Entrepreneurship Theory and Practice

Peer-reviewed and accepted version

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Niklas Elert and Mikael Stenkula

Published version: https://doi.org/10.1177/1042258720964181

Research Institute of Industrial Economics
P.O. Box 55665
SE-102 15 Stockholm, Sweden
info@ifn.se
www.ifn.se

Intrapreneurship: Productive and Non-Productive

Niklas Elert[*] Mikael Stenkula

Research Institute of Industrial Economics (IFN),
Box 55665, SE-102 15, Stockholm, Sweden[**]

Abstract: Researchers increasingly recognize that entrepreneurial employees, intrapreneurs, play a critical role in innovation. As with regular entrepreneurship, however, the value of intrapreneurial activity depends on the firm-specific and societal reward structures that intrapreneurs face. Ideally, these rules of the game are such that they reward intrapreneurship that is beneficial for the firm *and* the economy. When this is not the case, intrapreneurship can be beneficial for the firm but not for society, damaging for the firm yet beneficial for society, or downright non-productive. We offer a taxonomy describing how society's rules and firm rules interact to produce different intrapreneurial outcomes.

Keywords: intrapreneurship, entrepreneurship, entrepreneurial behavior

JEL-codes: D02, J24, L26, M14, O17, O31

[*] Corresponding author. Tel: +46-703-90 27 51.
E-mail-addresses: niklas.elert@ifn.se, mikael.stenkula@ifn.se.
[**] We are grateful for useful comments and suggestions from Caleb S. Fuller, Joshua C. Hall, Magnus Henrekson and participants at the 88th Annual SEA conference in Washington, DC. We acknowledge financial support from the Jan Wallander and Tom Hedelius Foundation and the Marianne and Marcus Wallenberg Foundation.

1 Introduction

There is a growing recognition that entrepreneurial employees, or intrapreneurs, are part of the main cast in the story of innovation and economic growth. Pinchot (1985) described intrapreneurs as "[t]hose who take hands-on responsibility for creating innovation of any kind, within a business," while Parker (2011, p. 19) defines intrapreneurship as "the practice of developing a new venture within an existing organization, to exploit a new opportunity and create economic value." Existing research indicates that intrapreneurship may be as crucial for welfare in developed economies as independent entrepreneurship (Stam, 2013), and most researchers operate definitions that assume that intrapreneurship is unequivocally positive for society (a notable exception to which we will return is Foss et al., 2007). This positive impression is reinforced by anecdotal evidence of successful innovation resulting from employees' creativity and initiative, rather than top-down decrees; examples are Google's Gmail, 3M's Post-It Notes, and Amazon's Drones (Knippen, 2017; cf., Pongracic, 2009).

In this paper, we question whether intrapreneurship is always beneficial, for society or for the firm where it occurs. We argue that the rules of the game that the intrapreneur faces determine whether intrapreneurial talents flow to productive, unproductive, or destructive purposes (Baumol, 1990). Furthermore, the intrapreneur's presence *within* a firm means that the relevant rules appear on two levels: the societal level and the firm level. In practice, this means that the analysis entails three levels, including that of the individual intrapreneurial decision maker. If the two institutional levels prescribe different courses of action, engaging in intrapreneurship may necessitate the breaking of at least one set of rules. Consequently, intrapreneurship that is productive or destructive for the firm need not be so for society at large. In exploring these insights, we develop a taxonomy of how society's rules and firm rules interact to produce different intrapreneurial outcomes. We identify four core scenarios depending on the outcome and level of analysis. First, while there are intrapreneurial activities that are beneficial for the

firm *and* the economy, the opposite can also be the case. Moreover, intrapreneurial activity can be destructive for the firm yet beneficial for the economy, and vice versa. Appreciating these differing intrapreneurial outcomes will be beneficial for future research on intrapreneurship, and for policymakers striving to promote innovation and economic growth.

2 Intrapreneurship: Reexamining the Concept

2.1 Is intrapreneurship always beneficial?

Business-related academic fields broadly refer to entrepreneurial activities within established firms as "corporate entrepreneurship", but there is no universally accepted definition (Sharma & Chrisman, 1999; Kuratko et al., 2015). Birkinshaw (2003) disentangles (at least) four strands of literature with different assumptions and objectives: corporate venturing, intrapreneurship, bringing the market inside, and entrepreneurial transformation. Scholars within the intrapreneurship tradition focus on employees and how firm structure and culture affect their entrepreneurial activities. The literature also discusses how employees can abide by or shape firm rules and how managers can affect employees' intrapreneurial intentions. Here, intrapreneurship is commonly seen as a prerequisite for firms to change and survive in the long run. The growing attention is accompanied by attempts to measure intrapreneurship. Since 2011, the Global Entrepreneurship Monitor (GEM) measures country level intrapreneurship, defining intrapreneurs as individuals who continuously develop new business activities for their primary employer. The definition is representative in treating intrapreneurship as a productive endeavor in the sense that it increases the joint surplus, and should be encouraged.

We challenge the outlook that intrapreneurship is always beneficial. Admittedly, some evidence indicates that intrapreneurship helps managers to revitalize firms, to innovate, and to enhance their overall business performance (Kuratko et al., 1990; Antoncic & Hisrich, 2001). However, firms do not necessarily perceive intrapreneurship in a positive light. Analysis of 2,000 medium-sized tech-businesses suggests that intrapreneurs often end up in an adversarial role:

"Intrapreneurs are very important to the company but they are seen as enemies because they question long-standing paradigms" (Baltes, 2016). But is a company always unwarranted in seeing the intrapreneur as an enemy? Not necessarily.

