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Indeterminable responsibility, determinable harm: From organized irresponsibility to harmless value creation

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Corporations have been found to create harm for people in society; however, due to the *organizational irresponsibility principle*, responsibility has remained unattributable to agents. Despite the ills created, the economic and technological progress provided by capitalism have led its advocates to suggest that there is no alternative because benevolent intent is psychologically opposed to capitalist goals of achievement and power. Building upon theories of *organizational irresponsibility*, *shared value*, *responsible innovation* and *value creation*, the aim of this study is to explain why responsibility remains indeterminable and propose the concept of harmless value creation by adopting products as units of value. This shift of viewing responsibility from ‘who’ to ‘what’ renders harm attributable to the product (or process or service), even if not to the agent.

Paper For The British Academy Of Management 2020: Conference In The Cloud

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Introduction

Companies such as Coca-Cola, Diageo, Kraft, Mars, Nestlé, PepsiCo, Philip Morris, SABMiller, and Unilever are market leaders producing products that are leading causes of death and diseases (Moodie et al., 2013). Health defects associated with goods manufactured and distributed by these companies, such as tobacco, alcohol, vinyl chloride, asbestos, cars and food and drinks, are termed as *industrial epidemics* (Jahiel & Babor, 2007; Majnoni, 1995), since they are leading causes of non-communicable diseases (NCDs), as identified at the 2011 UN high-level meeting on NCDs (Moodie et al., 2013). NCDs accounted for 63 per cent of 57 million global deaths in 2008 (World Health Organization, 2011). These epidemics are related to consumption of ultra-processed foods representing a high dietary share (of total energy) in most countries – US (58 per cent), UK (53.1 per cent), Canada (48 per cent) and France (35.9 per cent; Rauber et al., 2018). Similar consumption patterns are rising in developing countries (Moodie et al., 2013). This is alarming because studies found that a 10 per cent increase in ultra-processed foods' proportion in diet corresponds to a 12 per cent increase in the risk of cancer (Fiolet et al., 2018).

Strategically, these industries use hard power (finance and institutional) and soft power (influencing ideas through advocates and scientists) to shift legislation and regulation in their favour (Moodie et al., 2013). This is a 'corporate political activity' (CPA), defined as 'corporate

attempts to shape government policy in ways favorable to the firm' (Mialon, Swinburn & Sacks, 2015). CPA strategies help firms in ultra-food processing, alcohol, and tobacco industries delay efforts to prevent and control NCDs (Mialon & Gomes, 2019), and then promote actions outside their expertise to deflect possible criticism and attention. For instance, tobacco companies promote women's safety, and food and drink corporations emphasize physical activity (Moodie et al., 2013). These often result in interpretations of expanding value to multiple stakeholders and have featured as popular case studies (e.g. Nestlé and Coca-Cola) for 'creating shared value' (see Crane et al., 2014; Porter & Kramer, 2011).

This is not just an industry-specific phenomenon. Several studies, for instance, examine the negative effects of radiation caused by modern-day technological advances (Aitken et al., 2005; Balmori, 2009; De Iuliis et al., 2013; Everaert & Bauwens, 2009). Organizations in capitalist economies have been observed to lack the compassion to acknowledge individual suffering (George, 2014). Self-benefit resulting in harm to others seems a systemic norm that does not result in any culpability. For example, 'the top 1% in the US approximately emits 51 times the world average and, 244 times the sustainable level of carbon immersions' (Curran, 2018). Negative effects of creations are linked to issues such as global warming, ozone layer disappearance, nuclear weapon proliferation, terrorism and unequal income distribution (Sternberg, 2010).

The ideas of *sustainability*, *social responsibility* and *shared value*, though well-intended, can be misleading (O'Toole & Vogel, 2011), since, within the firms sharing value, products and processes can be harmful. BP went from being regarded the 'greenest' energy company to one of

the most environmentally destructive ones in less than a decade (O'Toole & Vogel, 2011). Apple, driven by maximizing profit per employee, contracted over 700,000 workers in Asia and Europe (Duhigg & Bradsher, 2012), resulting in employee layoffs – 636,484 employees were laid off in the U.S. between January to May 2012 (George, 2014). Working conditions at the Chinese Foxconn factory, where iPads are manufactured, have been highly questionable – an explosion in 2011 killed and injured workers, and suicide attempts were reported in workers' dormitories (Duhigg & Barboza, 2012). CEOs are often rewarded with millions for such strategies (Reich, 2012). Intentionally (or unintentionally), firms justify these acts in the name of organisation viability (Kalleberg, 2011).

The intent is not to question those making money. However, the responsibility – or 'organized irresponsibility' (OI; Curran, 2015, 2018) – must be questioned. Although 52 of the largest 100 economies are corporations (i.e. 52 corporations' economic activity is greater than that of most nations; Kasser et al., 2007; Mander, Barker & Korten, 2001) – a sign of great success – questions have been raised about how so many of these corporations' acts that are self-beneficial while causing harm to others are not crimes (Curran, 2018). Developing on the studies on growing risks (Beck, 1992, 1999; Giddens, 1990, 1999) and inequalities (Atkinson, Piketty & Saez, 2011; Piketty, 2014), OI is defined as a relationship between agents (individuals, organizations or nation-states), where their actions commutatively generate risks and damages for others; however, distinct agents can minimize or avoid culpability (or responsibility) because of complications in tracing the harm to any one agents' harmful action (see Curran, 2015, 2018).

