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How to Apply Yin-Yang Balancing to Paradox Management

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Extended Abstract

Purpose:

The author argues and explains that the indigenous Eastern epistemological system of Yin-Yang balancing should be taken as a novel system or frame of thinking, which is deeply rooted in the indigenous Eastern culture traditions, but it has significant global implications, especially in the domain of paradox management. The purpose and contributions of this article are twofold: (1) to provide a detailed elaboration of the indigenous Eastern epistemological system of Yin-Yang balancing in contrast to the Western logic systems; and (2) to provide a roadmap for applying the system of Yin-Yang balancing to complex issues in the area of management, in general, and paradoxical issues, in particular.

Design/Methodology/Approach

This is a conceptual paper with a focus on theory-building.

Findings:

The author elaborates on the indigenous features of Yin-Yang balancing, in contrast to Aristotle's formal logic and Hegel's dialectical logic in the West, to further explore the former's global implications for the increased attention to research on paradox management. In particular, the author posits that Yin-Yang balancing appears to be better suited for paradox management than the more commonly used logics available in the Western literature. Built upon the Yin-Yang balancing, a practical tool of Duality Map for paradox management is proposed.

Research limitations/implications:

The system of Yin-Yang balancing proposed in this paper has the potential to embrace logical systems available in the West into a geocentric (East-meeting-West) meta-system. This paper further shows how to apply Yin-Yang balancing with the tool of Duality Map. can be applied to the most salient paradoxes in the domain of management, including value-profit balance (triple bottom lines), exploration-exploitation balance (ambidexterity), cooperation-competition balance (co-opetition), globalization-localization balance (glocalization), institution-agency balance (institutional entrepreneurship), simultaneously positive and negative attitudes toward an entity (ambivalence), and etic-emic balance (geocentric) across all domains of management research.

Originality/Value:

The primary challenge for management researchers is to find a way to achieve a geocentric integration between the West and the East at the fundamental level of philosophy. The hope is that the philosophical traditions in the East will facilitate such integration. In particular, the Eastern philosophy of wisdom has a unique capacity to reframe paradox from a negative problem (i.e., a problem of inconsistency to be resolved by dualism in terms of separating opposite elements) to a positive solution (i.e., a solution of completeness or holism to be achieved by duality in terms of partially separating and partially integrating opposite elements).

The Global Implications of the Indigenous Epistemological System from the East:

How to Apply Yin-Yang Balancing to Paradox Management

There is an emerging consensus that social research should adopt an interdisciplinary and multi-perspective approach (e.g., see Suddaby, Hardy & Huy, 2011 for a review in the area of management). However, there is little evidence to suggest that scholars are actively responding to the shared vision despite the repeated calls for an integrative approach. This situation does not appear to stem from a lack of motivation or effort; rather, it appears to arise from an *inability* given the methodology of logical analysis rooted in the epistemology of rational reductionism as well as the ontology of realism-idealism separation, both of which lie at the core of the Western philosophical traditions. In particular, the either/or logic (i.e., the dominant epistemology of dualism or dichotomy) has generated hyper-specialized knowledge that has resulted in increasingly impermeable boundaries between diverse disciplines (Morin, 2008). Historically, the nineteenth century was marked by a boundless optimism and confidence in the power of progress and technology, so much so that most scholars at that time truly believed that in science lay the promise of certainty in knowledge built on a foundation of facts and/or data obtained from objective and trustworthy tools. However, science has later shown that our knowledge will always be fundamentally incomplete as a true understanding of the reality, especially that of organic life, is ultimately too complex and uncertain (Knight, 1921; Peat, 2002; Weaver, 1948). This is especially true when we attempt to capture the inherently holistic and dynamic social reality that arise from growing interconnectedness and interaction among many diverse elements in the world (Chia, 2010; Morin, 2008; Stacey, Griffin & Shaw, 2000) in light of accelerating technological advances and globalization (Dicken, 2015). This new reality gives rise to the urgency to look for fresh insights in a new place, away from the traditional lens of perfect rationality including the revised lens of bounded rationality (Simon, 1957). The new place is where the East and the

West can meet, and the new lens is the geocentric (the West-East balance) meta-paradigm (Li, 1998, 2008, 2012a, 2012b; also see Byers, 2007; Capra, 1975; Chen & Miller, 2011; Chia, 2010; Peng & Nisbett, 1999; Reinecke & Ansari, 2015).

The primary challenge for management researchers is to find a way to achieve a geocentric integration between the West and the East at the fundamental level of philosophy. The hope is that the philosophical traditions in the East will facilitate such integration. In particular, the Eastern philosophy of wisdom has a unique capacity to reframe paradox from a negative problem (i.e., a problem of inconsistency to be resolved by dualism in terms of separating opposite elements) to a positive solution (i.e., a solution of completeness or holism to be achieved by duality in terms of partially separating and partially integrating opposite elements). Further, the Eastern philosophy of wisdom advocates a critical balance logical analysis with intuitive imagination. By extending the framework of exploration and exploitation proposed by March (1991), it is possible to integrate the Eastern philosophy of wisdom (as science-art integration for exploration) with the Western philosophy of knowledge (as science-art separation for exploitation) into the geocentric meta-paradigm of learning (to balance the separation and integration between science and art for both exploration and exploitation). By so doing, it is possible to frame the Eastern and Western philosophical traditions as a *duality*, which refers to the opposites-in-unity as both *partially conflicting* and *partially complementary* (相生相克 in Chinese, Li, 2012a, 2012b, 2014a).

From the outset, by the *East*, I explicitly refer to the geographical areas traditionally influenced by the ancient Chinese civilization, while the *West* refers to those traditionally influenced by the ancient Greek civilization (Li, 2012a), with India and the Middle East as the two bridges between the East and the West (cf. Jullien, 2012). Hence, "Chinese" and "Eastern" (primarily East Asia) will be used interchangeably. Further, both the Eastern and Western philosophies I refer to are orthodox and traditional (as the dominant and mainstream)

ones in the West and the East, so I focus first on their distinctions and later on their

integration, while fully recognizing/acknowledging the diversities within the East and the

West as well as the parallels between the East and West in terms of peripheral and emerging

philosophies. At the outset it is important to note that the intent here is not to discredit the

philosophical tradition in the West, but to unravel its hidden limitations as boundary

conditions that have not been critically scrutinized before. Further, the intent is not to

overrate the philosophical tradition in the East, but to reveal its unique characteristics as

potential contributions that are thus far less known in the West. Finally, the peripheral and

emerging philosophies on each side of the East-West divide (e.g., the Western views on

intuition and wisdom, and the Eastern views on logic and rationality) are largely compatible

with the orthodox and traditional philosophies on the other side (e.g., the Western views on

logic and rationality, and the Eastern views on intuition and wisdom), hence the possibility

for an East-West integration as an *asymmetrical balance* with perhaps more emphasis on the

Eastern philosophy of wisdom (Li, 2012a, 2012b, 2014a, 2014b; also see Chia & Holt, 2007;

Jullien, 1998; Weick & Putnam, 2006).

The purpose and contributions of this article are twofold: (1) to provide a detailed

elaboration of the indigenous Eastern epistemological system of Yin-Yang balancing in

contrast to the Western logic systems; and (2) to provide a roadmap for applying the system

of Yin-Yang balancing to complex issues in the area of management, in general, and

paradoxical issues, in particular. In the rest of this article, I will first explain the need for a

paradigm shift from the current focus in management research anchored on the Western

perspectives and contexts. Second, I elaborate on the unique features of Yin-Yang balancing

as the epistemology of the Eastern philosophy of wisdom by comparing the Eastern system of

Yin-Yang balancing (the "either/and" system) with Aristotle's formal logic (the "either/or"

system) and Hegel's dialectical logic (the "both/or" system) in the West as well as with the

"neither/nor" and "both/and" systems. Third, I will discuss how the system of Yin-Yang balancing can be applied to paradoxes, in general, and managerial paradoxes, in particular, such as conservative-liberal balance (political coalition), value-profit balance (triple bottom lines), exploration-exploitation balance (ambidexterity), globalization-localization balance (glocalization), cooperation-competition balance (co-opetition), institution-agency balance (institutional entrepreneurship), simultaneously positive and negative attitudes toward an entity (ambivalence), and etic-emic balance (geocentric) in the cross-cultural research in particular and across the entire field of management research in general. Finally, I conclude with some suggestions for applications of Yin-Yang balancing in future research.

The Urgent Need for a Paradigm Shift

The Unique Challenge of Paradox

It is increasingly accepted that reality is complex with diverse elements interacting in uncertain ways (Chia, 2010; Knight, 1921; Morin, 2008; Peat, 2002; Prigogine & Stengers, 1984; Stacey et al., 2000; Weaver, 1948), with many being the *real opposites* (as tensions that abound in the real world), in their critical links of interdependence, interpenetration, interaction, and inter-transformation (Bar-Yam, 1997; Bohm, 1980). However, likely due to the dual-hemispheric structure of our brain possibly related to our bipedal body (Shlain, 1998; McGilchrist, 2009), we often *polarize* real opposites into simplified pairs of *mental opposites*. This is about reducing the complexity of all links through spatial or temporal *separation* (Estes, 1994; Lloyd, 1966). However, such mental opposites tend to be so simplified that they distort reality beyond any recognition (Kelso & Engstrom, 2006). I posit that polarization will result in contradictions or paradoxes if we apply the simplified mental opposites to understand complex real opposites. In this sense, paradox is an outcome of our mental polarization (Lewis, 2000; cf. Smith & Lewis, 2011). In general terms, *paradox* refers to the co-existence of mental opposites that are contradictory yet interrelated (Lewis, 2000; Poole &

Van de Ven, 1989), which is distinctive from duality and this distinction will be discussed later.

To manage paradox, an *epistemological system* or mode of thinking is needed. It is increasingly recognized that our reality today is more interconnected and changing quickly (more holistic and dynamic in nature), thus more complex and ambiguous, all of which will make our reality today more uncertain than before (Chia, 2010; Knight, 1921; Morin, 2008; Peat, 2002; Prigogine & Stengers, 1984; Stacey et al., 2000; Weaver, 1948). Further, one of the biggest challenges presented by the increasingly uncertain reality is the need to balance inherently contradictory or paradoxical elements, including the united with the diverse in spatial terms, as well as the stable with the flexible in temporal terms (Kelso & Engstrom, 2006). In other words, the inherent interdependence, interpenetration, interaction, and inter-transformation between real opposites are so strong that any sharp separation (either spatial or temporal) of mental opposites is no longer possible for an adequate understanding of our reality. Hence, we need an epistemological system that can fully appreciate and accommodate paradox in our understanding about both the natural and social realities.

The Salience of Ambiguity

In the Western tradition, *ambiguity* refers to the status of a single concept or statement with multiple meanings, interpretations or frames of reference that are often conflicting, thus giving rise to inconsistencies (Atherton, 1993) and paradox (Byers, 2007). Referring to ambiguity as "a lack of clarity or consistency in reality, causality, or intentionality" (1994: 178), March pointed out that "neither rational theories of choice nor rule-following theories of identity fulfillment deal particularly well with ambiguity. The contradictions, inconsistencies, and fuzziness of reality, preferences, and identities are largely ignored" (1994: 192). In contrast to the negative perception of ambiguity in the West, the Chinese tradition has embraced ambiguity as inevitable and desirable (Gao, 1994; Liang, 1921/1997;

Yu, 2009). From the Eastern perspective, ambiguity can be central to explaining complex and uncertain issues if ambiguity is reframed as a multi-frame blend of diverse meanings toward open-ended completeness (i.e., holism), rather than as the fuzziness within a single-frame system that operates in a close-ended inconsistency context (as often assumed in the West; see Byers, 2007; Eisenberg, 2007; Lester & Piore, 2004; Levine, 1985; March, 1994; Stark, 2009 for exceptions).

