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Innovation of Extraordinary Chefs: Development Process or Systemic Phenomenon?

full paper

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Abstract

A highly rated current study on culinary innovation was found to be too product- and service-oriented and narrow, more appropriate to describe the culinary craft than the culinary art Creativity seems to be put into a box and is sold as a well-structured task. Creativity, however, is an ill-structured problem solving and a systemic phenomenon. It requires social validation from the gatekeepers of the domain and if accepted changes an existing domain or transforms an existing domain into a new one. These theoretical findings were supported by selected empirical data from 19 phenomenological interviews with extraordinary chefs from the UK, France, Spain, Austria and Germany. It emerged from the interview analysis that culinary innovation is more than just product or service development and that extraordinary chefs use ill-structured problem solving. Finally, it was shown that the field and the domain have significant influence on the individual chef and her/his creations.

Introduction

The fascination for innovation is as old as mankind. Aurelius Augustinus (354-430 AD) described innovation as change and renewal, Martin Luther (1483-1546) translated *innovare* into renew, and William Shakespeare (1564-1616) described a person that brings about political change with the term *innouator* (Urban and Nordiek, 2007: 14-21). And until today, Schumpeter's image of innovations as waves of creative destruction prevails (Malerba, 2006: 3-23, Malerba and Orsenigo, 1997: 83-117, Sutton, 1992, Sutton, 1998), but it is often forgotten that Schumpeter clearly differentiated between the inventor and the innovator (Schumpeter, 1911/1934). Innovation is a significant change in the status quo of a social system (Aregger 1976 cited in Hauschildt, 1997) and when this social system changes the perceptions of innovation change (see Perunovic and Christiansen, 2005: 1051-1058, Tidd et al., 2005), because *"the road towards innovation leads through the jungle of social attributions"* (Pohlmann, 2005: 9-19). The emergence of the first innovation model dates back to the 1950s and since then five generations of models have developed (Rothwell, 1994: 7–31, Tidd, 2006: 1-16). However, outdated process-oriented perspectives from times when innovation was believed to apply only to products or processes bequeathed a belief that innovation is simply the process from research and development to the final application (Uhlmann 1978 quoted in Hauschildt, 1997), market launch (Lederer, 1989) or adoption (Rogers 1983 quoted in Hauschildt, 1997).

Recently, Ottenbacher and Harrington (2007: 444-460) presented *"The innovation development process of Michelin-starred chefs"*, which is the first study that looks into culinary innovations of extraordinary chefs. While their study is undeniably pioneering, being the first on the topic, it is questionable if their following starting point, which is based on a previous study of Harrington (2004: 35-57), is correct:

> *"Culinary innovations are generally product-oriented, but the innovation process also applies to innovations in service as both types lie somewhere on a service-product continuum. ...culinary innovations, culinary products and culinary product development are used interchangeably as all of these concepts reflect innovative food items consumed in a foodservice establishment."*

The aim of this paper is therefore to explore whether culinary innovation is the same as culinary product/service development that can be presented as development process or whether it is a more complex and systemic phenomenon. The paper starts by introducing Ottenbacher and Harrington's model and then it discusses why the term "innovation development process" is misleading. This is followed by a discussion about the link between personal creativity and the systemic phenomenon of innovation. Then, our study's methodology is presented including purpose-based sampling, phenomenological interviews and hermeneutic analysis, which we used in conducting interviews. This is followed by the presentation of selected empirical opinions from 19 extraordinary chefs from the UK, France, Spain, Austria and Germany. Finally, a conclusion is presented and recommendations for future research on culinary innovation are offered.

The Innovation Development Process of Michelin-starred Chefs

Ottenbacher and Harrington (2007: 444-460) present a seven-step innovation development process consisting of idea generation, screening, trial and error, concept development, final testing, training, and commercialisation. (Figure 1)