2.2 The Schumpeterian-Baumolian view of entrepreneurship

Schumpeter's conception of the entrepreneur as the person responsible for innovation—defined as the creation and commercialization of new combinations of (old and new) knowledge—is an obvious starting point for thinking about intrapreneurship: Pinchot (1985), who coined the term, explicitly described intrapreneurs as "[t]hose who take hands-on responsibility for creating innovation of any kind, within a business." And while there are other important conceptions of what entrepreneurs do (Hébert & Link, 2006; Foss & Klein, 2012), such as being alert to opportunities (Kirzner, 1973), and exercising judgment under uncertainty (Knight, 1921), the Schumpeterian perspective has high empirical relevance; Baumol (2010) estimates that more than nine tenths of the rise in GDP per capita since 1870 can be attributed to innovation.

Schumpeterian researchers consequently see the entrepreneurial innovator as the *primus motor* for economic growth (Henrekson & Stenkula, 2016). That said, wide-tent definitions of entrepreneurship successfully incorporate several aspects simultaneously; for example, Leyden and Link (2015) conceive of entrepreneurship as the (Schumpeterian) process of acquiring knowledge to produce innovations while dealing with (Knightian) uncertainty (for other wide-tent definitions, see, Henrekson & Stenkula, 2016; Wennekers & Thurik, 1999). Whereas our conception of intrapreneurship is Schumpeterian at its core, we also take Knightian uncertainty into account, to add further realism to the model we shall eventually propose.

To Schumpeter (1934), innovations could take various forms in addition to mere technological improvements. He enumerated five such forms: the introduction of a new good, the introduction of a new method of production, the opening of a new market, the conquest of a new source of supply, and the carrying out of the new organization of any industry (1934, p. 66; cf. OECD,

2010). Arguably, most of the innovative acts that Schumpeter lists could be carried out by intrapreneurs as well as by independent entrepreneurs (cf. Pinchot, 1985). That said, Baumol (1990) extends Schumpeter's list by hypothesizing that entrepreneurs use their talents to maximize their own utility rather than social welfare.

Thus, Baumol "undermines a fundamental assumption of most theories of entrepreneurship, namely, that entrepreneurship is always beneficial" (McCaffrey, 2018, p. 6). Instead, the social reward structure for economic behavior affects the allocation of entrepreneurial talent (cf. Murphy et al., 1991). In practice, this means that a society's institutions—the formal and informal rules of the game (North, 1990)—influence the nature of entrepreneurial activities, and whether they are productive (corresponding to a bigger social pie), unproductive (the size of the pie remains unchanged), or destructive (the pie shrinks). In neoclassical production terms, the distinction corresponds to an outward (productive) shift, a non-shift (unproductive), or an inward (destructive) shift in the production possibility frontier (Coyne & Leeson, 2004). Although all types of entrepreneurial activity occur in all societies (e.g., Acemoglu, 1995; Desai & Acs, 2007; Coyne & Leeson, 2004; Smallbone & Welter, 2002; Sobel, 2008), their relative allocation appears important determinant for each society's level of welfare and growth rate.

Different contexts carry different welfare implications for different people (Davidson & Ekelund, 1994; Desai & Acs, 2007), and Baumol (1993) himself acknowledges that his categorization is not always straightforward.[1] Still, the distinction has proven an intuitive and appealing way of classifying activities that require entrepreneurial talent (see, e.g., Minniti, 2008). Notably, it offers an important benchmark for judging the outcome of the entrepreneurial process, which, we argue, can also be extended to judge the outcome of the intrapreneurial

[1] Valuable innovations sometimes do not leave traces in national income statistics (Mokyr, 2010, p. 257; Coyle, 2014). Also, social value creation is determined relative to the individual's next best alternative, and institutions constrain the relevant alternatives (Lucas & Fuller, 2017). Thus, sometimes one can view non-productive entrepreneurship as second-best productive responses to bad institutions (Douhan & Henrekson, 2010).

process. That said, as "many studies imply that there is little difference between unproductive and destructive entrepreneurship" (McCaffrey, 2018, p. 187), some researchers group the unproductive and destructive categories together, usually under the label "non-productive" (cf. Sobel, 2008; Coyne et al., 2010; Douhan & Henrekson, 2010), an approach we shall follow.

"To derive more substantive results from an analysis of the allocation of entrepreneurial resources," Baumol (1990, p. 897) expands Schumpeter's list with "such items as innovations in rent-seeking procedures, for example, discovery of a previously unused legal gambit that is effective in diverting rents to those who are first in exploiting it." His subsequent historical account illustrates how flawed rules of the game can result in entrepreneurs leading "a parasitical existence that is actually damaging to the economy" (p. 894),[2] before highlighting rent seeking as the type of unproductive entrepreneurship that seems most relevant today. In an empirical study finding support for Baumol's central argument, Sobel (2008) makes a distinction between "investing entrepreneurial energies into productive market activities versus unproductive political and legal activities (e.g., lobbying and lawsuits)." According to Foss and Klein (2012, p. 197), "(r)ent-seeking, influence activities, and even fraudulent or criminal behavior, both inside and outside organizations, can be modeled as 'entrepreneurial' … but with questionable social benefit." The list can be expanded to include other (creative and non-routine) activities that are likely to result in a net reduction of social income and wealth.

