Recipes and Culinary Creativity: The Noma Legacy

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ABSTRACT

In the past years, food has found itself a central focus of creativity in contemporary culture and a pinnacle of this trend has been the kind of culinary creativity displayed at Noma in Copenhagen. But what is culinary creativity? And what is distinctive about the kind of culinary creativity displayed at places like Noma? In this paper, I attempt to answer these two questions. Building up on pioneering work on creativity by Margaret Boden, I argue that creativity is a matter of adding new valuable things to the world. I then distinguish three different ways a recipe can be creative, building up on different culinary trends. I then focus on the specific case of Noma and argue that what is specific about the kind of culinary creativity displayed at Noma is that it emphasizes the role that recipes can play in mediating our relation to the environment.

0. Introduction

In the past years, it seems that food has found itself a central focus of creativity in contemporary culture. To wit, streaming platforms are littered with cooking shows celebrating chefs′ creativity around the world, books take culinary creativity as their central topic (see, e.g., Redzepi 2013 and Questlove 2016), and people seem to be constantly concerned about the last culinary trend. But what is culinary creativity? And what are the forms it can take? This paper addresses these issues.

Building upon pioneering work on creativity by Margaret Boden, I argue that creativity is a matter of adding new valuable things to the world. Creative people are those that take on this task, and creative things are the output of their creative processes. Many recipes and many chefs meet this characterization. However, as we shall see, they don't all meet it in the same sense, and some forms of culinary creativity can be deemed more valuable than others. I will argue that this is especially the case with the kind of culinary creativity displayed at Noma in Copenhagen, one of today's most creative restaurants, headed by its

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celebrated chef René Redzepi. Indeed, the kind of culinary creativity displayed at Noma emphasizes the mediating role that recipes can have with respect to the environment and realizes the full potential of this mediating relation by taking into account not only its sensory, but also its cognitive and disruptive aspects.

The structure of the paper is the following. In the first section, I expound on some background issues about creativity and recipes. In the second section, I provide a summary of the creative perspective at Noma. In a third section, I discuss three ways creativity can occur in the culinary domain and discuss three important culinary movements: fusion food, nouvelle cuisine, and modernist cuisine. Before summarizing my results in the conclusion, I then expound, in a fourth section, my reasons to consider that the kind of culinary creativity displayed at Noma is distinctive.

1. Creativity and the Culinary Domain

What is creativity? Alternatively, what do we mean when we use instances of the schema "*x* is creative"? Current philosophical research on creativity is booming, and we are still very far from coming to an agreement on a fixed understanding of that central notion. In this paper, however, I will take as a working hypothesis an influential account due to Margaret Boden (Boden 2003 and 2010), which, I contend, captures well at least one central conception of creativity. As she sees the matter,

> creativity is the ability to come up with ideas or artefacts that are *new*, *surprising*, and *valuable*. "Ideas" here include concepts, poems, musical compositions, scientific theories, cookery recipes, choreography, jokes, and so on. "Artefacts" include paintings, sculptures, steam engines, vacuum cleaners, pottery, origami, penny whistles—and many other things you can name. (Boden 2004: 1)

If quite broad, this characterization of creativity doesn't cover any possible application of the schema "*x* is creative." In particular, it doesn't consider cases where x gets substituted by a term referring to a process or a person. This might sound peculiar at first. Why focus on outputs? After all, it is not that sentences such as: "John is creative" or "We should do more to subsidize creative processes" are uncommon or illegitimate. The issue, however, isn't one of legitimacy but, rather, of whether such further uses of the schema "*x* is creative" are as fundamental as in the case of outputs. Is an artifact creative because it results from a creative process or the output of a creative person, or is a process or a person creative because it generates a creative output? When creativity is

understood in the essentially evaluative way proposed by Boden, outputs are where creativity fundamentally resides. Indeed, first, it is hard to make sense of someone being creative in an evaluative sense, but because she has generated valuable things. And second, it seems hard to say which processes are creative in an evaluative sense independently of their outputs. Hence, in the sense of interest for us, the schema "*x* is creative" applies fundamentally only to outputs.

As should be obvious, this doesn't threaten the possibility for other notions of creativity standing beyond the scope of this paper to break free from this dependence on outputs. For instance, it doesn't threaten the possibility of non-evaluative conceptions of creativity, as remarked by Noel Carroll, who distinguishes between two senses of creativity, a normative and a non-normative one, according to which one can be creative merely in the sense of producing things (Carroll 2003). It doesn't also threaten the possibility of talking of creativity in a more phenomenological sense, as proposed recently by Bence Nanay (Nanay 2017), creativity being there conceived as a specific positive feeling one undergoes as one is doing something.

Boden's above quote leaves many things open and some details must be provided. In particular, we need to know what she means by "new," "surprising," and "valuable"? To begin with, she distinguishes between two different ways a creative output can be new. First, an output can be new in the sense of absolutely new, i.e., new to everyone. If a creative output is new in that sense, then it is an instance of "historical creativity" or "h-creativity" for short (Boden 2010: 30). Second, an output can be new in the weaker sense of being new to someone. For instance, a child can, on its own, produce something valuable that isn't absolutely new, but that is nonetheless new to her, and it would be highly restrictive to deny that child an instance of creativity. Yet, it is also true that not being unprecedented, it cannot be creative in the exact way something absolutely new can be. Hence, a second, less demanding form of creativity is "psychological creativity" or "p-creativity" for short (Boden 2010: 30). In this paper, my focus will be on h-creativity.

