

FOOD DESIGN ON THE EDGE

Proceedings of the International Food Design Conference and Studio



**2-4 July 2014
Food Design Institute, Otago Polytechnic
Dunedin, New Zealand**

Edited by Richard D. Mitchell

International Food Design Conference and Studio,
2-4 July 2014, Otago Polytechnic Dunedin, New Zealand

Food Design on the Edge: Proceedings of the International Food Design Conference and Studio

2-4 July 2014, Dunedin, New Zealand

Editor: Richard D. Mitchell

Publisher: Otago Polytechnic

Place of Publication: Otago Polytechnic, Forth Street, Dunedin 9016, New Zealand

ISBN 978 – 0 – 908846 – 48 – 1

Citation:

Mitchell, R. D. (Ed.) (2014). *Food Design on the Edge: Proceedings of the International Food Design Conference and Studio 2014*, 2-4 July 2014, Dunedin, New Zealand. Otago Polytechnic, Dunedin.

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Foreword

International Food Design Experience (Conference and Studio)

Like other emergent fields of study and practice, food design is seeking to carve out an identity in the academic and non-academic worlds. Designers are boldly exploring new ways of engaging with food and pushing the boundaries of our thinking around it. Meanwhile, food professionals are beginning to explore how design practice and methodology can improve the way they engage food and its production and consumption (some knowingly, but many more simply as an extension of a naturally enquiring).

Of course this marriage between food and design has not occurred in a vacuum. Other areas of the academic (e.g. the emergence of food studies as a legitimate field of study) and non-academic (e.g. the explosion of all things food as a form of popular culture) worlds have emerged recently. This has not only resulted from a middle-class re-engagement with the culture of the everyday and a desire for authenticity and connectedness, but is also a reaction to a series of food crises around the globe and a sense of foreboding that our food futures are very uncertain.

The International Food Design Experience (Conference and Studio) was born out of two independent, yet intimately connected conferences attended by myself and two members of the organising committee in 2012. The first, the [International Conference on Designing Food and Designing For Food \(London\)](#), was the first conference to discuss food design as a legitimate field of study and practice. While, the second, the [Mad Food Symposium \(Copenhagen\)](#), was full of inspirational presentations from food practitioners who were clearly demonstrating sophisticated design practice. Our vision was for a meeting place where these two worlds could come together.

Food Design

How do we design for something that is entirely ephemeral – a sensation that is a unique fleeting moment gone in seconds, never to be repeated again? This is what sets food design apart from other areas of design, but is also what many chefs have (largely unknowingly) been doing at least since the time of Antoine Carême.

The process of design requires the food designer (chef, artisan producer or designer) to have a deep understanding of the materials and techniques that they have at their disposal. Unlike other materials food is ingested and literally becomes part of the user and therefore the consumer can have the most intimate, multi-sensory relationship to the materials. The subjective (and imperfect) nature of our senses means that every experience of food is truly unique and this is both the beauty and curse of engaging with food as a design material.

The most skilled chefs and designers are able to explore this multi-sensorial engagement AND understand how our emotional responses to food influence how we perceive it. A design approach to food acknowledges that even the most mundane of our foods are able to provide us with an endless number of possible emotional experiences – even a can of spaghetti can evoke warm memories of our childhood. Of course, like any form of design, there is also an avant garde extreme that pushes the boundary of our relationships with food.

These proceedings contain peer-reviewed papers and abstracts that cover everything from the mundane to the avant garde. They explore materials, techniques, our senses, design practice and methodologies and theory. The authors come from diverse backgrounds (chefs, culinary educators, designers, social scientists and communicators) but they all have one thing in common – they are all concerned with how design can be used to help us better understand and improve our relationship with food.

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Food. Porn? Art!: In the Skin of a Food Artist.

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ABSTRACT

The concept of food pornography has the evident potential to spread like a wildfire; it is catchy, somewhat intuitive and has this particular sound to it that simply invites us to listen up. Now, with its popularity comes a price, namely the vagueness of what is meant when using this rather subjective hypothetical construct that may well have the power to keep a public discourse from evolving in a constructive manner. Departing from the observation that it usually denotes the consumption of how food is presented, this research challenges to move beyond the eye of the beholder and investigates the production of so-called food porn by taking a specific look at the subjective structures of a food artist's experience. Consequently, this case study conducts an empirical investigation of human experience regarding food, following the Descriptive Experience Sampling Method by Russell Hurlburt (2006). Instead of exclusively looking out for the content in interpretations and explanations of experience, this specific phenomenological method scores with the distinctive feature of assessing how a person thinks, by means of mental imagery, inner speech, emotions, and the like. Rather than harshly attributing images to be fake and polished, we arrive at the possibility of exploring novel perspectives, i.e. as if being in the skin of a food artist. Doing this attempts to deconstruct the concept of food porn and aspires to extend and support an open discourse on food. After all, judging food visuals as pornographic from an exterior view forms ideas that vary greatly from the pristine intention and experience of the artist.

KEY WORDS

food pornography; food art; human experience; phenomenology

INTRODUCTION

Stripped bare flesh of fruit, playfully tossed, colourfully presented, and showing itself from its best side. The small cores of a honey pomelo flirt with you and as you gently break the membranes of the pulp with your teeth; the fresh bittersweet sensation is released and overtakes your thoughts. It's mouth watering as it combines with the vivid imagery of velvet coconut milk fondling your tongue and the slash of lime that tingles your taste buds. All of a sudden a spicy scent of chilly overwhelms you; awakening you to that double-page print in front of you. Food as visual delight that evokes sensual desires all along; clearly: a case of *food pornography*. Or isn't it?

Both vision and sound of this term discredit. And at a glance something that started as *food art*, where an artist exposes food in its peculiarities, becomes labelled as *food porn* by the contemplator. On this, Krishnendu Ray asserted poignant, "Once you call something pornographic, you bring down moral opprobrium on it. You poison the topic and stop the discussion from going any further" (McBride, 2010). Therefore, a change of angle between artist and beholder, or *consumption* and *production* of food design is a crucial turn that is addressed in this paper: It is not *what* you see, but *how* you experience it, that reveals a prominent way to question the two reductions of *porn vs. art*. Down the line this paper conveys that it *matters* how we come to our conceptions, beliefs and judgements about food, since it is critical to our meanings and understandings, which in turn shape the experience of food as a social process that is embedded into culture, society, technology and science. Instead of allowing the term *pornographic* to disrupt an open discourse, it is aspired to deconstruct this concept in order to explore novel perspectives.

Accordingly, this research departs with overwhelming curiosity on what we consider to be our meanings, knowledge and thoughts. Instead of exclusively looking at the *content*, the interpretations and explanations of experience (which may be already biased and confabulated), it is attempted to reveal the *structure* of *how* things arise in consciousness. In other words: We are familiar to the importance of narration, but have you ever asked yourself *how you* (let alone *others*) actually experience things such as foods? I'm confident that a stream of inner speech, as we know it from movies, falls short on giving a proper picture of our inner lives. Moreover, thoughts on food are *delicate*; although they seem stable in their content they nevertheless arise as fragile and clearly differently for each individual. For example, while one might engage in mental imagery of visualizing a dark red coloured blend of a fruit smoothie with small cores in it, another might visualise the icy droplets of

freshness running down the glass and simultaneously experience the cool sensation in mind, or how the sweet mixture streams down your throat and elicits a secret smile. It might as well be just a thought verbalized in inner speech, a mental image of a specific product, or a recollection of a dear memory. And in the end, the plain content illustration of a courgette is with certainty not enough to cause food design to be labelled as *pornographic*.

This empirical research thus implements a phenomenological approach that explores the pristine inner experience of a food artist. The following figure (Figure 1) gives a schematic overview of this article's composition to facilitate an anchor for redrawing the connections between the discussed chapters. After opening with a discussion on the basic concept of food pornography (as detailed in the chapter *Food Pornography*) we extend the classic eye of the beholder by dissociating from the predominant exterior view of the consumption of food visuals. The so-called *interior view* shall illuminate the continuum from food art to porn (detailed in the chapter on the *Structure of Experience*) from other angles by using the Descriptive Experience Sampling Method (cf. *Research Design*). Studying the whole *gestalt of experience* aims at understanding the fundamentally diverging constructs of subjective lived experience and offers an authentic grasp at the daily life and artistic process of a professional food stylist. By and large, there is a huge difference between constructing something as *porn* of just harshly labelling it as such from exterior view. Arriving at an *idiographic* (within-person) description and visualisation of the case will then illustrate samples of the food artist's underlying structures to his daily life and creative process regarding food (chapter *Empirical Data*). At last, the chapter *Discussion* problematizes the concept of *food porn* in light of the case study's analysis. Doing this shall deconstruct the concept of food pornography and pose novel perspectives for the future discourse (as detailed in the *Conclusion & Outlook*).

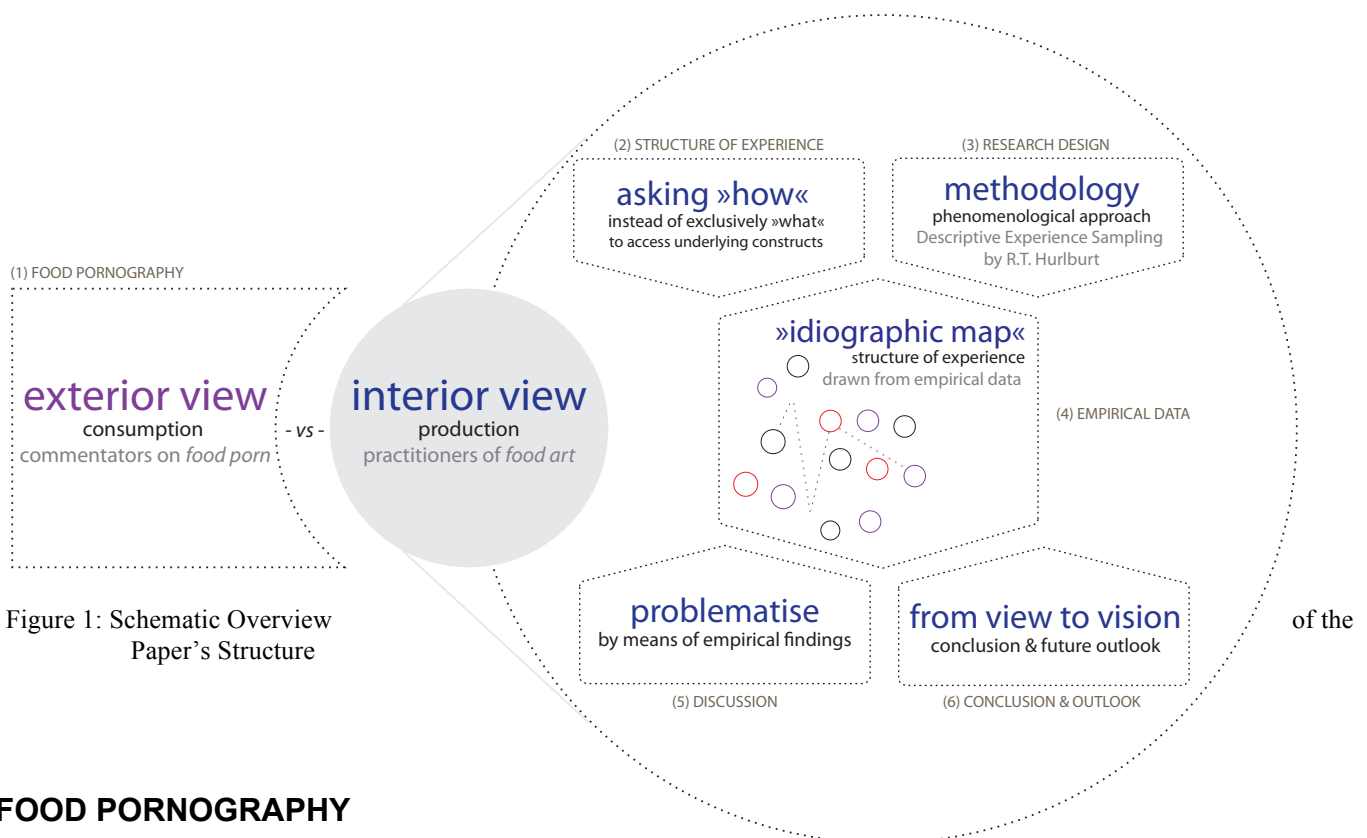


Figure 1: Schematic Overview Paper's Structure

FOOD PORNOGRAPHY

Before setting out to extend the current discourse it will be insightful to clarify the delicate grounds of this quest by looking at the definition of *food pornography*. Unfortunately, scavenging the literature on the origin or a clear definition will leave one astray; with breadcrumbs that lead the way towards clouded terminology and colloquial concoctions, rather than academic cultivation. On this, Ray (2007) exemplary dates back the origins of the concept of *food porn* to Alexander Cockburn's assertion on *gastro-porn* in 1977 that criticises the pornographic character of the unattainable and picture perfect dishes in connection to insatiable desires elicited (Cockburn, 1977). Alternatively, McBride (2010) suggests that the term first appeared in 1979 when Michael Jacobson used food porn to refer to unhealthy foods. She furthermore described the typical characterisation of "watching others cook on television or gazing at unattainable dishes in glossy magazines without actually cooking oneself" (McBride, 2010) and likewise pointed at the overrepresentation of the commentator's perspective when using the term food porn in comparison to practitioners that actively engage with food. However, there are, to my knowledge, no conclusive investigations available on this so far.

