nor logic can be associated with the saying of 'Jack of all trades, but master of none' and Petofi Sandor's poem 'Life is dear, love is dearer. Both can be given up for freedom'; the Neither-Or logic is used in the 'lesser of two evils' principle that says when compelled to choose one of two evils or undesirable choices one should choose the one that is not as bad as the other; and the Either-Nor logic is present in the saying that 'what other people think of you, [good or bad,] it is none of your business'.

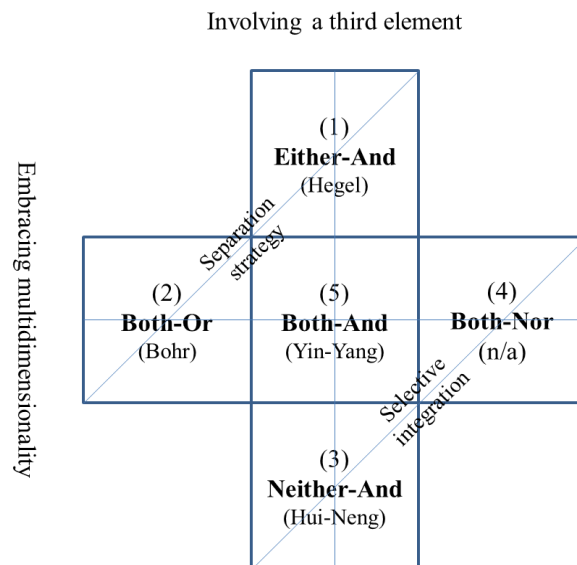
### 3. Five solutions to organizational paradox

Several scholars have discussed the issue of solving organizational paradox. For example, Bobko (1985: 105) posits that to resolve seeming paradoxes requires removing assumption of bipolarity and 'the non-bipolar resolution usually involves an *embracing*, rather than a *choice*, of both bipolar viewpoints'. Cameron & Quinn (1988: 7) contend that 'a paradoxical perspective would consider

how both [opposites] could be simultaneously pursued?. Barry Johnson (1992) describes polarities as interdependent opposites that function best when both are present to balance with each other and neither side of a polarity can be chosen as a solution when the other side is ignored (cited in Yip, 2010: 177). We argue, a solution to paradoxical balance should have a both/and component at the very least. However, there might be different ways of integrating a both/and component as part of a solution to organizational paradox. In Figure 1, except the four cells located at the four corners, the other five cells all have a both/and component. Therefore, all these five logical systems can inspire our thinking on solutions to organizational paradox<sup>13</sup>.

In Figure 2, we propose five types of solutions to organizational paradox, all of which except the Both-Nor solution are associated with a prominent philosophy. We take the liberty of defining the Both-Nor solution based on our literature review and intellectual judgment. Each type of solution has a cognitive aspect as well as a behavioral aspect. The cognitive aspect is about whether and why opposites are paradoxical, i.e., being contradictory and complementary simultaneously. The behavioral aspect is about how paradoxical opposites should be managed.

**Figure 2. Five types of solutions to organizational paradox**



We arrange them into a cross with two important cognitive features shared by some but not all of the five solutions. The solutions on the vertical line are said to have the feature of involving a third element<sup>14</sup> while the solutions on the horizontal line embracing multidimensionality in their cognitive aspects<sup>15</sup>. Situated at the junction between the vertical and horizontal lines, the solution

<sup>13</sup> This indicates that our five types of solutions to organizational paradox are not derived exactly from the respective philosophies aforementioned, albeit many inspirations.

<sup>14</sup> Dodd & Favaro (2006: 64) suggest a solution to paradox that uses a third element, namely, ‘by managing with an eye to the common bond between the two objectives within each tension’. To them, for the profitability/growth tension, the common bond is customer benefit. For the short-term/long-term tension, it is sustainable earnings. For whole and parts, the common bond is diagonal assets that help the company act as both a single company and many different business at the same time.

<sup>15</sup> For example, Feldman (1989) sees multifacetedness of the notion of control and autonomy. Mintzberg (1988) identifies multidimensions of the notion of differentiation.



five (Both-And) inherits both features. On the behavioral aspect front, the solution one (Either-And) and solution two (Both-Or) through which the upper diagonal line goes are said to adopt a separation strategy while the solution three (Neither-And) and solution four (Both-Nor) through which the lower diagonal line goes are said to adopt a selective integration strategy. Situated in between the two parallel diagonal lines, the solution five (Both-And) adopts neither a separation strategy nor a selective integration strategy.

Now we briefly explain these five solutions with a non-sequential one-three-two-four-five order.

The cognitive aspect of the Either-And solution is that, although there is contradiction between the two opposites, such contradiction is temporary at lower level and may be reconciled by a higher level third element which is a larger truth. Hegelian dialectics, for example, uses synthesis as the third element to reconcile thesis and antithesis and the synthesis ‘contains the two [opposites] but yet is different from them’ (Ford & Backoff, 1988: 103). The behavioral aspect of the Either-And solution is that it uses a separation strategy to make reconciliation. It separates the relationship between opposites into two sequential stages or domains. In the first stage (domain), the two opposites (e.g., thesis and antithesis) are said to be trade-off (i.e., of either/or nature) due to the absence of a third element; in the second stage (domain), the two opposites are synthesized into a both/and relationship due to the presence of the third element.