Baumol's argument has been influential among economists interested in entrepreneurship (e.g., Boettke & Coyne, 2003; Sobel, 2008; Boettke & Leeson, 2009; Elert & Henrekson, 2017), and also been integrated into core concepts of entrepreneurship theory, e.g., by Eckhardt and Shane (2003) who identify the choice between productive and unproductive entrepreneurship as a

[2] For example, Medieval warfare in Europe "inspired frequent and profound innovation", but pursuing "wealth through the forcible appropriation of the possessions of others surely does not add to the national product. Its net effect may be not merely a transfer but a net reduction in social income and wealth." (Baumol, 1990, p. 904)

major source of entrepreneurial opportunity. Surveying Baumol's impact, McCaffrey (2018) states that "entrepreneurship research now regards Baumol's theory as correct, and even foundational" (cf. Davidsson, 2016), before outlining two relevant strands of criticism. According to the institutional critique, the relationship between institutions and entrepreneurs is bidirectional, in that entrepreneurs can affect institutional change (cf. Douhan & Henrekson, 2010; Elert & Henrekson, 2017). The second criticism, associated with, e.g., Foss and Klein (2012), argues that key Baumolian insights "can be retained without using the Schumpeterian, innovation-based framework on which it has so far been based" (McCaffrey, 2018, p. 15). In this view, the chief problem with Baumol's theory is that it takes no account of uncertainty or judgment. We draw on both critiques when extending Baumol's theory to intrapreneurship.

2.3 Extending Baumol's framework to intrapreneurship

Even though researchers have embraced Baumol's (1990) fundamental insight, among the few who draw the corresponding implications for intrapreneurship are Foss et al. (2007), who explore the idea that intrapreneurship can destroy value (see also Foss & Klein, 2012). Drawing on Knight (1921), they argue that firms exist as manifestations of entrepreneurial judgment under uncertainty. Entrepreneur-owners can delegate this judgment, effectively making employees proxy-entrepreneurs in a nested hierarchy of judgment. However, "[d]elegated rights can be used in both beneficial and harmful ways, presenting managers with a tradeoff between encouraging beneficial entrepreneurship and facilitating harmful entrepreneurship inside the firm" (Foss et al., 2007, p. 1893). Managing the tradeoff between productive and destructive proxy-entrepreneurship becomes a critical management task, for which ownership plays a key role, since it "conveys the right to define key elements of this organizational structure" (Foss & Klein, 2012, p. 220, cf. Foss & Klein, 2015).

While this paper is indebted to Foss et al.'s (2007) Knightian take on intrapreneurship, we believe there is added value to approaching intrapreneurship from a Schumpeterian-Baumolian

perspective, both for emphasizing innovation (in line with Pinchot's 1985 conception of intrapreneurship), and for putting institutions front and center. Appropriately extended, a Baumolian framework reveals how the rules of the game at different levels of social analysis shape the productive character of intrapreneurship in heretofore unanticipated ways, and how intrapreneurship shapes those rules in turn. Yet, we acknowledge that like all entrepreneurs, intrapreneurs operate under Knightian uncertainty and make judgments about the future state of the world (Foss & Klein, 2012; cf. McCaffrey, 2018). Hence, intrapreneurship is an innovative process that takes place under uncertainty (cf. Leyden & Link, 2015). This approach reveals that intrapreneurship is at least as multi-faceted a phenomenon as entrepreneurship.

Applied to intrapreneurship, Baumolian logic implies that core *intrapreneurial* talents are used to maximize individual utility rather than firm profits or social welfare. The rules intrapreneurs face help determine whether their activities will be productive, unproductive, or destructive, but these rules appear on two social levels: the firm level and the societal level. For example, whereas social security and labor-market regulation appears to affect the allocation of entrepreneurial talents between intrapreneurship and entrepreneurship **(**Liebregts & Stam, 2019; Elert et al,. 2019), the intrapreneur faces firm-level rules that may cover everything from explicit intrapreneurship policy, to intra-company trust and other workplace norms (Antoncic & Hisrich, 2001). The recognition that entrepreneurs face different levels of institutions, with different effects and persistence is not new (Elert & Henrekson, 2016; Bylund & McCaffrey, 2017), but that this is so also for the intrapreneur has yet to be appreciated. For example, Foss and coauthors only discuss the organizational context within the firm as relevant for intrapreneurship (Foss et al., 2007; Foss & Klein, 2012).

As we shall argue, the two sets of rules are sufficiently distinct to be separated analytically, and taking both into account has substantial ramifications for the outcome of the intrapreneurial process, since the institutional dynamics between different levels can result in situations when

an intrapreneurial action undertaken by an employee can be harmful to the firm but beneficial for society at large, and vice versa. The chief implication is that assessments of whether intrapreneurship is productive or non-productive look different depending on whether one applies a firm perspective or a societal perspective, and both are needed. In practice, this means that the analysis encompasses three levels, including that of the individual (intrapreneurial) decision maker. To understand the overall incentive structure faced by the intrapreneur, we will provide a clearer view of the institutional interplay in the next section.