In the attempt to find some delimitation one may identify core themes such as valuation, intention or purpose. After rudimental inspection there are a manifold assertions that appear in tune; Magee (2007) exemplary asserted: "[f]ood, when removed from the kitchen, becomes divorced from its nutritive or taste qualities and enters a realm where surface appearance is all-important.

The interest here is in creating a graphic simulation of real food that is beyond anything that the home cook could produce". Here, the concept of food porn describes a movement away from motifs of aesthetics and trespasses some kind of threshold towards the obscene and unattainable; rupturing a gap and breaching the lucidity in judging what is *real* and *illusion*. Such characterisations are common and his description of divorcing the "surface appearance" from its "qualities" translates into the visual mode of simulation as well as its questionable interest. Considering this look and feel serves as a key to connecting to the root notion of *pornography* in connection to food, and yet this subsequent reduction likewise seems to be irresolute when reviewing the Oxford Dictionary's definition of *pornography*. Specified as "printed or visual material containing the explicit description or display of sexual organs or activity, intended to stimulate sexual excitement" (Oxford University Press Online, 2013) it clearly refers to an explicit content by addressing sexual organs or activity. But as a matter of fact it is not simply food presented on bare skin that elicits detecting an objectionable character of those visuals; rather the definition calls upon an implicit assessment that is not reducible to a list of contents. Similarly to Ray's position that food porn may only "poison a topic" from continuing, Alan Madison asserted that the use of the term suggests a "lack of understanding of what pornography is, how it is produced, and for what purpose; it dilutes the meaning and seriousness of the word pornography" (McBride, 2010). At this point, the only factual similarity of *sex* and *food porn* lies merely in the visual mode of representation, which leaves us with blind spots regarding our attempt of a definition.

Largely, food pornography is a concept that is associated to the visual idealization of food and the only remains while searching for a common core is the insight that it is a hypothetical construct that is subjectively attributed rather than directly measurable. This soon confronts the nature of this experience as primarily attached to the consumer and commentator of food visuals. Hence, arriving at human experience as the very essence of concepts such as *food porn*, originates the focus to investigate the diverging inner experience of the disputed food visuals in the challenged opposition between production and consumption. By looking at the lived experience of a practitioner of food art this shall evoke a data-driven discourse towards the meaning and use of the term *food porn*, through contrasting core themes found in the literature with the empirical data. That is to say, instead of exclusively focusing on common arguments from the consumer's point of view, a novel dimension is proposed that shall disclose a bigger picture for future discourse and research.

STRUCTURE OF EXPERIENCE

The concept we look at is a very narrow phenomenon and primarily directs the consumption of food representations in photography and cinematography. It is about the experience that we connect to the 'unattainable' pictures in high gloss magazines and cookbooks, online articles on recipes and restaurant recommendations, cooking shows and competitions on television, as well as the abundance of professionally appearing food pictures distributed via platforms such as Twitter or Instagram. Hereby, food increasingly seems out of reach to the average consumer (O'Neill, 2003) and may be compared to sex porn; as watching something that "we ourselves presumably cannot do" (McBride, 2010: 38).

Now, there are two important aspects to keep in mind when thinking about the structure of experience. First of all, the disputed term is not an attribute to an entity, i.e. we cannot reduce food pornography to a list of necessary or sufficient conditions by counting the number of exotic ingredients, inaccessible cooking tools, or access to proper equipment for styling and lighting dishes in a studio. And second of all, the notion of food porn is dependant on the characteristics we experience: by way of example, while a colleague of mine describes his reading of the line "lime foam" in the dessert section of a menu as a dull accumulation of black ink on thick paper, I visualize it in mind as a manifold of layers, mixing from gloss-white to off-white and shades of fresh green; for others it may elicit visceral sensations of hunger and desire; while another may even imagine the airy texture of the lime cream that melts into a soft and velvet blend as it strokes the tongue. The term *food porn* is thus not just about the *content* or *way* food is represented, but rather addresses a much more complex construct of human experience.

Vitaly, this research wants to move beyond reported *interpretations* and *explanations* of *what* is seen when e.g. browsing through a high-end cooking magazine, but concerns itself with *how* it is experienced which may reveal underlying structures such as mental imagery, emotional evaluation, comments in inner speech, the elicitation of memories or simulation of taste, smell, sound and such. Ultimately, this research aims at warily dealing with the distinctive differences between *content* and *structure* of experience, as well as the opposing perspectives of the *consumer* contrasted to the genuine perspective of an artist or stylist as the *producer* of so-called food porn.

RESEARCH DESIGN

The case study conducted for the purposes of this paper investigates the pristine inner experience of a professional food artist, whose experience is taken exemplary for the stance of a *producer* of so-called food pornography¹. At the time of data acquisition Jim H. (not his real name) is 44 years old and a successfully practicing food stylist with more than 30 international customers. His expertise in the field is shown in his work as well as prior education, i.e. as student of Lou Manna New York and graduate of a Food-Styling Master in the United States.

The specific phenomenological method chosen for the empirical inquiry is the Descriptive Experience Sampling Method (DES) by Russell Hurlburt (2006), a method for investigating random samples of inner experience in participants' natural environments. The usual setting is as follows: "DES subjects carry a random beeper in natural environments; when the beep sounds, they capture their inner experience, jot down notes about it, and report it to an investigator in a subsequent expositional interview" (Hurlburt, 2006). These expositional interviews serve as the phenomenal data to the investigators analysis and results in a verbal and visualised description of the co-researchers subjective structures of experience.

For matters of clarification, the research design implemented a procedure, which transcends the mere method description of DES as follows²:

- 1) The co-researcher is introduced into the philosophical perspectives and attitudes behind the approach, especially the concept of studying *how* people experience a phenomenon.
- 2) The artist is trained to collect and give descriptive reports according to DES. The following explicatory interviews of this training sampling serve to clarify uncertainties about the method on concrete examples from the everyday lived experience. (This training is excluded from the later data analysis.)
- 3) The actual data acquisition samples random beeps during leisure and working time, where the co-researcher is asked to jot down notes whenever a random beep coincides with a food-related experience. Overall, the sampling period is set to 24hours prior to the scheduled explicatory interview, in which the samples are discussed for a maximum duration of 90 minutes (due to reasons of concentration and accuracy of reports).
- 4) The collected phenomenal data is then analysed and coded by the investigator.

EMPIRICAL DATA

This section offers a short discussion³ of the empirical findings and includes an attempt to structure and visualize the data. The analysis of the phenomenal data derived descriptions from the explicatory interviews and is illustrated as subsequent *idiographic* (within-person) map in *Figure 2*. It shows a selection of core concepts that are grouped, classified and accordingly color-coded in three categories of *cognition* (black), *sensation & perception* (red) or *emotion* (violet) in order to illustrate the artist's structure of experience related to food.

Cognition. The reports consisted concise descriptions for *cognizing* food-related experiences (with core concepts indicated in black font colour). Evidently, there was a predominance of *mental imagery* and *abstract thoughts* in sense of being aware of the meaning of thoughts without any concrete symbols. Particularly, notions of *concentration* and *time* were relevant to his samples.

Sensation & Perception. Furthermore, a lower importance of *sensation & perception* is suggested with only a smaller fraction of *perceptions* from the external surrounding (i.e. when describing his *focus*), such as an actual visual input, smell or taste. Most importantly, he expressed a mode of *embodied knowing* where simply engaging in e.g. a task, talk or walk do address bodily qualities that are experienced as automatic.

Emotion. Emotional concepts were very rare and limited to cases of expressing *valences* rather than explicit moods or emotions. Only rare reports included an awareness of emotions when directly reflecting on a situation, therefore suggesting that his food-related experiences commonly occur in an emotionally passive manner.

Overall, the analysis showed that the majority of reports involved clearly classifiable concepts to one (rather than combinations) of the three classes. Only for a few concepts we encountered descriptions that combined classes of e.g. *emotion* and *cognition* when experiencing *stress* or *comfort*. In matters of relations we found a close connection between his experience of *time* and his mode of *concentration*, which were described as clearly separate and yet highly interdependent.

¹ Note that this attribution is chosen by the investigator and primarily carries the line of argument of this paper. This however, does not reflect the artist's self-perception of being a producer of illustrations that resemble *porn*. Even more so, it is fundamental to the method of inquiry to suspend prior judgments and avoid biasing the co-researcher. Thus, any mentioning of value-laden concepts such as food pornography was explicitly excluded during the phenomenal inquiry.

² This description of the procedure is a modification of previous work of the author, cf. Tan (2013). For similar research designs consult an overview of traditions proposed by Creswell (1998).

³ An in-depth analysis of the extensive amount of phenomenal data enquired and analysed would unfortunately exceed the scope of this paper.

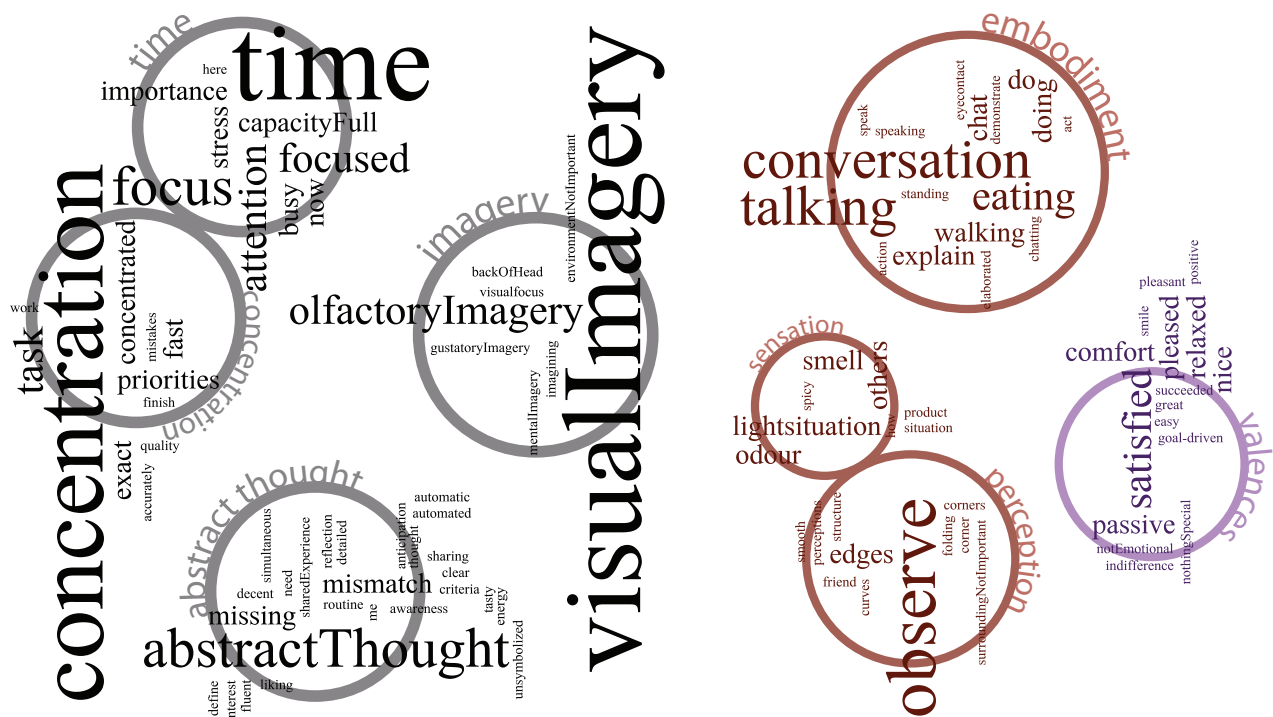


Figure 2: Schematic map showing core concepts to the artist's experience of food.

DISCUSSION

Concluding from this preliminary analysis of the empirical data, it seems that Jim's structures of food-related experience are confined to a rather clear set of categories. That is to say, all random samples described a steady selection of concepts in line with the artist's self-reflection of a consistent world of experience that integrates food as perpetual part of thinking in both leisure and labour time. His descriptions showed a passive handling and strong cognitive focus on tasks in clear-cut situations without any mentionable variations, in that thinking of food did not significantly differ in situations at work from incidents that happened in private. This finding suggests a functional consolidation insofar that thinking and acting can be seen as based on routines, habituated, automatic and therefore experienced as distinct, unique and natural. The major underlying structures involved *embodied* categories of *cognizing* and *perceiving* things from the physical surrounding with scarce emotional assessment and absence of sensations in more depth.

In the light of the disputed concept of *food pornography*, one can thus suggest that his reports did not include any *cognitive*, *sensational*, *perceptual* or *emotional* aspects that would indicate reasonable connections to the attribution of food graphics as being "insatiable" or "unattainable". In other words, drawing from the modest attendance to valences or valuation from the artist's perspective, there were at no point any resemblances to experiences of desire, emotional upheaval or intentions in order to visually aggrandise food in such manner⁴.

