

THE MOMENT OF DECISION FROM THE PERSPECTIVE OF DELIBERATE AND EMERGENT STRATEGIES

EL MOMENTO DE LA DECISIÓN DESDE LA PERSPECTIVA DE ESTRATEGIAS DELIBERADAS Y EMERGENTES

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ABSTRACT

The purpose of this paper is to contribute to the understanding of moments of decision for strategies based on the concept of deliberate and emergent strategies and the cycle that exists between them. The use of a strategy workshop incorporating the "beer game", is employed, which allows for the creation of a deliberate strategy, followed by an abrupt end to the game, causing disruption and subsequent failure of the plan. The moment of decision concept was determined from the perspective of deliberate and emergent strategies, where the moment of decision results from a disruption of the deliberate strategy. This leads to an agent to a decision space where an emergent strategy can be constructed that results in continued viability in a system and allows for decisions to be made. Looking towards the future, it is with applied research activities that are associated with specific situations within the organization that are highlighted. As the main contribution shows, a relationship was seen between the cycle of deliberate and emergent strategies and decision timing, broadening the understanding of the temporal aspect of decisions.

KEYWORDS

Disruption, truncating element, deliberate and emergent strategies, moment of decision.

RESUMEN

El propósito de este artículo es contribuir a la comprensión del momento de la decisión estratégica, a partir del concepto de las estrategias deliberadas y emergentes y el ciclo que existe entre ellas. Se diseña un taller de estrategia basado en la aplicación del juego de la cerveza, que permite la creación de una estrategia deliberada y la finalización abrupta del juego para causar la deconstrucción y posterior ruptura del plan. Como hallazgos se determinó la concepción del momento de la decisión desde la perspectiva de las estrategias deliberadas y emergentes, en donde surge el momento de la decisión a partir de la deconstrucción de la estrategia deliberada, que lleva al agente a un espacio de decisión, donde lleva a

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cabo la formación de una estrategia emergente, para poder continuar viable en el sistemas tomando decisiones. Es preciso iniciar, hacia el futuro, con actividades de investigación aplicadas asociadas a situaciones puntuales dentro de la organización. Como contribución principal se muestra una relación entre el ciclo de las estrategias deliberadas y estrategias emergentes y momento de la decisión; ampliando la comprensión del aspecto temporal de las decisiones.

PALABRAS CLAVES

Deconstrucción, Elemento truncador, Estrategia deliberada y Emergente, Momento de la decisión.

INTRODUCTION

Within decisions, two hypotheses can be clearly identified based on the neoclassical theory established by Garrouste (1997) and Morin (1990), as cited by Smida (2006) and Espinosa (2016), which speaks of the freedom of decision-making agents when answering the question, “how to decide” and the rationale used when answering, “why decide.” Various authors, using different schools of thought, have discussed the problem of decisions when considering the questions of how and why, but there is a particularly marked absence of studies on *when* to decide. There is only an implicit discussion of moments of decision when discussing the opportunities seen with decisions, when there are urgent threats, when the availability of resources allows for decisions, or when the decision maker considers a decision to be satisfactory, among others (Smida, 2006).

The problem of moments of decision has been addressed incidentally, concluding in some theories, that it is determined by the environment or the availability of resources while in others it is based on the decision maker and their concept of the strategy result in the timing (Smida, 2006). The decision-making process should also be discussed as a problem of timing, wherein the decision maker must be aware of the decision timing (Smida, 2006).

The conceptual framework is the strategy that has been mainly used in studies of decision timing as a field of organizational studies (Sanabria, Saavedra & Smida, 2014). Some authors define the concept of strategy as strategic decisions (Smida, 2006), creating decision-making processes that are associated with managing strategic gaps between an organization and the environment (Harrison, 1996).

Henry Mintzberg defined strategy as a plan, among other things, that is a series of courses of action that are consistently predetermined as a guide (Henry Mintzberg, 1987a), emphasizing the common idea of multiple definitions, where strategy frameworks are determinant of future decisions through a predetermined process and planned situations (Montoya, 2010).

Mintzberg (1987) dealt with the concept of strategy, searching for more tangible aspects for researchers, defining it as a pattern in a stream of decisions, with a commitment to action. In this definition, there are intended strategies and realized

strategies, where intended and realized strategies are classified as deliberate strategies and unintended strategies are emergent strategies.

An emergent strategy comes about despite various, existing intentions (Mariani, 2007; Mintzberg & Waters, 1985). Paradoxically, the emergent strategy is arguably the new pattern of the altered intentions (Mariani, 2007; Mintzberg & Waters, 1985). In addition, Mintzberg outlined the idea of a cycle between strategies. Based on his definition of intended strategies, realized strategies today have an intertemporal relationship with the intended strategies in a subsequent period (Montoya, 2010). These processes are important for organizational adaptability (Kopmann, Kock, Killen, & Gemünden, 2017)

Montoya & Montoya (2013) further developed the findings of Mintzberg, suggesting that there is a cyclical relationship between deliberate and emergent strategies, where the agent or organization solves urgent problems with a set of representations, evaluations, perspectives of the environment, past experiences and real-world expectations, which feeds on itself through experiences, with a view of improving, implicating a rearrangement of resources at a cost (Montoya & Montoya, 2013). This means that a cycle could be proposed for the decision-making process, and decision timing is subject to adjustment between the current environmental conditions that require a commitment to action and the habit of the decision-making process.