3 Institutional Context and Intrapreneurial Responses

Many researchers discussing the specific roles of firms and markets emphasize how a firm offers a common set of rules or institutions (e.g., Hayek, 1973; Vanberg, 1992; Langlois, 1995; Sautet, 2000). According to Vanberg (1992, p. 242–243), "the essential definitional attribute of an organization is that a group of persons, for whatever interests or goals, submit with some of their resources to certain constitutional constraints, to a set of common rules …" Moreover, society's rules differ from those of an organization such as the firm "because the problems that arise when people interact in market settings are characteristically different from those that occur in organizational settings" (p. 245). It is therefore essential to consider the rules an intrapreneur faces at the firm level *and* the societal level, though it is possible to conceive of several layers of societal rules (cf. Williamson, 2000).[3]

Coase (1937) described firms as islands of planning in a sea of market relationships. In reality, the Hayekian knowledge problem—the fact that information is not only important and incomplete (and thus expensive) but also *tacit* and *dispersed* (Hayek, 1945) —is consistently present within firms, and increasing with size (Foss, 1997). Firms cannot centralize their

[3] Vanberg (1992, p. 225) argues that a constitutional account "provides a perspective that consistently combines both an individualist methodology and an account of organizations as corporate actors." In Williamson's (2000) hierarchical model of institutional systems, what we label as firm level rules correspond to the governance level L3, while societal rules correspond to the formal institutional level L2 *and* the informal institutional level L1.

internally dispersed knowledge, only attempt to coordinate it by inducing employees to act upon the knowledge only they possess, (Sautet, 2000; cf. Foss, 1997, p. 29), promoting the kind of intra-firm learning and local discoveries that appear critical for (productive) intrapreneurship. Perspectives that see intrapreneurship as something unequivocally positive therefore stress that companies that are decentralized or employ less formal management control tend to have more (productive) intrapreneurs, as do firms combining formalized and established routines for innovation with encouragement and support from the top management (cf. Hornsby et al., 2002). One example is the famously intrapreneurial firm 3M's policy that employees can devote 15 percent of their time to realize their own ideas (Pongracic, 2009).

Intrapreneurial firms also strive to cultivate structures of shared meanings, e.g. creating a feeling of common cause among employees through norms encouraging creative and hard work (Ebeling, 1999; Pongracic, 2009). Yet, this greater autonomy risks yielding inferior incentives and efficiency compared to hierarchy and ultimately, to "golden opportunities"—situations where a person believes that there is no chance of being detected if he or she behaves opportunistically (Frank, 1988; Pongracic, 2009; Rose, 2012). Arguably, the freedom required to be a productive intrapreneur is also the freedom to be a non-productive intrapreneur (Foss & Klein, 2012, p. 201).

In addition to firm rules, the intrapreneur also faces society's rules, and firm-level factors likely often interact with society's institutions to shape intrapreneurial incentives (cf. Mahoney & Thelen, 2010). For example, nations characterized by high trust (an informal, societal institution) likely have more firms with a decentralized governance structure, as managers consider their employees to be more reliable (Rose, 2012), whereas strong employment protection legislation (a formal, societal institution) may cause firms to contract out more work, relying less on intrapreneurship (Roman et al., 2011). Whether firm reward systems like stock options are attractive also depends on societal institutions like the tax system (Elert et al., 2017).

This interaction between societal and firm rules is not always conflict-free, and "may allow unforeseen changes in the ongoing distribution of resources" (Mahoney & Thelen, 2010, p. 8).

Conceptually we can distinguish between four types of interplay between two (sets of) institutions (Voigt, 2017). First, institutions can be *neutral* because they regulate separate areas of social interaction. Second, institutions can be *complementary*, sanctioning non-compliance in the same way. High generalized trust may, e.g., increase firm management's willingness to increase job autonomy and spur intrapreneurial activity. Third, two institutions can be *substitutive*, meaning that non-compliance is sanctioned by the one or the other—stealing is a crime even if the firm has no formal rule against theft, and while lying may not be punishable in a court of law, a firm policy that prohibits it accords with society's moral framework. In neither instance is there any real ambiguity between institutional levels, but whether this results in productive or unproductive activities depends on the content of the rules—if society's institutions facilitate rent-seeking and firm-level rules permit the seeking of subsidies, this alignment will likely yield unproductive intrapreneurship.

Finally, the institutional relationship becomes *conflicting* (DiMaggio & Powell, 1991; Seo & Creed, 2002; Elert & Henrekson, 2017) when societal and firm-level institutions prescribe opposed courses of action. Such misalignments, or mere perceptions or threats of misalignments, create institutional uncertainty, with which actors such as intrapreneurs must cope by using judgment (Bylund & McCaffrey, 2017). To abide by society's institutions, the intrapreneur may then be forced to break firm rules, or vice versa. Which set of rules end up dominating depends as much on the individual intrapreneur as on the strength of the rules. Moreover, that rules favor a particular course of action does not mean that all economic actors are content with following them—when it suits their purposes, entrepreneurial individuals appear particularly likely to bend, circumvent, or break rules (Obschonka et al., 2013; Elert & Henrekson, 2016). This tendency not to passively accept rules explains why the relationship

between institutions and entrepreneurship is likely bidirectional rather than unidirectional (e.g., Douhan & Henrekson, 2010; Elert & Henrekson, 2017).