Departing from this specific case we get a very sober peak into the *interior view* of a *producer* and practitioner of food visuals that strongly contrasts to the usual access of the topic from the *exterior view* of *consumers* and commentators. Drawing from the data analysis it seems that the heavy valuation carried by most of the unsystematic definitions and contemplations of food pornography (as shortly detailed in the beginning) are not applicable, in terms of an absence of similar experiences or indicators that would imply intentions to elicit such valuation. In a sense, his stable structures when engaging in thoughts related to food are as much enabling the production of food visuals as they do act a part in his daily preparation of food at

⁴ This preliminary conclusion considers previous investigations that are not part of the initial research design, but vitally contrast the analysis and findings from this case study, i.e. a close elaboration of multiple cases would unfortunately exceed the scope of this paper. Exemplary, other co-researchers showed more diverging realms of experiences and different scopes of categories related to food, for that they included inner speech, bodily sensations of hunger, external perceptions of smell, mental imagery of a texture or elicited memories and such, connected to so-called *food cravings*. Here, one particularly interesting case contrasts the food artist with a very emotional approach towards food, where sudden shifts in mood would consistently signal the actual thought for food. For an extensive review please contact the author or consult her introductory paper on *Flavours of Thought: Towards A Phenomenology of Food-Related Experiences* (Tan F., 2013).

home. Judging his professional work as *pornographic* is therefore rendered to be redundant, since it would necessitate labelling his everyday thinking just as critical, since his underlying structures and experiences of food in daily life compared to work show to be consistent. In short, this is in line with McBride's (2010) opinion that "people who actually work with food generally ignore the label and focus instead on their jobs".

CONCLUSION & FUTURE OUTLOOK

In order to extend the discourse on *food*, this paper explored the concept of *food pornography* by zooming into the interior view of a producer of food visuals in contrast to approaches that primarily analyse the consumption of the disputed images. This peak behind the scenes investigated a food artist, whose underlying structures of experiences showed to be consistently occurring in *embodied* classes of *perception* and *cognition* throughout both labour and leisure time. Considering the infrequency of *sensations* and *emotional* assessment this suggests that he experienced no categories that indicate potential connections to typical attributions of *food pornography*, in sense of questionable depictions of the "surface appearance" of "unattainable" dishes that elicit "insatiable" desires which separate the visual depiction from actual cookery.

Reminding again on Ray's appeal: calling something *pornographic* results in the obstruction of a discussion on the topic and one such obstacle was identified in the narrow perspective of the commentator's view on food visuals that was subsequently problematized in this paper. The specific case presented facilitated a first grasp on the pristine inner experience of an artist's life revolving food and strived to offer a foretaste on the potential of this kind of study of human experience. Although giving only limited conclusions on how one producer of food visuals experiences his doing, this research embodies the first cut. In the end, even the illumination of one specific individual allows for a first comparison; namely to our very own experience of the world of food.

A concrete pointer for the near future is essentially the need for a further exploration of the so-called exterior view. But moreover this paper invites multidisciplinary cooperation and extended applications of the used research design in order to challenge the way we come to our meaning and knowledge of things. That is, to move beyond the mere categorization of food *art vs. porn*, but simultaneously question how we construct what is *good* or *bad* food, *healthy* or *unhealthy*. On a large scale one may envision that there are certain *cognitive flavours*, in sense of modalities or structures that are decisive to an individual's experience; this might reveal data-driven approaches to understand how particular (groups of) individuals experience food in their life and leaves us with encouragement to start our investigations at the very fundamental building blocks of cognition.

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Meat Thy Maker: In-vitro meat, insects and the role of design inedibility formation

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ABSTRACT

As the sustainability of the global food system becomes increasingly threatened, there is an urgent need to look beyond the highly unsustainable foodstuffs that currently dominate the market and instead find new substances to bring into the realm of the edible. Previous research has shown, however, that despite the claimed merits of novel food solutions much more is often required in order for consumers to accept the product as an 'edible' alternative on a mass scale. This scenario is currently being faced by two innovative food solutions presently in development within western countries: in-vitro meat (a process whereby stem-cell technology is utilised to grow meat artificially in labs) and edible insects. By examining these meat alternatives, this paper will show that for a novel foodstuff to be successfully adopted requires an understanding of how perceptions of 'edibility' are coproduced between various actors in the food supply chain, and that design - of the food itself and the eating environment - plays an integral role in this process of edibility formation at the consumer level.

KEY WORDS

Food design; Food security; Edibility formation; Food semiosphere; In-vitro meat; Entomophagy; Meat alternatives

INTRODUCTION

The global food system is facing a volatile future. Rising populations, climate change and diminishing natural resources are among many problems which threaten the sustainability of worldwide food production and thereby pose significant risks to food security in the future (Boer & Aiking, 2011). In response to these concerns, there is growing recognition of the need to look beyond the more conventional foodstuffs which currently dominate the global food system - such as agricultural produce, meat and fish - and instead look to alternative materials that offer higher standards of human, animal and environmental welfare (Schonwald, 2012). A number of these potential alternatives are currently being promoted in western countries (Elliot, 2013; FAO, 2013; Forgacs, 2013; Singer, 2013); some are already perceived as 'edible' by certain societies and are embedded within existing food cultures, whereas others are completely new products which are only just beginning to develop cultural practices of production and consumption (in-vitro meat and Beyond Meat Chik'n, for example).⁵

Yet despite the claimed benefits of a novel foodstuff or indeed its presence within existing food cultures elsewhere in the world, to gain mass acceptance with consumers requires a complex assemblage of elements that must work collectively to re-shape people's perceptions of what constitutes an edible substance. As will be shown, to achieve this goal requires an understanding of how the 'edibility' of a substance is constructed and negotiated, which elements are involved in this process, how and why they differ between individuals and cultures, and ultimately which elements can be utilised to increase acceptance of a novel foodstuff as 'edible' at the consumer level.

⁵ Beyond Meat is a Missouri-based company currently developing a plant-based chicken alternative. This product has gained widespread popularity within the US and is now stocked in nationwide Whole Foods stores (see <http://beyondmeat.com/>).

NEGOTIATING EDIBILITY

Exploring the process of edibility formation has been the project of many food scholars in recent decades. From genetically-modified carrots to beef, kangaroo meat to sushi, the process by which substances are transformed into an edible material has been shown to be wholly dependent upon a specific collection of (non)human and (im)material elements (Vialles, 1994; Roe, 2006a; Roe, 2006b; Probyn, 2011). Examples of human elements may include particular individuals enacting particular practices, such as the meat preparation of a butcher, the storing mechanisms of a transporter, or the promotional strategies of a retailer. These practices may in turn be informed by immaterial elements including inherited knowledges, economic factors and trends in public 'taste', and are generally performed through the use of particular material/nonhuman utensils, spaces and packaging.

The dependency of edibility formation on assemblages such as these is demonstrated clearly in Vialles' (1994) anthropological study of abattoirs in the Dour region of south-west France. She documents the journey that a living organism undertakes to become a substance which local, national and international consumers consider 'edible' ('cow' to 'beef', for example). Completing this process involves a complex demarcation of space both within the abattoir itself as well as the separation of the abattoir (death) from the rest of society (life), a dissociation which has been increasingly enforced in the West from the early nineteenth century (Vialles, 1994, p. 17). It is through this organisation of space that edibility formation is managed. The animal, taken from the realm of the living, is transported out to the abattoir. Once there it is directed through the site, starting in the "dirty sector" within which the stunning, slaughtering and bloodletting are completed, and eventually arriving in its 'modified' form into the "clean sector" where "everything is inert, bloodless, trimmed, and stabilised by cold" (Vialles, 1994, p. 35). Each space requires a specific collection of individuals operating with specific skillsets and utensils, which are in turn informed by regulations of hygiene and ethical conduct as well as current public tastes⁶. It is thus the collection of these elements that transforms the 'cow' into 'beef', that distinguishes 'slaughtering' from 'murdering', and that allows a highly brutal, messy and sombre business to become an ethical, controlled and overall 'acceptable' means of food production.

Vialles' case study highlights the accepted (non)human elements involved in the edibility formation of most meat-based products in western countries. However this assemblage is highly open to re-interpretation depending on geographical, temporal, economic and cultural specificities. As such the process described above may not in fact produce an 'edible' substance for certain individuals and cultures; for example, many Muslim consumers would not consider this method of meat production acceptable as it does not conform to the specificities of their religious dietary laws. Through investigation of the intermediary steps of food production, and the specific (non)human elements involved, we can thus begin to understand why certain foodstuffs may be accepted as 'edible' in one culture but not in the other, and how the presence or absence of a particular component may jeopardise the perception of 'edibility' at the consumer level.

Once we begin to deconstruct edibility formation in this way it becomes clear that it involves a network of particular elements which, through a process of coproduction, collectively work to form our perceptions of edibility. However, it must be noted that the power relations inherent in these networks are by no means equal. The disproportionate influence possessed by food retailers over edibility formation has been widely documented, especially with regards to the promotional methods and the quality standards they expect from producers (Bentley, 2011). An example of the latter is the strict aesthetic criteria many supermarkets have for their fruit and vegetable products which has led to the re-configuration of many consumer perceptions of what constitutes an 'edible' fruit or vegetable. This in turn has forced farmers to adopt particular production methods in order to avoid creating 'ugly' foods, often at the expense of wasting large proportions of crop that are fit for human consumption (Glotz & Ford, 2012)⁷. Likewise, the design of written and visual information on food labelling has been shown to play an integral part in the construction of edibility at the consumer level, as through this medium certain aspects of a foodstuff can be made to matter ("presented") or not matter ("absented") (Evans & Miele, 2012). This process often involves the 'presenting' of aspects such as proof of high animal welfare and connotations of 'naturalness', 'care' and 'sustainability', whilst associations with intensive farming and artificial inputs are simultaneously 'absented'. Not only has this practice been shown to impact consumers' perceptions of edibility and, ultimately, their purchasing decisions, but also the way in which consumers perceive the taste and 'quality' of the product (Roe, 2006a; Roe, 2006b; Lahlou, 2011; Miele, 2011).

It must not be assumed, however, that producers and consumers lack influence over the process of edibility formation. As we shall go on to see, 'presenting' and 'absenting' certain methods of production can also be a powerful way for food producers to increase consumer acceptance of novel foodstuffs. Similarly, Eden (2011) has shown that the influence retailers seek to gain over consumers through food labelling is not always successful, and can, in certain instances, lead to consumers shopping elsewhere due to mistrust in the retailer and their products. There are many other cases where consumer perceptions of edibility have challenged those of a retailer, despite the product in question being fit for human consumption. This can be due to cultural/personal taste preferences (ShortList, 2013); the ineffective design of the retail environment (Probyn, 2011); association with a mistrusted brand or organisation (Eden, 2011; Evans & Miele, 2012); or the absence, mishandling and overuse of particular information (Roe, 2006b). Furthermore, the rise of consumer awareness of the intrinsic nutritional value

⁶ As will be shown, consumer and/or retailer preference for particular types of meat, welfare and quality standards, and the aesthetics of the final product, can all have significant influence on the practices adopted by food producers to meet these demands.

⁷ 'Fit for human consumption', i.e. a product that is safe for humans to eat with very low risk of immediate or long-term harm.

of food (reflected in the frequently-used phrase 'you are what you eat'), and the effects this can have on consumer perceptions of taste, quality and edibility have led to increasing pressure on producers and retailers to use particular production methods, to provide more transparent labelling, and to abstain from including certain ingredients in their produce (Mol, 2008; Gadema & Oglethorpe, 2011; de Krom & Mol, 2010; Scrinis, 2012).

It is through such interactions between producer, retailer and consumer - and the (non)human and (im)material elements these levels entail - that the 'edibility' of a foodstuff is constructed and negotiated. This does not mean to say, however, that once the 'edibility' of a substance is constructed it remains a fixed absolute; if this was the case then we would not be able to account for the significant changes in societal tastes that have occurred as new substances have been discovered and others have fallen into or out of cultural, political and economic favour (Sakamoto & Allen, 2011). If edibility is something that is purely constructed and negotiated, it thus follows that it can be re-constructed and re-negotiated so that a substance which was once perceived as 'inedible' can in fact come to be accepted as 'edible' (and vice versa).

EDIBILITY AS FOOD SEMIOSPHERE

To make the conceptualisation of this fluidity between 'edibility' and 'inedibility' clearer, Parasecoli (2011) has looked to the language of semiotics. He talks of edibility as a food *semiosphere* which "constitutes itself by marking its porous, ever-shifting boundary in relation to the extra-semiotic that surrounds it". In other words, he views 'edibility' as a particular realm, one that exists at the individual level and whose boundary is dictated by the context-specific factors described in the previous section - i.e. personal taste and quality expectations, food labelling and so on. Outside of this boundary substances are perceived by the individual as 'inedible'; however this status quo is by no means fixed as the "ever-shifting" nature of the boundary between the edible and inedible realms enables an individual's food semiosphere to be re-configured, thus allowing "new extraneous substances [to] become part of the system" (Parasecoli, 2011, p. 651).

How then is this re-configuration of an individual's food semiosphere initiated so that a novel foodstuff may transfer from the realm of the inedible to the edible? This paper proposes that design - of both the food itself and the eating environment - is one such process by which this transition may be achieved⁸. Building upon research which has shown the integral role design can play in edibility formation, this study will demonstrate how two design-specific mechanisms - normalisation and knowledge management - can be utilised to re-shape the realm of the edible, thereby increasing the chances of consumer acceptance on a mass scale.

FUTURE FOOD SOLUTIONS: TWO MEATY CASE STUDIES

In-vitro meat (IVM) - a process whereby stem-cell technology is utilised to grow meat artificially in labs - and edible insects are two innovative foodstuffs that have been the focus of increasing research interest and investment over recent years. In response to a growing global demand for meat-based products and the high costs to environmental, animal and human welfare that are associated with the current livestock industry, advocates for these alternative products claim they provide more sustainable and ethical methods of production without the need for people to decrease their total meat consumption (Huis, 2013; Next Nature, 2013b). To date, consumer knowledge of these alternative products is still in the early stages. Media coverage of IVM development was, up until recently, relatively sparse and primarily located within specialised science and technology publications (Wired, 2009; New Scientist, 2013). This changed, however, in the run up to the first tasting of an IVM product which was held in London on 5th August 2013⁹. The event received global coverage and has since stimulated discussions across various media on the proposed benefits and potential risks, the ethical considerations, and the probability of IVM becoming a commercial product in the future (CBC News, 2013; Elliot, 2013; Ghosh, 2013; Singer, 2013).