Let me now move from novelty to surprise. To begin with, novelty doesn't entail surprise. Each day is a new day but, alas, most days aren't surprising. Surprise, then, is a property that certain new things can bear, complementing their being new. What, however, is surprise? Think of a certain practice in which creative outputs can occur. Like all practices, it is more or less codified, governed by things like conventions, rules of thumb, and so forth. From within this practice, new things can occur. In addition, new and surprising things can

also occur. This is the case when, roughly, something comes up that doesn't really line up with the established conventions and rules of thumb.

Something is creative, then, when it isn't only new, but surprising within a certain practice or, as Boden calls them, a certain "conceptual space" or "structured type of thought" (Boden 2010: 32). She distinguishes, however, between three different ways in which an output can be surprising from within a certain conceptual space: a) combinatorial creativity; b) explorative creativity; and c) transformative creativity.

To make sense of combinatorial creativity, imagine a practice of producing two kinds of outputs, those of type A and those of type B. Outputs of type A are aggregates of two kinds of parts, P1 and P2, while outputs of type B are aggregates of two other kinds of parts, P3 and P4. One day, however, someone creates an output of a new type C, produced of parts of kinds P1 and P3. Admittedly, this output is new and surprising, and we can also assume for the sake of the example that it is valuable. Hence, it is creative. However, its creativity is of a minimal kind: it merely consisted of a new combination of already known parts or, as Boden puts it, "an unfamiliar combination of familiar ideas" (Boden 2010: 31).

What about explorative creativity? Take a certain practice or structured style of thought again. Assume that this practice produced a series of outputs of different kinds for some time, some of them having been instances of combinatorial creativity. That being said, a fair question might be asked about this practice. Can't it produce more kinds of things? Intuitively, we want to say that with most practices or structured styles of thought, more things can be produced than already known ones and creative recombination thereof. Indeed, it seems that with respect to any practice or structured type of thought there is a range of possible outputs determined by the nature of the practice or structured type of thought which are possible and which haven't yet been actualized. This opens up the space of explorative creativity as, as Boden puts it, "exploratory creativity is valuable because it can enable someone to see possibilities they hadn't glimpsed before" (Boden 2011: 33).

Boden third sense of creativity, finally, is the most demanding. It doesn't merely require exploring the possibilities of a practice or structured style of thought beyond mere recombination. Instead, it requires transforming it in such a way that a new set of possibilities becomes accessible. I should apologize for taking an already well-worn example, but I think it is particularly clear. Take the case of Marcel Duchamp exhibiting a urinal under the title Fountain in 1917. Try

to think now of what the possible moves within the practice of the arts at that time were. Obviously, Fountain isn't an instance of combinatorial creativity. More interestingly, it is also not an instance of explorative creativity, as one may be hard-pressed to pinpoint within the accepted concept of art pre-1917 a possibility such as Fountain being an artwork. What Duchamp achieved, for better or worse, is an instance of transformative creativity: he managed to make a move so radically creative that it transformed the concept of art itself.

What now about value? It isn't difficult to imagine something being both new and surprising but utterly uninteresting or useless. Would this thing count as being creative? It seems rather clear that the notion of creativity relevant for our discussion—the one we apply to masterpieces in the arts and sciences, like Janaçek's *Jenufa* and Cantor's diagonalization's proof, or technical revolutions like the Internet—, wouldn't allow us to deem this thing creative. That is, in at least one of its senses, creativity entails value. But what is value? And what kinds of values are relevant for creativity?

Generally speaking, a value is a property of a special kind: it is a property such that its having can justify evaluation, positive or negative of a something. Standardly, however, philosophers distinguish between two kinds of such values: intrinsic and instrumental. A value is intrinsic if we evaluate what has it merely for and in itself. Beauty, for instance, is often advanced as an intrinsic value. If a certain landscape is beautiful, then we positively consider that landscape merely for its being what it is, a beautiful landscape, and not in virtue of something else, e.g., the pleasure it causes or its economic value, even though its being beautiful might be related to these further things. On the other hand, a value is instrumental if we evaluate what has it not in and for itself, but in terms of what we can do with it. Take, for instance, a stick having a certain length. Admittedly, nothing in this length itself would justify any positive consideration of the stick. But imagine harvesting apples from a tree. In such a case, the length could turn out to be a value. Namely, positive consideration of the length of the stick could be justified on the ground that it is helpful to harvest apples.

In the context of creativity, both kinds of values are relevant. The inventor of the wheel, for instance, came up with something new, surprising, and valuable, but this value wasn't intrinsic: the value of the wheel resides in its utility, i.e., in what it allows us to do. However, creativity in other domains, such as in the arts, is more likely to be intrinsic. We often engage with and value artworks not in the light of something else, but instead in the light of something they have in and for themselves.

With these basic elements about creativity in place, let me now turn to the culinary domain. In this paper, my focus is on a specific kind of creative culinary outputs, namely recipes. What, however, are recipes? Let me clear some initial fog by distinguishing between a recipe and a dish. A dish is what is to be found on your plate: a concrete, edible item. A recipe is what is being represented in your exemplar of Yottam Ottolenghi's last cookbook: an abstract, non-edible entity. These two things, however, can stand in an important relation. If it isn't the case that all dishes need a recipe (one might, for better or worse, proceed to cook an ingredient randomly) and if some recipes, like some buildings, exist merely on paper, dishes are often instances, or concretizations, of recipes.