Systematic disappearance of responsibility (Mills, 1956), OI or *organized non-liability* (Beck, 1992; Curran, 2018; Giddens, 1999) and *structural gap* between harm and ascription of

injury (Veitch, 2007) or *limited culpability* (Djelic & Bothello, 2013) describe harm by corporations as indeterminable because of the level of complexity and number of agents contributing to risk creation (Curran, 2018). Large organizations benefit from this indeterminism by producing social risk, accruing profits from these risks and disproportionately avoiding consequences, although the overall society may be worse off. For instance, damages from the global financial crisis, worsening climate change and plastic waste crisis are greater than any selective punishments imposed on corporations (Curran, 2018). This suggests that the injuries are determinable. However, no ‘agent’ is responsible because the responsibility itself is indeterminable.

Thus, recognizing these anomalies, studies have emerged within strategic management on *virtuous* or *conscious capitalism* (O’Toole & Vogel, 2011) and *shared value creation* (Porter & Kramer, 2011). Crane et al. (2014) traced their emergence from *corporate social responsibly or non-market strategy* (Baron & Diermeier, 2007), *social entrepreneurship* (Mair, Battilana & Cardenas, 2012), *social innovation* (Hanleybrown, Kania & Kramer, 2012) and *bottom of the pyramid* (Prahalad & Hammond, 2002). Within policymaking, there is growing research on understanding and solving these problems as *wicked problems* (Head, 2008, 2019) or *responsible innovations* (Guston, 2015; Stilgoe, Owen & Macnaghten, 2013). Within economics and crime, these have been studied as *risks* and *OI* (Curran, 2015, 2018; Giddens, 1999).

This study summarizes and integrates key concepts from the literature and develops a theoretical understanding of *responsibility* and *harm*, using the ‘product’ (including service and process) as the analysis unit.

Responsibility to self versus to others

Capitalism perpetuates freedom for pursuing self-interest and encourages goals of achievement and power by employing capital to create profit for the employer (Kasser et al., 2007). Kasser et al. (2007) noted that the system works best when capitalists, workers and consumers can pursue self-interest to the maximum extent. Adam Smith, often regarded as the grandfather of capitalist thought, concluded the following:

It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity, but to their self-love, and never talk to them of our own necessities, but of their advantages.

Smith (1776/1976, pp. 26–27)

Capitalism (specifically, American corporate capitalism) is summarized as an ideology where the society has an opportunity to get what it wants (profits, wages or products) within a competitive market, where each agent pursues self-interest. Such competition drives quality upwards and prices downwards and, therefore, benefits society (George, 2014; Kasser et al., 2007). This ideology encourages the pursuit of self-interest amidst competition and engenders a ‘winner-take-all’ mindset (Frank & Cook, 1995). For example, the richest 1 per cent of Americans own 40 per cent of the country’s wealth, while the bottom 80 per cent own only 7 per cent (Jilani, 2011; George, 2014). Capitalism encourages values and beliefs people can achieve through hard work, individualism and even greed (Wang & Murnighan, 2011). Legal systems, governments, stock markets, media, trade organizations and other institutions form the system supporting this ideology (George, 2014).

The system encourages responsibility to self as a means of fulfilling responsibility to others. Despite the economic advantages, capitalism does not always consider environmental costs, and may lead to exceptionally high-level inequitable wealth distribution between nations and capitalist countries' populations (O'Toole & Vogel, 2011). Nevertheless, capitalism has many strong points: Technological advancements, provision of valuable goods and services, newer and more effective means of communication, simplification of access to travel and medical treatments and advancements lead many to conclude that capitalism is the only way to successfully organize economic life and that 'there is no alternative' (TINA; Kasser et al., 2007).

Firms within capitalist economies pursue extrinsic goals of achievement of wealth, power and financial dominance (George, 2014; Kasser et al., 2007). Arguments that these goals are the primary reason for technological and other innovations can be contested, since theories on creativity indicate that people creating novel and useful creations are intrinsically motivated (Hennessey & Amabile, 1998). Moreover, recent discoveries suggest that creativity is a result of problem perception (Walia, 2019) that may or may not lead to creation, depending on decision makers' judgment (Csikszentmihalyi 1999, 2014). Firms' decision makers are concerned with the exploitation of innovations (or explorations) (McGrath & Kim, 2015; Teece, Peteraf & Leih, 2016), and, therefore, may select ideas that seem profitable. However, science has the capability to create intrinsically and harmlessly – an important distinction.

