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From a hint of perfume to a sip of whisky: the recombination of knowledge from fragrance to spirits industry

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Abstract

The aim of this paper is to build, discuss and enrich a framework to examine the knowledge recombination process from an industry to another with the specific case of “Comte de Grasse Whisky”. The “Comte de Grasse Whisky” is a company that has set up an artisanal distillery in Provence (Grasse), South of France to develop a range of high-end spirits which production process derive from the well-known fragrance industry and savoir-faire of Grasse. The development of the Premium Whisky new market niche is a result of exaptation from the fragrance industry - in which numerous innovations are developed in the distillery process - to the spirits industry, in which only automating of the production has been observed. In order to operationalize this exaptation process, we mobilise the literature in knowledge management and innovation studies. Combining prior research on appropriate codification degree, exaptation and innovation through tradition, we develop a theoretical framework aimed at operationalizing the exaptation process, and identify the underlying challenges in this reinterpretation of knowledge.

Keywords: knowledge recombination; exaptation; fragrance and spirits; search process; codification

Type of paper: Academic Research Paper

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Extended abstract¹

The aim of this paper is to build, discuss and enrich a framework to examine the knowledge recombination process from an industry to another with the specific case of “Comte de Grasse Whisky”. The “Comte de Grasse Whisky” is a company that has set up an artisanal distillery in Provence (Grasse), South of France to develop a range of high-end spirits which production process derive from the well-known fragrance industry and savoir-faire of Grasse. The development of the Premium Whisky new market niche is a result of exaptation from the fragrance industry - in which numerous innovations are developed in the distillery process - to the spirits industry, in which only automating of the production has been observed. In order to operationalize this exaptation process, we mobilise the literature in knowledge management and innovation studies. Combining prior research on appropriate codification degree, exaptation and innovation through tradition, we develop a theoretical framework aimed at operationalizing the exaptation process, and identify the underlying challenges in this reinterpretation of knowledge.

In order to propose a framework for the study, we will start by defining the concept of exaptation. Then we will discuss how studies in Knowledge Management can complement and enable the operationalization of exaptation. Besides, we discuss and integrate another key dimension of knowledge: the temporal dimension. This can help better characterize how exaptation can be facilitated in the context of traditional sectors where the uniqueness of knowledge come, in a large extent, from the past. We then present our case study and research design and suggest a preliminary conceptual framework for discussion.

¹ Please note that this project is on-going. The company has been set-up only ,1,5 year ago. It is part of a project funded by the company and Bpifrance. This theoretical paper is in progress and will be ready mid-May.

1. Exaptation

i. A brief presentation of exaptation

Exaptation is an important but little studied evolutionary mechanism in the history of species, ecosystems and artifacts. Exaptation describes a discontinuous evolutionary process resulting from a functional shift of an existing artifact, giving rise to novelty.

The Exaptation process highlights a complex and rarely explored relationship between function and form (Andriani and Cattani, 2016). Extant explanations of innovation, including radical innovation, assume that first new functions emerge and then new artifacts are designed to perform these functions: what is called “*Adaptive* innovation”. Arthur (2009), argues that new functions and corresponding artifacts typically originate either **through the discovery of a new phenomenon in science/technology**, resulting in the exploration of its possible applications (‘technology push’ innovation process), or **through the identification of a need** that drives the formulation of functions, subsequently translated into artifacts (‘market pull’ innovation process). Exaptation corresponds to a **third channel driving innovation: a functional shift of an existing technology**, not traceable to the discovery of new scientific phenomena or the link to clearly defined market needs (Andriani and Cattani, 2016). In other words, while adaptive innovation can be associated with the question – given a problem, what is the solution? – *exaptive* innovation tackles a reverse question – “given the knowledge/technology I already have at my disposal, what problem have I solved?”. In simple words, exaptation involves searching for alternative uses of already existing knowledge/technologies. From the emergence of the microwave industry based on exapted magnetron to novel application of Sildenafil, a chemical compound known as Viagra, there is a plethora of examples of exaptations in the history of innovation and scientific discovery. For example, Cattani’s (2006) now seminal in-depth study of Corning shows how the company’s specialty glass expertise was ‘exapted’ into fiber optics. This exaptation gave rise to a radically new technology, which eventually changed the entire telecommunication industry.