Figure 1: The Innovation Development Process of Michelin-starred Chefs
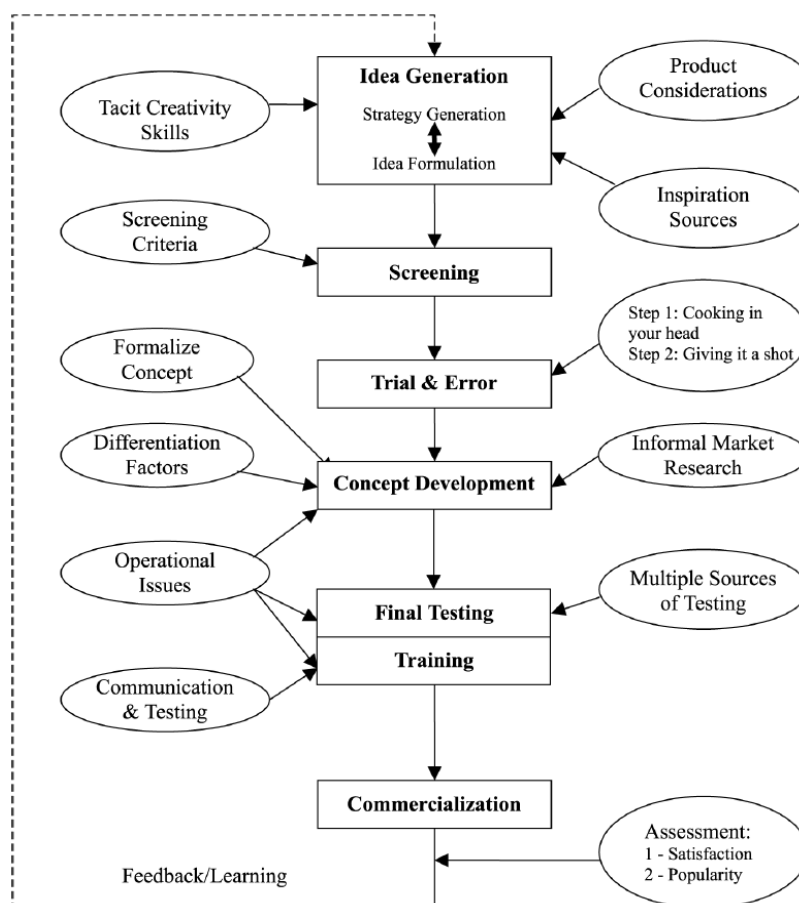
Source: Ottenbacher and Harrington (2007: 444-460)

Step One
During the *idea generation* stage the chef decides on a product as the basis for her/his strategy or idea. Seasonality and product quality are thereby critical indicators. Then the chef uses his tacit skills in creative thinking by playing around with ideas aiming at a harmonious and flavourful composition and taste experience for the customer. Sources of inspiration are, among others, dining at a colleague's restaurant and cooking literature.

Step Two
During the *screening* stage the chef considers criteria such as seasonality, product quality, and "fit" with personal style of cooking. Other criteria that are considered, although to a lesser extent, are financial considerations like cost efficiencies, profitability, product cost, and chargeable prices, but also balance of the dish in itself and as part of a menu, customer acceptance, and operational issues such as maintaining standards at maximum business levels.

Step Three
In the *trial and error* phase the chef cooks the idea in the mind and uses tacit knowledge to mentally play with different spices, textures and ingredients. Then s/he cooks elements of the dish typically several times and upon satisfaction combines them at the end. This step is iterative and almost simultaneous with the next step.

Step Four
During the *concept development* chefs use, for example, recipe-date files, written working instructions, presentation/arrangement instructions, photographs of the final dish, a rough theoretical plan, informal market research through conversation with customers or feedback from their restaurant managers, competitors' pricing, and/or cooking trend analyses.

Steps Five and Six
The *final testing* is done on leading employees, such as the restaurant manager or sommelier, regular customers and friends. Chefs also test the sequence of how a dish should be eaten under real conditions including the atmosphere of the restaurant. Sometimes the *training step* and final testing step is reversed, but chefs explain the dish to their employees in the kitchen and service and might even cook the dish to demonstrate their expectations.

Step Seven
Finally the *commercialisation* happens when customers try the new dish and evaluation is received via direct conversational customer feedback and sometimes via recorded number of sales for the dish.

Ottenbacher and Harrington (2007: 444-460) refer to their model as an "innovation development process" and say that Cooper and Edgett (1999) define the innovation development process as "a formal blueprint, roadmap or thought process for driving a new project from the idea stage through to market launch and beyond." However, Cooper and Edgett talk about a new product development process, respectively their Stage-Gate® innovation process. According to Cooper (2008: 213-232), stages consist of a set of necessary or suggested best-practice steps that are essential to bring a project to the next gate. Gates, in turn, are go/kill decision points that serve as quality-control check and prioritisation decisions points. Cooper (2008: 213-232) criticises that a lot of people get the idea of Stage-Gate wrong, because they think it is a functional, phased-review process, a rigid, lock-step process, a linear system, a project control mechanism, a dated, stagnant system, a bureaucratic system, a data entry scheme, a back-end or product-delivery process, and/or the same as project management.