For the Neither-And type of solution, its cognitive aspect is that the contradiction between the opposites is illusory due to the lack of understanding of the third element that underlies the two opposites. Hui-Neng’s Chan/Zen teaching, for example, uses the moving of mind as the third element to unify the moving of banner and moving of wind as the latter two opposites are unreal but illusions caused by the former. The behavioral aspect of the Neither-And solution is that it needs to identify a third element that can unify the two opposites. In practice, the Neither-And solution uses a selective integration strategy, namely, the solution is to selectively integrate elements from both opposites.

In the case of the Both-Or type of solution, Bohr’s complementarity principle, for example, accepts that any object has opposite yet complementary aspects, however, they cannot be seen at the same time. So, the cognitive aspect of the Both-Or solution is to see the opposites as different aspects of a higher order reality, while the behavioral aspect of it is to separate the multiple dimensions into different segments (in terms of time, space, and context, etc., in practice). This is clear from Bohr’s aforementioned notion of ‘planes of objectivity’ and doctrine of classical concepts<sup>16</sup> we briefly explain here. While Bohr sees quantum physics as universally correct, he nevertheless thinks it inappropriate to describe the experiences of the observers using purely quantum mechanical notions; however, there is irreconcilable disparity between quantum and classical physics and therefore it is also impossible to give a pure classical description of the world. Bohr’s solution to this paradoxical situation is, on the one hand, to treat quantum and classical physics as contradictory yet complementary, and on the other hand ‘to divide the system whose description is sought into two parts: one, the object, is to be described quantum-mechanically, whereas the other, the apparatus, is treated *as if it were classical*’ (Landsman, 2006: 221). This quantum-classical division or separation strategy is often called ‘Heisenberg cut’ due to Heisenberg’s efforts to explicate it.

For the Both-Nor type of solution, the cognitive aspect of it is to argue that opposites are both contradictory and complementary because the opposites have multiple dimensions, some of which

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<sup>16</sup> Bohr’s philosophy of physics is characterized by two core ideas, the complementarity principle and the doctrine of classical concepts. As Howard (1994: 202) points out ‘the doctrine of classical concepts turns out to be more fundamental to Bohr’s philosophy of physics than are better-known doctrines, like complementarity’.

may be compatible while some others may be not; when one puts the compatible dimensions from both opposites together, there will be synergy/complementarity; but when incompatible dimensions from both opposites are put together, conflict/contradiction may be created. Here, the both/and component of the Both-Nor solution means a combination can be a blessing and a curse depending on what elements are combined. The behavioral aspect of the Both-Nor solution is, accordingly, to selectively integrate or combine some compatible dimensions from both opposites to gain synergy and to avoid combination of incompatible dimensions from both opposites. Here, the neither/nor component of the Both-Nor solution means the combinative result is neither the entirety of one thing nor the entirety of its opposite.

The cognitive aspect of the Both-And solution has both involving a third element and embracing multidimensionality features. Indeed, Chinese Yin-Yang philosophy, for example, involves a third element, which is the notion of change. As aforementioned, Yin-Yang is derived from the *Book of Change* that is all about the idea of change. Yin-Yang also embraces multidimensionality because it says everything has its own yin and yang dimensions. The Yin-Yang philosophy argues that the opposites (i.e., yin and yang) are neither pure identities nor being dichotomous; instead, each of the opposites is a combination of two opposite sub-elements, i.e., yin and yang. A yin entity is a combination of a yin sub-element and a yang sub-element while a yang entity is a combination of a yang sub-element and a yin sub-element. What makes a yin entity different from a yang entity is the difference in the ratio of the two sub-elements in the combination. The so-called yin entity is in fact a combination of yin as the primary sub-element and yang as the secondary sub-element. Similarly, the so-called yang entity is in fact a combination of yang as the primary sub-element and yin as the secondary sub-element. Hence, the so-called opposites (call them yin and yang) are not different in kind but in degree.

The behavioral aspect of the Both-And solution is to dynamically balance between the two opposites. As a practical principle derived from Yin-Yang philosophy, Chinese Confucian Zhong-Yong rule prescribes a middle-way solution to balance two opposites, namely, one should always avoid going extreme but choose a middle route between two extremes represented by two opposites such as being too hardworking and being too relaxed. Here, the notion of middle-way does not mean an exactly middle position of a continuum connected by the two opposite poles; rather, it means a reasonable distance away from any pole. What counts as a reasonable distance is contingent upon the specific situation in which a paradox is present. In this sense, Chinese Zhong-Yong rule is very similar to Aristotle's doctrine of the mean as Aristotle's notion of the mean is not the arithmetic mean but 'relative to us' that basically means being contingent upon situation (Losin, 1987).

Interestingly and not surprisingly, the five solutions presented in Figure 2 largely overlap with three existing taxonomies of paradox resolutions offered by Poole & Van de Ven (1989), Stroh & Miller (1994) and Seo, Putnam & Bartunek (2004).

Poole & Van de Ven (1989: 565) identify four modes of paradox resolution including, opposition (i.e., to accept the paradox and use it constructively), spatial separation (i.e., to clarify levels of analysis), temporal separation (i.e., to temporally separate the two levels), and synthesis (i.e., to introduce new terms to resolve the paradox). Strictly speaking, their first mode is not a solution to paradox as Poole & Van de Ven (1989: 566) acknowledge that 'it is to accept the paradox and learn to live with it' while 'The remaining three strategies attempt to resolve paradox'. On the other hand, we may see there is similarity between the opposition mode and our Both-Nor solution in the sense that the opposition mode suggests bias toward neither of the opposites. We mark a '(-)' in Table 1

to indicate such a loose sense of similarity. The spatial and temporal separation modes overlap with our Both-Or and Either-And solutions.