It is this sense, this article aims to contribute to the understanding of decision-timing problems from the perspective of deliberate and emergent strategies that are used in organizations. To achieve this, the first part of the article uses a methodological description to address the problem, divided into an interpretation of the concept of decision timing based on elements of deliberate and emergent strategies. In addition, verification of these concepts were proposed with the development of a strategy workshop focused on decision timing. The second part presents the results of the theoretical change and the workshop. Finally, the last section states the main conclusions.

METHODOLOGY

The methodology has two parts (see Table 1). The first part generated theoretical associations and the second is a strategy workshop.

Table 1. Stages of the methodology

Parts	Stages
1. Theoretical associations	Search for information in Scopus database
	Initial discard from the reading of the title, summary and conclusions
	Classification of documents in: direct contributions, applications and unrelated documents in search of aspects associated with the moment of decision
	Explanatory relations between the concepts of the moment of the decision, process of formation of the strategy and process of mourning.
2. Beer game workshop	Instructions
	The beer game application
	Survey

Source: present study

Theoretical Associations

The generation of theoretical associations is based on inherent aspects in the process of forming the strategy in relation to the deliberate and emergent strategies, (Mintzberg & Waters, 1985; Mintzberg, 1978, 1987; Mintzberg, Bruce, & Lampel, 2003; Montoya, 2010; Montoya & Montoya, 2005, 2013) and the few concepts of decision timing found in the literature (Smida, 2006) and result of the search of information in the Scopus database, taking into account the following search equation: *TITLE(("decision making" AND ("timing" OR "moment of decision" OR "decision moment")) OR ("decision timing"))*. Incidentally, the psychological grief processes were associated with these theoretical concepts (Bowlby, 1993; Kübler-Ross, 1993).

With the results of the information search, the documents are reviewed from the initial reading of the title, summary and conclusions, with the purpose of a preliminary discard, followed by reading the rest of the contents of the document, which were classified in: direct contributions, applications, and documents not related to the theme. The claim with this review is that it is the tracking of elements that helps to explain the moment of decision.

Finally, an explanatory relationship is sought between these elements identified in the literature at the moment of decision, the strategy formation process (deliberate and emergent strategies) and the grieving process.

Workshop Description

The second part of the methodology included formulating the strategy workshop based on the "beer game" (Senge, 1995), which is used as a tool to identify the elements that agents take into account when making decisions in regard to the

deliberate strategy and emergent strategy when confronted with truncating elements that disrupt the agents' plans. The workshop was carried out with 48 students from the *Gestión Estratégica* in the *Facultad de Minas* of the *Universidad Nacional de Colombia* in the second semester of 2015, with the premise that they are students completing their curricula, mainly in the fields of Industrial Engineering and Administrative Engineering, and are in the process of training to assume managerial positions in their professional lives. It is equally important to note that from the conception of the deliberate and emergent strategies one can have the presumption that all decisions are strategic as long as they have a pattern.

The workshop had three parts: the first dealt with the instructions, the second was the beer game and the third used a survey to identify the agents' perceptions of the game.

First Step: Instructions

The beer game was run in a room that had computers with a game application, using USB cables and an IP address to connect the devices and play the game. The game was explained to the students, indicating each of the parts of the supply chain.

Each player took on a role in the supply chain and decided the number of cases of beer to order, keeping in mind that there were costs for unattended orders and storage costs for the crates of beer. They were told that the aim of the game was to minimize the costs. To encourage student participation and obtain the best results in the game, they were told that the participant with the best performance would get a prize.

Second step: The Game

The Beer Game

The beer game is an educational activity developed by the Sloan School of Management of the Massachusetts Institute of Technology (MIT), which allows for visualization of the dynamics of a system of production and distribution of a beer-producing company where each player is free to make their own decisions (Senge, 1995).

As described by Senge (1995), the game follows the roles of a distribution chain. The first is the retailer, the second is the wholesaler and the third is the producer. Each of these roles makes a purchase from the next role. In each of the stages, there is an order fulfillment time of four weeks (Senge, 1995).

Each of the players forms a strategy based on the pattern in the flow of decisions generated with each of the orders, which is carried out with a plan, making this strategy a deliberate strategy.

Software

The beer game was played using the software posted on the "The Beer Game Portal" (Riemer & Christ, 2012). Demand can be modified by the administrator during the rounds of the game, ensuring control of the game's behavior by moderating the

activity. Finally, the tool presents the production results as stocks and the costs generated in each of the game stages per participant.

The Game

For the workshop, a 50-week round was established, which was run as follows:

- -The first four weeks were used to familiarize the students with the tools; the players decided how many boxes to order with indications from the coordinator of the workshop (five cases), similar to the quantity demanded by customers during that period.
- - From the fifth to the eighth week, the workshop coordinator continued to give the number of boxes to order (10 boxes); customers demanded 10 cases during this time.
- - From the ninth week, the participants made the decision on how many boxes to order without any indication. Until the twelfth week, the customers demanded 10 boxes.
- - In the thirteenth week, there was an unexpected increase in demand, up to 18 boxes, thereby loosening the players' plans for the following week; the demand returned to 10 boxes the next week.
- - In the twentieth week, the game suddenly ended, a truncating element, resulting in the disruption of the deliberate strategy of the players.

