



## Entrepreneurial Iatrogenesis: An Exploratory Approach

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**Abstract** Focusing on different positions on the dark side of entrepreneurship (DSE) (Montiel & Clark, 2018; Shepherd, 2019), including the dark side of the family business (Montiel & Soto, 2021), we investigate iatrogenesis and its application in entrepreneurship. Through a literature review, we clarified and defined entrepreneurial iatrogenesis (EI) as a novel perspective, as well as the factors that can promote it. Through a conceptual model, a potential research stream is proposed, and the results show that both its elements and dimensions are related, a systemic position where the context has a determining action. We conclude that it is feasible to extend this analysis to the development of public policies focused on entrepreneurship, as well as the creation of entrepreneurship and small and medium-sized enterprise (SMEs) programs at different levels, such as government and universities, and in general for the entrepreneurial community to establish strategies that can foresee and address it.

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### PALABRAS CLAVE

Contexto, Lado oscuro del emprendimiento, Iatrogenesis emprendedora.

### Iatrogenesis emprendedora: un enfoque exploratorio

**Resumen** Partiendo de diferentes posturas respecto al lado oscuro del emprendimiento (DSE) (Montiel & Clark, 2018; Shepherd, 2019), incluido el lado oscuro de la empresa familiar (DSFB) (Montiel & Soto, 2021), este trabajo investiga el concepto de iatrogenesis y su aplicación en el emprendimiento. Por medio de una revisión bibliográfica, se define la iatrogenesis emprendedora (EI) como una perspectiva novedosa que involucra factores que pueden promoverla. Además, se plantea un modelo conceptual para enfatizar que la iatrogenesis constituye una potencial corriente de investigación. Los resultados muestran que tanto sus elementos como sus dimensiones están relacionados, donde el contexto tiene una acción determinante. Se concluye que es factible extender este análisis al desarrollo de políticas públicas y programas de capacitación enfocados al emprendimiento en pequeñas y medianas empresas (PYMES).

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## 1. Introduction

Different positions and behaviors have been studied (Jones & Spicer, 2009) where entrepreneurs sometimes perform detrimental actions to the entrepreneurial project (the nascent or established company), as well as for the entrepreneur itself, without awareness or control. As stated by Schumpeter (1934, p. 93) who said that business motivations go hand in hand with “the will to found a private kingdom” and “the will to conquer; the impulse to fight, to prove oneself superior to others.”

There are two scenarios in the literature on entrepreneurship. The white or bright one has been studied by several authors, highlighting the wealth of factors necessary to achieve success known as business efficiency: the production of measurable innovation (Baumol, 1990, 2010). On the other hand, there is a dark side, greed, among other elements, which can be interpreted first as ambition, calls for domination, and manipulation, which can be expressed as the intention to emancipate oneself, guided by the desire to control circumstances and be free from perceived limitations (Brownell et al., 2021).

Kets de Vries (1985) describes different scenarios that cause problems that arise from the fact that one company acquires another but decides to incorporate or keep the founder (i.e., entrepreneur) in top management. Given this, it recommends a singularity of precautions to avoid the consequences of negative complex behaviors that might develop within this strategy, which can end in organizational failure.

McMullan (1996) addressed various problems related to character or personality (e.g., mental abilities, moral, or value-based capacities). He recalls details of his own experience as an entrepreneur, stating that the anxiety and pressure to maintain business performance and not disappoint his circle of friends, family, and investors had a high consequence on his personal life (Schjoedt, 2013; Ufuk & Ozgen, 2001). Consistent with this argument, research has shown a strong negative relationship between narcissism and business performance (Creek et al., 2019; Schmid, 2016).

Zahra and Wright (2016) address the issue from the social theory and economic thought, where they ensure that entrepreneurship is lacking in balance concerning its social and economic impact. However, the literature is, to a certain extent, based on a static individualistic paradigm that omits the narrative domain of individual and collective reality (Turunen, 2015), both inserted in the process of entrepreneurship as practice.

In the medical field, iatrogenesis is the process in which negative outcomes are produced by

well-intentioned treatment causing new serious adverse events, rather than a cure (Hofer & Hayward, 2002). Unsurprisingly, research and discussion on iatrogenesis in management are generally considered unfortunate (Meckler & Boal, 2020), with few studies addressing it, for example, in technology (Palmieri et al., 2007), copyright (Kennedy, 2015), and general risk management (Wiener, 1998). Thus, in an organizational scenario, iatrogenesis might surge in an unintentional, unexpected, generally negative context—new events that an organization must face, derived from behaviors and decisions that put the enterprise at risk, either due to ingenuity or bad intentions. Our goal was to offer a framework for making sense of dynamics that can surge within any organization and the poor outcomes that might come so that awareness and identifying intervention strategies can be elaborated to prevent/mitigate an iatrogenic stage.