Stroh & Miller (1994: 32) argue approaches to resolving paradox fall into four categories, namely, ‘both/and thinking; best-of-both thinking, expanding the context in space, time, or both space and time, and neither/nor thinking’. The ‘both/and thinking’ is straightforward. The ‘best-of-both thinking’ is ‘to make personal values explicit by inquiring into both the positive and negative qualities of two seemingly contradictory paradigms and to develop a synergistic solution or a synthesis’ (Belasen, 1998). Therefore, it overlaps with our Either-And solution. The approach of ‘expanding the context in space, time or both space and time’ overlaps with Poole & Van de Ven’s (1989) spatial and temporal separation solutions. It is worth noting that what Stroh & Miller call neither/nor thinking is very similar to what we termed as the Neither-And solution because Stroh & Miller (1994: 37) make clear that “‘Neither/no” thinking—choosing a third option. A Jewish proverb advises that, if there are two courses of action, you should always pick the third’.

Seo, Putnam & Bartunek (2004: 76) suggested five ways of managing dualities, i.e., selection, separation, integration, transcendence, and connection. Selection is an either/or solution that entails denial or selecting one side of the dichotomy over the other. Separation is about separating opposites through levels of analysis, topical domains, or temporal processes, which is similar to our Both-Or solution. Integration combines the dualities in one of two different ways—neutralization or compromise and forced merger. Neutralization or compromise refers to a ‘middle of the road’ approach that is ‘a balance in that both ends of the continuum are legitimate at once but remain unfulfilled in their totality’. It overlaps with our Both-And solution. We don’t consider the forced-merger approach an appropriate solution to balance as Seo et al. (2004: 76) acknowledge it ‘parallels the selection approach’. Transcendence is also known as synthesis in Seo et al.’s taxonomy, so it overlaps with our Either-And solution. Connection legitimates dualities through demonstrating respect, empathy, and curiosity for differences without seeking unifying, merging and transcending opposites. It is similar to Poole & Van de Ven’s (1989) opposition mode and therefore our Both-Nor solution for aforementioned reason.

**Table 1. Overlaps and similarities between our typology and three existing taxonomies**

Our typology	Poole & Van de Ven (1989)	Stroh & Miller (1994)	Seo, Putnam & Bartunek (2004)
Either-Or			Selection; Forced merger
Either-And	Synthesis; Temporal separation; Spatial separation	“Best-of-both” thinking; Expanding the context in space, time, or both space and time	Transcendence (synthesis); separation
Both-Or	Temporal separation; Spatial separation	Expanding the context in space, time, or both space and time	Separation
Neither-And		“Neither/nor” thinking	
Both-Nor	(-) Opposition		(-) Connection
Both-And		“Both/and” thinking	Integration (neutralization or compromise)

#### 4. Application of the five solutions to the generic strategy paradox

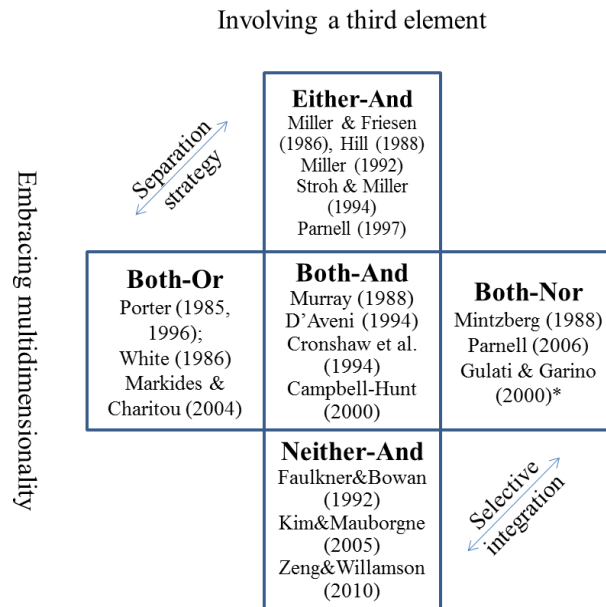
Now, we illustrate the relevance of these five solutions to the real world of organizational paradox. We use the generic strategy paradox as an example to see how well our typology matches the various existing solutions to this paradox. We choose the case of generic strategy paradox for two reasons. One is that the generic strategy paradox is very important issue in strategy literature (Campbell-Hunt, 2000) and there are renewed interests in it (Markides, 2013; Thornhill & White, 2007). The other is that there are sufficient number of varied solutions existed in the literature.

Michael Porter (1980), a strategy guru, argues that there are three generic strategies any company can adopt to compete in the market, i.e., cost leadership, differentiation, and focus. While the focus strategy is about the scope of a company's activities, cost leadership and differentiation are the real 'generic' strategies, strictly speaking. While both cost leadership and differentiation are equally viable strategies, Porter asserts that the combination of two generic strategies has a high risk of being 'stuck in the middle' (Porter, 1980: 41, 1985: 16, 1998: xiv, 1999: 217). Porter's explanation for the incompatibility of the two generic strategies – cost leadership and differentiation – has been as follows.