We see several fundamental problems in Ottenbacher and Harrington's model. It seems to suggest that the process of culinary innovation is well-structured and we know that by following recipes only serials products can be made, not works of art. The creativity, which we see as the only necessary component of all innovations, is not modelled, only squeezed into the first box. Creativity is exactly what cannot be modelled in a well-structured way (Popper, 1968):

> *"… there is no such thing as a logical method of having ideas, or a logical reconstruction of this process. My view may be expressed by saying that every discovery contains «an irrational element», or «a creative intuition», in Bergson's sense."*

In this sense the model may be considered for the development part from R&D but not for the research part. The model also fails to account for the learning. A process of innovation, as

any process that includes creativity, must be highly non-linear, with circular and iterative components, involving multiple feedback and feedforward loops; in such process learning occurs at various places and in the steps between the various complex relations. Furthermore, components of learning may come from outside the process involving other parties as well. In this model we have a single feedback loop from the very end to the beginning. Fortunately we see the extraordinary chefs as much more docile. It is also very strange that the chef is supposed to examine the fit of her/his idea to her/his style – was s/he not there when s/he was having the idea? The whole personality of the chefs participates in creating those brilliant new dishes – of course it is harmony with their style. It is a more difficult question who would be able to recognise the style of a chef if her/his innovation is far away from her/his natural settings, for instance recognising Heston Blumenthal's style in the Little Chef chain is probably difficult. But in this study we limit our examination to extraordinary chefs in their own natural settings.

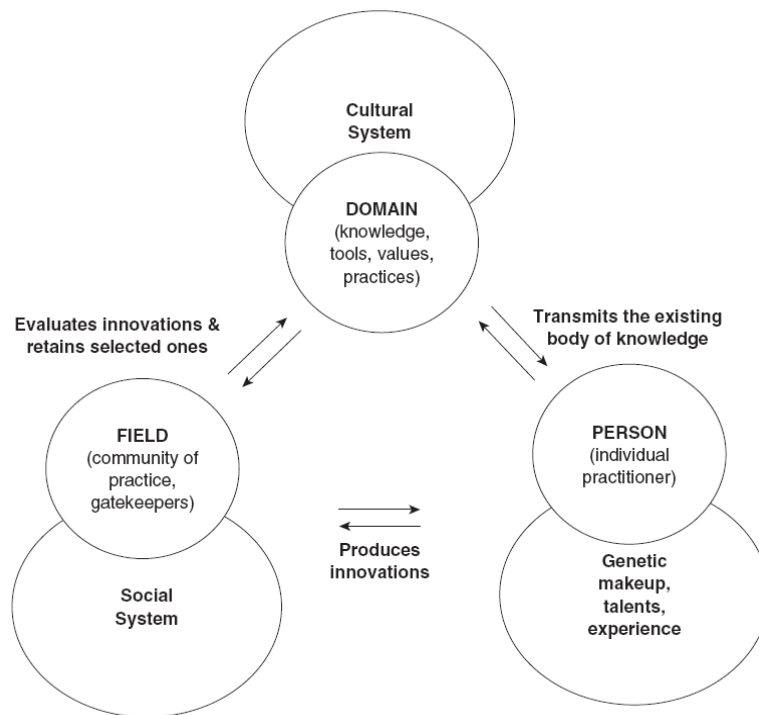**Creativity as Systemic Phenomenon of Innovation**

We can gain better understanding of creativity by conceptualising through solving ill-structured problems. Simon (1973: 181-201) distinguishes between ill-structured and well-structured problems; he regards the first as a residual concept, i.e. a problem is ill-structured if it is not well-structured, and describes the latter with six conditions (if any of these is missing, the problem is ill-structured):

(i)   there exist definite criteria to test the solution;
(ii)   the initial problem state, the goal state and all intermediate states may be represented;
(iii) the transitions between the previous states can be represented;
(iv)   the acquired knowledge can be represented;
(v)   the effects of the environment can be represented;
(vi)   and a feasible amount of search and computing is required;