I will operate with a simple characterization of recipes, made of three clauses. The first clause says that a recipe requires a list of ingredients. This list generally covers two parameters, ingredients and quantity, but it might also contain more, or less, parameters. Some further ones might pertain to geographical or agricultural (e.g., organic vs. non-organic) properties of ingredients. All parameters can be more or less specific: some recipes are painted with rather broad brushes while others are crafted with excruciating details.

The second clause says that a recipe requires a specification of a combinatorial procedure that takes the ingredients as input and delivers an instance of the recipe—a dish—as an output. This combinatorial procedure generally covers several parameters that pertain to processes such as, e.g., washing, peeling, cutting, preparing, and platting ingredients. It can also be more or less specific: some combinatorial procedures might contain few parameters, some other might contain a lot; also, some procedures, or elements of them, might be very precisely described or only hinted at. Finally, a procedure might completely ignore, or the contrary prescribe, the kind of tools to be used to realize the procedure.

Recipes, moreover, come with success conditions. That is, when combining the ingredients in the way set by the combinatorial procedure, one can either succeed or fail. However, it isn't so where do these success conditions come from and whether the mere conjunction of a list of ingredients and a combinatorial procedure are sufficient to determine them. One of the reasons for this is that some recipes come with rather loose success conditions, while others come with rather strict ones. For instance, a simple convenience recipe can be adapted or tempered with without thereby threatening the success of its realization. In comparison, someone cooking *bucatini all'amatriciana* with regular bacon instead of *guanciale* or someone substituting *pecorino* for

parmiggiano in Massimo Bottura's recipe *Five Ages of Parmiggiano* could legitimately be said to produce an instance of a recipe that is, in the best scenario, sub-optimal and, in the worst one, a complete failure (Bottura 2014: 32).

How to best account for such differences remains an open question for the philosophy of recipes. In this paper, I will tentatively endorse the following claim. The conditions of success of a recipe are determined, at least in part, by the interplay of the status of the recipe (i.e., whether it is a chef's recipe, a traditional recipe, a convenience recipe, etc.) and the culinary intention of the person realizing the recipe. These conditions of success determine, in part, the individuation conditions of a recipe. Accordingly, the intentions of the person realizing the recipe should be considered being a part of the recipe, rather than a mere accompaniment to it. In that respect, one fails to produce an instance of *bucatini all'amatriciana* by using *pancetta* instead of *guanciale* if it is one's intention to produce an authentic instance of *bucatini all'amatriciana*. If, on the other hand, one only intends to produce one's best approximation or one's own interpretation of the recipe, then one can hardly be said to fail if substituting *pancetta* for *guanciale*, even though the culinary values realized in each case might turn out to be different (for a more complete account, see Engisch forthcoming).

In the rest of this paper, a specific kind of culinary intentions will matter. Namely, the intentions of professional chefs, and these are special on three counts. First, they are materialized in recipes that receive an institutional form, either through being proposed on the menu of a public establishment or, in the best cases, by figuring in a cooking book. Second, they come with stringent conditions of success, determined by the culinary intentions of the author of the recipe. As a result, successful instances of such recipes must bear very strong relations of culinary similarity with each other. Third, as we shall see later, it is often the case, at least in the contemporary culinary world, that part of a chef's culinary intention in creating a new recipe is that it meets the threshold for being a creative output.

In what comes next, then, I will focus my attention on chef recipes as characterized here, and especially on the possibility for them to be creative. But before turning to this issue, let me first dip into culinary creativity by offering a quick tour of culinary creativity at Noma.

2. Culinary Creativity at Noma

In this section, I provide a quick sketch of creativity at Noma. The task isn't an easy one. Not only is Noma an exceptionally creative place, its creativity is also in constant flux and went through different phases. As a result, my account will be painted with broad brushes and will remain rather schematic.

Opened in 2003 in Copenhagen and headed by chef René Rezdepi, Noma is one of the world′s most renowned restaurants and won four times *Restaurant Magazine*'s best restaurant in the world award (2010, 2011, 2012, 2014). The word "Noma" is a programmatic contraction of two Danish words, *nordisk* and *mad*, meaning "Nordic food". The concept behind the restaurant and its name was bold: to serve Nordic food not as people knew it then but, rather, to reinvent it.

What does it mean to reinvent Nordic food? For Redzepi, the issue was a radical one, and it had to be done from scratch. It didn't mean building upon traditional Nordic food, a bit in the way Massimo Bottura, in some of his recipes at least, can be said to build upon traditional Italian cuisine (see Bottura 2014). Rather, it meant taking a geographical area as a constraint upon developing a new form of cuisine pretty much from scratch.

Redzepi's idea of a geographical constraint was a simple and bold one: he opened a map, drew a circle around the Nordic region, and set to create recipes with ingredients only originating from that area (he later weakened the constraint as only ingredients growing seasonally in that area). The task was no minor one:

> When René thought of North Atlantic cuisine, his ideas were automatically restricted. For example, what would he do during the long harsh winter if everything had to be grown outdoors? And what on earth would he use as substitutes for the traditional herbs? 'I soon realized that I had to cast an eye on over other regional cuisines to find inspiration for how to run a North Atlantic restaurant. There wasn't really any experience to draw on in Denmark or the rest of Scandinavia, where the restaurants don't base their philosophy on their own regions and their own cultural heritage. The problem was simply that French and Spanish restaurants had a completely different set of raw materials to work with. So it was a big mental challenge, which made me have doubts about the project and consider other job opportunities', René Admits. (Skyum-Nilsen 2010: 11)