This important nuancing of Baumol's (1990) perspective suggests that intrapreneurs may be capable of changing the constraints they face, directly or indirectly. Such changes can be either productive, unproductive, or destructive in nature, but the igniting spark that make changes likely has to do with rule conflicts and ambiguities that "provide critical openings for creativity and agency" (Mahoney & Thelen, 2010, p. 10). Bylund and McCaffrey (2017) argue that entrepreneurs can use their judgment to both cause and mitigate the institutional uncertainty resulting from conflicts between institutions on different levels. And while abject rule-breaking is often perceived as a problem that may impede economic development (McBarnet, 2006; Rose, 2012; Nurse, 2015), a conflict between what firm rules and societal rules prescribe may make it necessary to choose which rules to break—and if those rules are flawed, deviations *can* be beneficial, e.g., by enabling productive intrapreneurship. Intrapreneurial rule-breaking is less likely when societal and firm rules are complementary (Voigt, 2017), but whether this results in productive intrapreneurship depends on the content of the rules. Especially in times of rapid change, economic adaptability and development may be difficult to achieve if actors operate strictly within the limits of existing rules (Etzioni, 1987; Thierer, 2016).

4 Intrapreneurship: Productive or Non-productive

4.1 The model

A consequence of the interplay between the intrapreneur and the two rule levels is that while an intrapreneur may engage in innovative activities that are beneficial for society *and* for the employer, such a harmonious outcome cannot be taken for granted. Figure 1 describes the situation for an intrapreneurial employee facing the rules of the firm and of society, classifying intrapreneurial outcomes depending on whether they are beneficial (+) or harmful (–) for society and/or for the firm, taking into account the fact that a particular outcome can come about

in several ways (e.g., a positive outcome may occur either because an individual follows a beneficial rule or disregards a harmful rule). The figure aims to structure the discussion and does not claim perfect and mutually exclusive categorization; on the contrary, the intrapreneur can engage in several of these responses, either simultaneously or sequentially. However, intrapreneurial action aimed at innovation is always surrounded in uncertainty (McCaffrey, 2018), suggesting that intrapreneurship can become non-productive in two ways: first, as Baumol (1990) recognizes, when an intrapreneur anticipates that the rewards to non-productive activities will be relatively greater and chooses to pursue them; second, welfare outcomes are always uncertain in advance, a fact that may be particularly true when low-quality rules (at the firm level or the societal level) interfere with intrapreneurs' decision-making and distort their judgments (cf., McCaffrey, 2015).

Moreover, the model implies that the entrepreneurially gifted individual has, at least temporarily, made the (conscious or unconscious) choice to become an intrapreneur, rather than an independent entrepreneur who starts a firm.[4] This choice is shaped by societal rules, such as employment legislation and the social security system that often impose a heavy opportunity cost on an individual leaving safe employment to start a firm (Elert et al., 2019). These and other barriers to new firm entry may make the choice to pursue intrapreneurship a second-best route (Lucas and Fuller, 2017), but the option to become an entrepreneur will always be available to the intrapreneur and cast its shadow over model outcomes (perhaps especially so for Scenario B).

[Figure 1]

Scenario A is straightforward: the intrapreneurial activity is beneficial for the firm *and* society. Such *fully productive intrapreneurship* is analogous to productive entrepreneurship, as it

[4] Employees can also choose *not* to be intrapreneurial. The prior literature that sees intrapreneurship as unequivocally beneficial has studied this "choice", implicitly or explicitly. In Baumol's vein, we believe that it is more useful to focus on those individuals who do behave intrapreneurially, to see how they channel their talents.

commonly takes the form of a novel combination of knowledge that is commercialized in the form of a new product or service that the firm recognizes that it can sell for a profit, resulting in increased consumer surplus or societal well-being. This innovative process is always subject to uncertainty and therefore requires judgmental decision-making, as suggested by the development of Post-It notes at 3M: It was far from evident that Arthur Fry's experimentation with a new kind of glue would amount to anything useful, and the development took several years and faced substantial opposition within the firm. Still, Fry persisted. That he could do so was largely a result of 3M's policy permitting their employees to devote 15 percent of their time to realize their own ideas (Pongracic, 2009).

This forcefully illustrates that rule quality (at the firm level or the societal level) will affect the intrapreneur's decision-making processes, helping or distorting their judgments (McCaffrey, 2018). As such, fully productive intrapreneurial ventures often come about in conducive corporate environments with clear and well-established procedures and norms that support employee initiatives and reward productive intrapreneurial activity. Such an environment is likely easier to achieve when society's rules are supportive, i.e., when the two rule levels are complementary *and* conducive to productive activity. Yet, it is possible to conceive of situations when this is not the case, e.g., when a multinational firm locates in an underdeveloped country with poor institutional quality. An intrapreneur may then be forced to break society's rules in order to follow firm's rules, but the result may still be beneficial for the firm *and* for society.