Well-structured problems are thus tasks rather than problems (Baracskai, 1997) and are accomplished rather than solved (Dörfler, 2005: 324). Hence, problems are always ill-structured and their solutions require always creativity. The heuristic power of problems can be found in sensing that there is something hidden that passionately strives to reveal itself and thereby builds fascinating incipient knowledge (Polányi, 1969). This means that ideas are only creative when they solve a new and valuable problem (Johansson, 2006, Amabile, 1996). Such problems, though, can only be solved by jump in at the deep end of learning how to solve problems (Moustakas, 1990) and by creatively structuring them so that only a well-structured task remains, which can be seen as a solution to the problem in itself (Eden, 1987: 97-107).

However, for an idea to be considered innovative it is not enough to be just creative and valuable, it must also be realised (Johansson, 2006, Amabile, 1996). To distinguish between the first and the latter, Csíkszentmihályi (1997) suggests to aim at understanding where creativity happens rather than what it is. He distinguishes between Creativity (with a capital C) and creativity (with a lower case c) as shown in the following figure:

Figure 2: A System Model of Creativity

Cultural
System

DOMAIN
(knowledge,
tools, values,
practices)

Evaluates innovations &
retains selected ones

Transmits the existing
body of knowledge

FIELD
(community of
practice,
gatekeepers)

PERSON
(individual
practitioner)

Produces
innovations

Social
System

Genetic
makeup,
talents,
experience

Source: Csíkszentmihályi (2006: 3-17)

Creativity (with a capital C) is a system of three inter-related parts: the domain, the field and the individual person. According to Gardner (1998), the domain is the discipline in which the individual has chosen to work. The domain is linked to the cultural system with its symbolic rules and procedures, knowledge, tools, values, and practices (Csíkszentmihályi, 2006: 3-17, Csíkszentmihályi, 1997). The field are the persons and institutions, respectively the community of practice and gatekeepers to the domain that judge the individual's quality of work (Gardner, 1998, Csíkszentmihályi, 2006: 3-17, Csíkszentmihályi, 1997), which links the field to the social system (Csíkszentmihályi, 2006: 3-17). The individual person with her/his talents and goals, genetic makeup, and experience represents what Csíkszentmihályi (1997) describes as *personal creativity* (creativity with a lower case c):

> *"Creativity is any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one. And the definition of a creative person is: someone whose thoughts or actions change a domain, or establish a new domain. It is important to remember, however, that a domain cannot be changed without the explicit or implicit consent of a field responsible for it"* (Csíkszentmihályi, 1997).

This means that creativity is concerned with the creation of a new idea and Creativity is concerned with realising a new value that is the successful innovation from the idea (Baracskai et al., 2007, Csíkszentmihályi, 1997). Hence, the innovation process can be expressed through two heuristic stages. The first stage is a creative process of solving an ill-structured problem (Simon, 1973: 181-201) in which the problem solver rearranges her/his existing knowledge (Dörfler, 2004) in order to obtain a solution for the problem. The validation of the idea happens in the network of gatekeepers (i.e. the field) (Csíkszentmihályi, 1997) that shows mechanisms similar to Popper's (2004) conception of *"inter-subjective testing"* and Polanyi's (1983) *"principle of mutual control"*. The second stage of the innovation process is what Elsbach (2003: 1-7) calls pitching a brilliant idea and is concerned

with how the idea is converted into a value for the domain. The validation of the new value is then executed by idea catchers, who actually co-create the value by promoting it.

The Socio-Cultural Context of the Field and the Domain
Rogers (1962/2003) introduced the conception of diffusion of innovations, which is the planned and/or spontaneous spread of ideas. Diffusion is a type of communication of new ideas. The message about newness, though, involves uncertainty, which is *"the degree to which a number of alternatives are perceived with respect to the occurrence of an event and the relative probability of these alternatives"* (Rogers, 1962/2003). Hence, information is used to overcome the lack of structure and predictability implied in uncertainty. On the other hand, diffusion is also a type of social change that alters the structure and function of a social system (Rogers, 1962/2003). Whether a creative idea becomes an innovation depends therefore on how rule-breaking, on the one hand, and how compatible, on the other hand, the idea is with the value system of the relevant unit of adoption (Rogers and Shoemaker, 1971, Rogers, 1962/2003):