On top of that, the whole concept wasn't initially well-received,

> The mental barrier that had affected René in the start-up phase was now

> flourishing among his potential customers: 'People were asking me why I wanted to restrict my culinary options. After all, we were in a gastronomic age where everything was possible, and everything was just beginning. If you wanted to make a dish with oranges in it, you put in oranges, and that was it. The criticism we received made me clearly understand that whole unrestricted way of thinking'. (Skyum-Nilsen 2010: 12)

In little time, however, the concept picked up. But what, however, is this concept? Here is how Redzepi summarizes it:

> When we first opened the restaurant, we told ourselves, 'Let's explore the bounty of this region,', pushing away great products from around the world. I did that as a way to make sure that we would explore the seasons and the range of our produts completely. I felt certain that if we had the usual options to fall back on, we would never really progress, never discover new things. The seed of our creativity had to be a limitation. (Redzepi 2013a: 16)

Two elements seem essential in this passage. First, there is the idea of stimulating creativity through limitation. That is, forcing oneself to solve the riddle of what to cook by exploring a geographically determined set of ingredients instead of falling back on well-known elements from outside that set. Second, there is the idea of exploring this set completely. Importantly, however, "completely" here means two different and complementary things.

On the one hand, it means exploring the cardinality or richness of that set, i.e., how much one has been taking in by setting this geographical limitation. The result of this was a kind of inventory of anything edible coming from the geographical area, and a return to ancient methods of supply such as foraging. On the other hand, it means, for each element of that set, i.e., each ingredient, exploring its own richness. What is the full range of properties each ingredient has, and how many transformations can it undergo to reveal its full culinary potential?

The result was the creation of recipes that contained only, or mostly, native ingredients. Some of these were well-known (*e.g.*, carrots, beetroot, sea buckthorn), some others were more surprising (*e.g.*, reindeer moss, seaweed, tree branches). Most impressive, however, is the fact that many well-known ingredients emerged from the kitchen unrecognizable. Here, for instance, is an instruction for preparing carrots for the recipe *Carrots with Watercress and Speck*:

> Trim the carrots to 12-cm lengths and wrights of 45g each. Vacuum-pack the carrots and 450mg of salt and cook in a water bath at 90°c (195°F) for 45 minutes. Cool, dry the carrots and brush them with a little grapeseed oil. Chargrill (charbroil) the carrots over birch wood at 120°c-140°c (250°F-275°F) for 1 hour, turning them every 15 minutes. Cool, then brush the carrots with a thin layer of the sea buckthorn reduction. Dehydrate at 60°c (140°F) for 4-5 hours. Cool and keep in an airtight container at room temperature. (Redzepi 2013b: 58)

This example is telling. A modest carrot is receiving three different transformations: cooked sous-vide, grilled, and then dehydrated, the whole process taking over 4 hours. In some other cases, native ingredients can also be fermented or pickled, such as in the creation of lacto-fermented vegetables, kombuchas, kojis, misos, or garums (see Redzepi & Zilber 2018).

Of course, most of the ingredients are known, and most of the techniques as well. There is nothing new in lacto-fermenting a carrot, for instance. Where is the creativity to be found, then? Full discussion of this issue will have to wait till §4 but in the meantime, let me point to two central elements.

First, what seems striking in Noma′s creative endeavor is the extent and systematicity with which these known ingredients undergo these known techniques to unravel yet unknown features of them—what Redzepi himself calls "innovative transformations" (Redzepi 2013a: 24)—to then constitute elements of new recipes. Second, it is also remarkable that innovation isn't limited to ingredients and techniques. The final aim is clear: substituting known culinary value (for instance, the culinary value attributed to supposedly lavish culinary products like foie-gras or caviar) with yet unknown culinary value, uncovered through substantial processing from native, often basic, ingredients. As Redzepi puts it,

> Our inherited culinary ideology defines which types of food are considered luxurious enough to grace the dining rooms of the most respected restaurants. A tiny group of 'elite ingredients' still seem to make some diners happy everywhere. That's over, for me. My friend and culinary prodigy Daniel Patterson, chef at Coi in San Francisco, wrote a great article for the *Financial Times* called 'Carrots are the new caviar'. The moral was that all ingredients have the same worth. I believe that's true. Now all we have to do is shake off some of the traditions we've been carrying around, the dying relics that are waiting to be finished off. (Redzepi 2013a: 22)

As mentioned, I'll come back in more detail on such instances of culinary creativity after having paid more attention to culinary creativity in itself. That being said, let me sum up this little tour of creativity at Noma by coining three principles that seem to govern it and to which I'll come back later:

1) Creativity at Noma is fueled by a geographical constraint: exploring the bounty of the Nordic area.
2) This geographical constraint forces both (a) exploration of the culinary richness of area, and (b) exploration of the culinary richness of individual ingredients *via* innovative transformations.
3) Ultimately, creativity at Noma leads to a disruption of culinary value, as innovative transformations allow to endow with more substantial culinary value rather basic ingredients.

In the next section, I will turn to a philosophical analysis of culinary creativity in general. This will allow us to put into perspective the kind of culinary creativity displayed at Noma, to be discussed in §4.

3. Three Forms of Culinary Creativity

If Boden is right, an output is creative when it is historically new, surprising, and valuable. However, as we saw, she distinguishes between three different ways something historically new can be surprising: in a combinatorial, explorative, or transformative way. In this section, we will see how this three-fold distinction applies to the culinary domain.