This multi-frame integration is analogous to a 3-D picture. Without 3-D lenses, we only see a fuzzy picture; with 3-D lenses, we can see a very clear 3-D picture. This view of ambiguity is consistent with March's suggestion that "ambiguity may be used to augment understanding through imagination" (1994: 179), so I call this *positive ambiguity*. The link between complexity and ambiguity can be further illustrated by the story of the elephant and the six blind men of Hindustan. The elephant is complex in the sense that it consists of many parts that require multiple frames; these multiple frames have to be blended in order to render a holistic picture of the elephant. Hence, the link between complexity and ambiguity can be best captured by the shared duality of diversity-in-unity for the completeness-consistency balance (Byers, 2007; Levine, 1985; cf. Klinke & Renn, 2002; Weick, 1995). Hence, I regard complexity as *ontological* in focus, and positive ambiguity (also paradox) as *epistemological* in focus because it is closely related to uncertainty (epistemological in nature, cf. Peat, 2002; Walkers et al., 2003). More specifically, complexity refers to the ontological issues of spatially holistic content or substance (i.e., "being") as well as temporally dynamic process or pattern (i.e., "becoming"), but uncertainty refers to the epistemological issues of spatial ambiguity (i.e., multiple perspectives) as well as the temporal unpredictability (i.e., spontaneous, fluid, and nonlinear emergence). If we apply the Eastern perspective of Yin-Yang balancing to the notion of ambiguity, we can gain novel insights into how to reframe ambiguity from a negative problem to a positive solution, given the Western "flight from

ambiguity" (Levine, 1985; also see Byers, 2007) and the emerging refocus on uncertainty (Peat, 2002). In particular, the Eastern system of Yin-Yang balancing can help frame ambiguity so as to explain uncertainty deriving from complexity; as such, ambiguity can be viewed as a dimension of uncertainty (cf. Byers, 2007; Morin, 2008; Peat, 2002).

The Limitations of the Western Epistemological Systems

March summarized the core features of the Western philosophy of knowledge as follows (March, 1982, 69-71):

> "Our cultural ideas of intelligence and our theories of choice…share three conspicuous interrelated ideas: …the *pre-existence of purpose…*the *necessity of consistency…*the *primacy of rationality…* These ideas are obviously deeply imbedded in the culture. Their roots extend into ideas that have conditioned much of modern western history and interpretations of that history. Their general acceptance is probably highly correlated with the permeation of rationalism and individualism into the style of thinking within the culture."

Despite its significant historical contributions, the Western philosophy of knowledge has its own share of critical limitations. As Morin, one of the most prominent contemporary philosophers in the West, pointed out, the Western philosophy of knowledge, in the form of logical positivism, "could not avoid playing the role of an epistemological policeman forbidding us to look precisely where we must look today, toward the uncertain, the ambiguous, and the contradictory" (Morin, 2008, 31). Hence, "(i)nstead of seeking to reconcile intuition with analysis, we have been content to sacrifice one of the two, and as analysis must remain impeccable, we have decided against intuition" (Poincaré, 1913/1946, 52). Morin (2008) further criticized that the Western philosophy of knowledge as the "old light" that has led to "a new ignorance related to the development of science itself", and consequently "a new blindness about the deteriorated use of reason" due to "the principles of disjunction, reduction, and abstraction" as the "paradigm of simplification"; further, "this paradigm has dominated the adventure of Western thought since the seventeenth century" (2-3). To remedy this situation, Morin called for a new paradigm of complexity with the

"disturbing traits of a mess, of the inextricable, of disorder, of ambiguity, of uncertainty" to address "the paradox of the one and the many" (2008: 5). This new paradigm will extend beyond the "either/or" logic toward the "dialogic" that appreciate paradoxes as well as "imagination, illumination, and creativity" (Morin, 2008: 33-34).

There are two core epistemological systems in the West. The first is a mechanistic system with an absolute and full separation of opposite elements (in both spatial and temporal terms) so as to avoid and deny paradox. Aristotle's formal logic as the "either/or" system is the most prevalent epistemological system in the West and also in the world. Underlying the explicit denial and rejection of paradox are the three logical laws in the system: (a) the law of identity, (b) the law of non-contradiction, and (c) the law of the excluded middle (Brenner, 2008; Li, 2008; Peng & Nisbett, 1999). The *law of identity* states that any concept must be absolutely identical to itself. The *law of non-contradiction* asserts that no concept can be both identical and different. The *law of the excluded* middle posits that a statement must be either absolutely true or absolutely false. The prevailing epistemological system is deeply rooted in the above three laws of Aristotle's formal logic. Essentially, Aristotle's formal logic is basically a mechanistic, reductionist and analytical system that avoids and denies paradox with an absolute and full separation of mental opposites, thus the "either/or" logic (Li, 2012a). However, paradox cannot be avoided and denied. According to *Gödel's Theorems*, ultimate completeness and ultimate consistency are mutually exclusive (Van Heijenoort, 1963). For ultimate consistency at the expense of ultimate completeness, formal logic treats mental opposites as mutually exclusive discrete categories, rather than as a balanced unity of opposites within a continuum. Hence, the "either/or" logic cannot lead to true completeness (holism) given its exclusive focus on consistency (Li, 2012a, 2014a); as such, this system is insufficient for our holistic understanding concerning our complex reality.

The second core system in the West is a revised mechanistic system with an absolute and full integration of all compatible aspects of opposite elements (in spatial term), and also an absolute and full separation of all conflicting aspects of opposite elements (in spatial term) in a process known as "*sublation*" (扬弃 in Chinese). This system only temporarily tolerates paradox at the initial phase, but it ultimately rejects paradox at the final phase. This is Hegel's dialectical logic as the "both/or" system.

As an alternative to Aristotle's formal logic, Hegel's dialectical logic appears to accept and embrace paradox. However, the emerging view is that the dialectical logic is superficially incompatible, but fundamentally consistent, with Aristotle's formal logic, due to the shared goal of paradox resolution (Brenner, 2008; Hibben, 1902/2000; Kelso & Engstrom, 2006; Peng & Nisbett, 1999; Smith & Lewis, 2011). While Aristotle's "either/or" system sees paradox as problematic at all times, Hegel's "both/or" system treats paradox as temporarily tolerable, and even desirable, but ultimately problematic. In this sense, Hegel allows for the *temporary* existence of paradox in a transitional phase within a recursive process of "negation" for the *ultimate* resolution of paradox at the higher level as sublation. Sublation retains the compatible elements of paradox, but removes the conflicting elements so as to ultimately resolve all paradoxes at the higher level (Brenner, 2008; Hibben, 1902/2000; Kelso & Engstrom, 2006; Smith & Lewis, 2011). Hence, Hegel's dialectical logic is an ultimately mechanistic, reductionist, and analytical system to resolve paradox in a recursive process of negation with only temporary "both/and" but ultimate "either/or". For this reason, I refer to it as the "*both/or*" logic. Similar to the "either/or" logic, Hegel's dialectical logic accepts only temporary completeness, but embraces ultimate consistency, i.e., mental opposites are temporarily tolerated, but ultimately transcended as mutually-exclusive discrete categories. In sum, Hegel's "both/or" system also avoids and denies the ultimate possibility of paradox, so it is fundamentally compatible with Aristotle's "either/or" logic (see Table 1; Peng & Nisbett,

1999; cf. Basseches, 1984). Hence, it is truly "more confusing than helpful" to frame Yin-Yang balancing as dialectical (Peng & Nisbett, 2000: 1067).

[*Insert Table 1 Here*]

More recent attempts to accommodate paradoxes, including the para-consistent logic (e.g., da Costa & Krause, 2006) and fuzzy logic (e.g., Zhang & Zhang, 2004), are closely related to Hegel's dialectical logic (see Kelso & Engstrom, 2006 for a review). As such, they suffer from the same limitations in terms of their shared failure to realize that paradoxes are inevitable and natural as mental reflections of complex reality (Brenner, 2008; Kelso & Engstrom, 2006; Zhang, 2011). In short, the prevailing and also alternative epistemological systems in the West have inherent limitations, thus rendering them ill-equipped to appreciate and accommodate any paradox. Specifically within the domain of management, "the America- and Euro-centric perspectives that have guided our policies and actions have come under intense scrutiny as they may no longer serve us well in this changed calculus of global competition", so a new global mind-set is required (Tung, 2014: 2), especially in the context of West-meeting-East (Chen & Miller, 2011; Li, 2012a, 2014a). We need to look to the East for a potentially better alternative (Capra, 1975; Chia, 2010; Levine, 1985; Li, 2012b; Needham, 1956).

The Eastern Epistemology of Yin-Yang Balancing

The Unique Features of the Eastern Philosophy of Wisdom

A potential alternative can be readily found in the East or East Asia, more precisely, in the ancient Chinese philosophy of wisdom. It can be argued that the East and the West have historically selected two distinctive paths to manage complexity and uncertainty. The West has tried to reduce and substitute complexity and uncertainty with simplicity and certainty, which has resulted in the dramatic advances in modern sciences in the West, while the East has attempted to embrace complexity and uncertainty with its own philosophical traditions.

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While the Eastern approach has failed to lead to the modern sciences, it appears to be compatible with the post-modern trend (Capra, 1975; Chia, 2010; Levine, 1985; Li, 2012a, 2012b; Needham, 1956; Peng & Nisbett, 1999; cf. Peat, 2002; Weaver, 1948). Despite its great potential, the Eastern philosophy of wisdom remains very foreign to the West. As Watt noted: "so long as the conscious intellect is frantically trying to clutch the world in its net of abstractions, and to insist that life be bound and fitted to its rigid categories, the mood of Taoism will remain incomprehensible; and the intellect will wear itself out" (Watt, 1957: 19). However, "if we seek a philosophical treatment of the notion of creativity unsullied by the demands of either scientific or theological rationality, we must look beyond the Whiteheadian system to the thought of Taoist China" (Hall, 1978: 274). In particular, we must reevaluate the roles of intuition and subconscious processes due to their inherent connection to creativity, in the sense that "to reach the state of no-thought, according to Taoist, means to reach the realm of creativity" (Chang, 1970: 207). Hence, we need to explore the interplay between intuition and logic system, the conscious and subconscious as well as science and art as dualities beyond the traps of separating the opposite elements as sharp dichotomies or dualisms (see Daston, 1998 for a review on the science-art split).

I identify three themes shared by all Chinese philosophies (and other East Asian countries to varying degrees) in terms of ontology, epistemology, and methodology to jointly constitute the philosophy of wisdom. First, the ancient Chinese embraced "*Tao*" in terms of "Heaven-Human Integration" (天人合一 in Chinese) as the shared ontology for all Chinese traditional philosophies. "Tao" refers to a *holistic* realty that is both objective and subjective in balance rather than being separated as dualism or dichotomy, and the macro-level context is integrated with the micro-level object rather than being separated (e.g., the Chinese view of "field"). It is worth noting that balance requires the interconnection and integration between opposite elements. Further, symbolizing the natural way or pattern, "Tao" also refers to the

dynamic reality as a spontaneous, fluid and nonlinear process of "becoming" in the context of complex chaos (Hall, 1978), in contrast to the Western ontology of "being". It is worth noting that the distinction between "becoming" and "being" is central to understanding this difference (Chia, 2010; Needham, 1956; Peng & Nisbett, 1999): while "being" refers to a fixed, certain, and complete status or form of an existence before acquiring its relationships with other entities, "becoming" refers to an interdependent and interactive process with other entities before and after any entity acquires its status or form. This Chinese ontology differs from the dominant ontology in the West with idealism and realism as dualism or dichotomy, as well as the context and object as dualism. In particular, "Tao" endorses *complexity* as not only inevitable but also desirable on the two key dimensions of spatially holistic content and temporally dynamic process.

Second, the ancient Chinese philosophers embraced "*Yin-Yang*" in terms of a cognitive system of balancing opposite elements as partially conflicting and partially complementary, (阴阳相生相克 in Chinese) as the shared epistemology for Chinese philosophies. This unique epistemology balances the tradeoff and synergy between opposite elements as conflicting and complementary and, therefore, differs fundamentally from rational reductionism in Western epistemology as framed in Aristotle's formal logic and Hegel's dialectic (see Li, 2014a for a review). In particular, Yin-Yang balancing endorses uncertainty on the two key dimensions of spatially holistic ambiguity (i.e., multiple perspectives) as well as temporally dynamic unpredictability (i.e., spontaneous, fluid, and nonlinear emergence).