The exaptation concept has recently been introduced to the innovation and entrepreneurship audience, with promising contributions to questions about sources of competitive advantage and unexpected novelty. This “third channel” to innovation is viewed as being potentially important all the more as it can bring novelty at reduced costs through the discovery of new

functionalities for already existing artifacts, new applications of knowledge bases, and of particular interest to us: the emergence of new markets niches.

As explain Andriani & Cattani (2006 :121), the development of market niches as a result of exaptation differs from that based on adaptive innovation, in at least three important respects:

- Technological continuity: the core of the new technology is transferred across (usually) unrelated markets and does not have to be designed from scratch.
- Creativity: the origin of the new idea is rooted in hidden functionalities of existing artifacts, whose discovery originates from artifact–agent interactions that occur within dense social networks.
- Selection criteria: in the case of exaptive functional novelty, the selection criteria of a new market niche do not exist and have to be developed.

The authors highlight the unresolved questions

Several gaps in this emerging concept are here of interest to this study. First, studies on exaptation focus on network-centered approach (Padgett & Powell, 2012), while few studies focus on artifacts and knowledge bases for studying the emergence of new markets and industries. The second research avenue regards the methodological challenges: according to the authors (Andriani & Cattani, 2016), “the greatest potential for advancing research and theory on exaptation lies in methodological innovations that can penetrate and describe the inherent complexity of exposing the micro-evolutionary processes underlying exaptation. In our opinion, this is indeed the greatest need ». Some researchers have conducted a longitudinal case study design to empirically expose the dynamics of exaptation. Cattani (2006), for instance, conducted an in-depth historical analysis of the micro-organizational processes and evolutionary forces at the origin of the emergence of fiber optics technology. Longitudinal case studies that rely on a variety of data and particularly original documents detailing the decisions and actions of the actors involved in developing a new technology, precisely when those decisions and actions were first taken, constitute a very promising research approach. Finally, the authors claim that exaptation is not purely driven by chance. What are the capabilities needed for successful exaptation process? What is the importance of the capability to recombine existing knowledge? Research in strategy concerning firm heterogeneity highlight the relationship between existing knowledge and the capacity to innovate. But in the case of exaptation: do firms innovate because they anticipate which

knowledge will be needed in a new domain? Or is it the environment that randomly selects firms whose knowledge matches the requirements of a new domain? Elucidating these questions would help fill in another gaps: the question of operationalization of exaptation processes.

2. Innovation tradition and temporal dimension

The exaptation process, by highlighting the importance of existing knowledge and artifacts implicitly give voice to the past and to a certain extent the temporal dimension of knowledge. While technical problems tend to change continuously, the same body of knowledge can remain valuable as individuals “recognize similarities between old solutions and new problems” (Hargadon and Sutton, 1997: 732). This is however overlooked in emerging studies on exaptation. **We believe that research on innovation search processes combined with exaptation as a source of innovation can be valuable.** However, research on innovation search processes focus on two main dimensions of search: *search depth*, which captures the extent to which firms search for knowledge within their existing knowledge bases (e.g., Miner, Bassof, & Moorman, 2001; Stuart & Podolny, 1996), and *search breadth* which concentrates on how widely a firm searches for new knowledge across multiple knowledge domains (Katila & Ahuja, 2004).

By focusing on these two dimensions, **innovation scholars have overlooked the question of how firms search for innovation across time.** Recent work by De Massis et. al. (2016) demonstrate that **temporal search represents a third dimension** along which the search process in innovation can take place. Of particular interest is the process through which firms “search for and access knowledge created at different points in the past in order to create new products” (Katila, 2002, p. 995).