Boden's three-fold distinction seems to mesh well with different trends of recent gastronomic history. Let us start with combinatorial creativity. An important culinary trend of the second half of the 20th century is so-called "fusion cuisine". Its principles are simple: to fuse, or combine, known elements of different culinary traditions in new recipes. Its causes are also simple: higher mobility of people and ideas after WWII allowed for different culinary traditions to come into contact and created a demand for culinary exoticism. A paradigmatic instance is so-called Asian Fusion, namely the fusion of different Asiatic culinary traditions into a non-descript Asian cuisine, particularly in Western countries. On the more high-end side, a chef like Nobuyuki Matsuhisa, founder of the restaurant chain Nobu, is well-known for his fusion of Japanese and Peruvian cuisine (Matsuhisa 2001).

Let us now turn to explorative creativity. A good candidate here seems to be the outputs of the *Nouvelle Cuisine* (NC for short), an influential French culinary movement that originated in the 1970s. However, to understand this movement, it is essential first to understand what preceded it, i.e., Classical Cuisine (CC for short). Here is a helpful, quick summary:

> Gastronomy emerged in the 19th century with the advent of restaurants—a secular culinary tradition that countered negative judgments of gastronomic pleasure—and with the rise of a culinary discourse in which gastronomic journalists and chefs codified culinary knowledge and formalized French national cuisine... After the French revolution, chefs who once worked in the houses of private patrons offered their services to the public by establishing restaurants in Paris and its environs. Haute cuisine shifted from private homes into public restaurants; the spectacle of the banquet was replaced by a more intimate encounter; the hierarchy of the banquet of the ancient régime was supplanted by a more egalitarian order; and the extravagance of banquets gave way to economy... An informal and decentralized gastronomic effort to systematize the principles of this cuisine was led by chefs and gastronomic journalists. Among these writers the most influential was Antonin Carème (1784-1833)... He simplified meals so that there were four courses at dinner instead of eight, gave more space to those persons sitting at the table, and sought to redefine humble dishes such as the *pot au feu* as the essence of a modern cuisine. He and his disciples produced sauces that were works of art; sauces such as bourguignonne, salmis, sauce suprème, or sauce hollandaise camouflaged the meat, game, or fish being served rather than enhancing their flavor... Carème's ideas were strengthened by a new breed of chefs such as Georges Auguste Escoffier (1847-1935) and his circle of collaborators... If Carème's books constituted the Old Testament, Escoffier's *Guide Culinaire*, first published in 1903, was the New Testament that formed the body of what came to be known as classical cuisine... (Rao, Monin, Durand 2003: 799-800)

Roughly, then, CC was the first codification of cuisine as a public endeavor. Starting in the first half of the 19th century, it developed well into the beginning of the 20th century and stood under the influence of luminaries such as Auguste Escoffier, whose *Guide Culinaire* still to this day constitutes an essential step to master for every aspiring chef (Escoffier 2013/1903). It set up what we may call a table grammar: how to sit, what to serve, and in which order. The result was a cuisine that constituted a simplification of the one served at lavish *ancien régime* banquets, though it remained a quite rich and heavy one, centered around

classical ingredients, and well-known for its rich and thick sauces, such as the *hollandaise*.

CC remained unchallenged in France until the mid 1970s, which witnessed the emergence of a new culinary movement, NC, towered by figures like the brothers Pierre and Jean Troisgros and Paul Bocuse. Simplifying greatly, NC favored recipes that were less heavy than the ones of CC: heavy sauces were banished, cooking times were shortened, and the freshness of ingredients became central. Presentation also changed drastically. Many CC recipes required dishes to be plated at the table, right in front of the diner. NC, on the contrary, favored platting in the kitchen, directly by the chef, favorizing a more aesthetic presentation and opening up the way to a more multisensory approach to the experience of eating, where olfactory and gustatory elements of a recipe could now be complemented by visual ones.

The transition from CC to NC was substantial and it created a little earthquake in the French culinary identity (see Rao, Monin & Durand 2003). Despite this, however, it is essential to see that NC didn't entirely turn its back on its predecessor. First, the mastering of classical techniques remained essential, and the list of ingredients in use was obtained more by subtraction from CC than anything else. The basic concept of the meal remained the same as well, a menu with several recognizable courses, starting with first, then main, and ending with dessert. In that respect, NC seems more like an exploration of the possibilities set up by CC than the setting up of new possibilities. It remained a distinctively French cuisine, emphasizing the seasonality and regionality of the product. In that respect, it is both ironical and a testimony of the explorative nature of NC's creativity that one of its most famous recipes is the Troisgros' brothers *Salmon with Sorrel Sauce*, a piece of salmon swimming in a *crème fraiche* and butter-based sauce. Myhrvold, Young, and Bilet seem to share this diagnosis as they write,

> This is not to minimize [the Nouvelle Cuisine]; Nouvelle was absolutely critical to the development of all future cuisine, both in France and in many other places. But the winds of change brought by Nouvelle soon dissipated, and most of the edifice of Classical Cuisine remained intact. Innovations in flavors and ingredients created delicious food, but the change was evolutionary rather than revolutionary. The aesthetics of Nouvelle, and those of the New International movement that later supplanted it, basically stayed true to prior iterations of haute cuisine. (Myhrvold, Young, and Bilet 2011: 56)

Moving up now to transformative creativity, an obvious candidate is Modernist Cuisine (MC for short). Simplifying greatly, one may characterize it as a culinary movement that originated in the mid 1980s and resulted from the meeting of cuisine with the chemical sciences. More concretely, modernist chefs tackle their ingredients with the help of scientific knowledge and tools to create highly complex recipes.