In line with Meckler and Boal (2020), our study did not present a complicated concept of iatrogenesis. There are, more than we all want, organizational decisions that affect its viability, negative and irreversible iatrogenic results, as mentioned above, and with it, the expectations of all the actors involved, even affecting entire communities (Montiel & Pelly, 2022) that depend on the life of an organization, or other negative impacts that may derive from it, such as environmental, social, and physical damage.

The mortality rate among SMEs is high in all emerging economies. The purpose of this study, following the growing interest in this topic in organizational theory (Meckler & Boal, 2020), is to expose a potential framework that analyzes the negative processes that come from the business game, as well as discouraging results, to raise awareness and propose strategies to inhibit the effects of entrepreneurial iatrogenesis.

Furthermore, dark side of entrepreneurship (DSE) research remained on the fringes of entrepreneurship research throughout the 1990s and much of the 2000s (Landström, 2020). Since then, there has been a remarkable surge in interest in the ‘dark side’ of entrepreneurship (Keim, 2022; Montiel et al., 2020; Montiel & Clark, 2018; Shepherd, 2019; Talmage & Gassert, 2020).

Moreover, entrepreneurship and family business research are considered embedded (Aldrich et al., 2021), and a call has been made to address this close relationship, as already approached by Montiel and Soto (2021).

The document is ordered as follows: first, it shows the dimensions of DSE and then proceeds to focus on the context of entrepreneurship; third, it approaches the unintended effects on

entrepreneurship, which we call Entrepreneurial Iatrogenesis (EI). Based on this information, a conceptual model was presented. Finally, we discuss, for illustrative purposes, a recent business case and conclude the paper with conclusions, implications, and possible directions for future research.

## 2. Entrepreneur Dimensions

In economic literature<sup>1</sup>, entrepreneurship is frequently characterized as an ideal subject with the capability to identify business opportunities and generate innovation that triggers economic development. However, it is necessary to infer the other side of entrepreneurship, characterized by a dark side given by six aspects: entrepreneurial personality oriented towards opportunism; egoism, greed, Organizational and entrepreneurial processes; hubris; addiction, entrepreneurial bad behaviors, organizational and entrepreneurial processes, and undesirable and unintended consequences of entrepreneurship. Such peculiarities negatively affect both the organization and its members.

### 2.1. Entrepreneurial personality

To expose the dimensions of DSE from the perspective of the entrepreneur, [Luca \(2017\)](#) mentioned that it has a psychological effect and personality traits that differentiate individuals who share the same socioeconomic environment. Personality has been addressed in various contexts; for example, [Brandstätter's \(2010\)](#) meta-analysis, which is considered to give a fundamental component to both character and business behavior, while [Hmieleski and Lerner \(2016\)](#), and [Paulhus and Williams \(2002\)](#) approach some of its negative aspects, such as Machiavellianism, narcissism, and psychopathy as a dark triad of the entrepreneur's personality. In the same way, the personality orientation towards opportunism ([Williamson, 1989](#)), that is, the fraudulent action of the entrepreneur, harms the generation of innovation and the growth of the company in the long term due to the infringement of the rights of other citizens.

### 2.2. Egoism, greed & hubris

On selfishness, [Beaver and Jennings \(2005\)](#) argue that it can have consequences for the organization and can cause the business to incur

a crisis and cause its failure. Therefore, the ego of a businessman lends itself to the practice of the abuse of trust and the power of influence.

On the other hand, greed ([Brownell et al., 2021](#)) is perceived as ambition, a manipulation that brings with it the intention to control circumstances and be oblivious to limitations, whereas [Takacs et al. \(2017\)](#) see it as a desire to actively search for extraordinary material capital. Arrogance is an exaggerated pride derived from self-confidence, and hubris or exaggerated pride or self-confidence ([Hayward & Hambrick, 1997](#)) often results in searching for financial retribution. [Hayward and Hambrick \(1997\)](#) see these concepts as a clear personal advantage for those belonging to the company they own or represent, even if it lacks ethics, due to the growing need for human beings to want to control things.

### 2.3. Addiction

For addiction, [Keskin et al. \(2015\)](#) reflected on whether entrepreneurship can have a close relationship with addictive behavior since they present negative thoughts or emotions that lead to obsessive behavior. They compare it to additions such as Internet gambling, such as so-called serial entrepreneurs, when they face difficulties associated with the urge to keep going, the challenge of continuing with a sense of urgency.

### 2.4. Entrepreneurial bad behaviors

[Lundmark and Westelius \(2012\)](#) approach the so-called bad behavior of a business/entrepreneur. This sparked controversy, some companies can get involved in these behaviors since some new ventures might need support outside the organizational sphere, such as the support of a given political party or a politician, which usually has positive consequences for the entrepreneurial project. [Fadahunsi and Rosa \(2002\)](#) discuss the positive impact of the development of these illegal activities because they create companies and jobs with positive consequences that are usually not addressed in the literature ([Richards, 2008](#)).