Besides, in our case study, tradition and luxury are two main characteristics of the company, and as noted by the authors (ibid, 2016) relying on past knowledge to innovate can be especially effective in specific industries, such as luxury, where customers exhibit an enduring need that may be satisfied by managing the tension between preservation and adaptation.

Moreover, a specific characteristic is particularly interesting in these industries: the temporal dimension of search process is closely linked to tradition. The concept of tradition refers to the stock of knowledge, competencies, materials, manufacturing processes, signs,

values, and beliefs pertaining to the past (Savino et al., 2012). Tradition involves accumulation of know-how, symbolic and cultural content, and micro-institutions of practice handed down across generations and contributing to shaping the identity of individuals, organizations, and territories (Hibbert & Huxham, 2010; De Massis et. al. 2016).

Another important feature of tradition is that it relies on sticky and therefore localized knowledge rendering its diffusion more difficult, thus contributing to its distinctiveness and rarity. This implies that companies able to leverage a specific tradition may be able to create and capture value from innovation and thus create and nurture competitive advantage.

3. A recombinant view of innovation and knowledge management challenges

By focusing on the recombination of knowledge, this research has the ambition to add to the recombinant view of the innovation process (Ahuja et al., 2008) with an exaptive perspective and relying on past knowledge. We believe knowledge management will allow to operationalize the knowledge transfer process. Knowledge management theory suggests that before it can be transferred, tacit knowledge needs to be formalized and decontextualized (perfume). Then, it must be re-contextualized in the new domain (spirits). De-contextualization happens through abstract codification of knowledge. De-contextualization presents a double advantage. First, it allows to diffuse and to reuse knowledge in practices, which cannot be replicated in their identical form and/or in different contexts. This increases the perimeter of knowledge diffusion in time (heterogeneous practices) or in space (different contexts). Second, de-contextualization favors generation of new propositions. Indeed, reusing decontextualized knowledge in new practices implies subsequent re-contextualization of knowledge. Re-contextualization provides an opportunity for knowledge adaptation and consequently, its enrichment. The existing literature has rarely studied the process of de-contextualization/re-contextualization in relation to exaptation. In other words, in order to better understand how exaptation unfolds, it is necessary to analyze how knowledge is created, used and how it is transferred to new domains. The objective of this research is to study how the phenomenon on knowledge transfer can be source of exaptation and how does exaptation materializes in the context of de-contextualization / re-contextualization and recombination of knowledge. Besides, the appropriate codification strategy (Echajari & Thomas, 2015) approach will be helpful in defining how to codify complex and heterogeneous experiences while at the same time leaving enough flexibility so not to hinder exaptation.

4. Case study



The company Comte de Grasse is an artisanal innovative distillery recently created (2017) to develop a Luxury Spirit Distillery focused on creating the world's most intriguing and authentic portfolio of Luxury Spirits. The entrepreneur is passionate by high-end whisky. His intention by locating his production site in Provence region, is to develop a line of highest quality spirits with the idea to leverage on the perfume industry heritage, long prevalent French traditional know-how and technological innovation to create an intriguing and authentic line of super premium spirit brands. This case is of particular interest as it is a case of an entrepreneur who anticipate the industry's knowledge base he thinks his company will need without knowing a priori what exactly except formalised techniques of perfume companies such as in his own words: "copper alambics, innovative fusion of traditional perfume distilling techniques such as vacuum distilling and molecular distilling to achieve better level of crispness and taste in comparison to pot stills. Explore the innovative processes in the ageing and maturing of the spirits by leveraging on France's strong and rich wine heritage. We will experiment and define how the use of different types of French oak casks used to age wines, champagnes and cognacs in different regions can add value and taste to the maturation of the spirits." To fulfil his objective, the founder has bought one of the oldest family manufacturing plant, that has been abandoned for more than 20 years.