Third Step: Survey

At the end of the game, the participants were asked to complete a survey that asked them for an alternative to solve the situation and the elements taken into account when making the decision.

The survey aimed to identify the impact of the breakdown of the plan and establish the emotions felt by the agents in this process. In addition, the participants were asked about their feeling for their plans and whether or not they felt anxiety when the deliberate strategy was destroyed. The variables that were evaluated in the survey are in Table 2:

Table 2. Survey variables

Research Objective	Variable	Description	Authors
Identify the impact of disrupting the plan and establish the emotions felt by the agents, and the elements they took into account when making the decisions.	Bond	Identify the agents' perceptions of their bonds with their plans.	Bowlby, 1993
	Disrupting element	Identify the agents' perceptions of the sudden end to the game as a plan disrupting element.	Montoya & Montoya, 2013
	Grieving process stages	Identify the agents' valuation of the grieving process stages (denial, anger, bargaining, depression, and acceptance) when the deliberate strategy was disrupted.	Kübler – Ross, 1993
	Elements considered by the agents when making decisions	Identify the elements the agents took into account when the emergent strategy occurred, based on the identifications in the systematic review of the literature, when making the decision.	See Table 3.

Source: present study combined the one carried out by Hernández, Montoya & Montoya, 2015, p. 556 (Hernández, Montoya, y Montoya, 2015)

RESULTS

This section of the article contains the research results, which are divided into the results of the theoretical findings in relation to the decision timing and the process of forming the strategy, focused on the deliberate and emergent strategies, resulting in a model of agent behavior at the time of the decision. The second part is based on the results of the survey in terms of the dynamics of the beer game as applied to students of the *Gestión Estratégica* of the *Facultad de Minas*.

Theoretical Results

The theoretical revision exercise proposed in the first part of the methodology highlights four aspects: (1) the existence of deliberate and emergent strategies and the operation of the cycle between them, (2) the emergence of the truncated element that deconstructs the deliberate strategy, (3) the decision space then transits through the process of mourning of the decision maker on the emerging strategy, and the generation of alternatives from variables identified in the literature, and (4) the typologies of the moment of decision. These elements will then be expanded and converge in the conception of the moment of the decision based on the deliberate and emergent strategies, which is explained at the end of this section.

Deliberate and Emergent Strategies and the Cycle That Exists Between Them

The concept of deliberate and emergent strategies was based on the contributions made by Mintzberg (1987), which explain why a strategy was intended or why it failed. Montoya (2010) and Montoya & Montoya (2013) explained the cycle found between deliberate and emergent strategies, which allows the agent to develop initiatives and at the same time remain viable within the decision-making system.

This concept of creating a strategy from an evolutionary perspective where the agent has an incremental adjustment, which can be seen as learning between the leap from deliberate strategies to emergent ones, results in a truncating element concept. This disrupts the deliberate strategy (Montoya & Montoya, 2013) and forces the agent, according to their interests, to generate emergent strategies that allow them to remain viable.

Truncating Element That Disrupted the Deliberate Strategy

The agent, when creating an intended strategy to carry out, devises a plan, including activities, resources and responsibilities that will result in a strategy that leads to achieving a goal. These factors are immersed in the atmosphere or environment, which has natural elements that are not controlled by the agent, and generate uncertainties in the decision-making process. This uncertainty forms the possibility for truncating elements that disrupt the deliberate strategy.

Truncating element characteristics include: (1) prevents the effective continuation of the plan, (2) unpredictable or degraded importance during the formulation process, (3) generated by external elements, but can also be brought about by the decision-making agent, (4) becomes evident to the decision-making agent in the execution of the plan, (5) results in reactions that are related to the psychological stages of grief, (6) results in a decision space in the search for viability in the system and, (7) generates the moment of decision.

At the organizational level, truncating elements are evident in situations dealing with market competition; for example, when a company is about to launch a new product and its main competitor launches a substitute product. It also occurs when government regulations are translated into laws that go against the planned strategies. Another truncating element includes fluctuating economic variables, such as the representative market rate (RMR) or inflation, among others.

Decision Space

The decision space is generated after the agent identifies the existence of a disruptive element, passing through a series of emotions that are similar to the psychological grieving process described by Kübler - Ross (1993): denial, anger, bargaining, depression and acceptance, because the agent forms a bond with the plan and when the truncating element breaks that bond, it leads to the stages of the grieving process.

After reaching acceptance that the plan has failed, the agent will enter a decision space, exploring alternatives that will allow them to remain viable within the system.

The agent enters the decision space with a situation that is determined by the state created by the truncating element in relation to the feasibility of achieving the objective. There is another element in the decision space called possible solution, which must be configured with the situation and synced with the environment. Possible alternatives feed the elements of the agent, the situation and the actions of the decisions (see Table 3).