'Effectively implementing any of these two generic strategies usually requires total commitment and supporting organizational arrangements that are diluted if there is more than one primary target' (Porter, 1980: 35), because 'achieving differentiation may sometimes preclude gaining a high market share. It often requires a perception of exclusivity, which is incompatible with high market share. More commonly, however, achieving differentiation will imply a trade-off with cost position if the activities required in creating it are inherently costly, such as extensive research, product design, high quality materials, or intensive customer support' (Porter, 1980: 38); and 'achieving cost leadership and differentiation are also usually inconsistent, because differentiation is usually costly' (Porter, 1985: 18), and 'in pursuing differentiation, a firm often affects the cost drivers of an activity adversely and deliberately adds cost' (Porter, 1985: 128), so, 'if a firm has been aggressively reducing its costs, therefore, attempts to achieve uniqueness usually raise cost. Similarly, once competitors imitate a major innovation a firm can remain differentiated only by adding cost' (Porter, 1985: 130).

Therefore, Porter (1985: 17) reminds us that 'usually a firm must make a choice between them or it will become stuck in the middle'. However, the paradox of generic strategy is that, on the one hand, while Porter's warning is backed by sound reasoning, companies do strive for achieving both low cost and differentiation because their customers certainly want to buy things that are both less expensive and more differentiated; on the other hand, while some researches have supported Porter's thesis (e.g., Dess & Davis, 1984; Hall, 1980; Hambrick, 1983; Nayyar, 1993; Robinson & Pearce, 1988; Thornhill & White, 2007; White 1986), there are ample evidences showing that many companies have succeeded in combining both generic strategies. The paradox begs answers. Strategy scholars have come up with a couple of solutions to the paradox. We find that all of these solutions can be characterized by the five types of solution we proposed.

It is worth noting that the (empirical) solutions we identified in the strategy literature may not necessarily embrace all the features of the five theoretical solutions we present in Figure 2. This is especially the case for the Both-And and Both-Or categories. Also, some of them may be more of cognitive than behavioral in nature, or vice versa. Now, we will briefly explain the various solutions grouped into the five categories.

**Figure 3. different solutions to the generic strategy paradox**

### *Both-And*

In theory, the Both-And solution embraces multidimensionality and involve a third element on the cognitive front and adopts neither the separation nor the selective integration strategies on the behavioral front. In practice, many empirical solutions only embrace multidimensionality without involving a third element on the cognitive front. However, in order to be labelled as Both-And, the solutions have to adopt *neither* a separation strategy *nor* a selective integration strategy on the behavioral front.

Murray (1988: 398) argues that, Porter's generic strategy concept is very useful for strategy researchers, but his theory does a disservice to practicing managers by asserting that efforts to combine the two generic strategies will result in stuck in the middle because 'there is no a priori reason why firms should limit themselves to a single generic strategy'. He proposes a contingency approach that associates each generic strategy with a whole cluster of strategic means and argues that a firm's choice among strategic means is determined by the specific external context of the firm. His contingency approach then allows a firm to choose among 'a set of strategic means which may include components aimed at reducing costs, raising revenues through product differentiation, or both'. Obviously, Murray's solution embraces multidimensionality by viewing any generic strategy as being composed of both cost reduction and product differentiation components.

Campbell-Hunt (2000: 131) compares and contrasts four approaches to describing competitive strategy, one of which is the dimensional approach that 'interprets the characteristics of market scope, cost-, and differentiation-emphasis as independent dimensions of a multi-variate space encompassing most of the variation in competitive-strategy designs'. By viewing all competitive strategy designs as being positioned relative to both cost- and differentiation-dimensions, this dimensional approach argues that the presence of one emphasis does not exclude the other. Campbell-Hunt points out that 'Even the extreme archetypal designs of cost- and differentiation-emphasis cannot be adequately described in their own terms alone, but must be positioned relative to both parameters: cost leaders must not lose touch with the competitive standards of

differentiation, and vice versa'. Clearly, Campbell-Hunt's dimensional approach embraces multidimensionality as well.

On the behavioral aspect front, D'Aveni's (1994) 'being in the middle' and Cronshaw, Davis & Kay's (1994) 'being in a mid-market position' are typical Zhong-Yong choices that adopts neither a separation strategy nor a selective integration strategy on the behavioral front. These scholars contend that such Both-And solutions may result in superior performances. For example, Cronshaw et al. (1994) point out 'When interpreted narrowly as referring to the appeal of a product to its target buyers, the proposition that firms should not be "stuck in the middle" should not be taken to imply that companies must be down-market or up-market, but nothing in-between. Such a view is belied by the evident success of companies such as Sainsbury's, which earn substantial economic rents in a mid-market position'. Similarly, Campbell-Hunt's (2000: 149) study 'may be taken as support for the body of theoretical work that has investigated contexts in which "stuck-in-the-middle" designs may be superior to strategic specialization'.

#### *Either-And*

Under the 'Either-And' category we group those solutions that involve a third element on the cognitive front and adopt a separation strategy on the behavioral front.