This case study is a suitable case for a longitudinal case study on recombination of knowledge with exaptive view:

- The company has just been created along with the start of this research project on the intersectoral recombination of knowledge, giving the chance to examine the innovation search process of the entrepreneur, how he shapes his organization, and his role in founding and imprinting processes within his new organization.

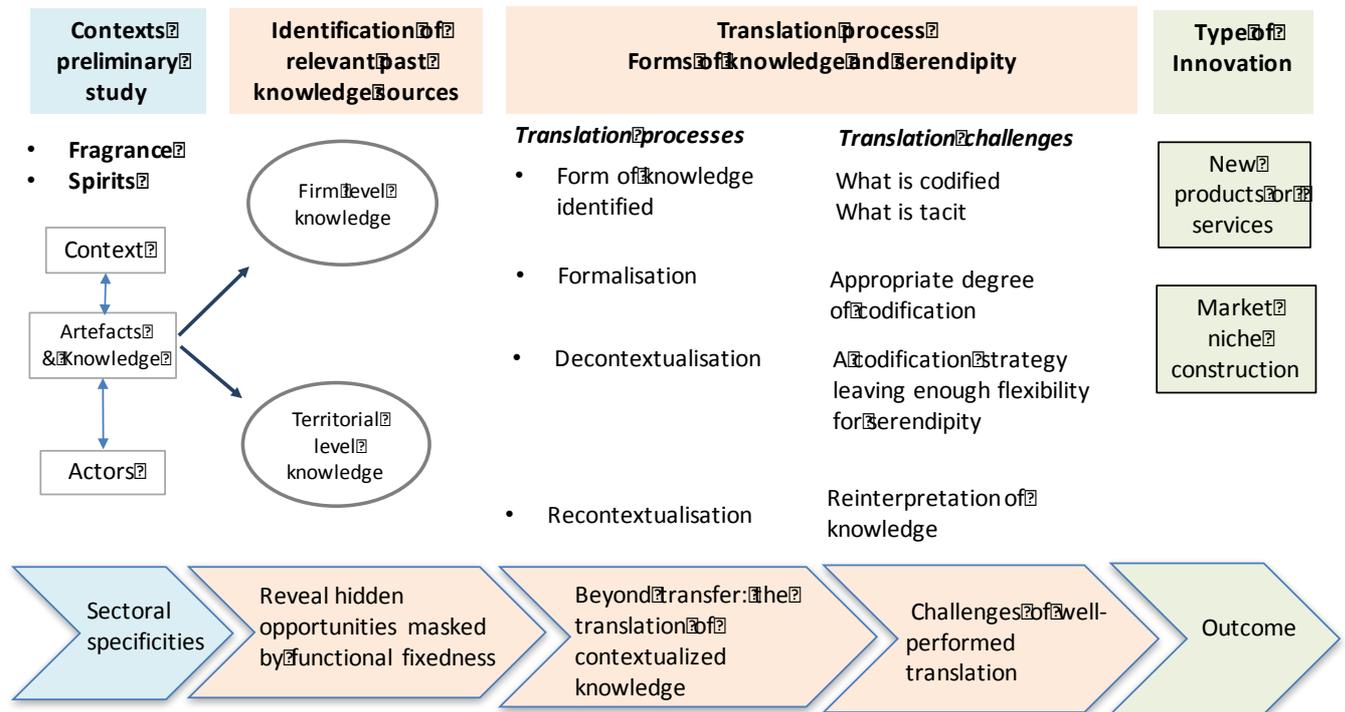
- The fragrance industry is an industry largely dominated by family business while this entrepreneur is new to the fragrance world and newly located along family businesses.
- This company wants to leverage on tradition of the fragrance industry while realising a shift of functions or meaning of past knowledge and artifacts
- The fragrance industry is also dominated by secret and tacit knowledge: this case will be of interest in elucidating the levers and barriers to knowledge transfer and translation to a new industry. Part of the knowledge is explicit and formalised making the transfer easier while obviously other knowledge, actually the most crucial knowledge, such as know-how, is tacit or secretly held and therefore more difficult to transfer and integrate.
- As far as the reinterpretation of knowledge will be concerned: the form of knowledge and strategy of codification leaving enough flexibility will be key for success.