Table 3. Elements of the Alternatives

Perspective	Element	Authors
	Rationality	Simon, 1982 (Simon, 1982)
	Reutilization	Montoya & Montoya, 2013
	Acquired tools	Sterman, 1994(Sterman, 1994)(Sterman, 1994) (Sterman, 1994)(Sterman, 1994)(Sterman, 1994) (Sterman, 1994)(Sterman, 1994)(Sterman, 1994) (Sterman, 1994)(Sterman, 1994)(Sterman, 1994)(
	Priorities	Sanabria, 2003
	Mourning and emotions	Bolmsjö; Nilstun.y Löfmark, 2007 Michelini, Acuña & Godoy, 2016 (Bolmsjö, Nilstun, y Löfmark, 2007)
Agent	Human condition	Abele, Bless & Ehrhart, 2004 (Abele, Bless, y Ehrhart, 2004) Kariman, Simbar, Ahmadi & Vedadhir; 2014 (Kariman, Simbar, Ahmadi, & Vedadhir, 2014) Friedman & Goes, 2000 Hong, 2006 Iverson, 1997 Hess & Bacigalupo, 2011 Cote & Garcia, 2016 Porcelli & Delgado, 2017
	Motivation and leadership	Spanjol, Tam, Qualls & Bohlmann, 2011 (Spanjol, Tam, Qualls, & Bohlmann, 2011)

Table 3. Elements of the Alternatives. Continuation

Perspective	Element	Authors
Environment	Global vision	Checkland & Scholes 1994
	Environmental absorption	Cohen & Levinthal 1990
	Traditions and social parameters	Ménard 1997
	Perception	Klapproth, 2011 Hong, 2006 Friedman & Goes, 2000 Iverson, 1997
	Personal support	Camilleri, Zarate & Viguie, 2011
Decision action	Pondered alternatives	Robbins & Coulter, 2005 Harrison, 1996
	Decision type	Tzovara et al., 2012
	Compensation	Tzovara et al., 2012; Mintzberg, 1987 Cynthia Lin, 2012 Liu, Huan, 2010
	Information	Heekeren et al., 2004, cited by Tzovara et al., 2012 Meck, Doyère & Gruart, 2012 Paul, Saunders, & Haseman, 2005 Cynthia Lin, 2012 Fessel & Roese, 2011 Henrikson, Ellis & Berry, 2009 Bolmsjö, Nilstun & Löfmark, 2007 Greenstein, 2016
	Complexity	Philiastides, Ratcliff & Sajda, 2006
	Irreversibility of the decision	Henrikson, Ellis & Berry, 2009

Source: present study

The decision space is the transition between the cycle, which indicates the end of a deliberate strategy and marks the beginning of the emergent strategy. The decision space does not follow the rhythm of physical time; in fact, in this state, the decision-making agent is removed from time marked by a clock. The timing is determined by the synchronization between the *situation* and the *possible solution* that enables the creation of an emergent strategy for achieving the objective, Kairos time.

The decision space allows the agent to learn because it provides the opportunity to reconfigure skills, beliefs, resources and perceptions of the environment in order to overcome the obstacle generated by the truncating element.

Typology of the Decision Timing (Emergent strategy)

When a possible solution is generated, fed by elements of the agent, environment or decision action, which are synchronized with the *situation* (used by the agent in the decision space), the emergent strategy arises, of which there are two types.

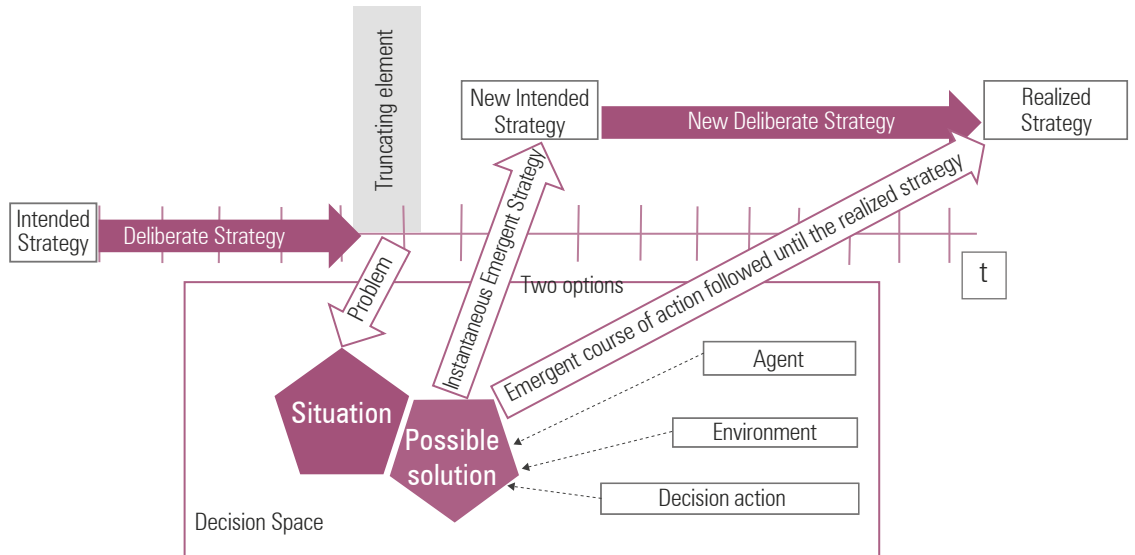
The first, is an *instantaneous emergent strategy*, which enables the agent to leave the decision space and create a new intended strategy, which leads to a new course of action that achieves the initial strategy. The second, is an *emergent course of action followed until the realized strategy*; in this situation, the agent does not have a plan after the truncating element, but uses an emergent course of action until the established objective is achieved.