According to von Bertalanffy (1981) *"values are things or acts which are chosen by and are desirable to an individual or to society within a certain frame of reference."* Baracskai (1998) speaks in this respect of *"moral compasses"*. The problem with value systems is that they have a constantly changing ill-structured hierarchy (Hofstadter, 2000, Mérő, 1998). Boulding (1956: 197-208), for example, states that human beings are not only self-aware but also self-conscious; they have a self-reflexive quality. In other words, human beings not only have knowledge but know about their knowledge and can perceive that they perceive (László, 2001). Humans use a symbolic language to express abstractions and to distinguish between the future and the past. This makes it possible that they learn from the experiences of others through so-called second-hand or passed-on learning (de Bono, 1976) without having to go through the process of trial-and-error of first-hand learning. Moreover, human beings are able to anticipate their future goals in thought and so determine their actual behaviour to reach a higher level of *"true purposiveness"* or *"Aristotelian purposiveness"* (von Bertalanffy, 1981).

On the other hand, social systems, or social organisations, can be seen as a net of roles with their own communication channels (Boulding, 1956: 197-208). This can be explained by a little story told by Robert Sutton (2002):

> *"I find little value in a toy that my kids own called the Water Talkie, which is supposed to allow them to talk underwater. I don't think it works very well. I don't understand why they can't just stick their heads above the water to talk. ...It was invented by then-11-year-old Richie Stachowski and Richard Stachowski Sr., his father. ...It went on to become a very successful product. ...I may not like it, but I would call the Water Talkie a creative idea. Kids find the marriage of a telephone and swimming to be fun and new."*

Important to note is that when a social organisation has established a value system it becomes independent of its members. This can be explained by Hamel and Prahalad's (1994) story of the monkeys who receive a cold shower as soon as they trying to climb up a pole in the middle of their room to reach the bananas that are placed at the top; quickly they have learned not to try to get the bananas. Then all the monkeys were re-placed one by one and still no new monkey touched the bananas. The conclusion is that trying to get the bananas is bad and this became part of their group value system. Innovations may disturb the sense-making of the social organisation (please see Peter and Hull, 1969: as a humorous treatise) and this is

why innovation is often seen as dangerous to the organisation, because it requires space and freedom from direction and control (De Geus, 2002). In other words, social organisations tend to remunerate individuals for their conformity and tend to punish those who challenge the organisation (Ingram and Clay, 2000: 526-546):

> *"There is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage than the creation of a new order of things. ...Whenever his enemies have the ability to attack the innovator, they do so with the passion of partisans, while the others defend him sluggishly, so that the innovator and his party alike are vulnerable" (Machiavelli, 'The Prince', 1513 cited in Rogers, 2003).*

Methodology

The aforementioned conceptual findings informed 19 phenomenological interviews with extraordinary chefs from the UK, France, Spain, Austria and Germany that were selected using a purpose-based sampling technique. The data was hermeneutically analysed in a tradition similar to Gadamer's.

Purpose-based Sampling
A purpose-based sampling was used, because of the lack of previous studies, which meant to start from a limited understanding of the phenomenon (Kwortnik, 2003: 117-129). This required interviewees that could *"purposefully inform an understanding of the research problem and central phenomenon"* (Creswell, 2007). The sample was drawn from three sources. First, the Michelin Guide was chosen because it is considered as the most authoritative and widely recognized benchmark for the identification of extraordinary chefs (Ferguson, 1998: 597-641, Karpik, 2000: 369-389). It is said to be neutral towards different styles of cuisine (Durand et al., 2007: 455-472, Rao et al., 2005: 968-991). Second, the S. Pellegrino World's 50 Best Restaurants (RestaurantMagazine, 2008) list was chosen, because it employs several regional/national panels that are made up of a diverse range of voters from the restaurant industry, including active chefs who can judge the innovativeness of chefs from a domain perspective. Third, the guest chefs list of the Austrian restaurant Ikarus (Hangar-7, 2009) was consulted, because the Ikarus is under the auspices of the "Chef of the Century" Eckart Witzigmann, a title awarded by the French Gault Millau guide that was only awarded three more times namely to Paul Bocuse, Joël Robuchon, and Frédy Girardet. It is assumed that his guest chefs are chosen on the premise that they gained his interest as professional chef.