Drucker (1954) noted that profit is essential for firms to survive, invest in innovation and expand businesses. Innovation is key to obtaining and sustaining competitive advantage (Christensen, Bartman & Bever, 2016; McGrath & Kim, 2015; Teece et al., 2016), which,

however, is transient and erodes over time (D'Aveni, 1994; McGrath & Kim, 2015), as evidenced by a study (Foster, 2012; McGrath & Kim, 2015) pointing out that the lifespan of companies in S&P 500 has shrunk from around 60 years in 1960 to 16 years in 2010. This means that every two weeks, a new firm is added as another is removed. Similarly, the FTSE 100 in London churns out 15 per cent of its index each year (Foster, 2012; McGrath & Kim, 2015). Another study stated that only nine out of 500 companies in the S&P 500 managed to consistently deliver total shareholder returns in the top quartile for more than five years (Williamson, 2006). Furthermore, only six of the 18 companies singled out as visionaries by Collins and Porras (1994) managed to outperform the Dow Jones Industrial Average. The rest include companies such as Disney, Motorola, Ford and Sony, which are no longer considered as great (Hamel & Välikangas, 2003).

These competitive pressures and resultant performance leads to strategic problematic search within firms – a gap between performance and aspiration (Nickerson, Yen & Mahoney, 2012; Posen et al., 2018). Thereafter, it drives the strategic decision-making process for formulating strategies (Nickerson et al., 2012; Papadakis & Barwise, 2002). The strategizing process's nature involves group decision making (Nickerson & Argyres, 2018), and it is limited by bounded rationality – decision makers are limited by the information they have, their cognitive abilities and time (Argote & Greve, 2007; Gavetti et al., 2012). Thus, holistic considerations that are considered important aspects of strategic responsibility (Ims & Zsolnai, 2009) are hardly ever considered in the C-suite, except under crises (McMillan & Overall, 2016). Firms tend to overlook their actions' negative consequences, given their drive to exploit advantages before they disappear (Jasper, 2010; Kamylyis & Valtanen, 2010). In economic

terms, firms experience unanticipated relationships between individual decision making and collective outcomes (Schelling, 1978). These strategies; undesirable or harmful outcomes are examined in different studies as *negative creativity* (Cropley, Kaufman & Cropley, 2008; James & Taylore, 2010; Jasper, 2010), *negative innovations* (McGrath & Kim, 2015), *irresponsible innovation* (Guston, 2015), adverse psychological effects (Kasser et al., 2007), *OI* (Curran, 2015, 2018) and *wicked problems* (Head, 2019).

The TINA mindset

Curran (2018) dismissed the notion that effects, such as the global financial crisis and environmental damage through climate change, are ‘ordinary harms’ (Agnew, 2013) and suggested they were highly technical and siloed expert actions that commutatively cost the economy trillions of dollars. Firms and their elite decision makers enjoy ‘risk arbitrage’; they produce social risk and enjoy risk benefits but avoid consequences of the produced social harm (Curran, 2015, 2018). This is because corporations assign responsibility in ways that defeat attempts to assign it to individuals (Pearce, 2001). The causes and conditions resulting in significant harm are distributed in ways wherein legal responsibility cannot be ascribed to any agent (Pearce, 1993). *OI*, thus, avoids systemic consequences (Curran, 2018) and creates the possibility of treating this as a ‘runaway world’ that is uncontrollable, given the complexities of determining risk causation (Beck, 2004; Curran, 2018; Giddens, 1990).

The TINA mindset perpetuates the helplessness expressed within *OI*, or in organizations’ *unintentionality* to cause rather than alleviate harm (George, 2014; Kalleberg, 2011). Agents’

actions within the *principle of OI*, intentionally or unintentionally, are ‘destructive’ and yet unattributable to them (Curran, 2018). Guston (2015) highlighted that many scholars are tempted to *stay above the fray* and not point to irresponsibility when observed, which may explain why acts are described as *negative* (creativity or innovations) instead of destructive. What is the reason to create a false positive? Innovation within the neoliberalism modernization paradigm (Grossman & Krueger, 1995) is understood as economically profitable and inherently good (Blok & Lemmens, 2015). However, the terms *responsible innovation* and *sustainable innovation* suggest that innovation, if unexamined, is irresponsible or unsustainable (Guston, 2015).

Fundamentally, no one can be against values such as responsible innovation (Guston, 2015), social sustainability (Jackson & Nelson, 2004), moral capitalism (Young, 2003), humanistic management (Pirson & Lawrence, 2009), conscious capitalism (O’Toole & Vogel, 2011), shared value (Porter & Kramer, 2011) and social entrepreneurship (Dacin, Dacin & Matear, 2010). These theories generally accept that businesses are neither solely created nor can solve all global problems. Most theories – such as for responsible innovation (Oudheusden, 2014; Stilgoe et al., 2013, Nordmann, 2014), creating shared value (Porter & Kramer, 2011), and solving wicked problems (Crowley & Head, 2017; Head, 2019) – advocate expanding stakeholders’ multiplicity. While these are important in elevating social goals to a strategic level, three major concerns emerge:

1. Kasser et al.’s (2007) analysis, based on the circumflex model of values (Grouzet et al., 2005; Schwartz, 1992), shows that benevolence, universalism and self-direction are psychologically opposed to capitalism’s goals of achievement and power. Empirical research across methodologies, theoretical perspectives and individuals from different

nations concludes that the profit maximization intent (capitalism ideologies) undermines people's concerns about promoting others' welfare, developing close connections with others, and feeling worthy and autonomous.