The promotion of insects as a mainstream meat alternative in western countries is also gaining attention within academic and media domains (FAO, 2013; Huis, 2013). The topic was explored earlier this year in a BBC Four documentary entitled 'Can Eating Insects Save the World?' in which food writer Stefan Gates visited societies where entomophagy (the human consumption of insects) is a cultural norm. Mainstream newspapers such as The Guardian have also contributed to the discussion of entomophagy over the last year (Baker, 2013), and in addition to numerous pro-entomophagy campaigns appearing at the grassroots level around the world, the Food and Agriculture Organisation (FAO) recently held a conference entitled "Insects to Feed the World" at Wageningen University which sought to promote "the use of insects as human food and as animal feed in assuring food security" at the international level (Wageningen UR, 2014)¹⁰.

⁸ In this paper 'eating environment' refers to the physical environment in which a foodstuff is ingested. There is a vast literature on the influence the design of the physical environment can play on eating behaviours, particularly with regards to how aspects such as advertising, design of utensils and the layouts of domestic and retail spaces can lead to increased portion size, more frequent eating and greater consumption of unhealthy foods (French, Story, & Jeffery, 2001; Sallis & Glanz, 2006; Sobal & Wansink, 2007).

⁹ The three tasters at the event were Professor Mark Post (the lead scientist of the IVM burger project), nutritional scientist Hanni Ruetzler and food journalist Josh Schonwald; the general consensus amongst the tasters was that although the texture was very similar to a conventional burger it lacked significant flavour beyond the outer layer which had been exposed to the cooking oil.

¹⁰ Notable examples of grassroots, non-profit advocacy groups include 'Little Herds' in Texas, US; 'Bugs on the Menu', Victoria, BC, Canada; and, 'Eat Yummy Bugs' in Vermont, US.

The instigation of widespread entomophagy at the consumer level within the UK is the current focus of Ento, a new start-up company founded by a group of students from Imperial College London and the Royal College of Art. After running a series of supper clubs where diners were invited to taste insect-based dishes, Ento aims to introduce a range of ready-made meals in national supermarkets (Core77, 2012). The main products to date consist of ground-up insect protein flavoured with additional ingredients and shaped into bite-size cubes (entocubes).

Despite the emphasis that the developers and media have placed on the potential benefits of these meat-based alternatives, as well as the academic studies which support the claimed advantages (Fiala, 2010; Tuomisto & de Mattos, 2011; Huis, 2013), research into the diffusion of innovations makes clear that much more will be needed to achieve widespread adoption of these products at the consumer level (Rogers, 1983; MacMillan & Middleton, 2010; Adner, 2013). Indeed, results from recent focus groups which discussed IVM with members of the public have revealed initial responses ranged from feelings of wonder to those of disgust, uneasiness and distrust (van der Weele & Driessen, 2013). Likewise, preliminary research by Ento showed that major cultural barriers currently exist which prevent most western consumers accepting insects as a desirable meat alternative (Core77, 2012). It is clear that a re-alignment of western consumers' food semiospheres is required to bring these two foodstuffs into the realm of the 'edible', and as we shall see the use of design has to date featured prominently as a tool by which to initiate this transition.

NORMALISATION

In order to increase consumer acceptance of IVM as a future meat alternative there have been two important uses of design by those involved in its development. The first was the design of the product itself and the overall eating environment at the first public tasting of IVM. At the time of the event scientists had only been able to grow IVM in minced meat-like strands which limited the choice of dishes that could be used to present the product. The chosen format was a burger, cooked by a chef in a frying pan of oil and served on a plate with the common accompaniments of salad and bread bun. Given the widespread association of meat, particularly in burger-form, with western lifestyles and ideas of personal and economic freedom (Rockwell, 1997; Talwar, 2003), as well as the global popularity of burgers for their taste, low cost and convenience, it is perhaps not surprising that the developers of IVM chose to present their product in this form so as to increase consumer interest and acceptance. Since the tasting event another project has been initiated by the Next Nature Network who announced they are developing an IVM cookbook which will be publicly available from autumn 2014¹¹. Designed as a "visually stunning exploration of the 'food cultures' lab-grown meat might create", the project aims to engage readers through fictional recipes and accompanying imagery in a future-imagining exercise of how we may come to interact with IVM products (Next Nature, 2013a). What this project and the burger arguably demonstrate are attempts to 'normalise' the product and situate it within the existing food cultures of modern western consumers. By utilising culturally-accepted food shapes, cooking and eating practices, food media, and 'experts' involved in food preparation and judgement, the IVM burger and cookbook appeal to the norms and practices that already exist within the boundaries of many western consumers' food semiospheres. Through such associations, the process of breaking down the boundaries between semiosphere and extra-semiotic (i.e. 'edibility' and 'inedibility') is thus initiated and thereby allows IVM to more readily enter the realm of the edible.

A similar process can also be seen with Ento's products as the choice of presentation was, by the company's own admission, a conscious use of design to normalise insects as a foodstuff (Core77, 2012). Their entocubes and the accompanying packaging and eating utensils all resemble the appearance and consumption practices of sushi, a cuisine that has over the last thirty years become a widely accepted and popular choice for European and American consumers (Sakamoto & Allen, 2011). Likewise when experimenting with consumer perceptions of whole insects, the Ento team added a layer of fried breadcrumbs to a selection of samples to see if the public's willingness to try them increased. The results showed that consumers were more accepting of this appearance as it emulated foodstuffs such as chicken goujons or nuggets which, similar to the hamburger, have widespread associations with popular western food chains, convenience, low cost and tastiness.

KNOWLEDGE MANAGEMENT

The design of information about a novel foodstuff is another important platform through which edibility formation takes place, particularly when certain aspects of a foodstuff are made to matter ('presented'), or not matter ('absented') (Evans & Miele, 2012). With regards to IVM and *entocubes*, the use of 'presenting' and 'absenting' particular aspects of the products has been a significant and conscious part of the design process. Not only was the shape of the entocube chosen specifically because "the geometric shape...aim[s] to redefine insects as a type of food, not as a type of animal" (Core77, 2012), but the design language of the brand has been carefully constructed in order to 'present' particular characteristics ('natural', 'innovative', 'futuristic/modern') whilst simultaneously 'absenting' associations of insects with dirtiness, pests and the yuck factor. This is apparent in the playful, abstract and modern-looking logo (Fig. 1), and the emphasis that the company's website places on insects as a tasty, natural, healthy and more sustainable alternative to traditional meat products. Even the name of the company, Ento, plays an important part in 'presenting' insects as an edible substance - taken from the word *entomophagy* (the consumption of insects by animals, particularly humans), 'Ento' was also chosen because of its similarity to the Japanese word

¹¹ The Next Nature Network is an initiative comprised of academics, designers and students largely based in the Netherlands; see <http://www.nextnature.net/>.

'bento' (meaning 'lunchbox'), which adds to the process of 'presenting' the products as an edible foodstuff and further associates them with existing and highly popular Asian culinary traditions (Core77, 2012).

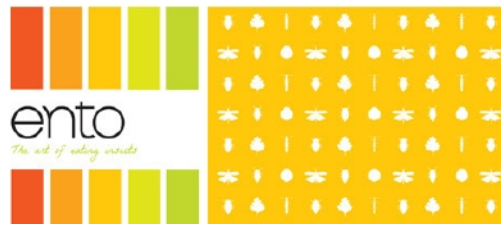


Fig. 1: Ento logo. Source: Core77 2012.

Where Ento have made a conscious effort to 'absent' the animal from their products, the developers of IVM have conversely chosen to 'present' the animal in the hope of gaining wider acceptance of their products. Strong references to the animal behind cultured meat (i.e. the animal that provides the source cells) are often highly prevalent in promotional texts and videos (New Harvest, 2013), as well as the visual material in public presentations (Fig. 2). This helps to reassure consumers that the initial and final stages of IVM are much the same as current meat production, the only difference being the methodologies and inputs used *in between* the animal and final product. Such practices emulate similar efforts by the current meat industry to increasingly 'present' the animals behind their products, a trend which has largely been in response to the major meat-related scares over recent decades and the consequent loss of consumer trust in the 'naturalness' and quality of meat-based products (Yee, Yeung & Morris, 2005; BBC, 2013). However, there have been growing concerns that the decision by producers and retailers to 'absent' the intermediary steps of production has led to a severe lack of consumer awareness about meat supply chains; these concerns were verified by the deep shock British consumers felt in response to the horsemeat scandal in early 2013 (Lawrence, 2013). Local butchers and independent meat traders experienced a significant increase in sales during the following months as consumers sought more transparency with regards to the intermediary steps in between the animal and the final product (Mitchem, 2013). Thus, in order to gain the similar level of trust that consumers place in local, non-processed meat products, the developers of IVM must not attempt to 'absent' the production methods in favour of solely 'presenting' the animal; they should instead endeavour to be transparent about the whole supply chain and look on the intermediary steps as a unique selling point that distinguishes them from the non-transparent practices of the traditional meat industry.

Evidence to suggest this strategy has been adopted by advocates of IVM is apparent through the frequent associations of the production methods with cleanliness, control, progressiveness and efficiency (Forgacs, 2013; New Harvest, 2013). This greatly contrasts to widespread negative consumer perceptions of the traditional livestock industry as unhygienic, unnatural, untrustworthy and violent (Lawrence, 2013). However, although transparency of the whole supply chain is a positive strategy, a balance must also be struck between 'presenting' IVM as both 'natural' and 'scientific' if the product is going to appeal to a mass consumer audience - to emphasise the latter too much may contradict the former in some consumers' perceptions, as well as fail to appeal to any culturally-accepted methods of food production that currently exist within most consumers' food semiospheres. In other words, the process shown in Figure 2 is very far removed from the assemblages of (non)human elements usually involved in modern meat production, and, as seen with more conventional foodstuffs, if the consumer does not accept these intermediary stages of edibility formation then the chance of them viewing IVM as an edible substance is significantly reduced.

'Presenting' and 'absenting' the production methods of a novel foodstuff is thus a vital part of edibility formation and requires a particular design of information so as to appeal to existing norms and expectations at the consumer level. In Probyn's (2012) study of the Australian kangaroo meat industry she observed how the producers used the word 'harvested' instead of 'slaughtered' in order to frame their products as a more humane meat alternative. A similar tactic appears to have been adopted by the two main advocacy organisations for IVM - New Harvest and Modern Meadow; here it seems an attempt to strike a balance between 'natural' and 'science' has been made by combining connotations of 'progressiveness' and 'modernity' with the more familiar, 'natural' and almost nostalgic imagery that harvesting and meadows provoke.

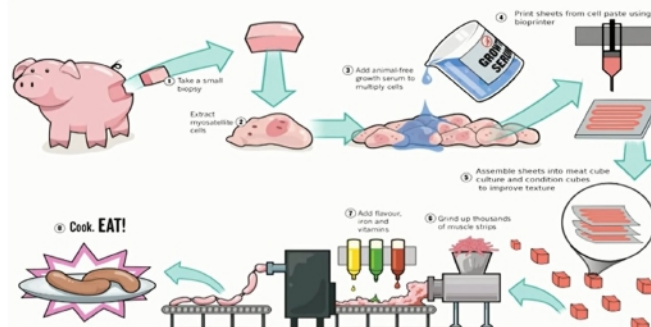


Fig. 2: Modern Meadow presentation slide describing the process behind cultured meat. Source: (Jones, 2010).

CONCLUSION

Food design provides a powerful platform through which to open up consumers' food semiospheres and encourage them to accept novel foodstuffs as edible. This paper has shown that the construction and negotiation of consumers' perceptions of edibility are heavily influenced by two important abilities of design - normalisation and knowledge management - but this is by no means an exhaustive study of the subject matter. There is much scope to look into other ways consumer perceptions of edibility may be challenged and reconfigured, such as the design of particular rooms, cooking tools and utensils involved within eating environments (Sobal & Wansink, 2007); the design of more abstract elements such as personal memory and nostalgia to increase consumer acceptance of novel foodstuffs (Sturgess, 2012); and the re-designing of the physiological limits of an individual's food semiosphere in order to change what is *physically* edible for human consumption (Next Nature, 2011)¹².⁹ What this paper has aimed to demonstrate is the importance of viewing consumer perceptions of edibility as coproduced concepts, and in turn how design plays an integral role in this process of edibility formation. It is proposed that any novel foodstuff which faces initial public aversion will have greater chance of consumer acceptance if attention is focussed on the ways in which the 'edibility' of the product is constructed, particularly through design-based practices. This has important implications in light of the urgent need for a global-scale transition to novel, more sustainable food alternatives and for informing the mechanisms used so as to increase the likelihood of consumer acceptance on a mass scale.

ACKNOWLEDGEMENTS

I would like to thank Dr. Mike Goodman and Isha Datar for their suggestions and insights on this paper. I would also like to express thanks to the Graduate School, Student Funding Office and Department of Geography at King's College London for the funding awards I received to present this paper at the International Food Design Conference and Studio (2-4 July 2014, Otago Polytechnic University, Dunedin, New Zealand).