The pilot interview was conducted with Harald Wohlfahrt whose restaurant has been awarded with 3* stars for the last 18 years and who was named one of the ten best chefs by the New York Times in 1994 (FAZ.NET, 2009). He created, for example, dishes for the astronauts of the European Space Agency (ESA) (Günthner, 2008). Beside the richness and deep insights this interview has provided, it was also a strategic decision, because it was hoped that Wohlfahrt's reputation would create a snowballing effect. This hope became reality and Wohlfahrt even signed a letter that was sent to 36 extraordinary chefs in Europe asking for their support. The letter was sent via email to those chefs that were anticipated to know Wohlfahrt in person. Upon receipt of their consent, their names were added to the list of supporters and the next round of letters was sent out. Sometimes more than one email was required before a reply was received and in most cases a number of emails were required until the final interview date was fixed. In total 19 extraordinary chefs from the UK, France,

Spain, Austria and Germany agreed to participate in the study and all granted to use their name in quotations.

Phenomenological Interviews
The interviews were conducted in English, German, French, and Spanish (the three Spanish interviews were conducted with translators), recorded and then transcribed. They can be described as phenomenological in nature (Thompson et al., 1989: 133-146), because at the beginning of a phenomenological study it is often unclear what is to be studied and in such a fuzzy situation interviewing is aimed at uncovering and enhancing the understating of the phenomenon. In other words, *"the fuzzier the research question is, the less structured the interview should be"* (Kwortnik, 2003: 117-129). Typical for this kind of interviews is a relatively small number of pre-planned questions aiming at an emergent dialogue and a discovery of the interviewee's unique experience with the phenomenon in study (Thompson, 1997: 428-455, Thompson et al., 1989: 133-146). This emergent dialogue was also possible, because the interviewer was a chef in Michelin star restaurants for years, which, at the same time, demands rigorous reflection and reflexivity, because the interviewer is to some extend part of the chefs' *Dasein* (Heidegger, 1962). It is explicitly acknowledged that phenomenological interviews inevitably make the interviewer to an essential part of the results' rationale (Polkinghorne, 1983).

Verstehen in this study is therefore seen as participative discourse that forms the logic of questions and answers (Bernstein, 1983, Grondin, 1994, Taylor, 1991: 304-314). Sense-making is believed to be processive and depended on the time and context of understanding (Aylesworth, 1991: 63-81) and the unity of words (Gadamer, 1960/2004). Meaning and understanding also emerged through qualia, which are the subjective dimensions of phenomenological experiences (Lewis, 1929). These included experiences during tours of the restaurant, invitations to dine, explanations of kitchen equipment that was often designed by the chefs, and through other artefacts, including menus, books and recipes. Many critical insights were captured during informal chats with the chefs after the interviews. These insights and qualia were recorded and reflected upon in a research diary.

Data Analysis
The analysis started in the moment of the first interview and continued during the transcription of the interviews and the formal analysis phase of coding emerging themes. While the research software NVivo 8 was used for data management and structuring, such as classifying, sorting and arranging data, the thematic analysis was done by the researcher, because this step requires creativity and computer programs cannot do the thematic analysis for the researcher (van Manen, 2002) as it is often misunderstood. Kvale (1983: 171-196) states that phenomenological interviews are predestined for hermeneutic analysis, because the researcher engages in a dialogue with the transcribed text and the qualia made. The aim of this inner conversation is to uncover what is hidden behind the words (Alvesson and Sköldberg, 2004).

However, it is crucial to understand that the work of hermeneutics *"is not to develop a procedure of understanding, but to clarify the conditions in which understanding takes place. But these conditions do not amount to a 'procedure' or method which the interpreter must himself bring to bear on the text; rather they must be given. ...the prejudices and fore-meanings that occupy the interpreter's consciousness are not at his free disposal. He cannot separate in advance the productive prejudices that enable understanding from the prejudices that hinder it and lead to misunderstandings"* (2004). This view of hermeneutics is very different from Husserl's phenomenology and Heidegger's hermeneutics in that it refuses the

conception of bracketing, which is the act of suspending beliefs in scientific inquiry. Instead Gadamer (1960/2004) offers that *"this separation must take place in the process of understanding itself, and hence hermeneutics must ask how that happens. But that means it must foreground what has remained entirely peripheral in previous hermeneutics: temporal distance and its significance for understanding."*