2. George (2014) observed that members within firms with the most resources to act with compassion – defined as being responsive to suffering (Goetz, Keltner & Simon-Thomas, 2010) – may be the least likely to do so (Desai, Brief & George, 2010; Piff et al., 2010; Stellar et al., 2012; van Kleef et al., 2008).
3. The *OI principle* states that increasing the number of legal agents further increases the complexity of attributing responsibility upon generation of social harm or risk.

While these theories suggest that there may be a 'crisis of [the] legitimacy of capitalism' (Driver, 2012), even as there is a need for 'a whole new sensibility', (Driver & Porter, 2012) or 'doing well by doing good' (Engardio, 2007; O'Toole & Vogel, 2011), they do not acknowledge the problem that certain firms' products may be causing social harm (Curran, 2018; Moodie et al., 2013). Instead, they suggest a solution by which the firms who may have caused the harm can aspire for a 'higher form of profit' (Driver & Porter, 2012) by creating shared economic value. For example, Coca-Cola and Nestlé are said to have created shared societal value (Crane et al., 2014) but are also included in a list of the top companies that may be responsible for spreading NCDs (Moodie et al., 2013). Should this be considered as shared value, as stakeholders' expansion of OI or as an effective strategy for deflecting causation of harm?

At the organizational level, firms may capture economic value by selling goods or services, and expanding value to multiple stakeholders for further value creation (Porter & Kramer, 2011). However, from a societal or environmental perspective, if goods and services are harmful, this may be risk arbitrage as the responsibility is not only indeterminable but also expanded to multiple legal agents (Curran, 2018).

Defining responsibility, its indeterminism and indeterminable responsibility

In simple terms, responsibility means being responsible for one's actions (Cornock, 2011) that cause harm or injury to others (Pellet, 2010). Responsibility focuses on the act or task, and not on accounting for the act; that is, responsibility differs from accountability or 'to be called to account' (Cornock, 2011). Pellet (2010) observed that if there is no responsibility, there is no law.

The criminology literature (Curran, 2018; Pearce, 2001; Tombs & White, 2015) considers lack of determinability of responsibility (or OI) as a rampant act in modern organizations and studies it by examining culpability. This study, however, does not use 'agent' as the unit of analysis; it does not delve into culpability or liability associated with evading responsibility. However, this study is concerned that, after determining harm (e.g. Moodie et al., 2013), coupled with an inability to appropriate harm to agents due to OI (Curran, 2018), the TINA effect takes over in the interest of perpetuating economic growth (Kasser et al., 2007). Therefore wicked problems, such as terrorism, income disparity, poverty, white-collar crime, volatile global markets, financial market complexities, interdependent organizational ecosystems, social justice, criminal behaviour, environmental pollution, climate change and international business regulations, remain unsolvable (Head, 2019; McMillan & Overall, 2016).

The *intractable* or *complex* nature of *OI* is similar to that of *wicked problems* (Crowley & Head, 2017). Both increase uncertainty, complexity and divergence (to multiple stakeholders; Head, 2008) and are non-linear, ambiguous and somewhat unsolvable (Curran, 2018; Head, 2008, 2019). Within a business or strategic management, that complex, nonlinear, dynamic and indeterminable problems are sometimes considered as chaotic (Levy, 1994; Smith & Paquette, 2010) under the chaos theory (Lorenz, 1963a, 1963b, 1964). Khalil's (1997) analysis of indeterminism using chaos theory and Knight's (1971) notion of risk and uncertainty are employed here to understand why responsibility remains indeterminable.

Indeterminism

Among the many statistical laws in physics, quantum mechanics and chaos theory as well as indeterminism (of chaos theory; Anderson, Kenneth & David, 1988) have generated considerable interest (Khalil, 1997).

Chaotic systems are unsolvable mathematical equations (Levy, 1994). Indeterminism in chaos theory emerges from the 'chance' or 'risk' in predicting an outcome, whereas quantum indeterminism arises from uncertainty. Risk arises from imperfect information, whereas uncertainty results from incomplete knowledge about an object (Khalil, 1997).

Consider an example of a coin toss. In principle, physicists can determine with 100 per cent accuracy whether the toss of a coin would result in a head or a tail. That is, the result depends upon factors such as the force or direction of toss, air friction and landing surface (Khalil, 1997). They cannot determine its definite outcome only because of ignorance of all

relevant information (Khalil, 1997; Laplace, 1951). If the observer is a ‘Laplacian demon’ with perfect information, then the toss’s outcome can be perfectly determined. However, humans are not ‘Laplacian demons’, and it is too impractical or costly to attain perfect information (Khalil, 1997). Indeterminism of the chaos theory is not very different from indeterminism of a coin toss (Khalil, 1997; Levy, 1994), which is a result of incomplete information. The other end of this risk or chance in determinism is uncertainty, and it is important to note the distinction between risk and uncertainty.

Knight’s distinction between risk and uncertainty

Knight (1972) distinguished between the ‘real’ doctrine of probability and ‘ignorance’ theory of probability to explain the difference between risk and uncertainty (Khalil, 1997). Within the real doctrine, uncertainty arises because future states are not factual as the agents are creative, and the creative acts make agents ‘uncertain’ about their ‘self-ability’, which keeps developing. In contrast, within the ignorance theory, ‘future states are facts in a world of certainty’ (such as weather fluctuations); however, such facts may not be perfectly available, and therefore, one can only formulate probability (risk or chance) about their occurrence (Khalil, 1997).