Miller & Friesen (1986a: 39, 1986b: 260) adopt an Either-And solution in solving the generic strategy paradox by bringing industrial difference into consideration. They maintain that while pure generic strategies may be needed for some industrial product and capital goods industries, producers in consumer durable industries can effectively combine both differentiation and cost leadership. Their argument is that, as capital equipment often represents a considerable investment, the returns over the life of the asset is a primary consideration to the knowledgeable buyers; and because the industrial goods purchases often involve very significant quantities, marketing and advertising to the expert buyers are not as important as the actual quality of the product. In these industries, differentiation usually involves 'higher quality or a more productive or innovative product or service', which is generally quite costly to achieve and thus precludes cost leadership.

In contrast, in consumer durables industries, producers can more easily create an *image* of quality via advertising. Marketing and advertising can build reputation and consumer loyalty that leads to a high market share; and economies of scale in production will help reduce average unit costs; hence it is possible to adopt a strategy that combines both marketing-oriented differentiation and scale economy-based cost reduction. Clearly, Miller & Friesen's (1986a) solution uses economies of scale as the third element to separate two different situations in which the significance of advertising differs, namely, the either/or situation in capital goods industries in contrast to the both/and situation in consumer durable goods industries. Miller (1992b: 39) also uses economies of scale notion as a third element to reconcile the differentiation-cost trade-off by arguing that 'differentiation, by increasing demand and market share, may produce economies of scale and speed the descent along the cost curve'.

Hill (1988: 404) is another example of the Either-And solution. He identifies three major contingencies that influence the impact of product differentiation on market demand, one of which is the competitive nature of the product market environment. He points out that, although efforts to differentiate appear to be greatest in an oligopolistic market, differentiation by established oligopolies will not increase market share enough to enable the firm to realize substantial cost economies; in contrast, in fragmented markets, a substantial impact on quantity demanded will be seen from differentiation. So, Hill uses market demand as the third element to separate two situations, namely, the either/or situation in oligopolistic markets in contrast to the both/and situation in fragmented markets.

While the separation strategy used by Miller & Friesen and Hill is of contextual nature, i.e., whether the generic strategies are of either/or or both/and nature depends on the industrial and market structural context, the separation strategy used by Stroh & Miller (1994: 32) is of temporal nature. Stroh & Miller (1994) argue that, because improving quality requires a short-term investment that costs money, hence, in the short run, there is a trade-off between quality and cost; however, quality is closely related to productivity/efficiency, in the long run, companies can realize enormous cost saving by using resources more efficiently.

Parnell's (1997: 178) Either-And solution is different from all of above mentioned because it uses the manner of combining generic strategies as the third element to separate the either/or and both/and situations, namely, if a combinative strategy is implemented 'in a haphazard manner', then it is likely to become 'stuck in the middle' as Porter (1980) suggested; however, if it is implemented in an appropriate manner, one may succeed in achieving both low costs and differentiation simultaneously.

### *Both-Or*

In theory, the Both-Or solution embraces multidimensionality on the cognitive front and adopts a separation strategy on the behavioral front. In practice, many solutions are only behavioral in nature and do not say anything about multidimensionality. In order to be labelled as Both-Or rather than Either-And that also adopts a separation strategy, the solutions have to not rely on a third element.

Quoting Peters & Waterman's (1982) argument that excellent companies may be able to pursue seemingly contradictory goals simultaneously, White (1986:230) suggests that those companies may 'give sequential rather than simultaneous attention to the different organizational requirements' and points out that sequential attention to goals was endorsed by Cyert and March (1963) as one means that organizations deal with apparently conflicting objectives.

Interestingly, Porter (1985) himself has proposed a Both-Or solution. Recognizing that 'reducing cost does not always involve a sacrifice in differentiation' (p. 18) and 'sometimes making an activity unique also simultaneously lowers cost' (p. 129), Porter has made a compromise that 'sometimes a firm may be able to create two largely separate business units within the same corporate entity, each with a different generic strategy' (p. 17). However, Porter (1996: 77) emphasizes that in order to contain the risk of the combination effort, corporations have to create stand alone business units, 'each with its own brand name and tailored activities'. Christensen's (1997) 'innovator's solution' has been a strong support to Porter's separation approach, which is echoed by Markides and Charitou (2004: 23) who propose a contingency approach that identifies four possible strategies for competing with dual business models, one of which is the separation strategy.

### *Neither-And*

Under the 'Neither-And' category we group those solutions that endorses neither pure cost leadership nor pure differentiation as viable generic strategy on the cognitive front and adopt the selective integration strategy on the behavioral front.

Arguing that 'there is no theoretical reason why differentiators could not also be the lowest cost producers in their segment', Faulkner & Bowman (1992: 495) outline an alternative approach to competitive strategy. Their approach is based on two types of customer perceptions of the products or services being offered to them, i.e., perceived use value and perceived price. They create a customer matrix with the two perceptions as two axes, in which the position of any product offering can be placed relative to the two axes. The customer matrix is often called 'Bowman's strategy clock' (Johnson, Scholes & Whittington, 2012: 243). According to these authors, there are eight

different directions a company can move from its current position within the matrix, three of which are destined for ultimate failure while the other five are more or less viable. The five strategic choices are: ‘no frills’ with low price but low use value, low price with equivalent use value, hybrid of high use value and low price, differentiation by high use value with equivalent price, and focused differentiation by high use value but high price (Johnson, Scholes & Whittington, 2012: 243). Apparently, in Faulkner & Bowman’s solution, what matters is neither price nor use value, but the combination of (or ratio between) perceived use value and perceived price. Namely, it does not matter which direction one moves in the customer matrix, it is a good strategy as long as the move increase the value/price ratio. Here, the value/cost ratio is the third element that unifies the generic strategies that are often said to be mutually exclusive.