Thus, the moment of decision occurs in the cycle between the deliberate strategy and the emergent strategy, where the agent contemplates the truncating element that disrupted the deliberate strategy, deals with the emotions related to the breaking of the bond, evaluates the situation, and creates possible alternatives to solve the problem and exit the decision space. This does not have a linear temporality and allows for the creation of an emergent strategy that can lead to a new deliberate strategy based on a new intended strategy, or, to an emergent course of action to be followed until the realized strategy.

The following figure graphically expresses the concept of decision timing in relation to the cycle between the deliberate and emergent strategies, decision space and temporality (See Figure 1).

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Figure 1: Moment of Decision Concept



Source: Present study

Results of the Beer Game Survey

This section contains the results of the survey completed by the 48 students, who were between 17 and 26 years in age, that participated in the beer game in order to recognize the perceptions and emotions of the participants during the game (See Table 4).

Table 4. Workshop participants

	Majors			Total	Percentage
	Industrial engineering	Administrative engineering	Political Sciences		
Male	13	14	0	27	56.25%
Female	9	10	2	21	43.75%
Total	22	24	2	48	100%
Gender	Percentage	45.8%	50.0%	4.2%	

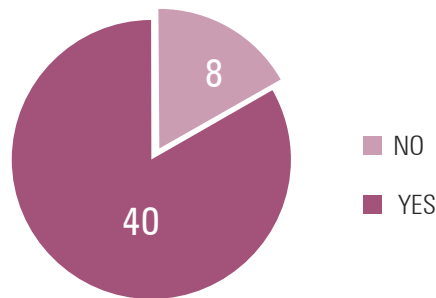
Source: Present study

91.7% of participants were interested in the reward. In addition, 83.3% of participants indicated that they created a plan after the weeks that were guided by the moderator

of the game (See Graph 1), indicating that the agents had a deliberate strategy. Also, 97.1% of students declared that they had created a bond with their plans, leading to a greater possibility of emotions related to the psychological grieving process, which is consistent with the fact that 77.1% of respondents said they felt anguish when their plan was not executed faithfully (See Graph 2).

Graph 1. Plan creation

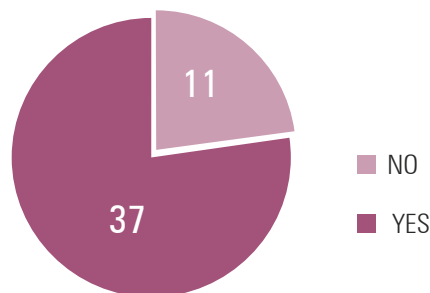
After the first eight weeks that were guided by the moderator, did you create a plan to deal with the remaining weeks and win the prize?



Source: Present study

Graph 2. Anguish felt when plan not executed

Did you feel anguish when the plan you designed was not executed faithfully?



Source: Present study

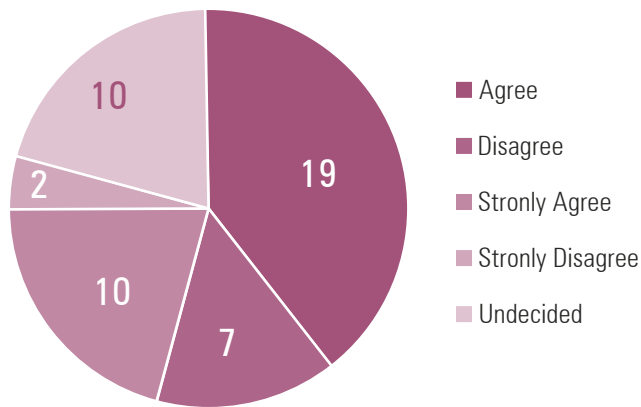
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As for the abrupt end of the game, 77.1% of students surveyed indicated that the game should have continued, allowing them to implement the devised plan, indicating that the abrupt end of the game disrupted the agents' plans because the participants expected the activity to last 50 weeks.

For the emergent strategy, 60.4% of those surveyed confirmed that they at least agreed with the fact that if an agent quickly discards the deliberate strategy, emerging strategies will be created more efficiently (see Graph 3) In addition, 68.8% of the participants believed that they should have changed their plan by at least 70% in response to the truncating element (see Graph 4).