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¹² An example of this is the future-imagining project by the Material Beliefs program at Goldsmiths, University of London, which proposes to convert our omnivore teeth structures into those of herbivores in order to reduce global meat consumption. The physiological characteristics of an eater could be seen as one set of conditions defining the boundaries of their food semiosphere (for example, particular flora which are inedible for humans are edible for ruminants due to their specific digestive systems); as such this proposed design project would re-shape the boundaries of the eater's food semiosphere by making it physically impossible (or indeed much more difficult) to chew meat-based products, thereby excluding meat from the individual's realm of the edible.

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Art and Food: Synergies between the Visual Arts and Food Design

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ABSTRACT

This paper aims to explore synergies between the visual arts and food design. Part one reminds one of how food has been represented over the millennia in the history of the visual arts, ranging from prehistoric rock drawings and engravings to ancient and classical examples, medieval ideas around food and religion, the secularisation of food in the modern era, through to modernist investigations and contemporary practices focused on issues relevant to food design. Part two considers theorists such as Marcel Mauss, Pierre Bourdieu, Roland Barthes, C. Nadia Seremitakis and Nicolas Bourriaud who have offered views from a variety of disciplines on the visual arts and food as semiotic systems which both represent and construct societies. Their views are illustrated with examples from the visual arts in tandem with food design in the twentieth and twenty-first centuries. The paper then continues in part three with a focus on a few case studies highlighting close synergies between the visual arts and food design in recent years: case studies which demonstrate how the visual arts and food design have mutually benefited from each other in an era sensitive to the critical issues facing us in a world of population growth and the possibilities of diminishing resources, in conjunction with the need for a focus on sustainability. Part four raises a few key possibilities around future synergies between the disciplines of the Visual Arts and Food Design within a context such as Otago Polytechnic where both disciplines are offered for students and where future collaboration is supported by the institution.

Professor Leoni Schmidt is the Head of the Dunedin School of Art and Associate Director: Research & Enterprise at Otago Polytechnic in New Zealand. Her own research focuses on the semiotics, politics, pedagogics and cognitive functions of contemporary drawing and on interdisciplinary approaches in the expanded field of contemporary creative practices.

From Slave Ship to Drive-through: Exploring the Hinterland of Conscious Culinary Design

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ABSTRACT

Fried chicken has a rich and interesting pedigree: from its beginnings as a celebrated slave dish to its transition onto white dining tables. It is an iconic Southern American dish steeped in social and racial history. Kentucky Fried Chicken, and its many imitators, have transformed this soul food staple into a ubiquitous “drive-through,” “24/7”, commodity. Colonel Sanders created a commercial empire that sold an iconic black dish to a white audience. From poor white farming roots he had two fortunes made and lost before his rise to fame with his “secret” recipe. (Ozersky, 2012) This heritage dish has recently seen a revival in modern cuisine with soul food revivalist chefs researching the West African spices and ingredients at the source and attempting to recreate the cooking conditions and ingredients found in plantation cookhouses. (Eddy, 2013) But the real question is “where did this interesting story come from”? In an industry which is often time poor, many chefs will resort to their repertoire of tacit knowledge to provide solutions to design problems. This paper discusses how making time to explore beyond one’s framework of knowledge and moving from a subconscious to conscious state of design can lead to new and unexpected insights and ways of thinking. It also discusses the adoption and application of the culinary double diamond design model (Mitchell, R., Woodhouse, A., Heptinstall, T., & Camp, J., 2013) which can lead to design resolutions that draw from unexpected resources.

KEY WORDS

conscious culinary design; culinary practice

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Wine and Music: The Synergies Between Sound and Taste

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ABSTRACT

In this paper I propose to investigate the synergies between sound and taste through an exploration of the way music appears to influence the perception of the aroma, taste and texture of a wine. This draws on scientific studies in the emerging area of sensory research. It also presents my own work in this field, which includes empirical studies that observe how different moods, timbres and frequencies of music affect the subjects' perception of different styles of wine; wine and sound/music matching workshops; and the multi-sensory work of sonic/gustatory art, Oenosthesia, whose sonic element was designed to enhance the appreciation of a number of different wines. It will also introduce my current project: the establishment of a wine and sound bar at The Auricle Sonic Arts Gallery in Christchurch, in which I curate the wine list to match the music playing in the gallery. In conclusion, rather than sound being regarded as simply a background element in places where wine (and food) are consumed, attention needs to be paid to the sounds/sound design within these environments given its often strong influence on the sense of taste.

KEY WORDS

music; sound; taste; wine; synaesthesia; multi-sensory art

INTRODUCTION

In the decadent novel, *Against Nature*, by J. K. Huysmans¹³ published in the 1880s, there is a description of what its protagonist Des Esseintes calls his Mouth Organ: a collection of casks of different liquors, the contents of each corresponding in taste to the sound of a particular instrument. He likens kummel to the oboe “with its sonorous and nasal timbre”, crème de menthe to the flute “at one and the same time sweet and poignant, whining and soft” and liqueur brandy “as blaring with the overwhelming crash of the tubas”.

Huysmans writes that “Des Esseintes would imbibe a drop here, another there, another elsewhere, thus playing symphonies on his internal economy, producing on his palate a series of sensations analogous to those wherewith music gratifies the ear.”

Over a century later and such analogies are not just a decadent flight of fancy in a work of fiction, but a concept that is driving a whole new area of research into the intersection between sound and taste and the powerful influence they can have on each other. This is an area which I have investigated in considerable depth in my work as a wine writer and practice as a sound artist and is now the subject of a growing body of scientific studies that have begun to be applied in the bar, restaurant and art gallery.

SYNERGYSTIC SUPPOSITIONS

When thinking about wine, music and sound they share many similarities in the language employed to describe their qualities. Crossovers in ideas include concepts such as harmony, notes and tones applied to wine, and words such as “sweet” and “bitter” used to describe moods of music. The latter is demonstrated by research conducted in Argentina in the wider area of music and taste by the physicist Mariano Sigman, pianist and mathematician Bruno Mesz, and Marcos Trevisan of Laboratory of Dynamical Systems¹⁴. This research noted the “tradition of describing musical concepts in terms of taste words” and that

¹³ Huysmans, J.K. (1884). *Against Nature (Translation of A Rebours)*. London, United Kingdom, Penguin Books.

¹⁴ Mesz, B., Trevisan, M. A., and Sigman, M. (2011). The taste of music. *Perception* 40. 2011;40(2):209-19. The research investigated whether taste words elicited consistent musical representations by asking trained musicians to improvise on the basis of the four canonical taste words: sweet, sour, bitter, and salty and showed that, even in free improvisation, taste words elicited very reliable and consistent musical patterns: 'bitter' improvisations are low-pitched and legato (without interruption

“recent empirical studies have found reliable associations between taste perception and low-level sound and musical parameters, like pitch and phonetic features”.¹⁵

Both sound and taste are powerful triggers of memory, with certain tunes or sounds; aromas or flavours possessing the power to take us back often far into the past. Both are also able to evoke moods, from a light fruit driven wine or upbeat melody to a full bodied brooding red or dark piece of music in a minor key.

In my own work as a wine writer and sound artist, I had been increasingly aware that this crossover was possibly more than purely semantic or conceptual. While all my professional tastings were conducted in silence, outside the tasting room I had instinctively been matching what I was listening to with what I was eating or drinking for years, albeit unconsciously. I came to realise that sound and taste were interacting in a way that appeared to affect my actual perception of the aromas and flavours of that which I was tasting, which provoked me to investigate further.

My first experiments were conducted on myself, sampling different styles of wines with different types of music. As a wine critic striving for objectivity the fact that an external influence like this could alter my judgments was a real concern. In these initial trials I was shocked at how different pieces of music could drastically change my assessments.

I then ran some more informal experiments on groups of friends, which again suggested that what a person listens to when they are imbibing has an effect and indeed appears to change their perceptions of what they are tasting. In these experiments and through feedback from subsequent wine and music matching workshops that I have been running over the last decade, I started to note the elements that had the strongest positive and negative effects on each other.

It appeared that the mood, tempo and pitch of the music could be matched with different components of the wine, aromas and flavours, as well as structural elements such as acid, sweetness and tannins. Despite the subjective nature of musical preferences and tastes in wine, in my workshops I was able to demonstrate a number of harmonious combinations and clashes between wine and sound, which appeared to be almost universally perceived. For example, I illustrated how a piece of poppy bossa nova enhanced the aromatics and fresh fruity character of a Marlborough Sauvignon Blanc, while a heavy rock track played with the same wine subdued both its bouquet and fruit and made its acid feel hard.

Another person who has conducted similar informal research in this area is Clark Smith, a Californian winemaker and wine technologist. Smith developed his own theories in music and wine matching through conducting his own trials using panels to sample 150 different wines with 250 different songs.¹⁶ Smith writes:

It seems that when the wine and the music have the same intrinsic mood, they complement each other. In particular, wines taste smoother, whereas when it's a mismatch, they can taste harsh and astringent. What goes with what? You can make pretty good guesses about what will work by learning to be as sensitive to the mood of a wine as to the mood of a piece. Anybody can tell happy music from sad from angry from romantic from lustful. Wines are the same. Cabernets are angry, Pinots romantic, Rieslings cheerful. After that, it's trial and error. Pay particular attention to astringency: the smoothness or harshness a wine displays when tasted in a specific musical environment. You don't need more than a few seconds to sense the effect.¹⁷

Smith worked with his late wife, Dr. Susan Mayer-Smith a clinical psychologist who also held degrees in music, a collaboration that included a paper presented on recent advances in cognitive musicology and its possible relationship to wine cognition at the 2007 Australian Wine Industry Technical Conference.¹⁸ In this he suggests that wine tasting stimulates the same processing areas of the brain as listening to music, with both wine and music activating the pleasure centres of the brain.

SCIENTIFIC SUPPORT

Like Smith, the idea of mood dictating what might make a good match between a wine and music was something that I also found in my own experiments. These empirical observations were given scientific support by the findings of a study into “Wine and Song”¹⁹ conducted by the music psychologist Professor Adrian North at the UK’s Heriot-Watt University.

between notes), 'salty' improvisations are staccato (notes sharply detached from each other), 'sour' improvisations are high-pitched and dissonant, and 'sweet' improvisations are consonant, slow, and soft.

¹⁵ Ibid

¹⁶ Gray, W. B. (2007). Music to drink wine by: Vintner insists music can change wine's flavors. *San Francisco Chronicle*.

¹⁷ Smith, C. <http://postmodernwinemaking.com/wine-and-music>

¹⁸ Smith, C. (2007). Liquid Music: Mysterious Resonances. *Australian Wine Industry Technical Conference*, Adelaide.

¹⁹ North, A. C. (2012). The effect of background music on the taste of wine. *British Journal of Psychology* 103 (3), pp. 293-301.

According to North, while it has been widely acknowledged within the scientific community that music affects behaviour, this study was the first time it had been scientifically proven that music can affect perception in other senses and consequently change the way a wine tastes.

The study noted that music's ability to prime certain thoughts and feelings had been supported by previous research, but its hypothesis was that music could also have a corresponding impact on taste. The study gave its 250 participants both a red and a white wine to try – in silence and then accompanied by four different styles of music:

Type of Music	Piece of Music
Powerful and heavy	Carmina Burana – Orff
Subtle and refined	Waltz of the Flowers (from The Nutcracker) – Tchaikovsky
Zingy and refreshing	Just Can't Get Enough – Nouvelle Vague
Mellow and soft	Slow Breakdown – Michael Brook

In each instance the participants were asked to rate the wine's taste from 0 to 10 for each of the dimensions represented by each different type of music, while being unaware of the way the study described the music. The study confirmed that the characteristics of the music primed people to perceive the wine in a manner consistent with the music. If the background music was powerful and heavy then the wine was perceived as being more powerful and heavy than when no background music was played. If the background music was subtle and refined then the wine was perceived as more subtle and refined than when no background music was played. The strongest result was when the red wine was rated 60% more powerful and heavy when accompanied by the powerful and heavy music, which could be viewed as the music closest to the wine's style.

In each case, these differences between the music and 'no music' conditions were statistically significant: the music shifted the perception of the wine in the direction of the mood expressed by the music by an average of 37.25%. This led to the conclusion that "Background music influences the taste of wine" and that "The specific taste of the wine was influenced in a manner consistent with the mood evoked by the music".

However, while Smith and North's research was restricted to conventional music, my interest in experimental music and sonic art led to my examining the relationship that more abstract sounds had to wine. I discovered that regardless of the obvious mood of a piece of music, pitch also appears to play a part, with high frequencies more compatible with high acidity and low ones with tannins in a wine. It also emerged that faster rhythms appear to work with higher acidity. These empirical observations are supported by results from research conducted by Professor Charles Spence, head of the Crossmodal Research Laboratory at the UK's Oxford University, which has become one of the main centres currently exploring these auditory-gustatory connections. His research found that sweet and sour tastes are associated with higher-pitched tones and piano sounds, while bitter ones are linked to lower pitches and brass instruments.²⁰

These findings were employed in the laboratory's "bittersweet symphony" experiment²¹ which provided proof that what people were tasting could actually be influenced by music. When the same cinder toffee was tasted with two different soundtracks - one designed to complement bitter flavours and the other sweet - participants rated the toffee as being significantly sweeter when sucked on with the 'sweet' music and more bitter when consumed with the 'bitter' track. It concluded: "the cinder toffee samples tasted while listening to the presumptively 'bitter' soundtrack were rated as tasting significantly more bitter than when exactly the same foodstuff was evaluated while listening to the 'sweet' soundtrack instead. These results provide the first convincing empirical demonstration that the crossmodal congruency of a background soundtrack can be used to modify the taste (and presumably also flavour) of a foodstuff."