A more well-known Neither-And solution is Kim & Mauborgne’s (2005) Blue Ocean strategy. These authors endorse neither cost leadership nor differentiation as wise generic strategy. In their view, the generic strategy notion is a language used by people with a competitive-advantage worldview who focus solely on and are trapped by the idea of winning competition by outperforming their rivals. Rejecting the trade-off between low cost and differentiation altogether, Kim & Mauborgne shift our attention from fighting competition in a ‘red ocean’ to a far more lucrative aspect of strategy, which is to find and develop markets where there is little or no competition at all.

At the behavioral aspect front, Kim & Mauborgne propose a four-actions framework of value innovation for simultaneous pursuit of differentiation and low cost. Different from Faulkner & Bowman’s focus on value/price ratio, the Blue Ocean strategy focus on the difference between the buyer’s value and the producer’s cost. Cost savings are made by eliminating and reducing the factors an industry competes on while buyer value is lifted by raising and creating factors the industry has never offered. Clearly, the Blue Ocean strategy solution says neither/nor to Porter’s two generic strategies and uses the value-cost difference notion as the third element to enable combination of differentiation and low cost.

Different from Kim & Mauborgne’s (2005) value innovation, the notion of cost innovation of Zeng & Williamson (2007) represents another Neither-And solution because it is about neither pure cost leadership nor differentiation, but a combination of the two generic strategic choice in a way unrealized by many scholars and practitioners. Williamson (2010: 344) calls cost innovation ‘a new type of generic strategy’ that is ‘of deploying the cost advantages that are enjoyed by players based in emerging economies (especially China) which are finding radical new ways to offer customers around the world dramatically more utility for less expenditure’.

### *Both-Nor*

Under the ‘Both-Nor’ category we group those solutions that embrace multidimensionality on the cognitive front and adopt the selective integration strategy on the behavioral front.

Mintzberg (1988) critiques Porter’s generic strategy model on two fronts, one being that the focus strategy defines the scope of a market domain while the other two generic strategies prescribe how firms should compete in the chosen market domain, so focus is not a generic strategy; the other being that cost leadership based on cost minimization does not provide an advantage by itself and it has to result in below average market prices to be a competitive advantage (cited in Kotha & Vadlamani, 1995: 76), so he labels cost leadership strategy as differentiation by price. Mintzberg disaggregates Porter’s differentiation strategy into six sub-categories, namely, differentiation by marketing image, product design, quality, support, and undifferentiation. In this way, a business strategy becomes a multidimensional phenomenon, and companies can selectively integrate different dimensions of differentiation.



In the spirit of Mintzberg's analysis, Parnell (2006: 1143) argues 'In general, all successful firms over the long term exhibit one or more forms of differentiation. These include not only those forms commonly associated with differentiation such as innovation and quality, but also forms directly associated with cost leadership and even Porter's focus orientation... Hence, an emphasis on cost leadership can be viewed as another form of differentiation'

Gulati & Garino (2000) represents a best example of Both-Nor solution although it is not about generic strategy paradox. This is indicated by a '\*' symbol on it in Figure 3. Nevertheless, we explain their solution here due to lack of enough examples of the Both-Nor type of solution to the generic strategy paradox.

Gulati & Garino (2000) talk about how to get the right mix of bricks and clicks, namely, should companies integrate their Internet businesses with their traditional businesses. The cognitive aspect of their solution is that 'the integration-separation decision is not a binary choice. There are infinite permutations along the integration spectrum' (ibid.: 112), which seems to be similar to the cognitive aspect of the Yin-Yang Both-And solution. The behavioral aspect of their solution is to suggest 'thinking carefully about which aspects of a business to integrate and which to keep distinct, companies can tailor their clicks-and-mortar strategy to their own particular market and competitive situation, dramatically increasing the odds of e-business success' (ibid.: 113). Specifically, Gulati & Garino (2000) recommend examining four business dimensions, i.e., brand, management, operations, and equity, when making decision about the degree of integration that makes sense along each of the four dimensions. They illustrate this selective integration strategy with three cases, each of which exhibits varied degrees of integration in the four dimensions of the respective business. For example, while Office Depot and its online business OfficeDepot.com are fully integrated in all of the four dimensions, KB Toys and its e-business Kbkids.com are mostly integrated in brand, moderately integrated in operations, slightly integrated in management, and separated in equity.

## 5. Is there a superior solution to paradox?

Given the varieties of theoretical and empirical solutions, one may wonder whether there is a best solution to paradox. For instance, Peter P. Li (2014: 324) claims that Yin-Yang 'is superior in managing paradoxes'. We refute such an assertion simply because claiming Yin-Yang is superior entirely contradicts to the very essence of the Yin-Yang philosophy, i.e., relativity instead of absoluteness. We completely agree with Poole & Van de Ven (1989: 576) that 'there is no single best way to address paradox, and any solution has both merits and drawbacks'. In addition to this type of reasoning, we present a contingency view that will in an alternative way to show why there is no best solution to paradox. We argue, the appropriateness of a choice of solution is contingent upon the 'degree of paradoxicality' of the paradoxical problem facing us.