### 2.5. Organizational and entrepreneurial processes

The theory of social exchange suggests that it is based on exchange from interdependent interactions<sup>2</sup>, in other words, in the

1. For more details on DSE's dimensions (entrepreneur and context, and its elements), please see [Montiel and Clark \(2018\)](#), [Montiel et al. \(2020\)](#), [Montiel and Soto \(2021\)](#).

2. Management and entrepreneurship are social processes that take place under social interactions. [Gillin and Gillin \(1954\)](#) classified forms of social interaction into two major groups: the associative process (consisting of accommodation, assimilation, and acculturation) and the dissociative process (consisting of competition, contravention, and conflict or contention).

entrepreneurial/organizational processes, the employer creates obligations for the worker, and the worker, in turn, acts towards the former in a reciprocal way (Cropanzano & Mitchell, 2005), so a long-term relationship of trust is created between them if this exchange continues favorably (Molm et al., 2000), leading to a successful organizational phenomenon (Garud & Turunen, 2017), while new knowledge, the output of these attentional processes is mostly missed in the literature (Coyne & Van de Ven, 2021). At the organizational level, some studies suggest that trust is positively related to business performance (Aryee et al., 2002). Furthermore, agency costs are considered potentially harmful in diverse business areas such as innovation (Chi, 2023) and financial performance (Abdullah & Tursoy, 2023).

### 2.6. Undesirable and unintended consequences of entrepreneurship

EI can have, as other organizational areas are closely related to it, such as innovation and undesirable and unforeseen consequences (Sveiby et al., 2012). This can result in lower productivity (Abrahamson, 1991), health consequences (Desmarchelier & Szabo, 2008) for both clients and employees, and less innovation in small and medium-sized companies (Koeller, 1995), and it is relevant to differentiate them from those that are considered externalities (Pigou, 1920). This section presents a potential and unexplored new area of entrepreneurship research.

In short, the description of the negative aspects of the entrepreneur shows that not all entrepreneurs show positive behaviors, such as those described in the traditional literature, while factors such as personality and attitude towards entrepreneurial work have an impact on business performance. Simultaneously, it is essential to observe entrepreneurship as a holistic set of connections between the subject and its environment; therefore, the proposal lies in incorporating the contextual dimensions of the dark side of the entrepreneur. The foregoing will allow visualization of the entrepreneur and his behaviors from a complex systemic perspective.

## 3. From the Context Dimension

Theoretically, an entrepreneur's behavior should have a positive impact on business performance. In particular, the success of new businesses in the long term implies generating collaborative links based on trust and not acting with fraud; however, it is possible to deduce the dark side of the entrepreneur, characterized by a behavior that generally differs from the ideal situation. Entrepreneurship is multidimensional because

the dark side is destructive or unproductive and affects the productivity and sustainability of companies (Baumol, 1990, 2010).

Boettke and Coyne (2009) mentioned the link between institutions and entrepreneurship, where the former consists of formal/informal "rules of the game." The latter operates within a context determined by these rules, creating payoffs that make certain entrepreneurial structures (private for-profit, private nonprofit, and political) more attractive than others, including unproductive, destructive, and evasive activities.

Given the preceding description, this research suggests adding social entrepreneurship, criminal entrepreneurship, institutional entrepreneurship, public entrepreneurship, and extreme conflicts as well as the factors inherent to contextual DSE. This is because these situations represent adverse institutional contexts that, at the same time, are linked to negative individual behaviors (Chang, 2007). Together, the subject's behavior, undesirable situations, and context harm entrepreneurial performance.

### 3.1. Social entrepreneurship

Banks in his fundamental work "The Sociology of Social Movements" used the term social entrepreneur for the first time, with the need to use the traditional strategies of the company to address social problems (Raghda, 2013).

In the 1980s, Bill Dayton coined the term social entrepreneurship and founded Ashoka (Alonso et al., 2014), a pioneer in the global network of social entrepreneurship. Later came an important development in social entrepreneurship, microcredit, according to Gutiérrez Nieto (2005), this great initiative was proposed by Muhammad Yunus in 1983, who sought the extension of loans to the poor and was rejected by banks, to improve the quality of life of Bangladeshi communities. This initiative led him to find the Grameen Bank, which lent money to marginalized communities to continue producing their products, creating a business model above charity.

Williams and Knife (2012) questioned the criteria that define a social enterprise because empirical data have shown that some of these companies under this umbrella receive funds to carry out their social work but may have an indirect consequence in strengthening the contexts of groups of power or violence who could use this type of entrepreneurship as a false frontage.