A paper Spence co-authored with Klemens Knöferle provides a review of current research in the area and concluded that there "is now a solid body of experimental research to show that neurologically normal individuals map tastes (and other aspects of flavor/oral-somatosensation) and both musical and nonmusical sounds in a nonrandom manner."²²

²⁰ Crisinel, A., and Spence, C. (2010). As bitter as a trombone: Synesthetic correspondences in nonsynesthetes between tastes/flavors and musical notes. *Attention, Perception & Psychophysics*; Oct2010, Vol. 72 Issue 7, p. 1994.

²¹ Crisinel, A., Cosser, S., King, S., Jones, R., Petrie, J. & Spence, C. (2012). A bittersweet symphony: Systematically modulating the taste of food by changing the sonic properties of the soundtrack playing in the background. *Food Quality and Preference* 24, pp. 201–204.

²² Knöferle, K. and Spence, C. (2012). Crossmodal correspondences between sounds and tastes. *Psychonomic Bulletin & Review*. 19(6)1-15

Spence has also focused specifically on wine and music in a number of studies. One such study combined wine aromas with different musical instruments and found that some aromas were preferentially matched to specific musical instruments and tones, such as fruity smells associated with high pitched notes.²³

One of his most recent studies in this area investigates crossmodal correspondences between classical music and fine wine.²⁴ It examined whether the comparisons wine writers made with wines “to pieces of music, a particular musical style or artist, or even to specific musical parameters” merely reflected “the idiosyncratic matches of the writers concerned” or “more general crossmodal matching tendencies that would also be shared by others, for example social drinkers”.

The study's first experiment looked for any consensual patterns of crossmodal matching across a group of 24 participants who were presented with four distinctive wines to taste. In the second experiment, three of the wines were presented with and without music and 26 participants were asked to rate the perceived sweetness, acidity, alcohol level, fruitiness, tannin level, and their own enjoyment of the wines.

“The results of experiment 1 revealed the existence of a significant agreement amongst the participants in terms of specific classical music - fine wine pairings that appeared to go particularly well (or badly) together. For example, Tchaikovsky’s String Quartet No 1 in D major turned out to be a very good match for the Château Margaux 2004 (red wine). Meanwhile, Mozart’s Flute Quartet in D major, K285 was found to be a good match for the Pouilly Fumé (white wine). The results of experiment 2 revealed that participants perceived the wine as tasting sweeter and enjoyed the experience more while listening to the matching music than while tasting the wine in silence.”

Spence et al concluded that taken together, the results of the two experiments “suggest that people (social drinkers) share a number of crossmodal associations when it comes to pairing wines and music. Furthermore, listening to the appropriate classical music can enhance the overall experience associated with drinking wine. As such, our findings provide prima facie evidence to support the claim that comparing a wine to a particular style of music (as documented in the work of a number of wine writers) might provide the social drinker with useful clues about the sensory properties that they should expect to perceive in a wine should they eventually get to taste it.”

This crossing of signals brings to mind synaesthesia, a rare condition in which one type of sensory stimulation is involuntarily experienced as another. Senses are crosswired and a sufferer might connect certain colours with unrelated images or associate sounds or with unrelated visual imagery. Studies such as those conducted by Spence, suggest that a similar kind of sensory crossing appears to occur in the wider population. However, Spence suggests that this is likely not synaesthesia itself. He writes:

While findings like these further our understanding of the interaction of our various senses, they seem to be strikingly different from reports of true "synaesthetes"... Thus, one important question in the field of multi-sensory perception still remains to be answered: Are “true” synaesthesia and crossmodal correspondences qualitatively different phenomena, or are they manifestations of a more or less continuous spectrum of crossmodal links, possibly rooted in the same neurocognitive mechanism... Whatever the answer to this question turns out to be, the key point to note is that crossmodal correspondences between sounds and tastes/flavors reflect a robust empirical phenomenon with potentially widespread applications.²⁵

PRACTICAL APPLICATIONS

These findings are starting to be applied beyond the laboratory, in bars, restaurants and even within art. Spence has famously worked with the chef Heston Blumenthal on his dish, *Sounds of the Sea* (Figure 1). This is a seafood dish where the food is accompanied by an iPod playing the sound of crashing waves to intensify the experience.

²³ Crisinel, A. and Spence, C. (2011). A fruity note: crossmodal associations between odors and musical notes. *Chem. Sense* doi:10.1093/chemse/bjr085.

²⁴ Spence, C., Richards, L., Kjellin, E., Huhnt, A-M., Daskal, V., Scheybeler, A., Velasco, C. & Deroy, O. (2013). Looking for crossmodal correspondences between classical music and fine wine. *Flavour* 2, p. 29.

²⁵ Knöferle, K. and Spence, C. (2012). Crossmodal correspondences between sounds and tastes. *Psychonomic Bulletin & Review*. 19(6)1-15



Figure 1: Sound of the Sea at The Fat Duck

When I visited Spence in his laboratory in 2012, he was working on ways of heightening sensory intersections by having music delivered by the actual vessels from which food and drink is consumed. He also played me a piece of music that was created after the components of Cognac were deconstructed to correspond with different instruments and pitches to accompany the spirit.

Experiments conducted over a decade ago had already indicated that the volume, speed and type of music can have profound effects on product preference, alcohol consumption and money spent^{26,27}. These highlighted points such as playing classical music and slower music in restaurants made people spend more, while slower music also meant people spent more time eating and drinking. Interestingly, while restaurant patrons did not eat more in the slow music condition, they drank far more.

With this most recent crossmodal research into the interaction between sound and taste comes a huge potential for applying their findings in the places where food and drink are consumed. However, while there have been a growing number of specific food and music and food and wine matching events, very few actual establishments have fully embraced the concepts and many still pay scant attention to the compatibility of the music they play to their customers with what they are serving.

This is something I sought to redress in the bar that I am currently helping to set up, The Auricle in Christchurch, New Zealand (Figure 2)²⁸. Attached to a sonic arts gallery, it is what I believe to be the world's first dedicated wine and sound bar. Every month I curate a wine list matched to the exhibition and the music playing in the space, which is informed by my own research and that of the scientific community. The aim is to heighten the patron's experience of both the wine and the music delivered in the space. An additional point that I have noticed is that customers appear to engage far more actively with what they are tasting and listening to when the wine and sound are linked.

²⁶ North, A. C., Shilcock, A. & Hargreaves, D.J. (2003). The effect of musical style on restaurant customers' spending. *Environment and Behavior* 35, pp. 712-718.

²⁷ Caldwell, C. and Hibbert, S.A. (1999) Play That One Again: the Effect of Music Tempo on Consumer Behaviour in a Restaurant. *European Advances in Consumer Research Volume 4: Association for Consumer Research*, pp. 58-62.

²⁸ The Auricle (n.d.) Retrieved from <http://auricle.org.nz/>



Figure 2: The Auricle Sound & Wine Bar. Source: Jo Burzynska

Recent research also has interesting ramifications in the world of art in an era in which artists have been increasingly embracing the multi-sensory in their work. For example, Wolfgang Georgsdorf presented his olfactory film *NO(I)SE* in Austria in 2013 using the “SMELLER” system²⁹, an olfactokinetic art device for composing, producing, interpreting, programming, recording, storing and playing back compositions made up of scents and scent chords.

There is now an Institute for Art and Olfaction in Los Angeles, which has featured work by artists combining sound with aromas. And last year, the Unsound Music Festival hosted an exhibition called *Ephemer*, an installation presenting olfactory compositions based on musical resonances and reverberations.

The synergies between sound, smell and taste is something that I have used in my own creative work as a sound artist. In 2012 I created the work, “Oenosthesia”³⁰ during my Suone dal Confine artist residency in the Italian region of Irpinia, Italy. This multi-sensory installation was created from field recordings that I made in the region’s wineries and vineyards, which were collaged to form the final musical element of the work. The different frequencies and timbres of this were designed to interact with selected local wines, which were served at specific times during its premiere at Interferenze’s Farm 2012 Festival in Tufo. (Figure 3)

²⁹ Smeller 2.0 (n.d.) Retrieved from <http://smeller.net/>. An electronic olfactory organ that is able to play thousands of scents in place of music notes.

³⁰ Burzynska, J. (2012) Oenosthesia: Sound and Wine. Retrieved from <http://stanierblackfive.com/oenosthesia-sound-and-wine/>



Figure 3: *Oenosthesia* at Interferenze's FARM Festival, Tufo, Italy (2012). Source: Leandro Pisano

CONCLUSION

Sounds and taste were once connected solely through intuition and empirical evidence, but over the last five years in particular scientific institutions have been increasingly involved in research that has proved that the two do powerfully intersect and have started to explore the ways in which this occurs.

Armed with this knowledge, those who manage places where consumption takes place need to pay attention to creating as much harmony between the music that is played and food and drinks that are served as a chef would when balancing the flavours within a dish or a winemaker when blending a wine. Sound can no longer be viewed as a neutral background element in these environments, but something that has the power to greatly enhance or detract from the taste experiences of those who drink or dine there.

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Design for Sustainability: Addressing Food Waste Behaviour Through Social Practice Approaches

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ABSTRACT

This article explores current approaches and frameworks for addressing food waste behaviour through a case study. Two social practice approaches, Comfort, Cleanliness and Convenience (3Cs) (Shove 2003a) and Meanings, Materials and Competence (Shove & Panzar 2005) were closely examined for their applicability in the design process. The case study sought to design interventions to improve the waste stream of a local farmers' market, using human-centred design methods in conjunction with the social practice approaches. The evaluation of the early stages of the design process showed that the two social practice approaches can reveal rich nuances of everyday food waste practices. The approaches were also complementary to human-centred design methods and are useful in combination with other sustainability approaches. I conclude that the two social practice approaches are useful tools particularly when framing problems for designing interventions. Further research in the effective application of wider social practice approaches, with reference to how they inform the design process, would enrich the field of sustainable design.

KEY WORDS

design for sustainability; food waste; human centered design; social practice theory

INTRODUCTION

An area of pressing concern with respect to sustainability is food waste. Issues surrounding food waste include related emissions from organic waste disposed of in landfill, loss of potentially valuable food resources, the wasted embodied energy of food production, and potential costs to society (Nahman, de Lange, Oelofse & Godfrey, 2012; Gustavsson, Cederberg & Sonesson, 2011). Food waste is often categorized in post consumer and post harvest waste. Post consumer waste refers to the phase of the food life cycle after consumers purchase food, where as post harvest waste results from food production and distribution. In mid- to high-income countries, post consumer waste outweighs the post harvest waste (Nahman et al., 2011). It is argued that this is largely due to consumer behaviour (Godfray et al., 2010, Evans, 2012). Accordingly, the commonly referenced data indicates that roughly thirty one per cent of food purchased is thrown away in the United Kingdom (WAAP, 2009 cited in Evans, 2012). This paper will explore the current landscape of post consumer food waste with relation to consumer behaviour.

Until recently, education and raising awareness have been a common approach in encouraging behaviour change (McKenzie-Mohr, 2000). The assumption, that people's knowledge leads to concern and subsequently to pro-environmental behaviour, is recognised as Attitude Behaviour Relation (Ajzen & Fishbein, 1977). However, growing concerns have been raised about the ineffective nature of informing people as the only form of intervention for altering behaviour (Hargreaves, 2011). Despite having knowledge and pro-sustainability attitudes, behaviours in our daily lives often do not reflect our intentions (McKenzie-Mohr, 2000; Fletcher, 2007). For example finding the occasional food at the back of our fridge that has become unrecognisable is a part of reality for many, even for those with an interest in, and positive intentions towards, sustainable practices.

SOCIAL PRACTICE APPROACH

Recently, an increasing amount of sustainability research has been carried out using social practice theory. This approach emphasises a move away from studying individual attitudes and behaviours to an investigation into the social organisation of everyday practices (Reckwitz, 2002; Hargreaves, 2011; Wade, 2009). The studies using this theory point out the limitation of an attitude-behaviour relationship model for isolating an individual's behaviour from elements that contribute to that behaviour other than attitude (Spaargaren, 2003; Wade, 2009).

Gaining an understanding of the wider influences of and individual's everyday habits may identify ways to promote more sustainable norms (Hargreaves, 2011; Spaargaren, 2003; Wade, 2009). Further, practices and routines are not static, but change over time. Current practices are reshaped or vanish, while new practices are introduced over time (Shove and Walker, 2010). By understanding the catalysts for transitions in social practice, and by applying this knowledge to design interventions, current practices can be altered to improve positive outcomes, and undesirable practices can be phased out.

Although we must recognize established scholarly positions governing this theory, as Ingram et. al (2007) suggest, a "brutal simplification" of this theory is needed to begin to understand its applicability to the design process. With this in mind, this article will focus on two sociological approaches: Shove's (2003) Comfort Cleanliness and Convenience, and Materials, Meanings and Competence (Shove & Panzar, 2005)

SHOVE'S COMFORT, CLEANLINESS AND CONVENIENCE (3CS)

In this study, Shove argues that;

- a) the 3Cs embedded in everyday norms and rituals are responsible for shifting norms over time;
- b) catering for the 3Cs are resource intensive; and
- c) the 3Cs act as cogs to accelerate the demand for resource intensive conventions.