Third, the ancient[1] Chinese embraced "*Wu*" (i.e., intuitive imagination for insight via metaphor; 悟 or 悟性 in Chinese) as the shared methodology for all philosophies in China (Li, 2012b). As the core mechanism for exploration, *intuitive imagination* refers to the unique

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[1] The term "ancient" has two meanings here. First, "wu" has a long history in China. Second, "wu" in ancient China was more prominent than in China today due to the influence of the Western science.

process and result of exploratory learning, with *intuition* as the process of imagination as well as *insight* as the outcome of imagination (Li, 2012b). Hence, underlying the special process of exploratory learning, *Wu*, as intuitive imagination, contains both gradual and sudden sub-processes as well as both conscious and subconscious sub-processes. In a sense, this is akin to March's (1991) notion of exploratory learning. Specifically, intuitive imagination involves the use of *metaphors* as the core mechanism in the pursuit of insight (Li, 2012b, 2014b). Niels Bohr was inspired by the Yin-Yang notion for the insight of his *Principle of Complementarity* to explain the puzzle of wave-particle duality (Li, Leung, Chen & Luo, 2012). Also, the metaphor of garbage provides the insight into decision-making in the context of ambiguity (Cohen, March & Olsen, 1972). Finally, the metaphor of ripple effect generates the insight into the social network structure in China in terms of differential mode of association (Fei, 1992). In particular, "Wu" endorses both ontological complexity and epistemological uncertainty. In sum, the three themes of "Tao", "Yin-Yang", and "Wu", as the *trilogy* for all Chinese philosophies, share their strong appreciation of complexity and uncertainty not only as inevitable but also as desirable.

The above unique ontology, epistemology, and methodology constitute the *Eastern philosophy of wisdom* for balancing completeness (i.e., holism) with consistency, in contrast to the Western philosophical tendency to emphasize consistency at the expense of completeness. I refer to *wisdom* as a higher-order knowing in terms of insight into complex and uncertain issues (e.g., wisdom as *learned ignorance* in terms of a balance between knowing and doubting as a duality, Chia & Holt, 2007; Meacham, 1990), in contrast to lower-order knowing in terms of information about superficial and narrow issues (Feng, 1996; Siu, 1957; Weick & Putnam, 2006; cf. Takahashi & Overton, 2005). Also, I emphasize the *emergence* quality that wisdom derives from, but cannot be reduced to, knowledge. As Lao Tzu, the father of Taoism, put it, "in pursuit of knowledge, every day something is acquired;

in pursuit of wisdom, every day something is dropped" (为学日益, 为道日损 in Chinese, cited in Weick, 2006: 1728). This is supported by the argument that "the essence of wisdom is to hold the attitude that knowledge is fallible and to strive for a balance between knowing and doubting" (Meacham, 1990: 180). Even though wisdom appears to mature with age as we learn from accumulated experiences, the primary driver is not age, but the attitude and ability to unlearn, especially for a balance between learning and unlearning (Chia & Holt, 2007; Meacham, 1990; Weick & Putnam, 2006). Further, originally proposed by Nicolas of Cusa in 1440 (Hopkins, 1985), learned ignorance is closely related to unlearning because since there is no perfect knowledge, we must keep a humble attitude and a strong desire to both learn and unlearn. It is worth noting that learned ignorance is paradoxical as a "coincidence of opposites" (Hopkins, 1985). Hence, wisdom requires a balance between learning and unlearning (Chia & Holt, 2007; Li, 2014b). Finally, while the West embraces logical analysis as the methodology of science separated from art, the East seeks a balance between science and art toward an integrative methodology of "Wu". Though both are tied to the lack of information as *risk* (probability) and the lack of knowability as *uncertainty* above and beyond risk (Knight, 1921), I differentiate complexity as the *cause* from uncertainty as the *effect*, thus as two distinct constructs (cf. Knight, 1921; Peat, 2002).

The Strengths of the Eastern Epistemological System

Fundamentally different from the two systems in the West, the Eastern (East-Asian) system is *organic* in nature and accepts relative or partial integration as well as a relative or partial separation (in both spatial and temporal terms) that appreciate and accommodate paradox. This is Yin-Yang balancing as the "either/and" system (Li, 2012a, 2014a). Among the three systems that exist in both West and East, the first (Aristotelian logic) has historically been the prevailing system that has, by and large, been unchallenged in the West until recently; the second (Hegelian dialectics) has remained marginalized in the West despite its

ultimate compatibility with the first system; the third has been virtually ignored in the West until recently largely because it has originated from the East Asia, thus often assumed as "primitive" or "naïve" according to the criteria of the Western philosophy (Peng & Nisbett, 1999; Wong, 2006).

The system of Yin-Yang balancing, as informally derived from the *Yijing* or *I-Ching* (the *Book of Changes*) is the root of all Chinese traditional philosophies shared by all schools of thought in history, including Confucianism, Taoism, and other schools (Graham, 1989; Needham, 1956; Schwartz, 1973). Further, among all Chinese philosophical ideas, the system of Yin-Yang balancing has had the biggest influence on scholars in the West in past history (Graham, 1989; Needham, 1956; Schwartz, 1973). Despite its historical origin of shamanism, the system of Yin-Yang balancing is neither a form of mysticism for divination (Zhang, 1991), nor a crude "primitive mentality" (Lloyd, 2007; Zhang, 2011). I share the emerging view that the Eastern system of Yin-Yang balancing is at least equally advanced as, if not more so than the familiar epistemological systems in the West (Cheng, 1977; Graham, 1986; Li, 1998, 2008, 2012a, 2014a; Pang, 1995; Peng & Nisbett, 1999; Schwartz, 1973; Smith & Lewis, 2011; Tian, 2002; Wong, 2006). Some scholars characterize Yin-Yang balancing as a unique Eastern version of dialectic logic, but they admit that Yin-Yang balancing is fundamentally distinct from the dialectical systems in the West (e.g., Peng & Nisbett, 1999; Wong, 2006). I will go further to posit unequivocally that Yin-Yang balancing is not a special version of dialectic logic, but a unique system of its own (Li, 2012a, 2014a).

As an open epistemological system (Gu, 2005), Yin-Yang Balancing derives from a holistic and dynamic metaphysics in the East, in contrast to the reductionist and linear metaphysics in the West, but is consistent with the marginalized stream on *organicism* in the West from Leibniz to Bohr (Graham, 1989; Needham, 1956; Schwartz, 1973). The system of Yin-Yang balancing has *three core tenets* (Gao, 1994; Li, 1998, 2008; Peng & Nisbett, 1999).

Specifically, the first is the tenet of *holistic content* with a spatial balancing to reflect the complex interdependence and interpenetration between opposite elements (i.e., mutually inclusive with partial overlaps in spatial terms) (Tian, 2002), thus allowing only a partial spatial separation of mental opposite elements rather than a full spatial separation. In other words, the holistic tenet posits that a phenomenon or a theory cannot be complete without opposite elements. This is consistent with *Gödel's Theorems* that a complete theory cannot be internally consistent, while a consistent theory is inherently incomplete (van Heijenoort, 1963), but it extends beyond the systems theory (Ashmos & Huber, 1987). The second is the tenet of *dynamic process* with a temporal balancing to reflect the complex interaction and inter-transformation between opposite elements (i.e., mutually inclusive with partial overlaps in temporal terms) (Tian, 2002), thus only allowing a partial temporal separation of mental opposites rather than a full temporal separation. In other words, the dynamic tenet posits that opposite elements will mutually transform into each other under specific conditions. This is compatible with the *theory of structuration* (Giddens, 1984) and extends beyond the view of punctuated equilibrium (Gersick, 1991). The theory of structuration posits that the creation or reproduction of social systems is based upon the interplay between structure and agents as two inseparable elements of the same process as a duality (Giddens, 1984). The view of punctuated equilibrium argues that the most typical pattern of change consists of the interplay between an enduring stage of steady paradigm-extension change and a brief stage of abrupt paradigm-shifting change (Gersick, 1991).

The third is the tenet of *duality balance* with mental opposites as opposites-in-unity (thus contrary yet complementary) via mutual negation and mutual affirmation in relative terms. Mutual negation in relative terms refers to a partial separation of the conflicting elements of mental opposites in different "spatial" aspects and levels or at different temporal stages and steps. Mutual affirmation in relative terms refers to a partial integration of the

complementary elements of mental opposites in both spatial and temporal terms. Duality balance serves as the underlying anchor for the other two tenets (Li, 2008, 2012a), and is central to the research on both "spatial" content and temporal process of emergence in all complex systems (Brenner, 2008; Kelso & Engstrom, 2006). Specifically, the duality tenet posits that the holistic and dynamic tenets are valid only because opposite elements can co-exist as a *duality*, which is defined as contrary (weaker than "contradictory") yet complementary (stronger than "interrelated") opposites-in-unity (相生相克 in Chinese) to partially affirm (相生 in Chinese, for relative consistency and equilibrium) and partially negate (相克 in Chinese, for relative completeness and punctuated shift) each other. The duality tenet is related to, yet above and beyond, the lens of paradox (cf. Lewis, 2000; Poole & Van de Ven, 1989; Smith & Lewis, 2011). Reciprocally, the duality tenet is also made possible by other tenets: by the interdependence and interpenetration between opposite elements as related to the holistic tenet as well as by the interaction and inter-transformation between opposite elements as related to the dynamic tenet (Li, 1998, 2008, 2012a, 2014a). It is worth repeating that Yin-Yang balancing is related to both complexity (spatial content and temporal process) and uncertainty (ambiguity and unpredictability).

The Interrelationships between Paradox, Dualism and Duality

It is worth noting that *relative term* is key to understanding the unique strength of Yin-Yang balancing as duality, in contrast to dualism that is implied in the Western systems as the means to resolve paradox. By "relative term" I mean that two opposite elements are framed not as mutually exclusive or separable (also not as mutually inclusive or integrative) in absolute terms (both spatially and temporally). On the surface, duality appears to be similar to paradox, but they are fundamentally distinct because the former is a relative construct, while the latter is an absolute construct. Further, dualism, also as an absolute construct, is only superficially different from paradox, so dualism and paradox are fundamentally

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compatible as absolute constructs. However, from the perspective of Yin-Yang balancing, both dualism and paradox can be revised from two absolute constructs into two relative constructs. The revised relative versions of dualism and paradox can be integrated as a duality in terms of "either/and" system, with the revised dualism as the "*either*" part, while the revised paradox as the "*and*" part. Further, there are two subtly distinct versions of duality in the West, either as an integration of complementary opposite elements (e.g., Farjoun, 2010; Jackson, 1999) *or* as an integration of opposite elements that are conflicting and complementary (e.g., Giddens, 1984). The first version is consistent with Hegel's "both/or" system, while the second version is consistent with Yin-Yang balancing as the "either/and" system. In line with the duality of structure, Giddens (1984: 25) explicitly pointed out that "the constitutions of agents and structures are not two independently given sets of phenomena, a dualism, but represent a duality. According to the notion of the duality of structure, the structural properties of social system are both medium and outcome of the practices they recursively organize. Structure is not 'external' to individuals…it is in a certain sense more 'internal' than exterior to their activities…Structure is not to be equated with constraint but is always both constraining and enabling." In this sense, duality is consistent with the revised relative notions of paradox and dualism in their *relative* senses. In other words, duality can be regarded as a balance between paradox and dualism reframed as two relative, rather than absolute, constructs.

Based upon the above argument, it can be posited that the central distinction between Yin-Yang balancing and Hegel's dialectic logic lies in three critical aspects. First, while Hegel's dialectic logic treats paradox as only temporarily necessary to be resolved ultimately (i.e., temporarily complementary, but ultimately conflicting, thus the need for resolution via sublation), Yin-Yang balancing fully embraces paradox as permanently necessary because it is both spatially and temporarily conflicting and complementary (i.e., permanent yet relative

paradox) (Li, 2012a, 2014a; cf. Peng & Nisbett, 1999). In other words, Yin-Yang balancing rejects sublation as neither feasible nor desirable because positive and negative elements are inseparable. Second, Yin-Yang balancing also rejects the dialectical notion of absolute negation because negation is not only context-specific but also relative given the duality nature of opposite elements as partially conflicting and partially complementary. Third, Yin-Yang balancing frames the tradeoff and synergy between opposite elements as *endogenous* because each opposite contains the "seed" of the other opposite, while Hegel's dialectic logic assumes such tradeoff and synergy as *exogenous* with each opposite starting as a separate entity with a full identity. Hence, the system of Yin-Yang balance differs from Hegel's dialectical logic in fundamental ways, and it is the only system available to truly and fully appreciate and accommodate opposites by reframing paradox as duality (Li, 2012a, 2014a).