### 3.2. Criminal entrepreneurship

According to the existing literature, Abdulkadirov (2010) pointed out that terrorists would be entrepreneurs. He defends that like all entrepreneurs, they have an organizational structure, financial and human capital, strategies,

seek new opportunities, take risks, and innovate. However, they are not motivated by profit but by their ideologies.

### 3.3. Institutional entrepreneurship

[Khan et al. \(2006\)](#) reflect on how international development programs and entrepreneurship practices are implemented and promoted by organizations in emerging/developing economies, which sometimes have unwanted secondary effects that are more harmful than those they are trying to solve, the dark side of the institutional dimension. [Foley and Hunter \(2016\)](#) found initiatives in indigenous communities in Australia, and the increased inequalities generated instead of reducing them ([Bonacich, 1993](#)).

### 3.4. Public entrepreneurship and related contexts

[Fennimore and Sementelli \(2016\)](#) investigate the dark side from the context of the public sector, exploring the psychopathic profile that government officials can present, a threat to both the state and its citizens, categorizing them as “climbers “ and “fans.”

[Ojugbele et al. \(2022\)](#) analyzed public entrepreneurship from the perspective of service presentation in South Africa. They allude to the fact that this sector is frequently assumed to be uncompetitive, bureaucratic, and mediocre. Therefore, it is essential to apply technological frameworks and best practices to improve results. In addition, they specify the need to inculcate an entrepreneurial mentality, develop skills, and gestation strategies aimed at reducing bureaucracy and increasing competitiveness.

### 3.5. Extreme crises/conflicts

At a global level, COVID-19 has generated extreme crises for entrepreneurs and their contexts and in societies (e.g., the EU or USA for example). These decisions affect entrepreneurs and create new opportunities for others. For example, small businesses and cultural entrepreneurs have been affected globally on a large scale, while some entrepreneurs or start-ups have benefited from the COVID-10 crisis, or from the other disruptive change that is taking place in the present geopolitical order.

Likewise, dark side of the family business is considered an extreme conflict that can be generated by an individual within the organization, or in the case of a family business, irrational polarization within the family group (for example, in the succession process), which puts family business at risk with profound differences in their knowledge and opinions ([Moscovici & Doise, 1994](#)). When faced with disruptive innovations, which drastically influence

technological and consumer behaviors, a leading player in the industry can be wiped out.

To provide a holistic overview of the negative factors that interfere with business work, this study proposes incorporating the definition of iatrogenesis, an aspect of modern medicine that can be incorporated into the study of adverse situations of entrepreneurship.

## 4. Entrepreneurial Iatrogenesis

Iatrogenesis in social sciences was introduced by [Illich \(1978\)](#), and its negative effects on people and society arise from the institutionalization of modern medicine. The word *intros* (doctor), comes from Greek and describes all the negative changes that a doctor generates in the condition of their patients. It refers to the unintended consequences of medical behaviors/personnel wanting to cure or generate a diagnosis. [Illich](#) said that there was a growing crisis of confidence in modern medicine, suggesting that political action is required to challenge the status quo of health professionals, who were determined to be the future monopoly, especially in Western societies.

In terms of entrepreneurship, a crisis of confidence and empathy is created when university students are taught not to own a business because most of them are educated with a bias, the conviction that, in the end, they will work for someone else, be an employee. The same situation is rooted in government programs by assuming entrepreneurship only as the creation of a company and not as professional growth within an organization (intrapreneurship) or a positive transformation at a personal level.

[Illich \(1978\)](#) argued that iatrogenesis must be seen as a specific medical manifestation of counterproductivity. For example, the costs to society when you sell/promote the dream of being an entrepreneur and independent, and the harsh reality shows a non-optimal ecosystem not prepared to efficiently support these new startups. It then generates business closures and high personal costs, economically, financially, psychologically, and socially. Organizational iatrogenesis is defined as ‘the unintended genesis of qualitatively different problems due to mistakes such as unwise intervention strategies, well-intentioned work on the wrong problems, or ignorance of significant correlations’ ([Meckler & Boal, 2020](#)).

Therefore, we defined Entrepreneurial Iatrogenesis as the involuntary genesis of various qualitative and quantitative problems that result in internal/external conflicts because of the inability of the entrepreneurial individual to provide accurate calculations, misguided or unwise intervention

strategies due to changes in values or behaviors of those in charge, or simply an inefficient interpretation of significant data of the context related to their business, which can seriously compromise the viability of the entrepreneurial project or the purpose of what is being promoted and implemented (institutionally). Following [Illich \(1978\)](#), he argues that iatrogenesis can be categorized into three types: clinical, social, and cultural.