Results and Discussion

In this section we offer a sample of quotations from the extraordinary chefs we interviewed; these are word-for-word quotations but we cannot disclose the names of the particular respondents due to the sensitive nature of the topics. The quotations are selected to support our argument that innovation should be seen as a complex socio-cultural phenomenon based on creativity rather than a well-structured developmental process. The quotations are grouped into three categories: creativity versus new product or service development in culinary innovation; creativity and the process of culinary innovation; and the influence of the field and the domain

Creativity versus New Product or Service Development in Culinary Innovation
In this group two chefs talk about how they see the innovations and the role of creativity in them. It is quite typical for those extraordinary chefs we interviewed to have such broad angle of viewing their domain and field as well as philosophical, sociological, historical and/or other perspective. And they definitely have deep understanding of creativity and innovation – they experience these on daily basis.

"I would say culinary innovation is certainly for me creativity and to purport the future direction. ...the German cuisine did not have a good reputation, but today the French come over to us... and in this we take pride and I think we contributed a big part to this achievement. But, you should never pat yourself on the back and say now you have achieved everything. There are always new products, new cooking techniques, and so on. You always stay young in the cooking profession. You have experience and you can fully use this experience and this is great and it is my ambition to pass this on to young people, especially in form of first-class cookery books, which I wrote a lot. And I think this is the most important for me that you do not stay still, but that you enjoy and have fun."

"Innovation is the frontiers or the borders of being known and unknown. We talk about the product and the technology, which are the two things the people see. There is a third one, which is for me the most interesting, which is the knowledge. So really, innovation is in knowledge. How does that work? It works with sociology, interpretation, including all the senses and the desire. Why do we do these things? Why to change? Why are we doing these things? Where do they come from? And where are they going to go? What is the moment's reality? For me that is where the real innovation is! Typical of this area are the white country houses. ...From the 16th to the 18th century they used to be big farms, industrial farms, and they were built with the best technology they had at that time. Everything they developed in that moment was industrial and within that, within that industry, the people lived. So, for example, there could be a place that made cider and people lived in between the machinery and the whole place. It was all together. You see a lot of big white houses in the middle of the green countryside. It is a big contrast, almost a hard vision. Between the 16th and 18th century that was normal. It is a normal passage. Now it is a lot of contrast, it is part of harmony. Today, people are creating houses to imitate these houses and you say: Wait! If

you want to be ...go back to the origin and the idea you have to ...you can't make houses that are white in the middle of the green country. You have to use the most advanced technology, because in this time these houses were the most technologically advanced in this time. So the people don't understand. So what they understand is a typical house and they have forgotten the idea behind the construction of the original house. So many times we stay in the formal and we forget about the origins of why they made these houses white. And in gastronomy this happens a lot."

Creativity and the Process of Culinary Innovation
Ottenbacher and Harrington (2007: 444-460) state that during the *idea generation* stage the chef decides on a product as the basis for her/his strategy or idea. Seasonality and product quality are thereby critical indicators. Then the chef uses his tacit skills in creative thinking by playing around with ideas aiming at a harmonious and flavourful composition and taste experience for the customer. Sources of inspiration are, among others, dining at a colleague's restaurant and cooking literature. This view, however, reads as if the chef only deals with well-structured tasks rather than ill-structured problems. Creativity cannot be put in a box available when needed. One chef, for example, discovered rather than developed a dish with fresh porcini mushrooms. Another chef was angry when he entered the cold store, because one of his chefs had put the crayfish next to the sweetbread, but this was the inspiration for one of his best dishes:

"Last year we got porcini mushrooms and then we tried, actually we discovered. We asked what fits with the porcini. They grow in the forest and there is the flavour of moss and of the forest and so we followed this way. We started to distil forest soil and this brings out the taste. However, the taste was not pleasant, but it was a great achievement for us. So we decided to make small dices of jelly with it and place the porcini on top. ...I like this taste, but 80-90% of the people they do not know what is behind it and for them a taste must be pleasant."

"I enter the cold store and get angry, because the crayfish lies next to the sweetbread. Suddenly, it made click in my head. Wow, let's do a sweetbread with crayfish! This is how it starts and then it goes forth and back. How can I do this? What do I need? How do I make it interesting? Does it really taste harmonious? This is how it works. This is the process. And then I draw a picture of the dish and note everything down. This goes very fast, because the artistry was given to me by Mother Nature. I already painted as a child and the teachers always said that I would have an artistic job. And today I paint on the plate. I take a piece of paper and draw the idea and then I cook it, but then it is already good most of the time. Maybe it is refined a bit over the next two days; maybe the colours are changed. For example you could add melted spinach as the base of the dish."