Considering the meanings embedded in the 3Cs may be helpful in introducing a shift in social norms that are less resource intensive. With respect to design for sustainability, through understanding how the 3Cs shift norms, can design interventions shift norms to ones that are less resource intensive? Clune (2010) suggests that understanding the demands for the 3Cs may be useful in finding barriers to more sustainable behaviour. Further, Shove's 3Cs, may be useful in gaining a more nuanced understanding of how individuals use products and systems (Ingram et. al. 2007). Testing the application of Shove's 3Cs to address wider sustainability issues may uncover insights about the use of the approach and its relevance to food waste intervention.

MATERIALS, MEANINGS AND COMPETENCE

Recent studies have uncovered richly nuanced information about domestic food waste, through the application of social practice theory. Evans (2012) used the theory to "explore how and why food that is purchased for consumption comes to be wasted" (p52). The findings from this study contributed to identifying various elements in the dynamics of everyday norms and routines relating to the temporality of food, which can help us to make sense of the complex processes and practices that result in food waste. Studies suggest that considering social practices as comprising three categories, materials, meanings and competence may be useful. (Evans, 2012, Shove & Pantzar, 2005 p.45). Using their research as a model, social practice in the form of materials, meanings and competence will be investigated for its applicability to investigate food waste behaviour.

METHODOLOGY

A local farmers market was observed for this case study. It was assumed that the observation of these sites would be effective in gaining insights into how various individuals respond to food waste systems that are provided at the farmers market. The observation used human centred design methods and prompts from Ideo cards (2003) to gain insights into the behaviours surrounding food waste disposal. The aim of this observation was to capture usual behaviour, so the result methods used had to be discrete. Consequently, Fly On The Wall, Rapid Ethnography, and Still Photo Survey and Informal Interview methods were selected for use from the set of IDEO cards (Ideo, 2003).

Alongside the Ideo card methods, a waste and packaging audit were also carried out to assess the landscape of the food waste disposal at the farmers market. The objective of the waste audit was to quantify the various types of waste being disposed at the farmers market. Similarly the packaging audit sought to assess all food packaging given out by the farmers market vendors to identify problematic packaging for the current waste disposable system. Shove's 3Cs were also used as prompts during the observation, to uncover aspects of the practice that were closely related to the elements of the Shove's 3Cs. The findings from the observation were also analysed to develop design briefs to improve food waste minimisation and separation at the farmers market. The design brief was followed by design concept development. The developed concept was evaluated against the Shove's 3Cs and Meanings Materials and Conventions to assess the applicability of these two sociology approaches to the design process.

RESULTS AND DISCUSSION

The research and observations on site indicated that a pressing area requiring a design intervention was the food waste created from the take away coffee practice. Some of the findings were closely related to Shove's 3Cs and Meanings, Materials and Competence, while some useful findings were found through systems, waste audit and food packaging audit.

SHOVE'S 3CS AND FOOD WASTE

An example where a clear correlation to the 3Cs could be found was in disposable coffee cups. Disposable coffee cups provide convenience, and cleanliness in the way of hygiene and self protection. In this way, cleanliness provides comfort, resulting in peace of mind. Further, Shove (2003) argued that providing for the 3Cs accelerates the rate of consumption. The 3Cs, embodied in disposable coffee cups, may be one of the reasons why this trade has become dependent on the disposable cup product.

For reusable coffee cups, however, some participants suggested that if the cup belonged to them, it would not matter if it had not been washed with care. They would consider reusing the cup without a thorough wash. The elements of cleanliness and comfort reflect this result, that the contamination from others is one of the major concerns in consuming food in the public spaces. However, reusable cups are a less convenient counterpart to disposable cups. Reusable cups require users to alter their coffee purchasing behaviour to one that is a planned purchase, or to have the cup on hand for unplanned purchases. Therefore, one of the reasons for a limited uptake of reuse cups at the farmers market may be due to the missing convenience element that fails to shift the current practice from the use of disposable cups to the use of reuse cups.

Comfort in the form of social comfort was observed in the behaviour of the visitors to the farmers market. The visitors talked about wanting to "do the right thing" regarding waste separation. Visitors were observed to peer inside the separation bins to see how other visitors interpreted the waste separation, while others simply followed the behaviour of other visitors. This was problematic when the visitors separated the waste incorrectly and successive visitors imitated the incorrect waste separation. The farmers market organisers saw this as a major issue for the waste separation and designated a volunteer to periodically check and correct the waste in the incorrect separation bins.

MATERIALS, MEANINGS AND PRACTICES

The take away coffee practice could also be examined through the application of materials, meanings and practice. Figure 1 displays the analysis of the elements of coffee drinking practice, broadly categorised into three areas, materials, meanings and competence. Each of these areas contained a number of elements that were significant when considering the generation of design concepts.



Figure 3: Materials, Meanings and Competence of take-away coffee practice observed at a Farmers Market

Materials, meanings and practice were useful prompts in the analysis of the interrelated issues surrounding take away coffee practice. Various aspects of this practice highlight elements that support, or act as a barrier for, sustainable behaviour.

SYSTEM-DRIVEN NORMS

The observations and informal interviews uncovered issues that prevented visitors from using re-use cups. Despite a sustainable attitude, a regular visitor to the farmers' market had this to say about reusable coffee cups:

“ I used to take reusable coffee cups to the market, but those people (coffee vendors) have a real system going. One person takes money and calls out the order and uses disposable cups as a cue for different coffee orders. I felt like I was being a nuisance and my (reusable) cup disrupted their system, so I ended up not taking them any more.”

Here, the disposable coffee cups are well embedded into the current coffee vendors' practice. The behaviours of visitors and vendors are driven by the system, rather than by user's attitudes, Shove's 3Cs, or materials, meanings and practice. This result illustrates the value of well-considered systems design to ensure more sustainable practices.



Figure 4: Farmers market waste separation site and the waste audit process

WASTE AUDIT AND PACKAGING AUDIT

The waste audit was carried out to quantify the waste generated from the farmers' market. The audit showed that there was a very small quantity of glass waste, while disposable coffee cups were one of the most problematic elements of the waste stream. The disposable coffee cups were the largest contributor to the waste stream as well as being the waste that was most often separated into the incorrect waste separation bins. (Figure 2)

Similarly, the packaging audit was conducted to improve the packaging used by the farmers' market vendors, which directly contributes to the waste in the public spaces. This audit identified three packaging items for improvement: polystyrene clam shell packaging, paper bags with wax coating, and disposable coffee cups with plastic lining, none of which can be recycled in the current system. Following this audit, the vendors responsible for this packaging were consulted to replace these packaging with more sustainable counterpart. This audit and the participation of the vendors dramatically reduced the packaging waste to landfill.

DISCUSSION

The evaluation of the early stages of the design process including research, analysis brief construction and concept development indicated that the two social practice approaches, Shove's 3Cs and Meanings, Materials and Practice were useful. The two approaches were useful, both in arriving at an understanding of food waste practices and in the design process.

- These analyses indicated that locating Shove 3Cs at the design observation stage of the design process was, indeed, a useful entry point in the assessment of everyday norms and habits (Clune 2010). In addition, through locating the 3Cs, broader issues that govern everyday norms were identified; for instance, the norms governed by systems (Shove, 2003). Therefore, some analysis did not replicate the 3Cs but offered comparably useful insights for this design research. Therefore, this approach can be recommended for the examination of norms and rituals.
- Here, Materials, Meaning and Practice were useful in mapping the complex landscape of food waste during the observation stage. These approaches can help to identify issues that are important for a human centred design process (Ingram et. al., 2007), but which are beyond the range of Shove's 3Cs. Therefore, the two approaches, Shove's 3Cs and Meanings, Materials and Competence, were useful when used in tandem. The application of social practice to design observation helped to reveal useful insights about the relationship between user behaviour and the design context.
- These social practice approaches are useful in the analysis of observation data in order to frame design problems. The approaches invite a non-linear investigation into the dynamics of everyday practice. This resonates with, and informs,

the non-linear nature of the design thinking process (Brown, 2008; Cross, 2001). In the case study, the approaches facilitated an observation approach that revealed elements of the practice that assisted in framing the problem. Identifying the disparate elements of everyday norms and rituals can be key to locating areas of priority for design intervention.

- This case study highlighted the importance of exploring sustainability issues and food waste behaviour through a various approaches strategies (Thorpe, 2010., Bhamra, 2007) . The waste audit and packaging audit were key components of the research phase. The waste audit was crucial in helping to frame a design problem and in establishing the area of highest priority. The quantifiable data from the audit showed that disposable coffee cups were one of the most problematic elements of the waste stream, which helped to frame a design problem. Similarly the packaging waste audit was instrumental in exposing which problematic waste stream could be prevented by consulting with vendors to use more sustainable alternatives. Social practice approaches used in conjunction with other waste minimisation strategies such as these help illustrate a rich landscape of food waste behaviour.
- For future scope to extend this research, prototyping and product testing the concepts in the farmers market location may further help uncover the applicability of social practice approaches to the design process.

CONCLUSIONS

Designing for sustainable behaviour in a food waste context highlighted the complex nature of generating design interventions for this area. The two social practice approaches complemented human-centred design strategies to uncover the connected elements that govern the landscape of food waste. In addition, a packaging audit helped to assess ways to improve the waste stream and a waste audit was useful in quantifying the actual waste. The quantified data was instrumental in locating areas of priority for waste minimisation. Applying these approaches in combination led to a more nuanced analysis of food waste in the design process.

This research also showed that the social practice approaches are complementary to a human-centred design process in the construction of design briefs. Both, Shove's 3Cs and Meanings, Materials and Competence, provide effective entry points to a social practice approach, which can reveal the interconnected elements that govern everyday practices. The dynamic interplay of the many disparate elements that constitute everyday practices reflect the non-linear nature of the design process. Consequently, these approaches, especially when combined, can help to make sense of complex sustainability context in order to frame design interventions and form design briefs. Further research into the ways that wider social practice theory can be effectively integrated into design processes would be beneficial. Identifying ways to seamlessly integrate these approaches into design would assist us in the complex task of addressing design for sustainability and wider design innovation.

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Digging the Umu

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ABSTRACT

When discussing “traditional” Maori styles of cooking, our default reference point is usually the Hangi. This has not only taken on the guise of being a “culturally authentic” experience but has become essentialised, alongside the boil-up, as archetypal Maori food. However, the Hangi as we know it today is a hybrid of both Maori and European culinary and design influences and histories. There is, however, a long history of the Umu being the preferred method of subterranean cooking in the Southern areas of New Zealand. The Umu is often seen as a more Polynesian Island style of cooking and has distinguishing features that differentiates it from a Hangi. This paper will investigate both the form and function of the Southern Umu as it is recorded historically and discussed contemporarily. From this, the writer will then outline the culinary and design processes involved, from harvesting and preparation of foods as well as preparing the Umu itself and associated requirements. While undertaking the above, the writer will focus on the practice of preparing an Umu as an integrated process, and not as a collection of disparate acts leading to a separated outcome.

KEY WORDS

hangi; umu; Maori; kaihaukai

Playing with Food (Studies): Rethinking Experience-Based Learning in American Food Studies Teaching

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ABSTRACT

In this paper I examine the possibilities and limits of experience-based learning in American food studies teaching paradigms. By comparing two classroom exercises from my Anthropology of Food course that were intended to encourage students to experiment with alternative modes of research and analysis, I describe how students were alternatively hampered and inspired by American cultural and pedagogical norms pertaining to proper food use. I argue that these experiences reveal an overemphasis on rules and outcomes that impede students' ability to play, and I suggest possibilities for revaluing play as forms of "hands-on" and "hands-in" learning in food studies teaching.

KEY WORDS

anthropological methods; experience-based learning; food studies; play; creativity

INTRODUCTION

As an anthropologist who studies food, I have thought carefully in my own research and teaching about how to bring together both the materiality of food and its symbolic capacity to encapsulate and convey cultural values and social phenomena without reifying either the materiality or symbolic dimensions at the expense of the other. An important piece of this is thinking carefully about how foods and food practices always exist in relation to the physical bodies that produce, use, and consume them. Practices of both production and consumption are the actions through which the simultaneously material and symbolic aspects of food are generated and made real.

For the case of Russia, where I do my research, individuals understand that bodily experiences with food, especially those that are sensory in nature, are forms of engagement with the world. For Russians, food can merge the cultural and the personal, and even bring the cultural directly into the most personal spaces of the body, because of its capacity to evoke multiple sensory realities (De Silva 1996; Ferrero 2002; Seremetakis 1993; Sutton 2001). Physiological sensations like taste, smell, hearing, and touch, as well as physiological processes like ingestion, digestion, and even excretion, are all means of knowing, recognizing, remembering, and interpreting the world that one inhabits (Bourdieu 1984; Caldwell *forthcoming*; Herzfeld 1991; Seremetakis 1993; Sutton 2001). Thus paying attention to simultaneously material and symbolic qualities opens up productive spaces for moving to more complicated and nuanced understandings of both foods and their users and for understanding how foods and bodies are interactional and even mutually constitutive.

But if this is a productive approach for scholarly analysis of the important role of food in everyday life, how effective is it for teaching about food? Can food studies pedagogies successfully bridge the material and the symbolic? To what extent can students understand, embrace, and even benefit from learning exercises that merge the material and the symbolic? These are questions that I have been exploring the past several years when I have taught my anthropology of food course. Increasingly I have wondered whether the experiential learning pedagogies that are promoted by many American food studies programs and are so popular among my students might inadvertently impede their ability to engage in more creative forms of hands-on research and learning.