Our use of the term 'Paradoxicality' is different from that of Cuonzo (2014) who offers a quantitative method to rate paradoxicality of logical paradox. Here, we use the notion of 'degree of paradoxicality' in a rather loose manner to mean how difficult the paradoxical problem is. Among the five theoretical solutions to organizational paradox, except the Both-Nor solution the other four types of solution are associated with four prominent philosophies, i.e., Hegelian dialectics, Yin-Yang, Bohr's complementarity philosophy, and Hui-Neng's Chan/Zen Buddhism. We argue, among these four philosophies, Hegelian dialectic solution of thesis-antithesis-synthesis is appropriate for solving the least difficult paradoxes, while Hui-Neng's and Nagarjuna's neither/nor solution is appropriate for the most difficult ones. In between, there are Yin-Yang and Bohr's complementarity philosophy, of which the latter is appropriate for more difficult paradoxes than the former is. Therefore, in terms of degree of paradoxicality of paradoxes for which these four

philosophies are most appropriate, there is an ascending order from Hegelian, Yin-Yang, Bohr's to Hui-Neng/Nagarjuna's philosophies.

Hegelian's thesis-antithesis-synthesis solution is said to be appropriate for the least paradoxical problems because for this kind of paradox the two opposites can be treated as low level thesis and antithesis that can be synthesized into a higher level synthesis (a new thesis). This is to say, as long as there is a higher level of abstraction than the one on which the paradox is seen, it can be solved by the method of synthesis.

In contrast, in the case of Yin-Yang, yin and yang are located at the highest level of abstraction as Yin-Yang cosmology describes the world as being filled and created by the two basic forces or energies. In other words, in sharp contrast to Hegelian thesis and antithesis, yin and yang are the ultimate opposites and cannot be synthesized. Therefore, Hegelian synthesis solution is not useful for the more difficult Yin-Yang paradox. The Yin-Yang solution is to assert that yin and yang are the ultimate forces and energies of the universe and they always coexist together within any object of the universe. It is worth noting that the Yin-Yang philosophy only asserts but does not explain why this is so.

While Bohr's complementarity philosophy seems to have an idea similar to Yin-Yang, namely, contradictory elements are complementary, it actually deals with a more difficult paradoxical problem, namely, why such complementary elements are mutually exclusive or incompatible in observation. Initially, he was confronted by the wave-particle paradox of light, that is, light can be observed as either wave or particle but not both wave and particle simultaneously. His explanation is that this is due to the measurement problem, namely, if an experiment is designed to measure the wave properties of light, then what we will observe is only wave properties, and if it is designed to measure the particle properties, then we will get only particle properties, and no experiment can be designed to capture both wave and particle properties simultaneously.

This measurement problem is not difficult for most physicists. What is difficult to be understood is the complementarity between two opposite/contradictory things such as wave and particle, namely, why light is ontologically both wave and particle. Bohr asserts that complementarity of contradictory pair is a fact without convincing explanation. It seems to us that Bohr simply accepted and believed it was so because he could think of no explanation. Bohr did not turn to Hegelian dialectic philosophy that also deals with this difficult ontological puzzle. Instead he turned to Yin-Yang as if it had an answer but actually it does not have. He associated his complementarity philosophy with Yin-Yang by using the Yin-Yang symbol in his self-designed coat of arms for his award of the Order of Elephant from the Danish monarch in 1947.

However, like China's most authoritative Bohr study scholar Ge Ge<sup>17</sup> (2001) pointed out, it was an inappropriate choice for Bohr to use Yin-Yang symbol to visualize his complementarity principle. We think there are two parts of such inappropriateness of the choice. First, Bohr's insight is primarily epistemological rather than ontological. So, his use of Yin-Yang as an implied ontology does not help to show his fundamental epistemological insight. This is what Ge Ge meant as he pointed out Bohr's complementarity principle is non-visualizable by any visual symbol. However, we would argue that Bohr's complementarity as epistemology can be perfectly visualized by the image of Rubin's Vase which ontologically is a both/and but epistemologically can be seen as either

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<sup>17</sup> Professor Ge Ge, a devoted Chinese translator of Niels Bohr's works, is praised as 'A Hero of History of Science' by American Institute of Physics. See <http://www.aip.org/history/newsletter/fall2001/gege.htm>. In recognition of his excellent work, he was presented with the Knight insignia of the Danish Order of the Dannebrog in 2001. See <http://www.nba.nbi.dk/gege.html>.

a white vase on a black background or two black faces on a white background. It is worth noting that Edgar Rubin is Bohr's second cousin and Bohr was involved in an experiment concerning visual perception that was a part of Rubin's 1915 doctoral thesis, in which Rubin constructed what was later known as 'Rubin's Vase' to demonstrate what may be called a complementary aspect of our perception (Li, X. 2014).

Second, although Bohr's complementarity as an unexplained ontology is similar to Yin-Yang's implied ontology, Bohr's ontological philosophy of quantum physics is much broader than the Yin-Yang-like complementarity idea. The most important and controversial part of his ontology that a lot of physicists including Einstein find unacceptable is his 'unknowability and uncertainty of the Nature' idea. The Nature is unknowable because, to know anything in the world is to observe or measure it; observation or measurement will cause the measurement problem; due to the measurement problem the knowledge we gain by observing or measuring the objects in the world is not the original states of the objects but an outcome of the interaction between the observer and the observed or something we as observers made or fixed it to be. In this sense, no matter how much knowledge we gain about the world, it does not reflect the true nature of the world.