Graph 3. Conception of the change from a deliberate strategy to an emerging strategy

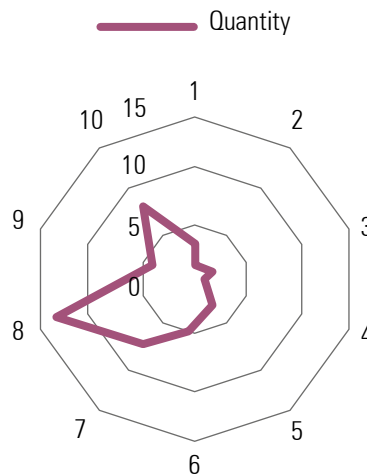
Do you agree that, if an agent quickly discards an obsolete plan, that agent will be able to think of alternatives more quickly?



Source: Present study

Graph 4. Concept of the change in the plan

Indicate on a scale of 1 to 10 how much you would change your plan (strategy) in order to deal with a similar situation after an abrupt end to the game?

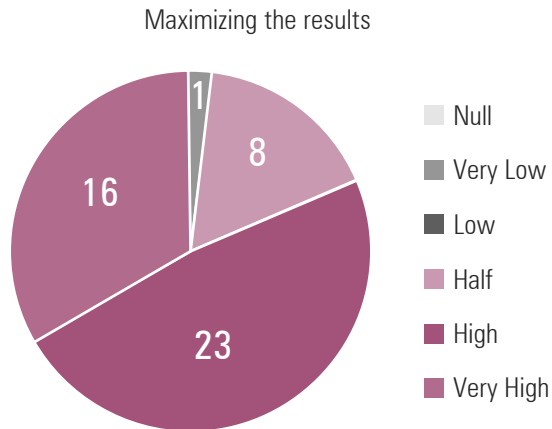


Source: Present study

Finally, when looking at the participants in terms of the elements that they took into account in the game after the truncating element, when looking for a way to remain viable in the system to make decisions and win the reward, i.e. to create emergent strategies, there were medium, high or very high levels. 81.3% were looking to exploit the results (See Graph 5), which was not as strong in the exploration strategies, regardless of the results, where most of the surveyed group was found at the medium level. 54.2% said they would base their strategy on attaining the reward. In the case of information and uncertainty and how they affected the game, 79.2% of participants indicated that would take them into account. Also, they accepted the complexity of creating emergent strategies; 87.5% of participants indicated that they would use past experiences (See Graph 6) and 97.9% said that they would use rationale (See Graph 7), indicating the participation of elements, such as the exploitation of alternatives, taking into account the reward, information and uncertainty, complexity, past experiences, and rationale, in the creation of emergent strategies.

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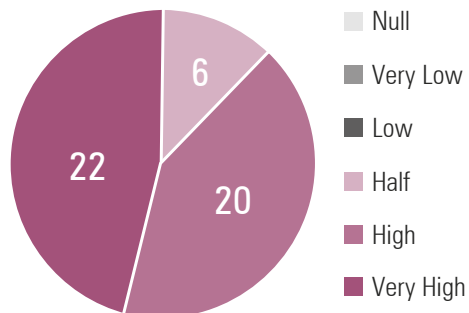
Graph 5. Maximizing the results



Source: Present study

Graph 6. Consideration of using past experiences in future beer games

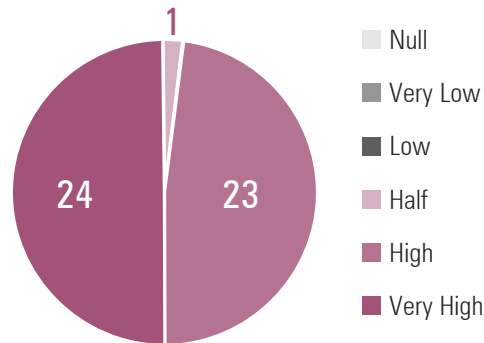
Using past experiences to face future beer games



Source: Present study

Graph 7. Consideration of using rationale in future beer games.

Make use of rationality to deal with upcoming Beer games



Source: Present study

CONCLUSIONS

Based on the outcomes obtained from the theoretical relationship of the moment of the decision, and the deliberate and emergent strategies, the results can be affirmed. The key contribution of this article: that the moment of decision occurred when the deliberate strategy of an agent was disrupted by a truncating element that did not allow for the faithful execution of their plan, resulted in its failure. This was followed by entry into a decision space where time was not physical, but rather Kairos⁴, which allowed for the synchronization of the situation with a possible solution (provided by elements of the agent, the situation and the decision action), leading to the creation of an emergent strategy that allowed the agent to remain viable within the system, and continue making decisions.

There are two types of moments of decision, framed from the characteristics of emergent strategies. The decision space can result in an emergent strategy that allows the agent to overcome the truncating element and create a new strategy that leads to the achievement of the initial strategy through a new, deliberate strategy, what we might call an instantaneous emergent strategy. On the other hand, there could be situations where the agent, within the context of an emergent strategy, achieves the realized strategy, avoiding situations with an emergent environment. This type can be called an emergent course of action until the realized strategy is achieved.

⁴ Based on the idea that there are two kinds of time, related to Greek mythology, Chronos and Kairos. The latter is relaxed and unstressed: "each present contains its own past and future, in which the memory of what happened and the imagination of the collective destiny can summon the yesterday and tomorrow in every event," resulting in opportunity, change and innovation. (Valencia, 2007, p. 1). In the words of Sanabria (2003), "Kairos refers to time with an interior, unique and irreducible experience (the time of existential philosophy; Saint Augustine, Kierkegaard, Bergson, Husserl, Heidegger and Sartre)" (p. 82).