#### 4.1. Clinical entrepreneurial iatrogenesis

Complications or health diseases are caused by clinical intervention and the actions of the doctor on the patient. In entrepreneurship, there are psychological problems, such as personality disorders, failures, or self-esteem, which the entrepreneur may have or generate because of the launch of his entrepreneurial project. The placebo or nocebo effect is the influence entrepreneurship will have on an individual.

#### 4.2. Social entrepreneurial iatrogenesis

For [Illich \(1978\)](#), medicine is a purely moral company because it produces products with content of good and evil, such as law and religion, and says that it is normal and appropriate to be able to decide what is and what it is not a symptom and who is sick, which is why it is said that the doctor is a purely moral businessman. Social iatrogenesis causes society to feel that they should consume more drugs, cause dependence, and have lower tolerance levels to discomfort or pain. Its practice promotes damage to people, such as illness, and reinforces a sick society. On the other hand, all damage to health is due to very attractive socioeconomic transformations and is even necessary because of the institutional form acquired by the physician.

Entrepreneurship may cause ego arrogance, failure, or frustration because failure is not well tolerated by today's society. It is the modern recipe for entrepreneurship and must be its goal; that is, a company that maximizes sustained profits and is not perceived as a vision/development of professional/personal life.

#### 4.3. Cultural entrepreneurial iatrogenesis

According to [Illich \(1978\)](#), cultural iatrogenesis occurs when people give consent to acts of manipulation of health, a conspiracy that gives a product "better health," as merchandise. Medicine is perceived as a morally dominant enterprise where cultural aspects or beliefs about health, pain, and disease are at stake. In, entrepreneurship occurs when society accepts the creation of new companies based on an ethnocentric model, manipulated to produce "entrepreneurs" as if they were simple products.

Entrepreneurship is promoted as the creation of new companies that will fight a war against suffering and poverty, where constant growth is the maximum value, the measure of success.

As can be seen, it is revealing to add iatrogenesis, since it makes it possible to systematically observe the set of adverse factors that impact entrepreneurship. To verify the relevance of academic research grants to iatrogenesis in entrepreneurship, an exploratory investigation of the scientific documents that examine these elements is first proposed. Second, we propose an analytical scheme aimed at identifying the links between entrepreneurship and iatrogenesis.

## 5. Method

Exploratory research was conducted to determine the relevance and use of iatrogenesis as a construct in management studies. A scoping review was conducted to explore contemporary issues in the iatrogenesis literature and are ideal for, among others, exploring "emerging" topics from multiple disciplines while "mapping the key concepts" of a line of research and describing "gaps" in the research ([Peters et al., 2015](#)).

Through an extensive literature review using various databases (with no specific dates, under "any time or moment" criteria), Google Scholar, EBSCOhost, ProQuest, Scopus, Emerald, Ingenta, JSTOR, ScienceDirect, and Wiley, no evidence of a prior conceptualization of EI was found. Using keywords such as "iatrogenesis," "management," "organization," "organizational," and "entrepreneurship" (we also did this search in the Spanish language), only a handful (four) of recent articles related to the organizational approach, and where iatrogenesis was the main subject, were found (all of them mentioned in the Introduction section). No recent or relevant articles were found where entrepreneurship was included. We did not introduce any geographical restrictions. The last search was conducted in May 2023.

This is similar to the findings of [Meckler and Boal \(2020\)](#) in their literature review, wherein only two business-focused investigations were conducted. According to [Meckler and Boal \(2020\)](#), the scope of the research is wide, but the number of studies remains low, suggesting that there is limited discussion on iatrogenesis in the management literature.

## 6. Results

Figure 1 is based on [Illich \(1978\)](#), [Montiel and Clark \(2018\)](#), and [Montiel et al. \(2020\)](#). The model *Dimensions and Elements of the Entrepreneurial Iatrogenesis* show iatrogenesis

as a social fact within complex systems, where all its elements, structures, and processes are in constant nonlinear development. In other words, the cause does not always produce the same effects, and a stimulus does not always give the same response. From this perspective, the model suggests interrelated multidimensional data under a process of constant and intrinsic evolution (Montiel & Soto, 2020).

The model is a dynamic process in which iatrogenesis can be the result of an endogenous element (from the entrepreneur dimension) or exogenous element (from the contextual dimension) and can trigger an organizational metastasis (its downfall and death).