Scenario B is a case of *mainly productive intrapreneurship*, in the sense that the intrapreneur's innovation is beneficial from a societal point of view but harmful for the firm. This may occur when the intrapreneur attempts to commercialize a novel combination of knowledge into a product or service that undercuts the firm's business model, consumes resources which are dearly needed elsewhere, or is considered a waste by firm management. The uncertainty of the intrapreneurial process means that such adverse effects are rarely foreseen in advance, but more

likely when the two rule levels conflict, with one set being unconducive to intrapreneurship: For example, firm-specific factors such as organizational inertia, cultural resistance, and a lack of incentives may make established firms resistant to socially productive internally generated innovations (Ford & Probert, 2011). Formal firm rules may also (unintentionally) discourage innovations, e.g., by requiring employees to devote a considerable amount of their time to following detailed protocols and filling out reports (Erixon & Weigel 2016, p. 68ff). Disregarding firm rules and norms may then be necessary to generate a socially productive outcome.[5]

Scenario B can also occur when societal and firm rules align, e.g., if the firm has made an over-commitment to current customers (Ford & Probert, 2011). In such instances, innovations rarely go beyond the prototype stage. Arthur Fry's development of Post-it notes at 3M almost suffered this fate, but the initial skepticism eventually gave way to the decision to produce and sell what would become one of the firm's most successful innovations (Pongracic, 2009), turning it into an example of fully productive intrapreneurship. A less successful case occurred when Nokia rejected an employee's touch-screen smartphone prototype without a hard keyboard three years before the launch of the first iPhone (Erixon & Weigel, 2016, p. 128). Nokia's specialization became a chief impediment to the innovation since its application charted a different future than the one in which the firm had invested. Similar developments occurred at Kodak (analog vs. digital cameras) and Facit (mechanical vs. digital calculators) (Sandström, 2010). That said, uncertainty means that failure is a potential outcome of all intrapreneurial processes, and firms and employees may learn from abandoned projects to develop successful innovations in the

[5] Another activity that could, at first glance, be deemed to fall into category B is whistle-blowing, i.e., when an employee exposes firm information or behavior that is illegal or unethical, such as fraud or corruption. While damaging for the firm, such actions are usually beneficial for society. Whereas whistle-blowers take on a high degree of uncertainty, it is difficult to classify them as Schumpeterian intrapreneurs, since they seldom innovate.

future. A firm culture with some tolerance of failures likely helps spur fully rather than mainly productive intrapreneurship (Tian & Wang, 2014).

Scenario B is intimately related to the aforementioned choice between intrapreneurship and entrepreneurship, since it often causes the employee to leave and start a new firm. *Inc.500's* 1989 list of the 500 fastest-growing private companies in the U.S. saw 71% of 100 founders report that they were developing an idea first encountered in previous employment (Bhidé, 2000). Conflict and disagreement between R&D workers and their managers lie at the root of many spinoffs and spinouts (Klepper, 2009; Klepper & Thompson, 2010), and firms appear to make extensive use of ideas that employees first developed at a prior employment (Singh & Agrawal, 2011). In fact, a spinoff can be seen as an intrapreneur's attempt to bypass a lower set of rules that are deemed too constraining, since he or she will only have to deal with society's rules when becoming an entrepreneur (cf. Bylund & McCaffrey, 2017).[6] The ensuing competition likely harms the former employer but may be outweighed by the fact that a socially desirable idea ends up being exploited, while forcing the former employer to reinvest profits in innovations to keep its market position.

Scenario C describes *mainly non-productive intrapreneurship*, meaning that an intrapreneurial activity is beneficial for the firm but harmful to society. This situation becomes more likely when firm rules and norms prescribe different actions than society's rules. Notably, many large firms employ lobbyists skilled at navigating the regulatory process, acquiring transfers, and engaging in unproductive activities, which, if they contain a sufficiently novel or creative element, can reasonably be labeled intrapreneurship. In the extreme, this category extends to white-collar crimes and activities that can, at a minimum, be deemed to harm society.

[6] The same is the case for so-called "side-hustles" – hybrid situations when an employee pursues an innovation outside the firm without actually leaving the firm (Folta et al. 2010; Raffiee & Feng 2014).

The creation of Collateralized Debt Obligations (CDOs) or credit default swaps to help firms avoid capital requirements by technically removing risk from the balance sheet may be one such example, as such financial instruments constitute novel combinations of knowledge. However, given the inherent uncertainty of the intrapreneurial process it is less apparent that the instruments' creators intended them to be non-productive for society. Another example is environmental misbehaviors, which "often eclipse the scope and reach of the criminal law" (Sollund, 2012, p. 3) and become possible because companies arm themselves with employees with intimate knowledge of a weak environmental regulatory regime, which they use to circumvent or even break laws regulating, e.g., pollution and toxic waste disposal (Nurse, 2015). However, the firm and its intrapreneurs may see such seemingly non-productive intrapreneurial activity as necessary inputs for productive activities (Lucas and Fuller, 2017).

Finally, in scenario D, we are dealing with *fully non-productive intrapreneurship*, which is harmful to the firm *and* to society. Just like Baumol's non-productive entrepreneurs often rent-seek against society, employees in this category often use their intrapreneurial talents to maximize a firm division budget even though resources are better needed elsewhere, or engage in other zero- or negative-sum games. In a British survey, most firm managers state that to succeed, they have to play politics at least part of the time, and 83% concur that "politics is played at all organizational levels" (Buchanan, 2008). Again, however, uncertainty shrouds all such activities, notably uncertainty of the institutional kind (Bylund & McCaffrey, 2017), suggesting that such non-productive intrapreneurial behavior may occur because firm rules and norms are conflicting or too complex, unintentionally encouraging unproductive behavior.