Specifically, the Eastern notion of duality (rooted in the "either/and" system) is distinctive from the Western notion of paradox (rooted in the "both/or" system) in three aspects (Li, 2008, 2012a, 2014a, cf. Chen, 2002, 2008; Lewis, 2000; Peng & Nisbett, 1999; Smith & Lewis, 2011). First, the notion of duality starts with the assumption that each opposite element contains the "seed" of the other, which is the basis for their inseparable interdependency and overlapping identity. In contrast, the notion of paradox starts with the assumption that each opposite is an independent entity with a separate identity initially, but becomes integrated subsequently after the opposite elements meet. Second, the notion of duality maintains that neither side can fully transform into the other side. This partial transformation is the basis for their recursive and duality interaction. In contrast, the notion of paradox maintains that each side can fully transform into each other so that each will maintain their well-defined identities at the end of transformation process. Third, the notion of duality posits that opposite elements are partially complementary and partially conflicting, so ultimate resolution is neither necessary nor desirable. The dual effects of being both

partially complementary and partially conflicting (相生相克 in Chinese) require *continuously* rebalancing actions. In contrast, the notion of paradox posits that opposite elements are in a vicious cycle of conflict, thus in need of an ultimate resolution in terms of either sublation or transcendence by keeping the complementary parts but deleting the conflicting parts at the higher level in a spiral process. As the result, the Western "both/or" system and the related notion of paradox fail to provide any real alternative to the prevailing "either/or" system, while the Eastern "either/and" system and the related notion of duality has the potential for becoming a genuinely viable distinctive alternative.

Hence, the Eastern notion of duality frames the co-existence of opposite elements as an *endogenous form* of self-contradiction as well as a *moderate form* of contradiction, while the Western notion of paradox frames the co-existence of opposite elements as an *exogenous form* of imposed contradiction as well as a *strong form* (in the case of "either/or" logic) or *weak form* (in the case of "both/or" logic) of contradiction (Li, 2012a; Tian, 2002). In this sense, we can regard the Western and Eastern systems as the two sides of a geocentric epistemology, with the Western systems better at analyzing *mechanistic* issues, while the Eastern system better at synthesizing *organic* issues (Jullien, 1998; Li, 2012b; Weick & Putnam, 2006). In sum, the Western notion of paradox is related to Aristotle's formal logic for the strong form of paradox with an absolute or full separation of opposite elements, and Hegel's dialectical logic for the weak form of paradox with an absolute or full integration of the compatible components of opposite elements as well as an absolute or full separation of the conflicting components of opposite elements. The Eastern notion of duality is associated with Yin-Yang balancing for a moderate form of paradox with both partial integration (the *overlapping* parts for synergy and harmony) and partial separation (the *non-overlapping* parts for tradeoff and tension), similar to the two sides of the same coin or the conjoined twins. The interface between partial integration and partial separation can be delineated by a *threshold*

(适度 in Chinese) as a range of proper points of balancing between the overlapping and non-overlapping parts in a single domain or across two domains in an entire system.

Further, the unique value of Yin-Yang balancing lies in its ability to complement and perhaps supersede Aristotle's formal logic of "either/or" as *explicit dualism*, and Hegel's dialectical logic of "both/or" as *implicit dualism*. First, Yin-Yang balancing can accommodate the "either/or" logic as a source of necessary and complementary input for Yin-Yang balancing. Specifically, the "either/or" logic can first separate mental opposites as dualisms, which serve as the building blocks for Yin-Yang balancing to integrate and leverage opposites. Second, Yin-Yang balancing can transform the "both/or" logic of Hegel as a simplified process of integration. As an implicit dualism, the "both/or" logic seeks to resolve paradox by fully separating incompatible aspects spatially (also completely separating compatible aspects from incompatible aspects), while fully integrating those compatible aspects spatially (e.g., the well-known process of thesis → anti-thesis → synthesis as the solution of "sublation", which retains compatible aspects while deleting conflicting aspects) (Hibben, 1902/2000). The system of Yin-Yang balancing can reconstruct the "both/or" logic by turning absolute or full integration and separation into relative or partial integration and separation to systematically reflect the interdependence, interaction, interpenetration, and inter-penetration between true opposite elements. The key to the ability of Yin-Yang balancing to transform the two Western systems is that the former adopts the relative stance toward separation and integration (in managing paradox) in contrast to the absolute stance adopted by the Western systems (Li, 2012a, 2014a; cf. Nisbett, 2003; Nisbett, Peng, Choi & Norenzanan, 2001).

Figure 1 represents the unique features of Yin-Yang balancing with the symbols of "Yin" and "Yang". The two opposite elements, i.e., "Yin" as the black domain and "Yang" as the white domain, jointly constitute the core components of a holistic entity. Further, within

each domain, there is a "seed" of the opposite element as the unique character of Yin-Yang balancing, which can produce a third (*derived*) area as a blend of black and white elements. Specifically, each "seed" and its adjacent area jointly define the *overlap* between the opposite elements, so this overlapping part is a gray area with a mix of both black and white elements. In this sense, the whole entity actually contains three components or colors, i.e., black, white, and gray, with the first two as two root elements or colors, while the third as one derived component or color. In addition, the gray area can be further differentiated between the *dark* gray (i.e., more black than white in the black domain) and the *light* gray (i.e., more white than black in the white domain). In sum, "Yin" (the black domain) and "Yang" (the white domain) represent the opposite elements as the root elements; the gray or overlapping area defines the *micro-level structure* inside a domain; one root color (i.e., black or white), together with the derived color (i.e., gray), defines the *meso-level* structure of each domain, and finally the two meso-level structures in the two domains jointly define the *macro-level structure* of Yin-Yang balancing as an overall configuration of all three colors. See Figure 1 for details.

[*Insert Figure 1 Here*]

In addition to the above illustration of the holistic content as one dimension of Yin-Yang balancing, Figure 2 represents the dynamic process as the other dimension (Jing & Van de Ven, 2014). The change in the size of the overlapping parts (i.e., the gray areas) relative to the non-overlapping parts (i.e., the black and white areas) defines *threshold* as a range with the two sub-ends of an effective *sub-spectrum* within the entire spectrum between two polarized ends: (1) the *minimum* sub-end with the overlapping parts being moderately smaller than the non-overlapping parts in their ratio of relative sizes, and (2) the *maximum* sub-end with the overlapping parts being moderately larger than the non-overlapping parts in their ratio of relative sizes. Specifically, Figure 2 shows the dynamic transformation between "Yin" and "Yang". As the "seeds" grow, so do the overlapping parts; hence, the non-overlapping

parts will also change, and can oftentimes be transformed into their opposite parts. More specifically, among the seven sequential steps of transformation process, Step 2 represents the minimum sub-end of a balanced threshold for a healthy tension, while Step 3 represents the maximum sub-end of a balanced threshold for a healthy tension. In contrast, Step 1 shows an imbalanced extreme with the "moderate" groups (i.e., the overlapping or gray areas) being too small or too weak to counterbalance the two "extreme" groups (thus a unhealthy tension), while Step 4 represents the other case of imbalanced extreme with the "moderate" groups being too big or too strong so that they will reverse the "balance of power" between the two "extreme" groups, thus a shift from one overall structure at all three levels to its opposite (shown by Steps 5-7). In other words, Steps 1-4 represent an inverted U-shaped curve.

[*Insert Figure 2 Here*]

To further operationalize the system of Yin-Yang balancing, we need to go beyond the three core tenets of holistic, dynamic and duality at the philosophical level. At the core application level, there are *three operating mechanisms* of Yin-Yang balancing (Li, 2012b, 2014a). Such mechanisms derive from two core assumptions: first, paradox cannot be resolved, but it can be effectively managed; second, Yin-Yang balancing cannot be applied as context-free, but it can be applied as context-specific, i.e., within certain boundary conditions. One primary boundary condition is the overall function with specific opposite sub-types, such as the goal of innovation with radical and incremental innovation as two sub-types as well as the goal of competitive advantage with low-cost and high-value as two sub-types. First, after the relative (partial) separation of opposite means for opposite ends (e.g., two sub-goals within an overall goal), the interdependence and interpenetration of opposite elements require one of the two opposite elements to play the dominant role in performing one specific function (e.g., a sub-goal) because this opposite element is compatible with the specific function given their positive association (e.g., exploitation for incremental innovation in

contrast to exploration for radical innovation), while the other opposite element will play the subordinate role in performing the same specific function because this element is incompatible with the specific function (e.g., exploration for incremental innovation in contrast to exploitation for radical innovation). It is worth noting that the dominant-subordinate mix occurs at two different levels: one at the level of *one* overall goal with a dominant-subordinate mix of opposite sub-goals, while the other at the level of each sub-goal with a dominant-subordinate mix of opposite means. Related to the holistic tenet that opposite elements always co-exist with distinctive yet integrative roles for the same function, the first operating mechanism is called "*asymmetrical balancing*".

Second, the subordinate opposite will be related to the dominant opposite in an inverted U-shaped nonlinear pattern with their interaction effect on the specific function: the subordinate opposite is the least complementary and the least conflicting when it is at a low level (because the gap between the opposite elements is *large*); it is the most conflicting, but the least complementary, when it is at a high level (because the gap between the opposite elements is *small*); it is the most complementary, but the least conflicting, when it is at a moderate level (because the gap between the opposite elements is *moderate*). In other words, an effective balance is a mix of opposite elements at their respective moderate levels (i.e., about 60-70% for the dominant element, and about 40-30% for the subordinate element, Lin, Lu, Li & Liu, 2015), which is consistent with the *Golden Rule of Balanced Harmony* (Chen & Miller, 2011; Li, 1998, 2012a). To put it differently, when opposite elements are both at a high level in the same spatial aspect and at the same temporal stage, they tend to have the higher conflict in their interaction as unhealthy tension, but they will be in a good balance as healthy tension when one opposite element is at a high level, and the other is at a moderate level. This notion is subtly different from the "*too-much-of-a-good-thing*" effect (Pierce & Aguinis, 2013) because a balance between opposite elements is different from a single

element in isolation. Related to the duality tenet that opposite elements are both complementary and conflicting in relative terms, the second operating mechanism is called "*curvilinear balancing*".

Third, the interaction and inter-transformation of opposite elements tend to trigger a dynamic shift in the relative status or positions of opposite elements from a dominant to a subordinate role, or vice versa. This shift is largely due to the external shift in the priority status or position of a specific sub-goal, which will trigger a concomitant shift from one type of asymmetrical balance to another (e.g., from the dominant role of exploration for radical innovation to a subordinate role of incremental innovation, or vice versa). Further, internal dynamics can also trigger such shift. A weak subordinate element can grow from a low to a moderate level, either pulled by a strong dominant element or pushed by it own force. However, the empowered subordinate element can go beyond the threshold or inflection point at the moderate to a high level, thus resulting in high tradeoff, but low synergy. Finally, the point of threshold is so sensitive and volatile that a swift switch in the relative status between dominant and subordinate roles is often desirable. Related to the dynamic tenet that opposite elements tend to switch between their respective roles, this third operating mechanism is called "*transitional balancing*".

In sum, the above three operating mechanisms share one *central theme* that opposite elements are always partially complementary and partially conflicting (相生相克 in Chinese) so that they must seek their holistic and dynamic balancing within the boundary of a given threshold, which is primarily delineated by the shifting priorities of opposite sub-goals within an overall goal. The idea of threshold is central to Yin-Yang balancing: any change within the range of a threshold (as a *quantitative*, often *sustainable*, change) is largely positive with synergy, while change beyond the range of a threshold (as a *qualitative*, often *unsustainable*, change) is largely negative with tradeoff (Li, 2012a, 2014a; see Figure 3 for the illustrations

of the three mechanisms). In other words, the notion of threshold reflects the central theme of relativity in Yin-Yang balancing with both partial synergy and partial tradeoff in a balance. It is worth noting that the three core tenets and the three operating mechanisms are applicable to all three levels of Yin-Yang balancing. In this sense, the critical notions of seed (for gray color) and threshold (for the mix of all three colors) are essential to Yin-Yang balancing.