The beer game workshop led to the conclusion that, when there is interest in a reward, the agent generates a plan for achieving the goal. The agent builds a bond with this plan as the agent recognizes the resources that were invested in its design (time, knowledge, opportunities, money and space) and, when it cannot be implemented faithfully, the agent feels anxiety, which was evident when the game was finished abruptly and the students expressed interest in continuing as planned and not disrupting the deliberate strategy.

Since the truncating element disrupted the deliberate strategy, as with the abrupt end of the game, the participants said they felt the steps of the grieving process to a great extent when the bond was broken for the emotions of denial, bargaining and depression, but felt anger and acceptance at a medium level.

The participants in the workshop identified the need to change, to a considerable extent, 70%, their plan for other beer games, indicating the creation of different deliberate strategies that accommodate emergent strategies.

In terms of the elements expressed by the agents that participated in the workshop, they indicated that they would take into account elements of exploitation strategies, uncertainty and relevance of information, complexity, past experiences and rationale, to create emergent strategies to address similar situations with a truncating element.

In summary, the main contribution of this article is the compression on the moment of the decision, generated from the deliberate and emergent strategies. This explains why, that at the moment when the decision arises from the deconstruction, by a truncator element, the deliberate strategy of an agent and the need for the emergence of an emerging strategy continue to be viable in the system making decisions.

It is recommended for future research to bring these concepts to the organizational context, where the assessments that come from the theoretical linkages, and the development of the strategy workshop in the relationship at the moment of the decision, explained from the deliberate and emerging strategies, are validated; In order to be able to observe their daily functioning of the organization.

REFERENCES

- Abele, S., Bless, H., & Ehrhart, K. (2004). Social information processing in strategic decision-making why timing matters. *Organizational Behavior and Human Decision Processes*, 93(1), 28–46.
- Bolmsjö, I., Nilstun, T., & Löfmark, R. (2007). From cure to palliation: agreement, timing, and decision making within the staff. *The American Journal of Hospice and Palliative Care*, 24(5), 366–370.
- Bowlby, J. (1993). *La pérdida afectiva*. (Paidós Ibérica, Ed.). Barcelona.
- Camilleri, G., Zarate, P., & Viguie, P. (2011). A timing management banner for supporting group decision making. *Proceedings of the 2011 15th International Conference on Computer Supported Cooperative Work in Design, CSCWD 2011*, 551–555.

- Checkland, P., & Scholes, J. (1994). La metodología de sistemas suaves en acción. (Noriega, Ed.). México.
- Cohen, W., & Levinthal, D. (1990). Absorptive capacity: a new perspective on learning and innovation. *Science*, 35(1), 128–152.
- Cote, L., & García, A. (2016). Estrés como factor limitante en el proceso de toma de decisiones: una revisión desde las diferencias de género. *Avances en Psicología Latinoamericana*, 34(1), 19–28.
- Espinosa, C. (2016). ¿Cómo se toman las decisiones organizacionales? Una revisión clásica. *Sociológica*, 31(87), 43–78.
- Fessel, F., & Roesse, N. (2011). Hindsight bias, visual aids, and legal decision making : timing is everything. *Social and Personality Psychology Compass*, 4, 180–193.
- Friedman, L., & Goes, J. (2000). The timing of medical technology acquisition: strategic decision making in turbulent environments. *Journal of Healthcare Management / American College of Healthcare Executives*, 45(5), 317–331.
- Greenstein, G. (2015). Timing and decision making. In *Euro Working Group Conferences on Decision Support Systems, EWG-DSS 2014 and Group Decision and Negotiation, GDN 2014* (pp. 89–100). Barcelona.
- Harrison, F. (1996). A process perspective on strategic decision making. *Management Decision*, 34(0025-1747), 46–53.
- Henrikson, N., Ellis, W., & Berry, D. (2009). “It’s not like I can change my mind later”: Reversibility and decision timing in prostate cancer treatment decision-making. *Patient Education and Counseling*, 77(2), 302–307.
- Hernández, J., Montoya, I., & Montoya, L. (2015). The mourning of the deliberate strategy for the arising of the emergent strategy. *Tojet*, (1), 547 –556.
- Hess, J., & Bacigalupo, A. (2008). Enhancing decisions and decision-making processes through the application of emotional intelligence skills. *Management Decision*, 49(0025-1747), 710–721.
- Hong, Y. (2006). Marital decision-making and the timing of first birth in rural China before the 1990s. *Population Studies*, 60(3), 329–341.
- Iverson, T. (1997). Decision timing: a comparison of Korean and Japanese travelers. *International Journal of Hospitality Management*, 16(2), 209–219.