Within the management literature, principles of ignorance theory were studied as ‘bounded rationality’ (Cyert & March, 1963; Simon, 1957). The phenomena of business models, expectations and pertinent macroeconomic models do not represent Knight’s notion of uncertainty (Khalil, 1997). Instead, common usage of ‘uncertainty’ relates more to risk or low probability as expressed within chaos theory.

The transformation of uncertainty (of self-ability) to certainty (risk) is possible through learning and discovery (e.g. Bayesian learning: Ikeda, 1990; Khalil, 1997). Thus, uncertainty is different from risk or chance and the estimation of unique events or likelihood of occurrences.

Figure 1 depicts indeterminism as a representation of certainty on one end and uncertainty at the other. Certainty can be divided into ‘perfect certainty’ and ‘imperfect certainty’ (or risk). Imperfect certainty, discussed as indeterminism, is divided into ‘incomplete information’ and ‘complete information’. Incomplete information is a subjective risk based on ignorance. Complete information is an objective risk based on the prior statistical distribution (Khalil, 1997).

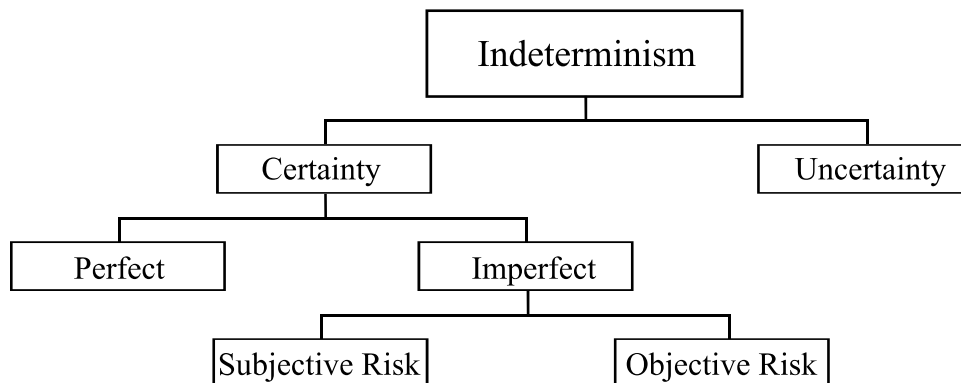


Figure-1: Indeterminism

(Adapted from Khalil, 1997)

This study does not review or explain chaos theory and thus does not consider mathematical equations, explanations of relationships between indeterminism and change or

application of chaos theory in strategic management. Theoretical works have already explored these concepts (Khalil, 1997; Levy, 1994). This study considers responsibility, its implications and its indeterminism, which, except OI, has not been dealt with in this manner.

Indeterminable responsibility

Indeterminable responsibility (IR) occurs when an agent (individual or organization) within a network of other agents, causes suffering (or harm) to others (in society) – but the reasons for suffering are attributed and distributed systemically (between agencies) so ‘suffering’ becomes an independent problem to solve.

Unlike physical systems, social systems (e.g. business environment) are subject to agency (individual or organization) intervention (Levy, 1994). Industries can be dynamic, complex and nonlinear (Levy, 1994) with diverse, complex and uncertain problems (Camillus, 2016; Head, 2008). Thus, the social world constantly deals with imperfect information (subjective risk). For example, interdependencies between various systems and subsystems produce complexities (Head, 2008), and activities in one dimension may produce unpredictabilities in another. Moreover, stakeholders’ divergence may make it difficult to arrive at the right answer (Barbara & Mitroff, 2014), and abundance of facts and data may create uncertainty (Fox & Miller, 1995).

Within the *responsibility-harm* context, the above situations imply that society, unlike ‘Laplacian demons’ has incomplete information about an outcome’s causation. It leads to a subjective risk in determining responsibility and assigning the cause of harm to an agency, thereby leading to IR. Theories on indeterminism confirm that although outcomes are unpredictable, they are patterned (Levy, 1994). For example, although the economy experiences

recessions and booms, their duration and depth are largely unpredictable (Butler, 1990).

Similarly, outcomes such as negative effects and social risk (Curran, 2018) may have a pattern of production, but one cannot link them to an agency due to the available information's nature.

OI (Curran, 2018) conjectures the same concern. However, although IR is closely related and is similar to OI, they differ in a few aspects. First, OI deals with risk and determination of the agent's culpability, whereas IR does not deal with the 'who'. Second, OI considers the harm's casualty (determining the agent responsible for the injury to create a better system; Curran, 2018), whereas IR considers the 'what' (determining the creation of the 'problem' rather than its creator). OI uses 'agent(s)' as the analysis unit, and IR uses 'products'. Last, whereas OI appears to deal with organized non-liability (Curran, 2018), IR deals with eliminating the futurity of social risk. Despite the similarities and differences, both are necessary, and neither may be sufficient to solve problems.