The fully non-productive outcome can also result from an abject breaking of rules that are conducive to productive behavior. In a survey, 75% of managers were willing to destroy economic value to keep firm numbers predictably up (Graham et al., 2005). Outright embezzlement and fraud against the parent company are also examples of fully non-productive

intrapreneurship if they are sufficiently novel and creative. A poignant example involves a manager who was reimbursed for over $1.2 million in false expenses through a complex web of deception, involving fake companies, fake invoices, and fake expense reports (Bilski, 2018). Enron is another case in point: while the company's intrapreneurial culture led Fortune to dub it as "America's most innovative company" 1996–2001, it turned out to foster massive creative accounting fraud, eventually resulting in company bankruptcy. The example shows how failure of control and governance can result in non-productive intrapreneurship (Birkinshaw, 2003).

To summarize, scenario A is the least conflict-ridden, because an intrapreneur's actions benefit the employer *and* society. Scenario D—when an intrapreneur's actions harm the employer *and* society—is its obverse image. Here, the incentives of society and the firm may once more align, in the sense that it is in the interest of both to put an end to the intrapreneur's non-productive behavior. Scenarios B and C are more complicated, and more interesting from a researcher's point of view. In Foss et al.'s (2007) parlance, scenarios A and C may both be considered examples of when an entrepreneur successfully derives judgment to proxy-entrepreneurs, to the benefit of the firm. Still, the two scenarios' welfare implications for society are very different. Likewise, scenarios B and D both entail unsuccessfully derived entrepreneurial judgment, but their differing societal implications should be acknowledged.

Under scenario B, the intrapreneur's actions harm the firm but are beneficial for society. The problem is that the firm has every incentive to stifle intrapreneurship which it perceives as a threat or a waste, even though furthering it would be productive for society—unless the firm is wrong. The uncertainty of the intrapreneurial process may cause managers or owners to erroneously dismiss an innovation that would in actuality benefit the firm. Exploring an innovation may also reduce the company's surplus in the short run but be necessary in order for the company to flourish and survive in the long run. The development of Post-it notes at 3M is a case in point. When such intrapreneurial innovations are discouraged, we are dealing with

what may be labeled a Type 2 error from society's perspective—a failure to identify and promote a socially valuable innovation (Johansson, 2010). A common "solution" to the problem is that the intrapreneur quits, to create a new firm or find an employer more susceptible to the idea. If the intrapreneur is convinced that the innovation entails value for society and can be sold for a profit, the impetus for doing this should be large (unless such "treacherous" behavior is hindered, e.g., by means of non-disclosure clauses, see, Starr et al., 2015).

Conversely, scenario C is desirable to the firm but detrimental to society, conforming to a Type 1 error from a societal perspective: it is not just a failure to eliminate failing projects, but the encouragement of projects that harm society. Nonetheless, a profit-driven firm may endorse the intrapreneur's behavior or even cover it up if it is illegal. Such situations make loyalty a double-edged sword. If allegiance to the firm leads an intrapreneur to engage in morally repellent or illegal practices, society loses out. In such a situation, disloyalty to the employer is to be preferred, or rather loyalty to society that may make someone engage in whistle-blowing.

4.2 Intrapreneurship and institutional change

The relationship between institutions and entrepreneurship appears bidirectional (cf. Elert & Henrekson, 2017), and intrapreneurship may be a similar force for endogenous change within and beyond firms, in several ways (cf. Mahoney & Thelen, 2010). First, an intrapreneur may "creatively circumvent constraints, for example by finding ways to hide their behavior, or inventing behaviors that are not formally prohibited" (Foss & Klein, 2012, p. 200), effectively changing the impact of rules indirectly (Elert & Henrekson, 2016). Moreover, when Scenario B results in a spin-off, this may be considered an institutional action: The intrapreneur elects to sidestep constraining (firm-level) rules and will, in the new role as entrepreneur, "only" be constrained by society's rules (Bylund & McCaffrey, 2017). The creation of a new firm also spawns a new set of firm rules that apply to a new generation of would-be intrapreneurs.

Furthermore, fully productive intrapreneurial innovation will likely encourage a firm to try to repeat the success, e.g., by decentralization or coming up with "a compelling narrative that promotes the entrepreneurial self-image among the employees" (Pongracic, 2009, p. 106; cf. Sautet, 2000). As mentioned, 3M early on recognized the potentials of intrapreneurship, trying to harness it by allowing employees to spend 15 percent of their work time on their own projects. And while 3M's management initially resisted some intrapreneurial innovations, the firm has had a habit of embracing them once their usefulness become more apparent. 3M has even used these intrapreneurs' uphill battles as instructive examples: "By treasuring such stories, 3M encourages others to try to innovate despite opposition" (Pinchot, 1985, p. 47). Such structures of shared meaning are likely conducive to fully productive intrapreneurship (Ebeling, 2009).

The mere potential of a new intrapreneurial innovation can be enough to induce changes to a firm's corporate culture. For example, a manager who could not sell GM headquarters on the idea of the Pontiac Fiero decided to "force" decentralization, renting a space ten miles away to get away from the bureaucracy. The success of this process spurred GM to try to replicate it (Pongracic, 2009, p. 107). Other firms follow similar strategies, pursuing governance structures that empower employees through less managerial intervention (Foss, 2001; Sautet, 2000). Decision-making decentralization may be the clearest manifestation of efforts to create a "thoroughly entrepreneurial firm, one where most or even all employees are encouraged to act in creative and innovative ways" (Pongracic, 2009, p. 1; cf. Foss and Klein, 2012, p. 213–214). Thus, many firms allow small teams to autonomously work in "skunkwork projects" or internal incubators outside the formal bureaucracy, to circumvent standard management constraints and encourage innovation (e.g., Fosfuri & Rønde, 2009). Firms like Facebook, Dreamworks, and Google have also altered their organizational structure to promote productive intrapreneurship, once the benefits of such activities become apparent (Trenchard, 2016; Knippen, 2017).