It is probably too crude to speak of *the* aim of MC, but it is certainly not mistaken to claim that one of its main aim of was to "deconstruct" (Myhrvold, Young, and Bilet 2011: 37) the then-known approaches to food. With a nod to deconstructionist perspectives prevalent in certain academic circles at the time, MC set out to question central dichotomies that govern our relation to food such as what is food and what is non-food, what is savory and what is sweet, and, perhaps most importantly, what is taste and what isn't taste, and what is sensory and what is cognitive.

MC developed a series of principles. I shall focus on what I take to be two central ones. The first is that chefs should create recipes by exploring the full possibilities of single ingredients. As we saw previously, two essential components of recipes are a list of ingredients and a combinatorial procedure. MC is famous for having introduced radical changes in our conception of both elements. With respect to the list of ingredients, it is famous for having introduced as routine ingredients in its recipes elements that would not been found on previous ingredients lists, such as nitrogen, cryogen, or xanthan paste. It is also famous for having introduced new combinatorial procedures inspired by the chemical sciences and supported by high-tech equipment that few chefs before the modernist turn would have recognized as belonging to a kitchen. To wit, Heston Blumenthal, the chef at the Fat Duck, one of the most iconic MC establishment, writes:

> Over the road from my restaurant, the Fat Duck, there is an annex housing a development kitchen (or lab, as it's often called) complete with sous-vide machines and water baths and rotary evaporators and vacuum centrifuges and all sorts of other cutting-edge equipment. (Blumenthal 2011: ix)

These two facts about MC are important and essential to it, as we shall see shortly when discussing the second principle I wish to highlight. However, it is also important to highlight the fact that MC also promoted a change in the relation between regular ingredients and combinatorial procedures. Indeed, if we conceive of a culinary combinatorial procedure as a function that takes

ingredients as inputs and delivers possible states of these ingredients as outputs, it is remarkable how much MC has expanded the range of such possible outputs. Indeed, with MC combinatorial procedures often take the form of a deep exploration of ingredients′ properties, going much further and deeper into an ingredient's possibilities than in previous forms of cooking.

A second central principle of MC is what I will call the operation of a distinction between a flavor and its vehicle. Traditionally, an ingredient has a certain flavor, and it is this ingredient itself, as transformed by a culinary procedure, that plays the role of the vehicle of this flavor. In MC, this identity of flavor and vehicle has been challenged, and new vehicles for flavors were developed by means of application of scientific principles in the kitchen. Bubbles, foams, spheres, gels, and the like started to appear on plates, giving modernist cuisine a revolutionary form, supported by the use of unprecedented ingredients.

This new form that food has taken within MC fundamentally puts into question what food is, as well as what food is for. Indeed, first, before MC, food was the processing of ingredients into the form of dishes, often through the following of a recipe, in a form where the initial ingredients were still recognizable, and where a certain identity between flavor and vehicle was preserved. Within MC, food takes highly artificial forms, often imitating the aspect of what isn't food, and the identity between flavors and their vehicles is more than often broken.

Second, this distinction between flavor and vehicle also opened a properly culinary reflection on the boundaries of taste. The culinary experience has been greatly enhanced through MC's matrix, where dishes take forms of yet unknown culinary complexity through the realization of extremely precise recipes. This led some chefs to explore the multisensory potential of fine dining, with new attention devoted not only to plating, but also to tableware, and, last but not least, to the global environment of eating. Heston Blumenthal, for instance, is well-known for having created recipes that are accompanied by sensory elements which are neither gustatory nor olfactory:

> Sensory science and its application to cuisine are of particular interest to Blumenthal, and he has collaborated with scientists studying human perception. Many of his more innovative dishes combine multiple sensory experiences. An oyster and abalone dish called Sound of the Sea, for example, engages not only taste but also sound: before serving the dish, the waiter brings each diner a conch shell with a set of headphones protruding from it. The shell, which contains a tiny

> MP3 player, seems to produce ocean noises. Blumenthal had a scientific reason for believing that the sound would add to the dining experience. He had conducted research with Oxford University and determined that listening to sea sounds while eating an oyster makes the oyster taste stronger and saltier than usual. (Myhrvold, Young, and Bilet 2011: 50)

Application of this second principle also allowed modernist chefs to tackle the question of the distinction between the sensory and the cognitive. Indeed, famous modernist chefs such as Ferran Adrià and Heston Blumenthal are famous for playing with diners' expectations. As the authors of *Modernist Cuisine* put it, commenting on Adrià creative development:

> Along the way, Adria developed perhaps his most important piece of culinary philosophy: the idea that dining is a dialogue between the chef and the diner. In haute cuisine up to that point, the vocabulary of that dialogue was constrained by tradition and convention. Diners come to a meal with a tacit understanding of what is possible and familiar, based on their previous dining experiences. The chef, at least in traditional cuisine, comes prepared to cater to diners' preconceptions. Adria broke those constraints by creating novel foods that could not help but provoke a reaction, forcing diners to reassess their assumptions. (Myhrvold, Young, and Bilet 2011: 37)

This move questions the distinction between the sensory and the cognitive in two ways. First, it questions how much the sensory is actually shot through with cognitive elements. On a purely sensory picture, the two domains are well kept apart, and sensory experiences should be unaffected by thoughts. But it is now well-documented, in part as an aftermath of the creativity of modernist cuisine, that expectations in fact do shape our sense of taste. For instance, mistaken expectations that something actually sweet is savory will make it appear sweeter than it would appear under the correct expectation that it is sweet (see, e.g. Spence 2017).