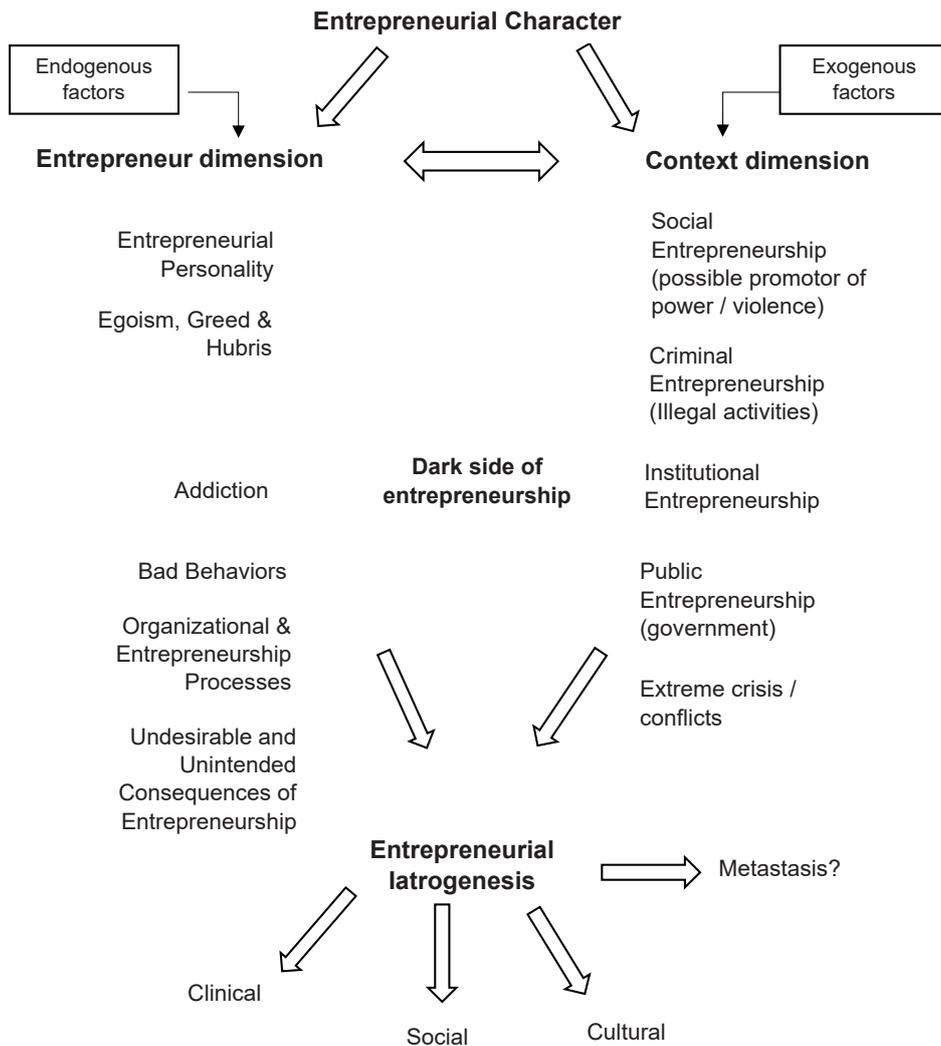
Whetten (1989) states that not all theoretical contributions need propositions but they can be significant in terms of derivations in the direction of the relationship and the logic that leads to the dimension. Therefore, 4 propositions are presented to specify the implications deduced by

logic. These were made considering the changes that the entrepreneur will have not only as a natural evolution of himself while managing the company but also on the effect that the industry environment and the rise of unusual extreme crises (such as COVID-19) should have:

**Proposition 1.** *The more challenging the context faced by the entrepreneur or founder, originating within the firm operations (endogenous), and/or by the context (exogenous), the more expected issues in each or both dimensions will arise, which might lead to the appearance of EI.*

**Proposition 2.** *The more information the entrepreneur receives from the measurement of both dimensions, the more improved agreements can be made to escape the appearance of EI, thus escalating the probability of accomplishing superior financial and nonfinancial performance for the firm.*

Figure 1. Dimensions and Elements of the Entrepreneurial Iatrogenesis



Source: Adapted from Montiel and Clark (2018) and Montiel et al. (2020)

**Proposition 3.** *The more issues that appear in the entrepreneur are associated with the entrepreneur dimension, the more likely it is that EI will emerge.*

**Proposition 4.** *The more problems that arise from extreme crises that might affect all elements in both dimensions, the more likely EI will emerge.*

In summary, Figure 1 schematizes the dimensions and elements of iatrogenesis in entrepreneurship as well as the gestation of organizational metastasis from clinical, social, and cultural iatrogenesis.

Kenworthy and McMullen (2014) acknowledge that entrepreneurship is too new to predict. Whetten (1989) suggested that the applicability of a given model might be limited by the discovery of limiting conditions by testing it in various scenarios. A novel proposal may result in additional inquiries regarding the proposed hypotheses and collection of empirical data. Based on a literature review, logical probability was applied to our model by evaluating the theory with facts (Meehl, 1990).

## 7. Discussion

Weick (1993) described how an entire system can collapse when individuals, who spring into action and turn cases into disasters, fall apart from collective care. For example, collective and contextual attention, also called organizational culture, is a contextual system of attention qualities of a company that sets the stage for the decision by influencing the field of perception and imagination of all the actors in the organization to increase its probability of acting, an insight that occurs (Garud & Turunen, 2021).