Fully non-productive intrapreneurship may also spur rule and governance changes, though likely in the direction of increased monitoring and limiting employee autonomy (Pongracic, 2009, p. 102). While such centralizing changes may limit non-productive entrepreneurship, they are also likely to limit productive intrapreneurship. This hints at an important trade-off: While decentralization risks yielding poorer incentives and efficiency compared to hierarchy, its benefits are greater flexibility and innovativeness (the creation of new knowledge), which, in times of rapid market change, may be too costly to ignore (Langlois, 1995; Pongracic, 2009). This suggests that in highly innovative, competitive markets, enabling fully productive intrapreneurship may be a crucial governance issue for both a firm's growth and its survival.

5 Conclusions

Most intrapreneurship research assumes that the phenomenon is beneficial. In Baumol's (1990) vein, we have argued that just like entrepreneurship, whether intrapreneurial activities are allocated to productive, unproductive, or destructive uses depends, largely, on the rules of the game that intrapreneurs face. While Baumol's (1990) original policy implications were straightforward—policymakers should establish societal institutions allocating entrepreneurial talents in a productive direction—our analysis suggests that for intrapreneurship, an additional layer of firm rules also need to be taken into consideration. The manner in which the two institutional layers interact will affect the allocation of intrapreneurial talent in firms, and both sets of rules should be taken into consideration when designing public policy. As intrapreneurship in large firms is highly valuable as a source of innovation in modern economies, this is no small matter. Specifically, if firm rules are such that they encourage destructive behavior, efforts to improve society's institutions may prove ineffective. However, an obverse scenario is also conceivable—namely that society's institutions are inimical to productive intrapreneurship while firm level rules encourage such behavior.

The most straightforward takeaway from our study is that the common perception of intrapreneurship as inherently beneficial should be reexamined: Rather, when attempting to capture intrapreneurship theoretically and empirically, researchers should opt for definitions and measurements that distinguish between positive and negative intrapreneurial activities. Our three-level model should, we hope, serve as a useful starting point for understanding the individual's decision-making regarding intrapreneurship, e.g., whether a promising innovation is pursued internally within the firm or by resorting to a spin-off. Relatedly, a renewed emphasis on the Knightian perspective could help shed further the light on how property rights (related, e.g., to potential patents and profits that a successful innovation generates) shape these processes.

Moreover, researchers should drill deeper into the interplay between institutions at the societal level and the firm level, to better guide policymakers wishing to align rules in a way that fosters genuinely productive intrapreneurship—importantly, more knowledge about whether and to what extent intrapreneurs can affect the institutional constraints they face (see., e.g., Elert & Henrekson, 2017) is needed. For example, is it possible that a sufficiently disruptive intrapreneurial action can affect not just firm-level rules but also societal-level institutions, for bad or good? If so, how? Future research addressing such issues would be highly valuable. In the end, the rules at different layers of society must be aligned in a way that results in a relative payoff structure that incentivize fully productive intrapreneurship—at both the firm and societal level. This likely requires a suitably rewarding public institutional framework, and a tolerant but non-corrupt business culture in combination with personal non-opportunistic norms.

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Figure 1. Fully and mainly productive and non-productive intrapreneurship

	Firm outcome	Good for firm		Bad for firm	
Societal outcome	**Intrapreneurial response**	Follow rules that benefit firm	Disregard rules that harm firm	Disregard rules that benefit firm	Follow rules that harm firm
Good for society	Follow rules that benefit society	Scenario A Fully productive intrapreneurship*: Activities that are beneficial for the firm and the economy.* The intrapreneur follows (disregards) rules that benefit (harm) society and follows (disregards) rules that benefit (harm) the firm. Example: An innovation that is successfully commercialized into a product or service on the market, such as Post-it notes.		Scenario B Mainly productive intrapreneurship*: Activities that are destructive for the firm yet beneficial for the economy.* The intrapreneur follows (disregards) rules that benefit (harm) society but follows (disregards) rules that harm (benefit) the firm. Example: A breakthrough or disruptive innovation that may make (part of) the firm's current business activity obsolete and the firm less profitable (or even unprofitable).	
	Disregard rules that harm society				
Bad for society	Follow rules that harm society	Scenario C Mainly non-productive intrapreneurship*: Activities that are beneficial for the firm yet destructive for the economy.* The intrapreneur disregards (follows) rules that benefit (harm) society but follows (disregards) rules that benefit (harm) the firm. Example: An innovation that makes it possible to circumvent or alter socially valuable regulation, such as pollution and hazardous waste regulations.		Scenario D Fully non-productive intrapreneurship*: Activities that are downright destructive in character for both the firm and the economy.* Intrapreneur disregards (follows) rules that benefit (harm) society and disregards (follows) rules that benefit (harm) the firm. Example: Innovative fraud against the firm, e.g., funds being misappropriated and directed towards employees without notice from the managers or treasurer.	
	Disregard rules that benefit society				