The 'what' and not the 'who'

Examining the proposed theoretical construct of IR seeks to expand the debate from the 'who' to the 'what'. Consider the example of NCDs cited in the first section. Applying OI directs the observer to examine who is responsible. IR explains that, because of agents' interdependencies, NCDs have become an independent problem to solve wherein agents may have no proactive role to play. Criminology or law is concerned with the 'who', and this understanding has spilled over to strategic management and policymaking.

Subjective risks are equally attributable to firms when they create and introduce products or services into the market but have incomplete information on their innovations' potential harm. There is usually a significant delay between emergence of innovation and understanding of its consequences regarding health and the environment (Owen et al., 2009; Pandza & Ellwood, 2013). There are two implications of this delay within IR: First, the number of agents involved has increased, leading to indeterminism. Second, significant investments and economic considerations may already be in play, thereby rendering any produced harm (e.g. NCDs) as a separate problem.

In a legal sense, the understanding of responsibility is derived from the question, 'who is responsible?' Similarly, OI questions the culpability and liability of the 'who'. According to Lucas (1993), the core concept of responsibility is 'why did you do it?' or who is responsible for doing something. Even shared and collective responsibility, as Lucas (1993) analysed, points to ways in which one person is responsible for others' acts.

IR suggests it may not be perfectly possible to determine or control the social environment (Smith & Paquette, 2010). Rationality or logical reasoning attempts to eliminate uncertainty (or chaos) through structures, order and control (Briggs & Peat, 1999; Smith & Paquette, 2010), such as within a 'legal structure' by assigning responsibility and subsequent accountability (Cornock, 2011). Thus, observed suffering in society, such as climate change, income equality, poverty and white-collar crime, raises the question, 'who is responsible?' In a complex social system, the answer is indeterminable; combined with economic compulsions, it induces the TINA effect.

Given the attention attributed to determining the ‘who’, the ‘what’ may get lost. For example, in the much-publicized Stanford Business School case on environmental sustainability at Walmart (Plambeck & Denend, 2007), the ‘who’ pressure on Walmart led to declining sales, which put pressure on it to act. Walmart took several actions by engaging stakeholders (as advocated by creating shared value; Porter & Kramer, 2011) and produced remarkable results (Plambeck & Denend, 2007). Although, their efforts were commendable, O’Toole and Voogel (2011) highlighted that Walmart continues to sell products in non-biodegradable and non-recyclable plastic packaging for economic reasons. Similarly, Whole Foods, which is committed to marketing sustainable food products and regarded as such, continues to sell meat because the sales are highly profitable, while meat production is widely regarded as environmentally destructive (O’Toole & Voogel, 2011). Similarly, tobacco or coal companies or companies mentioned in Moodie et al.’s (2013) report on causing NCDs may embrace multiple avenues of shared value, and their responsibility (towards causing harm) may remain indeterminable. However, it cannot be ignored that some of their core products may be related to harm. If the lens of asking ‘who’ is responsible shifts to ‘what’ is responsible (i.e. from the agent to the product), the responsibility may no longer be indeterminable.

Product as the analysis unit and determinable harm

The IR approach suggests that a product (or service), including its manufacturing and distribution processes, should be the analysis unit, since IR is about determining reasons for harm. This is different from the OI, risk or criminology approaches that adopt the ‘agent’ as the

analysis unit, since OI is about determining culpability. This is also different from sustainable and responsible innovations that adopt ‘innovation’ as the analysis unit and engage multiple stakeholders to anticipate possible future effects (Stilgoe et al., 2013). Responsible innovation is about being future-ready to deal with effects, whereas IR is about dealing with visible effects. This is also a departure from the shared value literature and theories (Porter & Kramer, 2011) using ‘value’ as the analysis unit and advocating creation of multiple sources and distributions of economic and social values. IR does not question value creation or capture but the ‘product’ that leads to value creation.

Responsibility studies (Lucas, 1993) also adopted individual, agency, or a collection of agencies as analysis units. This leads to attribution of harm to the ‘who’. Given the ‘who’, the ‘what’ is supposedly addressed. IR theory suggests adoption of the ‘product’ as the analysis unit and determines harm caused by the product, even if it is unattributable to the agency, as the agency may have had imperfect information. By adopting ‘product’ as the analysis unit, the observer of harm is essentially asking, ‘what is responsible’? This line of questioning may not uncover all responsible factors but does uncover the known reasons and presents them for action.

NCD research partly uncovered the products that may be leading causes of death and disease. If one is concerned with the ‘who’, it appears as an unending loop as explained by OI. However, if one is concerned with the ‘what’, the products are identifiable even if agency culpability is not, and TINA may no longer be a viable explanation.

Individuality within a capitalist system (Kasser et al., 2007) is often cited as the reason for harms’ co-creation. While this is valid consideration, studies acknowledged that organizations’ decision making is considered within the constructs of bounded rationality

(Argote & Greve, 2007; Cyert & March, 1963; Gavetti et al., 2012 Simon, 1957; i.e. imperfect information), whereas consumers are expected to make an entirely rational and informed choices. Consumers adopt innovations to create symbolic images (Hirschman, 1982) or display certain beliefs (e.g. environmentally sustainable products; Ozaki & Dodgson, 2015), not necessarily for utility alone. Moreover, consumers may be educated and conditioned to think about ‘agency’ (who) rather than ‘product’ (what).