The Influence of the Field and the Domain
Csíkszentmihályi (1997) says *"there is no way to know whether a thought is new except with reference to some standards, and there is no way to tell whether it is valuable until it passes social evaluation. Therefore, creativity does not happen inside people's heads, but in the interaction between a person's thoughts and a sociocultural context."* One chef reports that he is worried, because a healthy critique seems impossible in the current media climate. Another chef reports that considering the food critics in the innovation process is essential. And another says that learning from a great master of the domain is important to get an understanding of the whole.

"The young people are getting praised for everything they do. I just said to someone that if

you cook pig's ears in chocolate sauce everybody says wonderful, because nobody has the guts to say something about it. Everybody is afraid to be considered not being up-to-date, closed-minded, or not innovative, and this is how we get food that is certainly not good. But it is a different time and one has to accept it."

"This is an old topic. Whether it is scallops or ramsons, or other things that are frowned upon by critics, you have to inform yourself and read these things whether you like it or not. Critics go out dining every day and at some point you are sick and tired of these things even if you try to be objective and professional. ...This is why I do not cook these things. It is an unwritten rule. I would never cook these things exactly for this reason, because everybody else is cooking them."

"Witzigmann was certainly well respected and young people look up to such role models. There was a pursuit of perfection and new horizons were found how to cook sauces, how to cook fonds, and how to deal with fresh fish and fresh produce. It was a completely new world of perfection and when you are young you are like a sponge and you want to learn from the great master. You absorb as much as you can, but after a certain time you realise that it becomes a whole. The circle closes and you realise that everything circles like the earth around the sun and the circle closes and you understand that forms and things are repeated. You need a base on which you can later build the artistic."

This is only a small sample from our interviewees illustrating our points that the so called "innovation development process" is a less adequate description of how innovations happen in the restaurants of extraordinary chefs than the systems view of the phenomenon of creativity. First, the role of personal creativity is, at the best, significantly underplayed; and it is squeezed into the first step. The extraordinary chefs are telling us that creativity is woven not only into all steps of innovation but actually to everything they do. We can also see that there is nothing well-structured about the innovation process and that the scope of this process may range from the forest soil to the history or sociology or philosophy.

Conclusion

Ottenbacher and Harrington's innovation development process was found to be too product- and service-oriented; creativity seems to be put into a box and is sold as a well-structured task within the overall innovation process of chefs. Starting from Simon's conception of ill-structured problems, creativity can be seen as an ill-structured problem solving which happens as a complex socio-cultural phenomenon, which Csíkszentmihályi describes from a systems point of view. Innovation requires social validation from the gatekeepers of the domain and if accepted innovation changes an existing domain or transforms an existing domain into a new one. This means that the personal creativity of the chef is concerned with the creation of a new idea and for this idea to become an innovation it must be transformed into a new value. Hence, the innovation process can be expressed through two heuristic stages. The first stage is a creative process of solving an ill-structured problem in which the problem solver rearranges her/his existing knowledge in order to obtain a solution for the problem. The validation of the idea happens in the network of gatekeepers that shows mechanisms similar to Popper's conception of inter-subjective testing and Polanyi's principle of mutual control. The second stage of the innovation process is the pitching of a brilliant idea and is concerned with how the idea is converted into a value for the domain. The validation of the new value is then executed by idea catchers, who actually co-create the

value by promoting it.

These conceptual findings were supported by selected empirical data from 19 phenomenological interviews with extraordinary chefs from the UK, France, Spain, Austria and Germany. By using a form of hermeneutic analysis in the tradition of Gadamer it emerged that the phenomenon of culinary innovation is more than just product or service development. It also became apparent that the creativity of extraordinary chefs is the same as ill-structured problem solving and that this part of the innovation process cannot be put into a box of well-structured tasks. Finally, it was shown that the field and the domain have significant influence on the individual chef and her/his creations. The Ottenbacher-Harrington model might be appropriate for a product development in well-structured setting but it has little to do with creativity and extraordinariness. It might be appropriate for describing the culinary industry but not the culinary art.

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