Meckler and Boal (2020) expanded the concept of iatrogenesis in the organizational discussion of strategic decision-making. However, entrepreneurs do not make decisions in a vacuum. Collective attention or a field of collective consciousness (Turunen, 2015; Turunen & Mäntymäki, 2018) that can be affected by collective iatrogenic fields surrounds all organizational actors, such as entrepreneurs and societies that are based on metacognitive levels that, in general, are not usually aware, but they remain blind to the entrepreneur because the collective layers of society are generally not available to understand an individual, causing communication problems that can lead to an iatrogenic effect (Tourish & Robson, 2006).

Metacognitive EI can reside in an individual or collective layer, but it is usually a combination of both. Meckler and Boal (2020) introduced a cascading iatrogenic error of this type, which is

a dangerous source of irreversible organizational iatrogenesis.

In this section, we provide a case vignette/narrative that illustrates our conceptual model using an actual archival story. Narratives and stories (Boje, 2018) can generate knowledge about issues in organizational settings.

Let us dig in on a recently known business case: Theranos. On the premise that dozens of tests can be performed with a single-finger prick, Theranos, a biotech company, was founded in 2003. Its founder, Elizabeth Holmes, a 19-year-old who dropped out of Stanford, managed to convince investors and funds. This minuscule sample was analyzed on Theranos' "Edison Machines," undergoing tests for everything from cholesterol to cancer. By 2014, it had amassed \$900 million in funding, and Theranos was valued at \$9 billion (Parloff, 2014).

According to Roper (2014), a company's business model aims to create a system in which patients can select, order, and analyze their tests without certified medical personnel supervision, thereby "democratizing" medicine and empowering patients. It also plans to improve access to tests, detect health problems earlier, and charge Medicare rates that are less than half those of conventional providers.

Once the world's first self-made female billionaire, she was considered a powerful arrogant woman (Dundes et al., 2019). According to Fiala and Diamandis (2018), Elizabeth Holmes invited industrial and political leaders to the advisory board of Theranos. She managed to acquire a wealth of \$4.5 billion and became the youngest female (self-made) billionaire in the world at the age of 30 (Herper, 2016).

It is suggested that her actions were driven by the ambition to achieve her goals of gaining power, wealth, and fame. Entrepreneurial personality was not controlled. She did not have a work-life balance, worked 16 hours a day, seven days a week, and slept four hours a night (Dundes et al., 2019). This was a clear process of addiction, waiting for a similar commitment from her employees, whose hours were monitored, and questioning the loyalty of those who opposed her demands, a clear autocratic style (Carreyrou, 2018). Showed a lack of praise for employees, and fired those who crossed her (Dundes et al., 2019), a certain style of leadership (Carreyrou, 2018) characterized by a "lack of empathy" made employees feel as though "she was progressively depriving them of all (their) humanity" in the workplace. Clinical iatrogenesis begins with the employer's intervention in the form of psychological problems in employees.

According to Carreyrou (2018), even in the face of Theranos' failure, she showed no remorse and

was considered “collateral damage on her way to wealth and fame, so be it” never “apologizing or admitting fault”, thus suggesting behaviors typical of a “sociopath”. A clear manifestation of cultural iatrogenesis.

Despite being in a relationship with Theranos’ COO Ramesh “Sunny” Balwani, she used to hide this part of her life, perhaps because she wanted to give the impression that there was no emotional attachment beyond her work and responsibilities at Theranos, especially to investors and employees. Theranos was always first (Dundes et al., 2019). Social iatrogenesis, where the company is now everything.

Theranos’ employee, Tyler Shultz, the grandson of former Secretary of State George Shultz, blew the whistle. Even after her resignation, Elizabeth Holmes grew tired of controlling him and dabbling in Criminal Entrepreneurship activities. The pressure to remain gagged (via confidentiality agreements) was intense, given that Theranos’ lawyers threatened him, and his family refused to sign (Dundes et al., 2019).

In 2014, Theranos went bankrupt following mounting revelations about its lack of experience, technology, and inaccurate test results; two of its labs being closed; lawsuits from investors and patients; and EH’s wealth devaluing to nothing (Fiala & Daimandis, 2018). Meanwhile, information was discovered in which no details or data on Edison machine technology were submitted to a scientific journal or made available to the public, which is unusual for a medical company that provides services to the public (Carreyrou, 2016). At that time, Theranos and Elizabeth Holmes were at the point of no return. An extreme conflict or crisis is now underway.