Most emergent solutions as such try to make agencies or individuals ‘responsible’ or better governed. IR suggests the shifting of the analysis unit to the ‘product’ once the harm has been determined. Thereafter, the needed action can be taken. If X product causes Y harm, and Y harm is serious enough in societal implications, then, instead of ascertaining who is responsible for X, an alternative is to stop producing X (or innovating X) to, in turn, stop producing Y. Producing X, however, may be very determinable irresponsibility.

Harmless value creation

Baden and Higgs (2015) drew attention to the difference between means and ends. They suggested that when firms’ economic goals inflict social harm, the means and ends set up a trap of being unwise. Within business environments, society comprises members who are affected or can affect what the organization does (i.e. stakeholders; Baden & Higgs, 2015; Freeman, 1984). Porter and Kramer (2011) proposed an alternate view of creating shared value that involves creating economic value while solving societal challenges. O’Toole and Vogel (2011) cautioned that, while the ideas of shared value and social good are desirable, they do not constitute the only

viable business model, and market realities might limit businesses.

Regarding IR, harm can be attributed to certain products. If firms' products are harmful but create shared value, then is not the whole purpose of societal good counterproductive? The scalability of harm takes place at the same pace as the expansion of value.

The United Nations' (2015) 2030 agenda, for *people, planet, prosperity, peace and partnership*, highlights the critical need for balancing economic, social and environmental goals. It highlights progress in harmony with nature and freedom from violence. If the world steers toward this vision, harmful products, processes, and services appear to be a roadblock.

Using the product as the analysis unit, responsibility can be traced to harmful products. Causing harm is an act of violence, albeit, in this case, unintentional and untraceable. However, all five of the United Nations' agendas are unsustainable if harm is sustained.

Harmless value creation (HVC) is the *creation of products and services that do not negatively or adversely affect (harm) any stakeholder, including the environment*. HVC is a prequel to any shared value creation or social expansion model, because, unless value includes harmlessness, its scalability only propounds the problem. Whenever society, organizations or individuals are considered as sources of value creation and value capture (Lepak, Smith & Taylor 2007), fundamentally, unless the value created is harmless, it is, at best, irresponsible, and at worst destructive.

Porter and Kramer (2011) suggested that creating shared value strategically positions a firm for a sustainable future. This study would disagree if the product were harmful and would state that HVC should be considered, not as strategic positioning, but as a prerequisite for doing business and creating shared value. If the creations are harmful, they are potentially or even

literally destructive, no matter how novel or useful they appear to be. Thus, they may not be considered as creative, novel or appropriate.

Legal responsibilities rank higher than economic responsibilities (Baden & Higgs, 2015), and strategists, policymakers and scholars be cognizant of the fact that ‘causing harm or injury’ is a legal offense (Pellet, 2010). The literature on creativity suggests that perception of problems leads to creative solutions (Walia, 2019), and problem discovery triggers divergent thinking (Runco & Okuda, 1987). Even within strategic management, problem formulation triggers a search for subsequent solutions (Baer, Dirks & Nickerson, 2013; Lyles & Thomas, 1988). Nothing suggests that if ‘harmlessness’ were added as a construct within the norm of ‘problem perception’, then science would not have the means to innovate. Thus, TINA is an antithesis to creativity and innovation.

The HVC concept may also differentiate between *primary* and *associated* harms. Primary harm is caused by the use of a product (e.g. smoking a cigarette, burning coal, using non-recyclable plastic or using a nuclear weapon). Associated harm involves an agent’s imaginative use of a product, for instance, a kitchen knife used as a weapon while it is not primarily harmful. Similarly, the processes (and materials) involved in these products or services’ production may be considered as harmful or not.

Using practical knowledge to create HVC, while realizing that the same knowledge can create the opposite, may not only be wise (and a great service to the world) but also be the legally and morally right value to embrace, even if at an economic cost.

Discussion and conclusions

Businesses cannot address all global problems as there are many other players and institutions, such as governmental and non-profit organizations, that are essential to solving such problems (O'Toole & Vogel, 2011). This study discussed the outcomes of businesses known to be harmful and how such harm's responsibility is unattributable and untraceable. In identifying reasons for the responsibility's indeterminism, it emerged that incomplete information and subjective risks make the certainty imperfect. This finding led to defining IR, and the realization that harm (arising out of agency actions) tends to be an independent problem. This problem may not be for businesses to solve, but a basic understanding of responsibility indicates that businesses can stop creating or perpetuating harm once the 'product' is established as harmful.

Not all companies can adopt the tenets of conscious capitalism or shared value, as these require resources. However, sustainable production and harmonious development are a part of the United Nation's (2015) 2030 agenda. HVC is, then, not a 'good thing' but instead a threshold requirement.

This study introduced theoretical concepts of IR and HVC and raised many questions as a result. Firms need to be profitable to survive and grow. However, do they need harmful products to be profitable? Does society not have the innovation capability for HVC? Do policymakers have a legal responsibility to eliminate harm over and above the economic responsibility, or is it the opposite? Is there an over-reliance on self-regulation? After all, how is a company supposed to decide on abandoning a product when that may threaten its very existence?