- Kariman, N., Simbar, M., Ahmadi, F., & Vedadhir, A. (2014). Socioeconomic and emotional predictors of decision making for timing motherhood in Iranian women in 2013. *Iranian Red Crescent Medical Journal*, 16(2), 1-8.
- Klapproth, F. (2011). Temporal decision making in simultaneous timing. *Frontiers in integrative neuroscience*, 5(October), 1–10.
- Kopmann, J., Kock, A., Killen, C., & Gemünden, H. (2017). The role of project portfolio management in fostering both deliberate and emergent strategy. *International Journal of Project Management*, 35(4), 557-570.
- Kübler-Ross, E. (1993). *Sobre la muerte y los moribundos* (Cuarta). Barcelona: Grijalbo.
- Lin, C. (2012). Strategic decision-making with information and extraction externalities: a structural model of the multi-stage investment timing game in offshore petroleum production. *Review of Economics and Statistics*, 95(December), 1601–1621.
- Liu, L., & Huan, J. (2010). Research on a best-timing investment decision-making of hi-tech achievement industrialization project based on real options. In *International Conference on Advances in Energy Engineering* (pp. 202 – 205).
- Mariani, M. (2007). Coopetition as an emergent strategy: empirical evidence from an Italian consortium of opera houses. *International Studies of Management and Organization*, 37(2), 97–126.
- Meck, W., Doyère, V., & Gruart, A. (2012). Interval timing and time-based decision making. *Frontiers in Integrative Neuroscience*, 6(March), 3389.
- Ménard, C. (1997). *Economía de las organizaciones*. (Norma, Ed.). Bogotá.
- Michellini, Y., Acuña, I., & Godoy, J. (2016). Emociones, toma de decisiones y consumo de alcohol en jóvenes universitarios. *Suma Psicológica*, 23(1), 42–50.
- Mintzberg, H. (1978). Patterns in strategy formation. *Management Science*, 24(9), 934–948.
- Mintzberg, H. (1987). The Strategy Concept I: Five Ps for Strategy. *California Management Review*, 11 – 24.
- Mintzberg, H., Bruce, A., & Lampel, J. (2003). *Safari a la estrategia. Una visita guiada por la jungla del management estratégico*. (Granica, Ed.). Buenos Aires.
- Mintzberg, H., & Waters, J. A. (1985). Of Strategies, deliberate and emergent. *Strategic Management Journal*, 6(3), 257–272.

- Montoya, I. (2010). Una contribución a la comprensión de las estrategias deliberadas y emergentes de las organizaciones, Desde una Perspectiva Evolutiva. Universidad Nacional de Colombia.
- Montoya, I., & Montoya, L. (2005). Visitando a Mintzberg: Su concepto de estrategia y principales escuelas. *Escuela de Administración de Negocios*, 53, 84 – 93.
- Montoya, I., & Montoya, L. (2013). La formación de estrategias deliberadas y emergentes: una propuesta a partir de definiciones básicas de una metodología de sistemas suaves. *Revista Facultad de Ciencias Económicas: Investigación y Reflexión*, 21(0121-6805), 67–96.
- Paul, S., Saunders, C., & Haseman, W. (2005). A question of timing: the impact of information acquisition on group decision making. *Information Resources Management Journal*, 18, 81–100.
- Philiastides, M., Ratcliff, R., & Sajda, P. (2006). Neural representation of task difficulty and decision making during perceptual categorization: a timing diagram. *The Journal of Neuroscience : The Official Journal of the Society for Neuroscience*, 26(35), 8965–8975.
- Porcelli, A. & Delgado, M. (2017). Stress and decision making: Effects on valuation, learning, and risk-taking. *Current Opinion in Behavioral Sciences*, 14, 33-39.
- Riemer, K., & Christ, F. (2012). The Beergame software.
- Robbins, S., & Coulter, M. (2005). Administración (Octava). Ciudad de México: Pearson Educación.
- Sanabria, M. (2003). La temporalidad de la decisión, la crisis y la construcción de la realidad organizacional. *INNOVAR. Revista de Ciencias Administrativas y Sociales*, (22), 73–84.
- Sanabria, M., Saavedra, J., & Smida, A. (2014). Los estudios organizacionales: Fundamentos, evolución y estado actual del campo (Primera). Bogotá: Editorial Universidad del Rosario.
- Senge, P. (1995). La Quinta disciplina. Ed. Verdana, México.
- Simon, H. (1982). Models of bounded rationality: Empirically grounded economic reason.
- Smida, A. (2006). Les moments de decision strategique. Un essai de conceptualisation et de modelisation. In *Xvème conférence internationale de management stratégique, annecy/Genève* (pp. 13–16).
- Spanjol, J., Tam, L., Qualls, W., & Bohlmann, J. (2011). New product team decision making: Regulatory focus effects on number, type, and timing decisions. *Journal of Product Innovation Management*, 28(5), 623–640.

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Sterman, J. (1994). Learning in and about complex systems. *System Dynamics Review*, 10(February), 291–330.

Tzovara, A., Murray, M., Bourdaud, N., Chavarriaga, R., Millán, J., & De Lucia, M. (2012). The timing of exploratory decision-making revealed by single-trial topographic EEG analyses. *NeuroImage*, 60(4), 1959–1969.

Valencia, G. (2007). Entre cronos y kairós: las formas del tiempo sociohistórico. (UNAM: Centro de Investigación Interdisciplinarias en Ciencias y Humanidades, Ciudad de México: UNAM: Centro de Investigación Interdisciplinarias en Ciencias y Humanidades.