[*Insert Figure 3 Here*]

The Distinction between "Both/And" and "Either/And"

If the "recognition or denial of conflict or trade-off (相克 in Chinese) between opposite elements" was presented as one dimension, and the "recognition or denial of complementarity or synergy (相生 in Chinese) between opposite elements" as the other dimension, five cognitive or logical systems can be extracted (cf. Peng & Nisbett, 1999): (1) "*neither/nor*" system (denying both trade-off and synergy between true opposite elements, 既不相克也不相生 in Chinese), thus rejecting paradox; (2) "*both/and*" system (recognizing synergy, but denying trade-off, between fake opposite elements, 只相生却不相克 in Chinese), thus rejecting paradox; (3) "*either/or*" system (recognizing trade-off, but denying synergy, between true opposite elements, 只相克却不相生 in Chinese), thus rejecting paradox; (4) "*both/or*" system for Hegel's dialectic logic (temporarily recognizing, but ultimately denying, trade-off between temporarily true, but ultimately fake, opposite elements; temporarily denying, but ultimately recognizing, synergy between temporarily true but ultimately fake opposite elements, 暂时相克却最后相生 in Chinese), thus initial accepting, but finally rejecting, paradox via sublation; and (5) '*either/and*' system for Yin-Yang frame (always and fully recognizing both trade-off and synergy between true opposite elements, 既相克又相生 in Chinese), thus accepting paradox. It is critical to note that, among all five cognitive systems, Yin-Yang balancing is the only one that fully embraces paradox by truly accommodating and appreciating both trade-off and synergy between true opposite elements in the same place at

the same time. To be more specific, Yin-Yang balancing treats the two opposite elements in a paradox as both partial trade-off and partial synergy within a threshold as a range of holistic and dynamic balancing points for healthy tension. As such, the system of Yin-Yang balancing possesses the unique attribute of explaining paradox by reframing paradox into duality as opposites-in-unity (Li, 2008, 2012a, 2014a). In contrast, all the other four systems fail to do so. Specifically, except for the "either/and" system, the remaining three systems share a common characteristic of taking opposites as either fully complementary or fully conflicting. Finally, the "either/and" system of Yin-Yang balancing has the unique ability to reframe the other four systems as *relative* so as to integrate all revised systems into a *meta-system* anchored in the "either/and" system.

It is critical to point out that the typical characterization of Yin-Yang balancing as "both/and" is misleading due to several reasons. First, the "both/and" system posits itself as an absolute opposite of the "either/or" system, which is not the position of Yin-Yang balancing. Because Yin-Yang balancing is only a relative (partial) opposite of the "either/or" system, it has the ability to integrate the "either/or" and "both/and" systems into a duality (thus the "either/and" system) by reframing the systems as opposites-in-unity. Second, similar to the "either/or" system, the "both/and" system is incomplete and insufficient because it adopts an absolute stance whereby one polarized end is not properly balanced against its opposite end. If it were similar to the "both/and" system, Yin-Yang balancing would also be incomplete so that another system would be required to integrate the "either/or" system with Yin-Yang balancing. However, Yin-Yang balancing is unique because it has the ability to embrace the opposites-in-unity. Embracing the holistic and dynamic notion of open-ended balancing, Yin-Yang balancing specifically adopts the *duality position* by treating all opposites as partially conflicting and partially complementary. This is in contrast to the *monism position* of the "both/and" system that treats opposites as fully complementary

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without conflict (only unity without opposition), on the one hand; and to the *dualism position* of the "either/or" system that treats opposites as fully conflicting without complementarity (only opposition without unity), on the other. Hence, Yin-Yang balancing should be characterized as the "either/and" system, with "*either*" indicating the existence of tension, tradeoff, and conflict, with "*and*" indicating the existence of harmony, synergy, and complementarity. This is highly consistent with Niels Bohr's *Principle of Complementarity* as the core explanation for quantum physics, especially for the puzzle of wave-particle duality (Li et al., 2012; Peng & Nisbett, 1999; also see Bohr, 1958/1987). Third, the "both/and" system is not only incomplete and insufficient but also more naïve and immature than the "either/or" and "both/or" systems. This is because the "both/and" system fails to recognize the possible existence of any paradox, while the other two systems at least recognize paradox as a problem to resolve. Finally, among the five epistemological or cognitive systems (i.e., "neither/nor", "both/and", "either/or", "both/or", and "either/and"), the first two systems (i.e., "neither/nor" and "both/and") are the most naïve because they deny the possible existence of any paradox. The "neither/nor" system assumes the co-existence of opposites as impossible due to an absolute or full conflict between opposites without any possible resolution (similar to the *discounting* approach, Peng & Nisbett, 1999). The "both/and" system assumes the co-existence of opposites as impossible due to an absolute or full complementarity between opposites with no need to resolve any conflict (similar to the *denial* approach, Peng & Nisbett, 1999).

The Application of Yin-Yang Balancing to Paradox Management

The Global Implications of Yin-Yang Balancing for Paradox Management

Consistent with my central assumption that polarization results in paradox, especially in the context of complexity and ambiguity, I posit that the epistemological systems in the West, including Aristotle's formal logic and Hegel's dialectical logic, are insufficient for

effectively managing high complexity and high ambiguity, while Yin-Yang balancing is well-equipped to confront today's new challenges (Li, 2012a, 2012b; also see Smith & Lewis, 2011; Zhang, 2011). It is worth noting that Yin-Yang balancing was effective before the end of the 16th Century, because the practical nature of Yin-Yang balancing was adequate for the organic complexity and ambiguity (which require only imprecise conceptions and measures) in the *pre-modern era*, but it was inadequate for the mechanistic simplicity and clarity (which require precise conceptions and measures) in the *modern era*, from the beginning of the 17th Century until recently (Brenner, 2008; Kelso & Engstrom, 2006). The world today is entering into the "*trans-modern" era*, which requires both the organic complexity and ambiguity at the macro level, and the mechanistic simplicity and clarity at the micro level (Li, 2012b; cf. Levine, 1985). globalization is driving the world toward increasing interconnectedness (thus more complex and holistic) as well as increasingly volatile (thus more uncertain and dynamic). It is inevitable that we confront more paradoxes than before in the more holistic and dynamic trans-modern world today (Abram, 1996; Evans, 2000; Handy, 1994; Martin, 2007; Scharmer & Kaufer, 2013).

As noted above, as the Western and Eastern systems have their own strengths and weaknesses, neither one alone is sufficient to manage all types of problems, similar to the notion that whole-brain thinking is better than partial-brain thinking. Hence, the best solution appears to be one that can integrate the three major epistemological systems in the world into a geocentric meta-system, in the same manner that we need both hemispheres of our brain to best meet growing challenges in the future.

A critical approach to the geocentric integration is to first identify the complementary links between the East and the West. Even though Yin-Yang balancing is indigenous to China, it is related to the dialectical logic in the West (Peng & Nisbett, 1999; Wong, 2006), and it can be integrated not only with dialectical logic, but also with Aristotle's formal logic,

so as to reframe paradox and dualism into duality (Li, 2012a, 2014a). Because of its unique ability to address the key challenges of ambiguity, complexity and uncertainty, Yin-Yang balancing is arguably the most suitable for a multi-perspective approach. In particular, it is the most useful for explaining why and how to balance opposite forces into a unified whole not only in the East but also in the West, particularly among those who are more receptive to alternative traditions, as shown by Niels Bohr's Yin-Yang design when he applied the system of Yin-Yang balancing to his famous *Principle of Complementarity* for quantum physics (Li, 2012a; Peng & Nisbett, 1999; also see Bohr, 1958/1987). Also, in their book, *Built to Last*, Collins and Porras (1994) applied the Yin-Yang balancing to the study of long-lasting visionary firms in the West by replacing the "Tyranny of the OR" with the "Genius of the AND" (43-44). Further, Hock (2005) coined the word "chaordic" to capture the chaos-order duality. In the management field, some Western scholars explicitly evoke the notion of Yin-Yang balancing to explore how to manage paradoxes (Smith & Lewis, 2011). It is also evident that even the yin-yang symbol can produce a framing effect in the West when the Westerners are more likely to anticipate greater change and adopt a more balanced view after they are exposed to or primed with the Yin-Yang symbol (Alter & Kwan, 2009). Yet other Western scholars implicitly apply Yin-Yang balancing. For example, in their study of over 1,000 Western firms, Dodd and Favaro (2006) concluded that those firms that adopted a more balanced approach to three pairs of opposite goals (i.e., profitability versus growth, short-term versus long-term, and whole versus parts) performed better than those firms that were less balanced.

Further, Uzzi (1997) arrived at a similar conclusion in his own research on the paradox of embeddedness in terms of balancing strong ties with weak ones in a network. The notion of "*blue ocean strategy*" (Kim & Mauborgne, 2005) is also consistent with Yin-Yang balancing in that there is a proper balance between high value and low cost, rather than the

"either/or" choice. In particular, the blue ocean strategy highlights the power of Yin-Yang balancing by positing that the best competition is no competition, similar to the Taoist notion of "*wuwei*" as active non-action (e.g., flow with the wind). This can be better understood as a process of creating as well as leveraging a favorable contextual momentum (Jing & Van de Ven, 2014). Finally, the research on *ambidexterity* can benefit much from adopting a Yin-Yang balancing to address the conceptual and measurement problems (see O'Reilly & Tushman, 2013 for a review), especially in terms of the three operating mechanisms of Yin-Yang balancing discussed earlier in this paper (Li, 2012a, 2014a; cf. Nagji & Tuff, 2012). Similarly, the research on *ambivalence* can also benefit from Yin-Yang balancing by framing ambivalence as a duality and adopting the three operating mechanisms of Yin-Yang balancing (cf. Ashforth, Rogers, Pratt & Pradies, 2014; Bledow, Rosing & Frese, 2013). The research on harmony can also benefit as well (Li, 2014c). Again, the notions of seed and threshold are critical to the further development of the above-mentioned research streams as well as those that emerge in the future.

It is worth noting that many classical theories in the domain of organization management often share the central theme of balancing opposite forces, such as March's theory of *organizational learning* (1991) that calls for a balance between exploration and exploitation – this has inspired the popular research on ambidexterity. Schumpeter's theory of *creative destruction* (1942) concerning entrepreneurial function can also be viewed as a balance between creation and destruction. Other themes include: Granovetter's theory of *embeddedness* (1985) that balances the over-socialized mainstream sociology with the under-socialized mainstream economics; Weick's theory of *loose-coupling* (1976) that balances link with separateness; Lawrence and Lorsch's theory of the balance between differentiation and integration (1967); Mintzberg's theory of *realized strategy* as a balance between deliberate and emergent strategies (Mintzberg & Waters, 1985); Prahalad's theory of *multinational*

strategy concerning a balance global integration and local responsiveness (Prahalad & Doz, 1987), and Nonaka's theory of *knowledge creation* as a balance between tacit and explicit knowledge (1994). Further, the research on *complex systems* is concerned with the balanced link between chaos and order, especially at the edge of chaos (Prigogine & Stengers, 1984; Stacey, Griffin & Shaw, 2000). In addition, Giddens' theory of *structuration* (1984) is concerned with the structure-agency duality resembles Yin-Yang balancing. However, all the aforementioned theories have omitted two notions that are central to Yin-Yang balancing, i.e., *seed* and *threshold* as the keys to the three core tenets and three operating mechanisms of Yin-Yang balancing (Li, 2012a, 2014a). In particular, in the cognitive system of Yin-Yang balancing, threshold is not a discrete single point, but a range of acceptable balancing points as the interface between the overlapping and non-overlapping parts (Li, 2012a). The overlapping domain is made possible by the "seed" of the two opposite elements in each other's domains. This point is powerfully illustrated in a recent case study concerning the "wisdom of oscillation" between two opposing groups held together by their moderate members as the counter-balance (Ashforth & Reingen, 2014), and also in another recent case study about the balance between formal and informal forces in entrepreneurial firms (Lin et al., 2015, cf. Lawrence & Lorsch, 1967). It is worth noting that both notions of seed and threshold reflect the *relative* nature of Yin-Yang balancing. Given the inherent links of Yin-Yang balancing with ambiguity, complexity and uncertainty, the methodology of "*Wu*" (intuitive imagination via metaphor), as the third leg or anchor of the Eastern philosophy of wisdom, is also instrumental for the identification of the required level of *relativity* for Yin-Yang balancing as the threshold (Li, 2012b). A recent literature review in the field of insight in neuroscience (Kounios & Beeman, 2014) highlights the unique value of *mind-wandering* for insight-making, thus providing indirect evidence for "Wu" as the third cognitive system

above and beyond the typical dual-processing model of automatic and controlled systems (Li, 2014b).