These discoveries have many implications for strategic management, policymaking and research.

Implications for strategic management

Baden and Higgs (2015) challenged conventional wisdom that profit maximization is the ultimate goal of business. Porter (Crane et al., 2014) stated that businesses cannot solve all social problems and should not abandon their core purpose, but use strategic tools to address problems. Dembek, Singh and Bhakoo (2016) suggested that shared value is ‘currently more of a buzzword’. Capitalism allows firms to pursue individualism and profit maximization (Kasser et al., 2007). However, doing so in an unwise and socially irresponsible manner is not viable or sustainable (Baden & Higgs, 2015). The growing scrutiny of business practices (Baden & Higgs, 2015; Curran, 2018; Moodie et al., 2013) suggests that consumers are likely to become more aware and conscious; thus, HVC may be a profitable strategy.

Strategists and decision makers acknowledge that sustaining harm (e.g. plastic packaging, environmentally destructive processes and harmful products) for profits is fundamentally against harmonious prosperity (United Nations, 2015). Proactive innovations may be more productive than reactive corrections (once there is no choice).

Decision makers may also take note of IR and recognize that although the creation of ‘harm’ within the principles of indeterminism is a separate problem, once the damage is attributed to a firm, the costs are monumental. For example, the estimated costs from legal proceedings against firms cost over \$30b for Volkswagen and over \$61b for BP (Macalister, 2016; Schwartz & Bryan, 2017). Although such high fines may not be the norm, they can become an existential risk.

Implications for policymaking

Moodie et al. (2013) warned that powerful firms employ senior and influential bureaucrats to manage corporate affairs to shift policy in their favour. They may well be succeeding. In discussing risk, Beck (1992, pp. 134) stated, ‘institutions shape biographies’, and that institutions act in legally determined categories that do not often conform to reality. There is a growing disdain in political capital (Nichols, 2017) and a widespread lack of trust in public institutions (Head, 2019). The politics of risk definition (i.e. who defines risks and on which grounds) are critical (Beck, 1999). The emergence of knowledge and understanding of risk require a policy response (Head, 2014).

Policymakers should be cognizant that although the agency’s culpability may remain elusive, suffering or harm, as a result of certain products, is still being caused. Harm and the associated risks are determinable to the product. If causing harm or injury is indeed a violent act and legal crime, then turning a blind eye may be considered irresponsible because inaction is also a decision. Indeterminism may be a technical reality, but should that be allowed to be a justification? While policymaking seems to encourage responsible future innovation by engaging multiple stakeholders (Guston, 2015; Stilgoe et al., 2013), this study implores policy action on HVC.

Thus, policymakers may influence, direct or regulate businesses to create products and services that are fundamentally harmless, specifically when harm is adequately established. Chaos theories of indeterminism also point out that patterns of competitive behaviour may be the same between firms in an industry or between countries (Levy, 1994). Thus, regarding competitive advantage, inaction may cause a loss. This study, however, suggests that although

there may be economic costs, HVC may be a strategic advantage and essential to achieving the goals outlined in the United Nation's (2015) vision for 2030.

Implications for research

Given the complexities of indeterminism, micro-processes needed for HVC, and difficulties in defining appropriateness (of novelty), as what is valuable to one may be harmful to another, further research may examine how these processes can be simplified and explained across multiple analysis levels.

Society, firms, individuals and polity may have competing interests regarding value (Lepak et al., 2007). Therefore, an important area for research is developing a holistic model of value creation that does not compromise one interest over another but integrates interests in a harmless win-win manner. This study examined HVC from a 'product as a unit' perspective. HVC can be examined using many different analysis units, such as an employee perspective within an organization, citizen's perspective within a society, behavioural perspective regarding leadership, decision-making perspective within firms and problem perceptiveness regarding creativity and innovation.

The source of value creation may be different from the source that exploits it (Teece et al., 2016). Indeterminism may be applicable as decisions that lead to a harmful creation may be untraceable. Further research is needed to examine decision makers' assumptions about factors such as stakeholders, goals and value that may help or hinder HVC. For example, are creation

and innovation viewed as so complex that, rather than going back to the drawing board, influencing policymaking or covering track through OI is the more viable option?

Kasser et al. (2007) suggested that individuals pay a psychological price for capitalist goals. Thus, they may suffer from lack of self-esteem or unhappiness, suggesting individual-level harms. Research may examine how an economic system (that must produce profit for a firm) may be psychologically compatible (in creating positive effects or HVC for employees).

In conclusion, IR and HVC may appear to be complex subjects given the nature of conflicting demands needed to integrate multiple units of analysis within various theoretical disciplines and the indeterminism that presents itself against possible solutions. This may raise more questions than answer existing ones. Moreover, harmless creation is not just a need or just the right thing to do. At the thematic level, it is an essential requirement (i.e. the need to add the word 'harmless' to creation itself is a demonstration of urgency). The author is hopeful that this introduction will lead to further debate and development regarding IR and HVC. A broader understanding and multiple perspectives may help achieve the goals of *people, planet, prosperity, peace and partnership*.

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