5. Proposition of a preliminary framework for a processual study

In order to conduct this case study, this paper has the objective to propose and discuss a preliminary framework based on 4 building blocks (cf. figure by the author). We will explain each of the building block.

- i. Context and preliminary study
- ii. Identification of relevant past knowledge sources
- iii. Translation process, Forms of knowledge
- iv. Type of innovation

From Entrepreneurial Intuition to a Processual Study of Exapted Knowledge from an Industry to Another



References

Adner, R. and D. A. Levinthal (2002), 'The emergence of emerging technologies,' *California Management Review*, 45(1), pp. 50–66.

Ahuja, G., & Katila, R. (2004). Where do resources come from? The role of idiosyncratic situations. *Strategic Management Journal*, 25(8-9), 887–907.

Ahuja, G., Lampert, C. M., & Tandon, V. (2008). Moving beyond Schumpeter: Management research on the determinants of technological innovation. *Academy of Management Annals*, 2(1), 1–98.

Andriani, P. and Cattani G (2016) "Exaptation as source of creativity, innovation, and diversity", *Industrial and Corporate Change*, 2016, Vol. 25, No. 1, pp. 115–131

Arthur, W. B. (2009), *The Nature of Technology*. Free Press: New York, NY.

Best, M. H. (2003), 'Regional capabilities and specialization dynamics: a case study,' *Business and Economic History Online*, 1, pp.1–50.

Boisot, M. (1998), *Knowledge Assets Securing Competitive Advantage in the Information Economy*, Oxford University Press, New York, NY.

Boisot, M. and Li, Y. (2005), "Codification, abstraction, and firm differences: a cognitive information-based perspective", *Journal of Bioeconomics*, Vol. 7 No. 3, pp. 309-334.

Cattani, G. (2006), 'Technological pre-adaptation, speciation, and emergence of new technologies: how coming invented and developed fiber optics,' *Industrial and Corporate Change*, 15(2), pp. 285–318.

De Massis, A., Kotlar, J., Frattini, F., Messeni Petruzzelli, A., Wright, M. (2016). Innovation through tradition: lessons from innovative family businesses and directions for future research In: *Academy of*

Management Perspectives. 30, 1, p. 93-116. 24 p.

Dew, N. and S. D. Sarasvathy (2016), 'Exaptation and niche construction: behavioral insights for an evolutionary theory,' *Industrial and Corporate Change*, 25(1).

Echajari L. and Thomas C. (2015), "Learning from complex and heterogeneous experiences: the role of knowledge codification", *Journal of Knowledge Management*, Vol. 19 Iss 5 pp. 968 - 986

Hargadon, A. and R. I. Sutton (1997), 'Technology brokering and innovation in a product development firm,' *Administrative Science Quarterly*, 42(6), 716–749.

Hibbert, P., & Huxham, C. (2010). The past in play. *Organization Studies*, 31(5), 525–554.

Miner, A. S., Bassof, P., & Moorman, C. (2001). Organizational improvisation and learning: A field study. *Administrative Science Quarterly*, 46(2), 304–337.

Padgett, J. and W. W. Powell (2012), *The Emergence of Organizations and Markets*. Princeton University Press: Princeton, NJ.

Savino, T., Messeni Petruzzelli, A., Albino, V. (2017). Search and recombination process to innovate: A review of the empirical evidence and a research agenda. *International Journal of Management Reviews*, Vol. 19, pp. 54-75.

Zollo, M. and Singh, H. (1998), "The impact of knowledge codification, experience trajectories and integration strategies on the performance of corporate acquisitions", working paper [62/SM], INSEAD, Fontainebleau