Importantly, it also questions what are the kind of values that are proper to culinary experience. To wit, a recipe, a dish, or a meal can be deemed to taste good, be healthy, be traditional or authentic, be creative or innovative, be local, be harm-free, etc. It is thus most natural to wonder how best to think about the *culinary value* of a dish or a meal. That is, among the different values that a culinary item can bear, which are the properly culinary ones, and which are the ones that merely accompany culinary value.

Indeed, generally speaking, not any value that pertains to an object of kind *k* thereby is a value constitutive of that kind *k*; that is, objects can bear values that

aren't constitutively linked to the kinds of objects they are. For instance, take an object belonging to the kind "artworks", say this painting; it may turn out that the painting is profitable, but such profitability is not a value constitutive of its being an artwork. From this, we can infer the following principle:

(V) A value *v* predicated of an object *o* of kind *k* is a *k*-value only if *o*'s having or not having *v* pertains to the evaluation of *o qua* object of kind *k*.

Putting this principle to work, we can now see that profitability isn't an artistic value because whether or not an artwork is profitable should be irrelevant with respect to its artistic value, even though it might matter for its overall value (for the distinction between kind value and overall value, see e.g. Stecker 2019). What now about the culinary domain?

One way to interpret the work of modernist chefs is that they extended the realm of culinary value beyond mere sensory values and ended up advocating a conception of culinary value that integrates both sensory and cognitive elements. In their reconstruction of the ten commandments of modernist cuisine, for instance, Myhrvold, Young, and Bilet offer the following fifth commandment:

> In addition to surprise, many other emotions, reactions, feelings, and thoughts can be elicited by cuisine. These include humor, whimsy, satire, and nostalgia, among others. The repertoire of the Modernist chef isn't just flavor and texture; it is also the range of emotional and intellectual reactions that food can inspire in the diner. (Myhrvold, Young, and Bilet 2011: 56)

Similarly, in a training manual for his restaurant The Fat Duck, Heston Blumenthal writes,

> In all cooking there is science-some say much art-and sage traditions that must be understood in relation to the diner. Our challenge is to discover these relationships, demystify the culinary traditions and, with that knowledge, *create an experience that reaches beyond the palate*. (Blumenthal, quoted in Myhrvold, Young, and Bilet 2011: 50-my emphasis)

It seems indeed hard to assess the culinary value of some modernist recipes, such as Ferran Adriàs chicken served in a liquid form with its sauce coming in a solid one (see Myhrvold, Young, and Bilet 2011: 35) without bringing into play non-sensory values like surprise or satire into play. As a result, the dining experience that results from consuming an instance of such a recipe "reaches beyond the palate" to hit on the way the culinary experience takes an undeniable cognitive form.

To sum up this birdeye's view of MC, this culinary movement resulted in recipes that are creatively transformative in Boden's sense on three different grounds. First, they transformed our understanding of what ingredients are and of what is possible to do with it. Second, they challenged our conception of what food is by advocating a dissociation between flavour and vehicle, and by designing dishes that had little do to with previously existing instances of food. Third, finally, they transformed our conception of what is culinary value, encouraging a more cognitive way to conceive of our relation to food.

In the next section, I will now use the elements developed in this section to offer an analysis of some aspects of the culinary creativity displayed at Noma. I will argue that, while failing to meet the standards of transformative creativity itself, it nonetheless stands in a particularly interesting and substantial explorative relation to the transformative creativity displayed by MC.

4. Culinary Creativity at Noma

Before turning to this issue of the kind of culinary creativity displayed at Noma, let me clarify the following issue first. My interest here is a certain kind of creativity displayed at Noma. Hence, there is no claim that the situation at Noma is unique. My only claim is that there is something distinctive and particularly valuable in the kind of culinary creativity displayed at Noma, and that the recipes created at Noma constitute an excellent archetype of this kind of culinary creativity.

In light of the results of the previous section, how should we characterize the culinary creativity displayed at Noma described in §2? I take it to be rather clear that it stands in an explorative relation to MC′s conceptual space. Indeed, among the principles of the kind of culinary creativity displayed at Noma identified above stood the notion of the exploration of the possibilities of individual ingredients, a cornerstone of MC, as well as the notion of a disruption of culinary value, another central element of MC. Certainly, Noma is here harvesting the fruits of seeds planted by its illustrious modernist predecessors.

That being said, it is also arguable that there is something distinctive about the kind of culinary creativity displayed at Noma. Something that the transformative shift of MC made possible, which somewhat remained latent in it, and that took the creativity of chefs like René Redzepi to be fully realized. Indeed, several decades after MC's emergence, it is sometimes hard to shake off a mixed appreciation of its achievements. On the one hand, it has been a substantial, and overall beneficial, culinary revolution that profoundly transformed the culinary

world, from imposing a new culinary aesthetics to transforming our relation to food, making it, notably, both a sensory and a cognitive one. But one might wonder, why this new aesthetics and why this new, more cognitive relation to food?

Indeed, despite all the ways in which it challenged our relation to food and our conception of culinary value, the harsh judgment that MC never really managed to overcome what we might call the problem of food for food's sake might not be entirely unjustified. That is, MC mostly remained hooked at the level of interrogating the relation between diners and food. What is food? And what are the possible parameters of culinary value beyond mere sensory enjoyment? MC posed these questions, proposed some answers, and on the way greatly advanced cooking techniques. But one might wonder, so what?