In March 2018, the [Securities and Exchange Commission \(SEC\)](#), a US financial regulator, announced that it would pay a \$500,000 fine to resolve massive fraud charges (raised more than 700 million fraudulently) and was barred from being an officer or director of a public company for 10 years and relinquished control of Theranos. She admits no wrongdoing (United States District Court, Northern District of California 2018). The final metastasis was not only in the company but also in the entrepreneur. A complete failure.

In January 2022, a jury found her guilty of wire fraud and conspiracy to defraud, three counts of wire fraud, and one count of conspiracy to defraud investors (Pardes 2022). The woman, who is now 37 years old, was not arrested, and there is no exact date for the final sentence, which may be 20 years for each of the four charges of which she was found guilty. In total, she faced 11 charges; the jury found her innocent of another four, related to public fraud, and could not reach

a unanimous verdict on the remaining three (BBC, 2022). On April 10, 2023, a federal judge said that Elizabeth Holmes failed to prove its appeal process and was sentenced to over 11 years in prison. She was scheduled to go to prison on April 27<sup>th</sup> (BBC, 2023).

There may also be other examples in an organizational setting. [Weitzel and Jonsson \(1989\)](#) argued that organizational failure and decline are almost always preceded by a denial of reality that leads to inaction. In the case of Blockbuster losing its supremacy (egoism, greed, and hubris, extreme conflict, and even ceasing to exist) against Netflix and major streaming providers, Kodak and digital camera manufacturers (egoism, greed, and hubris, extreme conflict, where the former had developed and filed the patent and then lost the technological lead), the Enron scheme saga (selfishness, greed and arrogance, criminal entrepreneurship, bad behavior), Toys R Us (extreme conflict), Pan American Airlines (extreme conflict), and many other corporations that closed their operations completely, examples of fail strategic renewal ([Hernández-Linares & Arias-Abelaira, 2022](#)). In today’s global economy, in which technology plays a decisive role, including the fourth type of technological iatrogenesis ([Palmieri et al., 2007](#)), emerging errors are stimulated by the infusion of technological innovations in complex systems.

The results showed that there are potential implications (as a preventive/corrective strategy) for the development of public policies at each level of government of a given territory, federal, state, and local entrepreneurship/business programs, and medium-sized enterprises (SMEs). Educational institutions can play a decisive role in raising awareness of this topic among future entrepreneurs and include this topic in their professional and/or executive development programs. The latter includes family businesses, the core of many economic systems, and closely related to entrepreneurship; so that they can establish lines of preventive action.

## 8. Conclusions

A review of the literature revealed that relatively little work has been conducted on this subject. However, we are unaware of any other paper that describes or organizes various EI positions. The current study aims to create a new vision and fill a void, a topic that is beginning to be addressed in other research areas.

A conceptual model is proposed that has the potential to serve as a starting point for systematizing EI findings and has several theoretical, analytical, and empirical implications. To contrast various market issues

and industry contexts, this model proposal should be investigated in other areas, including business creation, innovation, and creativity in various sectors.

To stop economic and social value from being eroded, all components of the so-called entrepreneurial ecosystem could closely examine the dysfunctional effects that these activities can have when attempting to create value in social, economic, regulatory, technological, and natural environments.

Although this study focuses on a review and analysis of the concept of iatrogenesis in entrepreneurship, it is feasible to return to these notions to investigate strategies aimed at observing how organizations act in situations of conflict, change, and metastasis. Thus, the model presented is suitable for application in universities; federal, state, and local entrepreneurship initiatives; and other business incubation institutions.

It is feasible to extend this analysis, not only for the development of public policies, but also to include it in entrepreneurship programs for SMEs and business incubators at different levels (local, state, and federal), to establish courses of action that can raise awareness.

Business schools and executive education programs might include a discussion of iatrogenesis to raise awareness of the multifaceted nature of entrepreneurship, not only in terms of its economic effects but also its social effects.

The limitations of the study reside in the fact that, on the one hand, it shows a theoretical analysis that must be extended to practical cases to verify if the functioning of organizations implies the analysis of the dimensions of iatrogenesis, and, on the other hand, the application of iatrogenesis to other aspects, such as the family business.

Future research should adopt a systemic approach, which seems to be the best way to start asking questions and examining the various business contexts that will allow for a precise definition of EI. In addition, the dysfunctional effects of the context dimension need additional development, and it would be fascinating to conduct in-depth research into the specific ways in which the dimensions of the entrepreneur's side might coincide or interact with the dimensions of the context side, triggering possible iatrogenesis, and how the metastasis dynamics in the business, the entrepreneur, and the context around them.

Another line of research, currently being elaborate, is the development of a specific model to investigate this iatrogenic process in family businesses since they represent most economic agents in today's global economy. Since entrepreneurship and family business research are considered embedded, there is a need to address

this close relationship under EI. Family business groups, founders, and senior management can become more aware of the situation and decide whether to take preventative or corrective action.

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