The Nature is uncertain because, as Bohr pointed out, in contrast to the classical world where many things are certain, for example, a cup is right at the center of a table, the quantum world no longer has such certainty. A quantum object may be here or there or any other position with a probability. It seems that the God (Nature) is playing dice, which Einstein did not accept. So, from this point of view, we can say Bohr's philosophy is fundamentally different from and more sophisticated than Yin-Yang. In fact, Bohr's philosophy of physics is very close to Buddhism because there is 'a strange parallelism' between the two concepts of reality depicted by Bohr's or Copenhagen Interpretation of quantum physics (Kohl, 2007), namely, everything as we observe is dependent arising under specific conditions and devoid of objective and independent existence.

However, as a scientist, 'Bohr felt this lack of independence to be a threat to the objectivity of physics' (Landsman, 2006: 221). Instead of moving toward the Buddhist nihilism, he still insisted on the objectivity, at least the description, of physics that can be accomplished by 'expressing the account of all evidence in classical terms' (ibid.). Therefore, we can say Bohr deliberately stayed one step behind the Buddhist Hui-Neng in claiming the paradox is caused by the moving of our mind. Such a mind-moving solution seems to be omnipotent for any paradox no matter how difficult it is because it simply denies any paradox and advises us to let go without being bothered by any opposite. Then, it seems the most powerful solution does not offer any solution at all. Is not this a paradox? Indeed, it is a paradox that is caused by human temptation to find best solutions to resolve all paradoxes once for all. However, we would argue that paradox is the intrinsic nature of the world and it is unavoidable and unresolvable. We call this the paradox of paradox resolving, which we explain as follows.

Resolving paradox is like the search for the ultimate source of sustainable competitive advantage, which may be the Holy Grail that may not exist, for paradox is endless and there is 'the possibility that the resolution of one paradox may inadvertently create another', rightfully pointed out by Poole & Van de Ven (1989: 576). On the other hand, the world is full of absurdity, as described by the Existentialism; misfortune can happen to any firms (e.g., Motorola, Nokia, Kodak, etc.). No matter how hard organizations work, no matter what solutions they take, there will never be guarantee that they will be free from such absurd misfortune.

Recognizing this, some people argue organizational leaders should not be afraid of paradox but instead embrace it and practice paradoxical leadership (Zhang et al., 2014). However, paradoxical leader behavior is both beneficial and risky. It is not the case that practicing paradoxical behavior

will automatically bring positive results. If executed inappropriately, it may bring negative result (e.g., ‘stuck in the middle’), which may be even worse than the result of a nonparadoxical behavior. For example, when talking about the antecedents of contextual ambidexterity, i.e., discipline, stretch, support, and trust of organizational context, Gibson & Birkinshaw (2004: 214-215) point out that ‘the attributes of context themselves can create and amplify internal tensions if they do not contribute to the simultaneous capacities for alignment and adaptability that comprise ambidexterity’. For example, Thornhill & White (2007: 553) studied 2351 businesses and found ‘in all instances pure strategies never did less well, and often did better than hybrid strategies’. Paradoxical balancing requires a high level skill (higher-order capacity for ambidexterity, in Gibson & Birkinshaw’s term, p. 215) and not everyone has acquired such a skill yet. The development of such high level skills takes many years and is recognized to be complex, time-consuming, and causally ambiguous (Gibson & Birkinshaw, 2004: 214). Normally, junior managers often do not have such a high level skill while senior managers may have a higher chance to have acquired it. A Chinese saying goes ‘one has to learn crawling before learning how to walk’. The implication is that, to blindly ask any managers to practice paradoxical behavior is dangerous.

Even for those senior managers who are skilled in paradoxical behavior, their past successes do not guarantee they will succeed in the future. One of the reasons is the competence trap (Levitt & March, 1988) that may lead the once successful leaders to become overconfident in their competences even if there are radical environmental changes which may render their competences outdated. Audia, Locke & Smith (2000: 837) indicate that greater satisfaction with past performance leads to ‘more confidence in the correctness of current strategies, higher goals and self-efficacy, and less seeking of information from critics’. As a result, the once successful leaders may make fatal decisions that bring their organizations big failures. This is well captured by the notion of icarus paradox (Miller, 1990, 1992a) or the paradox of success (Audia et al., 2000). The paradox is that one’s greatest asset may lead to his demise, for example, core capabilities in the past may turn out to be core rigidities in the future (Leonard-Barton, 1992), or the same strategic behaviors that are associated with great success are also associated with failure (Raynor, 2007).

In cases where some skilled leaders may not make any big mistakes, they then become heroes. When they become heroes with personality cult, there may be ‘halo effect’ that will dwarf all the other leaders. The consequence may be that the development of other leaders will be hindered. When the heroic leaders die or leave, there may be a skill or confidence gap between what the successors have and what the stakeholders expect. Such gap may bring negative results.

Even if some organizations may luckily avoid all above pitfalls, they then become super-competitive. However, the paradox is that what is good for individual organizations may not be good for the wider society because the super-competitive organizations may become predators who will destroy new but small innovators. Like dinosaur, once it became predatory monster, it was ultimately dispelled by external forces, for good.

We conclude the present article by citing Engle’s (2003) insightful statement that ‘paradoxes exist not to be solved but rather to teach problem solving!’

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