The Duality Map as a Novel Tool for Paradox Management

To effectively apply the Yin-Yang balancing to paradox management, we develop the *Duality Map* as a novel practical tool. Let's use the vivid example of the US political system to showcase the Duality Map. In the US political system, there are two primary camps, i.e., the conservatives with stronger leanings to the Republican Party, and the liberals who are more prone to join the Democratic Party, we can represent the conservatives with "Yin" (the black domain), and the liberals with "Yang" (the white domain). In other words, the conservatives and the liberals as two core camps define the root elements of the US political system. Further, as a pair of opposite elements in a duality, the two core camps can neither be fully separated nor integrated due to the co-existence of two groups of moderates, namely, the moderate conservatives and the moderate liberals. In other words, the two moderate groups, represented as the gray or overlapping areas, define the micro-level structure inside each camp. Finally, the mix of conservatives and the liberals within each domain defines the meso-level structure (with the dominantly conservative still within the black domain, while the seed of the liberals are represented by the white element in the dark gray area). The converse is true for the liberals in the white domain where the seed of the conservatives is represented as the black element in the light gray area. The macro-level structure of the US political system is the configuration of all four political groups across the entire political spectrum: (1) extreme conservatives; (2) moderate conservatives; (3) moderate liberals, and (4) extreme liberals.

Consistent with the tenets and mechanisms of Yin-Yang balancing, each and every election in the U.S. political history has been determined by the two moderate groups in their choice of joining the opposite camp: when the moderate liberals decide to join the moderate

conservatives, the conservative camp as a whole will win the election, and vice versa. The contextual condition for the choice of joining the opposite camp is primarily the perception by the moderate groups concerning the imbalance of power (out of the required threshold for healthy tension) between the liberal and conservative camps. The contextual condition for possibly joining the opposite camp lies in the overlapping gray area between the opposite groups within each camp as well as the overlapping gray area between the moderate groups across the two camps. Further, it is worth noting that, even though the extremist groups do not appear decisive in determining the result of election, they remain critical due to two key reasons. First, the extremist groups define the existence of the moderate groups. Without the extremists, there will never be the moderates, consistent with the notion of gray as a color derived from the root colors of black and white. Second, the extremist groups also anchor the balance of power as the polarized ends of the entire political spectrum. Finally, the key to the balance of power between the liberal and conservative camps lies in the threshold as a required range of proper balancing points for a healthy tension as measured by the relative sizes of the four political groups. The "relative sizes" refer to the maximal and minimal sizes allowed (neither too large nor too small) for their healthy tension as groups that are too large or too small can result in unhealthy tension. The application of Yin-Yang balancing to the case of U.S. political system, especially the critical coalition between the extremist groups and the moderate groups, illustrates that the notions of seed and threshold are the most unique features of Yin-Yang balancing. In sum, the two "extremist" groups, as the root elements, emphasize the conflict and tradeoff between the opposite camps, thus reflecting the either/or logic; the two moderate groups, as the micro-level structure with the derived component, emphasize the complementarity and synergy between the opposite camps, thus reflecting the both/and logic; the coalitions between the extremist and moderate groups, as the meso-level structure inside each domain, or the macro-level structure across the entire political spectrum,

emphasize both conflict (tradeoff) and complementarity (synergy), rather than just one of the two outcomes, thus reflecting the either/and logic (balancing the either/or logic with the both/and logic to result in a holistic and dynamic logic).

Taking the *Polarity Map* (Johnson, 2014) as the point of departure, the *Duality Map* is designed to identify and measure the threshold as a range within which the opposite elements can be properly balanced for a healthy tension, as shown by the upper side of Figure 4 about the controversial issue of balancing social value with financial profit as two basic goals for all business organizations (similar to the notion of "*triple bottom-lines*", Elkington, 1997), thus avoiding the trap of unhealthy tension, as shown by the bottom side of Figure 4. The Duality Map consists of four unique features as compared to the Polarity Map (Leslie, Li & Zhao, 2015).

[*Insert Figure 4 Here*]

First, the Duality Map highlights that within each of the two opposite elements on the left and right sides (e.g., the business practices for social value and financial profit) along the horizontal dimension, there are both "extremist" groups and moderate groups, thus a total of four groups with two groups on each of the opposite sides: Group E1 refers to the extremists with an exclusive focus on social value with no concern for financial profit; Group M1 refers the moderates with a relatively greater focus on social value than financial profit, with both goals deemed as necessary and critical; Group M2 refers to the moderates with a relatively greater focus on financial profit than social value, with both goals deemed as necessary and critical, and finally Group E2 refers to the extremists with an exclusive focus on financial profit with no concern for social value. It is clear that E1 and E2 treat the opposite goals as conflicting with tradeoff toward an unhealthy tension (related to the root elements via the either/or logic), while M1 and M2 frame the opposite goals as complementary with synergy toward a healthy tension (as the micro-level structure via the both/and logic). The meso-level

structure (a mix of E1 and M1 or a mix of M2 and E2), and the macro-level structure as the overall configuration of all four groups (i.e., the mix of E1, M1, M2, and E2) underlies the nature of balancing the root elements (for both structures via the either/and logic).

Second, with the bi-directional arrows between the business activities on the opposite sides for the opposite goals along the horizontal dimension (i.e., the business activities in favor of social value and those activities in favor of financial profit), the Duality Map emphasizes not only the harmony, but also the tension, between the opposite sides. In the Duality Map, the harmony and tension always co-exist in the same place and at the same time as well as for both input (means or activities) and output (ends or goals). Hence, a proper balance between input activities will depend on which of the opposite goals (i.e., social value and financial profit) is pursued with a greater emphasis via an asymmetrical mix of opposite activities (i.e., two types of business activities to pursue the two opposite goals). A healthy tension can occur with a greater synergy between the business activities on the opposite sides if the opposite goals are pursued with moderately asymmetrical emphases on the two goals (represented by the two upper sides in the Duality Map): a moderately high emphasis on social value as balanced with a moderately low emphasis on financial profit, or vice versa). For a healthy tension, the meso-level structure in each domain as well as the macro-level structure across the entire system are rooted in the key notion of threshold (i.e., a range of acceptable points for asymmetrical balancing). In short, the horizontal arrows reflect the dynamic shift in priority between the left and right sides as two opposite goals within the threshold for a healthy tension as an asymmetrical balancing.

Third, the Duality Map also highlights the tension between the positive (in the upper side of the Duality Map) and negative output goals (in the bottom side of the Duality Map). The tension between the opposite output outgoals (e.g., the resulted outcomes of social value and also those of financial profit) is directly tied to the tension between the opposite input

activities (e.g., business activities in favor of social value and those activities in favor of financial profit). When the input tension lies within the balanced threshold (i.e., at the moderate level), it is healthy for the positive output; when the input tension lies beyond the threshold of balance (i.e., at the extremely low or high levels), it will be unhealthy for the negative output. In other words, an unhealthy tension can occur if both opposite goals are pursued with an extremely symmetrical intensity, or if only one of the opposite goals is pursued at the expense of the other (i.e., an extremely asymmetrical mix of opposite goals) (represented by the two bottom sides in the Duality Map). In short, this dynamic process of balancing within or beyond the threshold along the vertical dimension is reflected by the bi-directional arrows between the upper and bottom sides as the shift between healthy and unhealthy tensions as curvilinear balancing.

Finally, with its emphasis on the desirability of healthy tension, the Duality Map posits that a minimal level of tension arising from the fundamental distinctions between the opposite elements is necessary for harmony because harmony cannot occur without a complementary diversity. Hence, too much similarity (due to an extremely high overlapping) between the opposite elements will be negative for synergy due to the little room for complementarity. Moreover, a minimum level of tension is also necessary to avoid the tendency of any opposite element to become too dominant so as to squeeze out the other opposite element (e.g., the extremist groups are required because they define the moderate groups and hold the opposite extremist group from becoming too strong at the expense of its opposite). This dynamic process of balancing within or beyond the threshold, along both horizontal and vertical dimensions, is reflected by the "butterfly" symbol with four diagonal arrows as transitional balancing.

In sum, the relationship between "Yin" and "Yang" as a necessary mix of partial tradeoff and partial synergy (both contrary and complementary) is rooted in the three

structures that constitute the overall configuration of Yin-Yang balancing, i.e., the micro-level, meso-level, and macro-level structures (for more details, see Figure 4). Further, the three core tenets and the three operating mechanisms are applicable to all three structures, rather than the root elements. For instance, the mechanism of *asymmetrical balancing* applies to all three levels because all three colors (i.e., black, white, and gray) dwell and interact with their asymmetrical mixes at all three levels. In Figure 4, the asymmetrical balancing between social value and financial profit can be pursued as dual goals with two specific asymmetrical mixes: one with more emphasis on social value, and the other with greater emphasis on financial profit. According to the two mechanisms of *curvilinear* and *transitional balancing*, however, the above asymmetry cannot be excessive or extreme. Specifically, in the micro-level structure inside a domain, the gray area should be a dark gray (with more black than white) or light gray (with more white than black); in the meso-level structure in each domain, if the group for social value is too strong for the other group to counterbalance or vice versa, neither the goal of social value in the domain of social value nor the goal of financial profit in the domain of financial profit can be well achieved. Similarly, the dual goals of social value and financial profit cannot be jointly attained if the overall asymmetry in the macro-level structure with the extremist or moderate groups is either too strong or too weak for the opposite force.

As indicated above, it is worth repeating that the notions of seed (related to the micro-level structure for gray color) and threshold (related to both the meso-level and the macro-level structures for a mix of two or three colors) are the two keys to any healthy tension. They are the two core contributions of Yin-Yang balancing. It is worth noting that the mechanism of transitional balancing (closely related to the mechanism of asymmetrical and curvilinear balancing) is typically driven by the transition from an "extremist" group to its closer moderate group, but rarely between two extreme groups.

Now let's apply the Duality Map to other managerial paradoxes. Since the seminal article by March (1991; also Levinthal & March, 1993), the heated debate over how to balance exploration with exploitation as an issue of ambidexterity has not yet settled (see Gupta, Smith & Shalley, 2006; Stettner & Tushman, 2010; O'Reilly & Tushman, 2013; Raisch & Birkinshaw, 2008, for reviews). The Duality Map can offer a novel insight by balancing those who actively engage in exploration as *path-finders* vis-a-vis those who actively engage in exploitation as *path-followers* (see Figure 5 for more details). Specifically, the two "extremist" groups of path-finders and path-followers define the root elements, with an emphasis on conflict with tradeoff according to the either/or logic; the two moderate groups, with a mix of path-finders and path-followers, define the micro-level structure, with an emphasis on complementarity with synergy according to the both/and logic; the two asymmetrical mixes of one extremist group with one moderate group in each domain define the meso-level structures, with an emphasis on both conflict (tradeoff) and complementarity (synergy) according to the either/and logic, and finally the two meso-level structures with all groups define the macro-level structure, with an emphasis on both conflict (tradeoff) and complementarity (synergy) according to the either/and logic. Recent evidence suggests that most firms adopt an asymmetrical configuration of 70% exploration and 10% exploitation, with 20% overlap between exploration and exploitation (Nagji & Tuff, 2012). Hence, the Duality Map can be fruitfully applied here to not only avoid the primary pitfall of the either/or logic to separate exploration from exploitation, either structurally or temporally, as fully conflicting without any potential synergy, but also redress the primary limitation of the both/and logic to integrate exploration with exploitation as fully complementary without any potential tradeoff. The two aforementioned problems have muddled the debate between the two prevailing camps of research on the exploration-exploitation link as *ambidexterity*, but the Duality Map holds potential to remedy such problems (Li, 2014a; Li, Li & Liu, 2012).