I want to argue that the kind of culinary creativity displayed at Noma provides an answer to this question by building up on MC′s achievements while also making much more prominent a third element into its creative process beyond diners and food: the environment and our relation to it. More precisely, as I see the matter, the key to understanding the kind of culinary creativity displayed at Noma is to bring into focus the mediating role that recipes can take in our relation to the environment. And the fact that the more creative the recipes, the richer this relation can be, both on a sensory and on a cognitive level.

Indeed, this mediating relation features at least three aspects. First, it features a sensory aspect, as recipes can be taken as mediating our gustatory relation to the environment by telling us which ingredients to select for consumption and how to prepare them. Second, it has a cognitive aspect, as one might be led to reflect on one's environment through the mediating of a certain recipe. Third, it also has a more disruptive aspect as a recipe might also lead us to a rethink and re-evaluate what is gustatorily—and, ultimately, culinary—valuable in the first place. What is distinctive of the kind of culinary creativity displayed at Noma, I want to argue, is the extent to which, building up on MC′s achievements, it has been able to realize these three aspects of the mediating relation that recipes can have.

Let me start with the first aspect. An important role of recipes is that they mediate our sensory relation to the environment. That is, seeing one's environment through the lenses of a recipe can serve as a guide to the gustatory potential of one's environment. Admittedly, this mediation element of recipes isn't news to the culinary world. Redzepi himself admits having looked at the relation other cuisines entertain with their environment, and to have reflected

on the culinary aspects of his Albanian roots, to come up with his own creative relation to his Nordic environment. However, there is a big difference between, on the one hand, seeing one's environment through the lenses of recipes from somewhere else and, on the other, devising new recipes tailored to a specific environment with the aim of uncovering yet unexpected gustatory value. By doing the latter, the kind of creativity displayed at Noma makes vivid one aspect of recipes' mediating power. By realizing this mediating power with creative recipes suited to one's environment, it allows a yet unexpected gustatory relation to one's environment and uncovers gustatory value where none was to be found in the absence of the mediating relation made possible by the coming up of creative recipes.

Second, a relation to the environment mediated by a recipe might not be a mere sensory one. That is, seeing one's environment through the lenses of the right recipes might not be a mere matter of, to put it bluntly, merely sensing that one's environment tastes good. It might also lead one to reflect on one's environment and on one's relation to it. Again, this point might look trivial in the light of, say, Mediterranean culinary cultures where one's relation to the environment is somewhat de facto a culinary one and where everyone thinks of one's environment as being a deliciously edible one. But in a different and scarcer context, the mediating effect of a recipe can lead one to rethink one's relation to the environment in a significant way. To some extent, this is what happened with the kind of culinary creativity displayed at Noma with respect to the Nordic landscape, as within a couple of years, and through the mediation of creative recipes, a former non-descript local food environment is now widely thought of as a unique source of gustatory value.

The third possible aspect of the mediating power of recipes is that it can lead to a disruption and transformation of our conception of what is gustatorily and culinary valuable. Most of the culinary creativity displayed at Noma results, schematically, from the overtaking of the aesthetic and *ethos* of MC with the conjunction of a geographical constraint. The result is a cuisine that challenges a hierarchy of valuable ingredients, and that wishes to abandon any kind of distinction between valuable and invaluable ingredients. Importantly, however, this disruption isn't merely a sensory one.

Indeed, it is an integral part of the appreciation of the creativity of Noma's recipes that one takes into account the mediating role that the recipe plays with respect to the Nordic environment, thereby promoting further, and in a less gratuitous sense than MC, a reflective element in the way to enjoy some food. In

other words, conscious entertaining of the idea that sensory value comes from a limited set of often banal ingredients through what we might call processes of culinary sublimation leads the diner to enjoy food not only sensorily, but also cognitively. That is, full appreciation of creative recipes of the type displayed at Noma seem to require a meta element, where one is not only aware of the fact that one's food displays gustatory value, but also to reflect on the fact that it mediates one's relation to the Nordic environment in a specific and valuable way.

On an endnote, one might venture to saying that this last element contains a certain political charge that might explain, at least in part, the impressive resonance that Noma's culinary creativity encountered and still encounters. Indeed, the extent to which Noma takes on to develop this three-fold mediating role recipes can have with respect to our environment might well provide us with some of the necessary culinary and intellectual tools we need to envision the possibility of culinary value in the future world of scarcity—either voluntary or involuntary—that lies ahead of us.

5. Conclusion

In the past years, culinary creativity has found itself at the centre of contemporary culture. In this paper, I offered some tools to think about this phenomenon by clarifying what can be meant by culinary creativity, what forms it can take, and the ways it can be valuable. Building upon pioneering work on creativity by Margaret Boden, according to which creativity is the matter of adding new valuable things to the world, I then argued that we can distinguish between three different forms of culinary creativity: combinatorial, explorative, and transformative. I showed that transformative culinary creativity is particularly interesting as it can lead us to reconceive the nature of the culinary domain, as happened—or so I argued—with the Modernist Cuisine movement. However, if Modernist Cuisine planted great seeds, I also argued that its full fruits have now been harvested by those who practice the kind of culinary creativity displayed at places like Noma. Indeed, it is in such places that what we might refer as the "cognitive culinary turn" initiated by the Modernist Cuisine finds, to date, its most profound realization by promoting a full appreciation of the mediating role that recipes can play with our environment.

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