Following the above illustration, the Duality Map can be applied to the debate over how to balance competition with cooperation toward framing the issue as a paradox (Bengtsson & Kock, 2014), on which Yin-Yang balancing can shed a special light (Hong & Snell, 2015; Raza-Ullah, Bengtsson & Kock, 2014). It can also be applied to the debate over how to balance global integration with local responsiveness toward framing the issue as a paradox (see Li, 2010 for a review; cf. Bartlett & Ghoshal, 1998; Prahalad & Doz, 1987). In essence, the Duality Map can be applied to all issues that can be framed as paradoxes, as shown in Table 2. For example, the debate over how to balance the influences of institutional forces with the proactive choices by entrepreneurial agencies has been moving toward framing this issue as a paradox (e.g., Garud, Hardy & Maguire, 2007; Seo & Creed, 2002; see Battilana, Leca & Boxenbaum, 2009 for a review). The Duality Map can shed new light on this issue by balancing those who emphasize the constraining power of institutions for the role of "iron cage" as *institution advocates* vis-a-vis those who emphasize the proactive choices of entrepreneurs for the role of "free agencies" as *entrepreneurship advocates*. Further, the debate over how to balance the positive feeling with the negative feeling for the same entity has been moving toward framing *ambivalence* as a paradox (Ashforth et al., 2014; Bledow et al., 2013). The Duality Map can also shed new insights into this issue by balancing those who favor optimistic attitude as *optimists* vis-a-vis those who favor pessimistic attitude as *pessimists*. Finally, the debate over how to balance the etic and the emic approaches to research has been moving toward framing this issue as a paradox (Li, 2012a; Li et al., 2012). Again, the Duality Map can provide new light on this issue by balancing those who favor the etic goal of building universalistic constructs and theories as *universalists* with those who favor the emic goal of building particularistic constructs and theories as *particularists*.

Similarly, the Duality Map can also shed light on the debate over induction and deduction (and even abduction) as a proper research method, especially for case study (Li, 2012c).

[*Insert Table 2 Here*]

Discussion and Conclusion

Within the context of comparing the Eastern philosophy of wisdom with the Western philosophy of knowledge, this article has explored the unique nature and function of Yin-Yang balancing as the Eastern epistemological system, in contrast to the Western epistemological systems of Aristotle's "either/or" logic and Hegel's "both/or" logic. Even though a growing number of Western scholars have recognized the salience of paradox as well as the flaw of "either/or" logic (e.g., Ashforth & Reingen, 2014; Bobko, 1985; Smets, Jarzabkowski, Burke & Spee, 2015; Poole & Van de Ven, 1989; Smith & Lewis, 2011), they cannot move beyond the separation-integration circle as their attempts to resolve paradox, so Yin-Yang balancing is the only epistemological system that can truly accommodate and appreciate paradox (Li, 2012a, 2014a; Smith & Lewis, 2011), and, at the same time, possesses the unique potential to embrace all Western systems into a geocentric (East-meeting-West) meta-system (Li, 2012a, 2014a; cf. Byers, 2007; Capra, 1975; Chen & Miller, 2011; Nisbett, 2003). It is worth noting that Yin-Yang balancing is central to this geocentric balancing that is asymmetrical, transitional, and curvilinear in a holistic, dynamic, and duality pattern. The keys to Yin-Yang balancing are the notions of, first, *seed* (the two seeds in the opposite elements as well as their adjacent areas constitute the overlap between the opposite elements as the gray area or the moderates, i.e., the micro-level structure that holds the key to balancing the opposite forces); and, second, *threshold* (the range of acceptable balancing points from the minimum sub-end to the maximum sub-end as both the meso-level and the macro-level structures, reflected by the asymmetrical range between 30-40% and 60-70%, Lin et al., 2015).

In this paper, I have proposed the Duality Map as a working model to apply Yin-Yang balancing to some specific "contradictions" that arise in the management context and in the U.S. political scene. The tenets and mechanisms of Yin-Yang balancing are rooted in the core constructs of *seed* for the gray color as the micro-level structure (e.g., the moderate groups) and *threshold* for the proper mix of the three colors at two levels: (1) a mix of one root color with gray color as a meso-level structure within each domain, and (2) the mix of all three colors as a macro-level structure. The notion of threshold is rooted the notion of seed since the latter is concerned with the interdependence and interpenetration of opposite elements, while the former is concerned with the interaction and inter-transformation of opposite elements; there will not be the former without the latter. In this sense, the core of Yin-Yang balancing is about how to identify the seed for the gray area as well as how to design the threshold for a range of all healthy mixes of both extremist and moderate groups, both within a single domain and across the entire system, both according to the either-and logic of Yin-Yang balancing. To apply the Duality Map, I propose a four-step procedure. First, we can choose any given well-known managerial paradox as the focus of a study (e.g., formal-informal balance for hybrid organizational form; learning-unlearning balance for creativity and innovation, and work-life balance for individual or family happiness). Second, we identify the overlap (the gray area) as the micro-level structure. Third, we specify the threshold for the mix of one root color with gray color as the meso-level structure. Finally, we design the threshold for the mix of all three colors as the macro-level structure.

As the underlying core of Eastern philosophy of wisdom, Yin-Yang balancing has inherent geocentric implications. This system can operate in the Western context, as shown in the case of Lego, a Danish toy-maker, that adopts eleven paradoxical principles (Evans, 2000), similar to the practices in China, as found in a recent study (Zhang, Waldman, Han &

Li, 2015). [2] Across the broad domain of management, more Western scholars explicitly evoke the notion of Yin-Yang balancing to explore how to manage various paradoxes (e.g., Raza-Ullah et al., 2014; Reinecke & Ansari, 2015; Smith & Lewis, 2011). Further, it is intriguing that even the Yin-Yang symbol itself can produce a priming effect in the West as Caucasian subjects were more likely to anticipate greater change and adopt a more balanced view after they were exposed to or primed with the Yin-Yang symbol (Alter & Kwan, 2009). The cognitive system of Yin-Yang balancing holds potential as a major contribution from the East to the West in the context of Chen & Miller (2011) and Chen & Li's (2015) proposition of the East *meeting* the West as *equal* partners. In particular, the system of Yin-Yang balancing is highly relevant to cross-culture research (Fang, 2012; Stahl & Tung, 2015). As each epistemological system has distinctive strengths and weaknesses, there is need for an *asymmetrical* balance between the two partners in each specific domain (e.g., the either/or logic as the dominant in the domain of largely simple and certain, thus non-paradoxical, analysis; the either/and logic as the dominant in the domain of largely complex and uncertain, thus paradoxical synthesis) in the context of globalization as the etic-emic balancing. Given the growing recognition that indigenous research is necessary for a global body of wisdom and knowledge (Chen & Li, 2015; Li, 2012), we need to apply the Eastern philosophy of wisdom (with Yin-Yang balancing as the epistemological component) in addition to the Western philosophy of knowledge (with the either/or logic as the epistemological component). The major achievement of Dr. Wu Wen-Tsun in the field of mathematics is a good example of integrating Chinese traditional mathematics with the modern mathematics in the West (Hudecek, 2014). The 2015 Nobel Prize winner, Youyou Tu, is another example of integrating the East and the West in the area of medicine. More achievements in the future

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[2] Lego's paradoxical principles include "*to build a close relationship with one's staff, ...and to keep a suitable distance*" and "*to lead, ...and to hold oneself in the background*". The Chinese practices include "*maintaining both distance and closeness*" and "*treating subordinates uniformly while allowing individualization.*"

can be expected from the West-meeting-East trend, and, as scholars, we have an obligation to facilitate this effort.

In general, the lower-order value of Yin-Yang balancing is its ability to explain holistic, dynamic, and duality issues, while the higher-order value is its ability to absorb the "either/or" logic, and allow it (other systems) to primarily manage fragmented, static and consistent issues. It is unrealistic to expect that Yin-Yang balancing will be perfect, and our current knowledge about the system remains immature. Our future challenge is to enhance and integrate it with other systems into a geocentric meta-system. In practical terms, we first need to recognize the centrality of paradox in management research; then we need to embrace the unique value of Yin-Yang balancing to paradox management, and finally we need to refine the Duality Map proposed in this paper and apply it to more managerial paradoxes. A recent study illustrates this point. From the quantum perspective, the traditional arrow of time from past to future can be mentally reversed from future to past, "analogous to being in a train looking out the window and seeing the distant horizon flow toward one's present location, even though one knows it is the train that is moving toward the horizon" (Lord, Dinh & Hoffman, 2015: 264). In other words, the links between past, present and future can be framed as a duality like the two sides of the same coin: (1) a vision of *future* as a potential option can be enacted into a reality of *present* that will pass as a history of *past* (with future vision as the more dominant force), and (2) a past history (e.g., imprint) can also shape a present reality that will influence a future vision (with past history as the more dominant force). This is related to the notion of "ambitemporality" to embrace the opposite temporal orientations of the Eastern process-time and the Western clock-time (Reinecke & Ansari, 2015). Perhaps it is not an exaggeration to say that the cognitive system of Yin-Yang balancing can yet present the most valuable tool of paradox management.

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Figure 1

The Structures of Yin-Yang Balancing with Black, White and Gray Areas
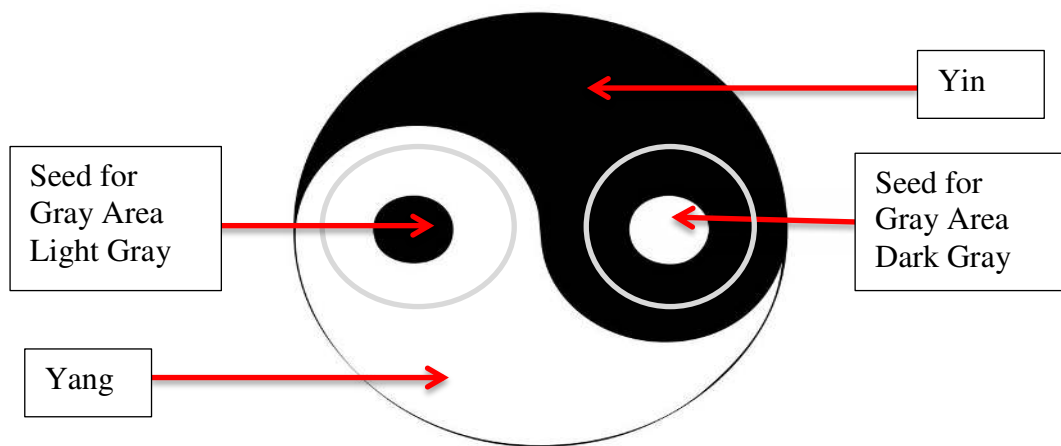
Notes:

1. Yin (black) and Yang (white) represent the opposite elements (two sub-domains within the whole domain) as the *root* components.
2. Each "seed" and its adjacent area jointly define an overlapping *gray* area within each of the two sub-domains as a *micro-level* structure.
3. Each micro-level structure and the non-overlapping (non-gray) area in the same sub-domain jointly define a *meso-level* structure (as the overall structure of sub-domain).
4. The two meso-level structures jointly define a *macro-level* structure (as the overall structure of the whole domain).

Figure 2

The Dynamic Process of Yin-Yang Balancing with the Stages and Thresholds at

Multiple Levels for Structural Changes
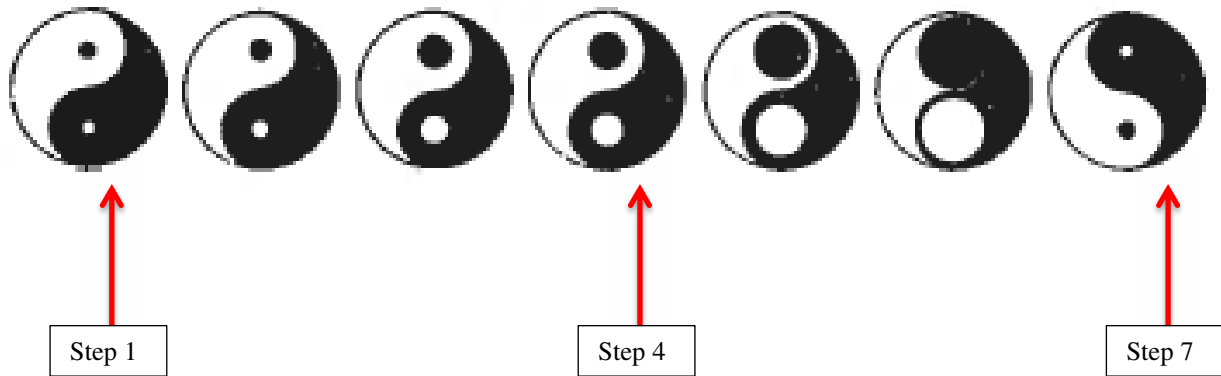
Notes:

1. The ratio between the size of overlapping area (gray area derived from the size of "seed") and the size of non-overlapping area (black or white area) defines the threshold at the meso level as a range from the *minimum sub-end* (with the overlapping area being moderately smaller than the non-overlapping area, e.g., Step 2) to the *maximum sub-end* (the opposite of the above scenario with the overlapping area as moderately larger, e.g., Step 3).

2. The ratio between the two meso-level structures defines the threshold at the macro level (not shown in Figure 2) as a range from the *maximum sub-end* (with one meso-level structure being moderately larger than the other meso-level structure) to the *minimum sub-end* (the opposite of the above scenario).

3. Step 4 is the transitional point from one overall structure at all three levels to its opposite one.

Figure 3

The Content and Process of Yin-Yang Balancing
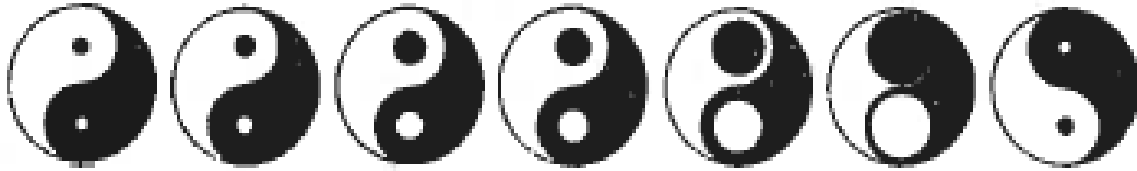
Notes:

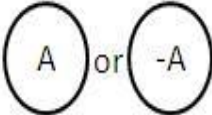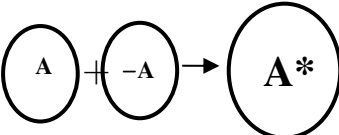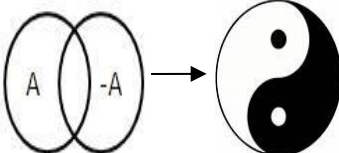1. Each symbol is a full system with all micro-level, meso-level and macro-level structures.
2. The mechanism of *asymmetrical balancing* can be reflected in each of the above figures in a "spatial" pattern as the overall "spatial" structure with the two root colors (i.e., "Black" and "White"), and also the one derived color (i.e., "Gray"). First, in the meso-level structure, one root color is dominant in its own specific domain (including its part in the "Gray" area beyond the seed), and the opposite color is subordinate in the same domain (i.e., the seed inside the "Gray" area). The size of each "Gray" area (derived from the seed) relative to the size of each root color defines the threshold in the meso-level structure. Second, the macro-level structure is a configuration of the entire system with all three colors, but one root color is dominant. The relative sizes of all three colors in this mix define the threshold in the macro-level structure.
3. The mechanism of *transitional balancing* can be reflected in the above set of figures as a temporal pattern of sequentially shifting from one asymmetrical balance (e.g., "White" as the dominant and "Black" as the subordinate in the upper domain of the circle in the first three figures) to its opposite asymmetrical one (e.g., "Black" as the dominant and "White" as the subordinate in the upper domain in the last three figures). Figure 4 is the threshold for this transitional shift. Further, there is a mirror transition in the bottom half of the circle as the other domain. Most often this transition is driven by the direct switch between an extremist group and its closer moderate group, thus rarely by the infrequent switch between two extremist groups.
4. The mechanism of *curvilinear balancing* can be reflected in the above set of figures as a mix of both "spatial" and temporal patterns with the middle figure (Figure 4) as the core threshold (when the dominant element is only moderately large, while the subordinate element is only moderately small) from growing synergy (as reflected in the first three figures where the subordinate element is growing from a low level to a moderate level) to growing conflict (as reflected in the last three figures where the subordinate element is growing from a moderate level to a high level).
5. The above three operating mechanisms share the central theme of opposites as duality in terms of being partially complementary as well as partially conflicting (i.e., 相生相克 in Chinese). This underlying theme of Yin-Yang Balancing defines the notion of threshold: an extremely large (or small) size of any one color is the cause of a unhealthy tension with limited synergy (or no tension with no synergy), rather than the only desirable result of a healthy tension (moderate tension with moderate synergy).

Table 1

The Similarities and Distinctions between Three Core Epistemological Systems

Three Logical Systems & Themes	Aristotle's Formal Logic	Hegel's Dialectical Logic (Paradox Resolvable)	Yin-Yang Balancing (Holistic-Dynamic-Duality)
Law of Identity (For Subject at the Concept Level)	$A = A$ (Absolutely identical)	$A = A'$ (Absolutely different)	$A \approx A$ (Relatively identical & relatively different)
Law of Non-Contradiction (For Subject at the Concept Level)	$A \neq -A$ (Absolute Dualism; Explicit Dualism; Consistent but Incomplete)	$A \rightarrow -A$ (Absolute Dualism; Absolute but temporary contradiction as implicit dualism; only as the means for the end or goal of non-contradiction)	$A \approx A + {}_{-A\ (minor)}$ (Relative Duality; Relative but permanent contradiction as duality; both means & end; Complete & Consistent as contrary and complementary)
Law of the Excluded Middle (For Predicate at the Statement Level)	$X = A \ or \ -A$ (Absolute "either/or"; Consistent but Incomplete)	$A + -A \rightarrow A*$ (Absolute "both/or"; Contradiction must be resolved at the higher level as sublation or transcendence)	$X \approx A \leftarrow\rightarrow -A$ (Relative "either/and"; Contradiction cannot be resolved and no need to be resolved as contrary and complementary at the same level and at the same time)
Illustrations			

Notes:

1. The notions of "absolute" and "relative" refer to the degree or extent of separation or integration of mental opposites, with full or 100% as "absolute", and partial or less than 100% as "relative";
2. The notion of "dualism" refers to an absolute separation (spatial or temporal) of mental opposites as fully contradictory, while the notion of "duality" refers to a relative separation as well as a relative integration between mental opposites as contrary yet compatible;
3. The "both/or" system refers to a temporary tolerance for, but a ultimate rejection of, paradox via sublation as the solution (thus a *superficial integration* between "both/and" and "either/or" systems), while the "either/and" system refers to a permanent and ultimate balance between mental opposites as a duality (thus a *deep-level balance* between the revised (in a relative term) "either/or" and "both/and" systems).
4. This table is adapted from Li (2012a).

Table 2

The Duality Maps for Paradox Management: Selected Illustrations

The Three Cognitive Systems for Paradoxical Issues	**Either/Or Logic (Only Tradeoff Without Synergy)**	**Both/And Logic (Both/Or Logic) (Only Synergy Without Tradeoff)**	**Either/And System (Yin-Yang Balancing) (Both Tradeoff and Synergy Yet Asymmetrical, Transitional, and Curvilinear in Balancing)**
Institution versus Agency	Either Institution Or Agency in Each Aspect/Stage As Conflicting With Tradeoff	Both Institution And Agency in Each Aspect/Stage As Complementary With Synergy	Either Institution Or Agency As Dominant in a Balance Between Both Elements as a Pair in Each Aspect/Stage as Partially Conflicting and Partially Complementary in Balancing
Positive Attitudes versus Negative Attitudes (Ambivalence)	Either Positive Attitudes Or Negative Attitudes in Each Aspect/Stage As Conflicting With tradeoff	Both Positive Attitudes And Negative Attitudes in Each Aspect/Stage As Complementary With Synergy	Either Positive Attitudes Or Negative Attitudes as Dominant in a Balance Between Both Elements as a Pair in Each Aspect/Stage as Partially Conflicting and Partially Complementary in Balancing
Etic versus Emic Research	Either Etic Or Emic in Each Aspect/Stage As Conflicting With Tradeoff	Both Etic And Emic in Each Aspect/Stage As Complementary With Synergy	Either Etic Or Emic as Dominant in a Balance Between Both Elements as a Pair in Each Aspect/Stage as Partially Conflicting and Partially Complementary in Balancing
Research Approach (Case Study)	Either Induction Or Deduction in Each Study as Conflicting With Tradeoff	Both Induction And Deduction in Each Study (in the form of Abduction) As Complementary With Synergy	Either Induction Or Deduction as Dominant in a Balance Between Both Elements as a Pair In Each Aspect/Stage in Balancing

Figure 4: The Duality Map for the Balance between Social Value and Financial Profit

Enhanced Organizational Effectiveness due to Good Balance *Healthy Tension*		

Business Activities Enabling Social Value
(Modest Asymmetry in Moderate-Extremist Mix)
(Mixes at Micro, Meso and Macro Levels)

Business Activities Enabling Financial Profit
(Modest Asymmetry in Moderate-Extremist Mix)
(Mixes at Micro, Meso and Macro Levels)

Social Value
(Extreme & Moderate Idealists)

Financial Profit
(Extreme & Moderate Pragmatists)

(Too Many or Too Few Extreme Idealists)
(Too Little or Too Much Asymmetry)
Business Activities Undermining Social Value

(Too Many or Too Few Extreme Pragmatists)
(Too Little or Too Much Asymmetry)
Business Activities Undermining Financial Profit

Little/Unhealthy Tension
Lost Organizational Effectiveness Due to Bad Imbalance

Notes: Horizontal arrows show the interdependency and interpenetration between opposites with *partial tradeoff and partial synergy*.
Vertical arrows show the interaction and inter-transformation between opposites from *little/unhealthy tension to healthy tension*.

1. There are three types of mix: overlap at the *micro level*, and overlap-separate blend at the *meso level* and the *macro level*.

2. The left and right sides constitute the horizontal divide at the macro level to reframe paradox into *duality* with an overlap made up by the "seed" and its adjacent area (e.g., the moderates in each group), but this divide is *asymmetrical* with one side being more dominant, rather than a symmetrical one with a 50:50 split as the so-called "*the doctrine of the mean*".

3. This horizontal divide represents a traditional dimension of paradox in terms of *generic tension*.

4. The upper and bottom sides constitute the vertical divide at the macro level with the upper side as the *threshold* (as a range from moderately more moderates than extremists as the maximum sub-end to moderately more extremists than moderates as the minimum sub-end).

5. This vertical divide represents a new primary dimension of paradox in terms of *specific tension*, such as good (healthy tension: modest asymmetry) and bad (little or unhealthy tension: little tension with too few extremists, and unhealthy tension with too many extremists).

6. If there are too many extremists on the bottom sides, a shift across both horizontal and vertical divides will occur (as shown by the four arrows in the middle picture); if there are too few extremists on the bottom sides, only a shift across the vertical divide will occur.

Figure 5:

The Duality Map for the Balance between Exploration and Exploitation as Ambidexterity

Enhanced Organizational Innovation due to Good Balance
Healthy Tension

Business Activities Enabling Exploration
(Modest Asymmetry in Moderate-Extremist Mix)
(Mixes at Micro, Meso and Macro Levels)

Business Activities Enabling Exploration
(Modest Asymmetry in Moderate-Extremist Mix)
(Mixes at Micro, Meso and Macro Levels)

Exploration
(Extreme & Moderate Path-Finders)

Exploitation
(Extreme & Moderate Path-Followers)

(Too Many or Too Few Extreme Path-Finders)
(Too Little or Too Much Asymmetry)
Business Activities Undermining Exploration

(Too Many or Too Few Extreme Path-Followers)
(Too Little or Too Much Asymmetry)
Business Activities Undermining Exploitation

Little/Unhealthy Tension
Lost Organizational Innovation due to Bad Imbalance