My goals in this paper are twofold. First, I want to consider whether bodily registers besides sight and hearing can be appropriated for innovative teaching techniques in food studies. And second, I want to consider what happens when students are required to produce anthropological research and analysis through non-visual and non-aural bodily registers. Based on my observations within my classroom, I want to suggest that the underlying normative orientations within particular approaches to food studies scholarship and teaching, especially within the experiential learning paradigms promoted by many food studies programs, are converging in ways that hinder true "hands-on" (and "hands-in") forms of intellectual work.

In this paper I will first describe two hands-on-based exercises from my upper-division course “Anthropology of Food” and detail several of the unexpected consequences of these exercises. I will then think through some theoretical and pedagogical implications of these consequences for food studies teaching.

INTRODUCING DESIGN TO THE ANTHROPOLOGY OF FOOD

In spring 2013, when I taught my upper-division course “Anthropology of Food,” I deliberately included two design-inspired components in the class in order to introduce students to a new set of methods and approaches. As an upper-division anthropology course, the class was meant to serve third- and fourth-year students majoring in anthropology (cultural anthropology, archaeology, and physical/biological anthropology) by introducing them to the specific methods, debates, and theories in anthropological studies of food and food practices. Because this was not an introductory “gateway” course to the major, students were expected to have mastered a core curriculum in anthropological theory and methods and thus be ready to learn this more specialized subfield. Fifty-three of the sixty-nine students were anthropology majors, with the others coming primarily from majors in environmental studies (which has an unofficial food studies concentration) and other social sciences disciplines. Non-anthropology students who enrolled in the course had already completed one of the introductory anthropology courses as a prerequisite. Hence all students were expected to have familiarity with anthropology and social sciences approaches more generally.

The first design-inspired component was a class lesson on molecular gastronomy, and the second was a group research project that incorporated elements from design research methods. Both were successful activities, but for different reasons and in ways that did not, at first, seem to align with my original goals. These unanticipated results have prompted me to think about what it means for anthropology students to move beyond thinking and doing and instead engage in making as a form of pedagogy, research, and learning. I suggest that what is key here is reconfiguring the ethnographic approach to research and learning so that participant-observation, with its emphasis on taking in information about our subjects through our eyes and ears – what is often described as the “ethnographic gaze” – can be expanded to include other bodily experiences in ways that enrich comprehension of another society. Specifically this move beyond the “ethnographic gaze” entails shifting research and learning from processes of receiving and perceiving information to processes that produce a form of intellectual engagement and analysis.

As the experiences of my students demonstrated, however, this shift to using different bodily modalities for teaching, research, and learning is not without challenges. While my students were keen to experiment with new bodily practices such as tasting new foods or smelling new scents, they struggled to move from more passive modes of ingesting or receiving information to more active ways of using multiple bodily registers to produce analyses of that information. What was particularly noteworthy was that their reactions aligned with the different exercises themselves, although in ways that I did not anticipate. Whereas students were sufficiently uncomfortable with the hands-on, play-based molecular gastronomy exercise that they held back from participating and preferred to observe, they were inspired by the design-based research exercise and experimented with new techniques for presenting their data and conclusions. In other words, as I will describe in a moment, they were happy to taste but reticent to cook.

My concern with exploring new modes of “hands-on” and “hands-in” ethnographic engagement in the classroom is inspired by the provocative “eating with fingers” experiment conducted by Anna Mann, Annemarie Mol, and their colleagues (Mann, Mol, Satalkar et al 2011). In that experiment, Mann, Mol, and their colleagues considered the different ways that foods might “taste” to eaters when those foods are touched by fingers and other body parts. By expanding the range of types of contact with food beyond those that occur at the palate, the possibilities for types of sensory experiences also expand, reflecting Hennion’s provocation to “feel the feeling of” (2007: 98) as a form of subjective and active knowing that enables the feeler to understand and experience the thing that is felt – or tasted in this case – in a wholly different, but yet still wholly personal and individualized way.

The class session on molecular gastronomy encouraged students to pursue alternative “somatic modes of attention” (Csordas 1993) by “thinking” and “interpreting” with their fingers, tongues, and other body parts. An instructor led the exercise, and students were invited to participate in the exercises by experimenting with the techniques themselves and then discussing how they might incorporate methods from molecular gastronomy (or household or garage chemistry, as the instructor described it) into their own experimental cooking. Students expressed curiosity with the exercise, enthusiastically, sampled the foods made during class, and initiated a thoughtful discussion about the limits of “food” and “authenticity.”

Yet they were surprisingly hesitant to try the methods themselves, either during class or at home. When we discussed why they were hesitant to try these techniques themselves, their responses aligned around a common set of themes: in short, they were afraid to play with their food. I probed further, expecting that because they were students with very limited incomes, they would focus on the moral and financial risks of wasting scarce food through unsuccessful experimentation.

Curiously, however, students consistently replied that they were afraid to play because they had learned from a young age that there were specific rules governing food use. On the one hand, they knew that they should not attempt to cook unless they

followed a recipe and knew how to use particular cooking tools. Many admitted that they ate poorly at home because they had never learned “how to cook” and so were unable to experiment without a recipe. On the other hand, and more revealing, was that they knew that it was inappropriate, even impolite, to play with food. Growing up, they had learned that food was off-limits for play. Olives on fingers, walrus-tusk celery sticks, and mashed potato forts were tolerated only under special circumstances, such as holiday family dinners when some food play is indulged as appropriate to the more relaxed rules of family holidays. But otherwise, food play was not tolerated, especially in school, restaurants, or other public settings. As my students explained further, American sensibilities about proper food practices rested on a set of beliefs that restricted food to very particular uses and values. Cultural notions of propriety, then, limited their ability to play and experiment.

After this experience, I was curious about how a subsequent class exercise designed to encourage play and experimentation would play out. For their final projects, students were required to engage in a research activity that would loosely model design-based approaches used in several American food corporations that I have followed in my work. Students began with a social problem (whether food access was an issue on our otherwise food-focused campus), conducted ethnographic research through observations, mapping, collecting, and interviewing, did their analysis through co-creation exercises, and created a final presentation that was intended to present a set of practical solutions. Although at first students were unsure about how to proceed because they were accustomed to doing library research or simple interviews, they enthusiastically jumped into this project. For their final projects, they successfully introduced alternative solutions to the “problem” they had been given. With handmade maps, models, and even original artwork and music, students demonstrated keen insight into some of the primary obstacles underlying campus food access and presented creative solutions ranging from mobile food carts and portable refrigerators to creative outdoor seating with retractable awnings for inclement weather. Their presentations themselves displayed creativity, as most groups went beyond a simple set of talking points to present video clips, photo montages, music, and performance art. In several instances when the classroom technology failed, students seemed more comfortable with spontaneous presentations. Later, students related that they found the imperative to play with research methodologies and presentation techniques liberating.

I take the differing responses of my students to these two exercises as pointing to some important questions about how we teach critical food studies, especially within a social sciences framework. In some ways, while my students’ responses were not what I had anticipated, they actually aligned with how my students had been disciplined, both culturally and academically, to understand both proper ways of encountering food and proper ways of doing academic work.

TEACHING FOOD STUDIES: THE LIMITS OF EXPERIENCE-BASED LEARNING

Teaching about food at a place like UC Santa Cruz is an intriguing and challenging adventure. Because of our campus’s liberal arts orientation, coupled with its longstanding theoretical and ethical commitment to social justice, especially with critiques of labor and economy, our students are deeply invested in extended critiques of capitalism and consumerism and embrace a sensibility that they bear a responsibility for changing the world. Our students are also “foodies” who are the product of a uniquely Northern California sensibility about food and health. They love the idea of “good food” and “healthy food,” and they are passionately committed to ensuring that “good, healthy food” is available to all as a basic human right.

Consequently, our students eagerly pursue experiential learning programs where they learn how to garden, turn farm produce into commodities that they can sell at the local farmers’ market, cook for low-income people, administer food relief programs, and be politically active through fundraising, lobbying, and protesting. As part of their political activism, our students are committed to bringing experiential learning techniques to disenfranchised persons in order to teach them how to garden, shop, and cook as part of their rehabilitation from poverty, domestic violence, addiction, mental illness, or even the challenges of undocumented immigration. Many of these activities are officially codified into the curricula of several departments, as well as in service activities affiliated with our campus’s organic farm and sustainability program, among others.

So given this educational context in which students, faculty, and staff are deeply committed both to food and critical scholarship, why did my students have such different reactions to these two exercises? Why was a play-based exercise so daunting, but a research project more approachable? One possible answer has to do with the rules and structures of social science research itself. Even though my students were far more creative with their research and presentations and claimed that they felt more free to play in interpreting their data and presenting their conclusions, their work still cohered to recognizable structures of research (i.e., identifying a problem, generating strategies to examine the problem, creating solutions, and presenting the findings). Even if the precise methods used in this project were not usual in anthropology, which tends to be oriented toward a more holistic style of generating open-ended hypotheses and multiple possible, contingent conclusions, these methods were still recognizable as appropriate forms of intellectual learning and communication. Thus these methods had comparative analogues across social sciences research, and students followed “the rules” in those methods accordingly.

But I think another, more intriguing, answer has to do with a particularly strong normative orientation within American approaches to food studies that is further complicated by what is known in many fields as a uniquely Santa Cruz style of social justice and social activism, especially in regards to food activism and food studies. At the same time that the uniquely Santa Cruz style of scholarship has long encouraged intellectual innovation and risk-taking, it is situated within a deep commitment

to social activism that might, in fact, reproduce the very structures that it seeks to disrupt. This is perhaps nowhere as evident in how UC Santa Cruz's food studies scholars teach about food and where students voice discomfort with, and even outright criticism of, food teaching that seems to violate expected norms governing "proper" political sensibilities about food access, health, and sustainability, among other topics (see also Guthman 2011).

Curiously, while our students are thinkers and doers, it is perhaps more appropriate to describe them as "reproducers" and not always "makers" or "inventors." At first glance this seems counterintuitive, given the extent to which our students are so active in experiential learning and experiential activism programs. Yet there is a big difference. These experiential activities focus on teaching students a specific set of skills, rules, and structures by training their bodies and minds to continue and pass on a particular doctrine about food. The disciplining that occurs through these experiential activities instills in students a normative understanding of the proper ways to farm, cook, monitor health, and distribute food. And because these experiential activities are presented within the context of an activist social justice framework – students are expected to take what they learn and teach others – there is an additional sense of urgency that students and their beneficiaries learn and master *the right way* to perform these activities. There is often a sense of benevolent militancy in students' activism, as is evident with the frequency of leafletting and posters advocating particular political philosophies about food. For instance, just a few weeks ago I was walking into the university dining hall when I was confronted by a very earnest – and persistent – undergraduate who forcefully thrust a flyer into my hand. It was a brochure detailing abuses by commercial food producers and alleging that commercial food was the root of all health causes, and instead advocating for "naturally produced" foods as a political antidote to this health crisis.

Consequently, it is not uncommon for students to come to faculty and to class to learn how to do something the "right way" and not to gain tools that would let them figure things out themselves. In the teaching evaluations for my own courses, students have complained that I did not provide them with the facts of nutrition or argue that globalization is detrimental; other food studies faculty on campus have reported receiving similar complaints. Instead, when students ask for "the facts," they are reproducing a singular wisdom about which data and modes of data production and analysis count. Experimental "playing" with data is risky because the stakes are too high. For instance, one student who was doing her experiential learning with a community garden project in an American inner-city community was so focused on trying to bring a specific set of nutritional standards to her community that she was frustrated when her subjects refused to give up their traditional recipes. Later she told me that she could not figure out how to make her subjects listen to her. When I asked her whether she tried alternative modes of working with her subjects in their kitchens to learn from them and experiment with them, she responded that she could not imagine how deviating from the nutritional rules she had to teach them would help. In another instance, a student who was completing her experiential learning project as a grant-writer with a low-income garden community in another urban area was unsure how to deal with the fact that her subjects, for whom she was trying to get a precise set of tools and seeds, repeatedly worked around the rules of the garden and her list of acceptable seeds to plant the foods they wanted and use the garden space in ways that did not align with the stated goals of the community (for instance, bringing in lawn chairs, snacks, and beer and socializing while they gardened).

While these are just two of many examples from my students' experiences with experiential learning projects, they are suggestive of some of the potential pitfalls of the normative inflections in the types of food studies scholarship that are so prominent in American education and activism at the moment (see also Alkon 2014, Montenegro de Wit 2014). Overemphasis on rules and outcomes can impede students' ability to play.

CONCLUSIONS

How, then, might this tension be addressed and resolved? How might completely unfettered play and creativity be included in experience-based learning? While I do not yet have conclusive answers, this is a question that is increasingly inspiring conversations about innovative research and teaching at my university, especially in my own department.

A first step has been to introduce the concept of a hacker lab into the anthropology department at my university. Drawing on the ethos of collaborative creativity embodied in hacking, and promoted by the larger Silicon Valley community where my university is located, as well as the ethos of social justice and challenging authority embodied by my university, likeminded colleagues and I are encouraging students not to ignore the rules but to subvert them and to bend them, and hopefully to find new paths for play. This has had mixed results, which in turn reflect some of the challenges already described above, where not all students feel empowered by the lack of a formal "to-do" list of activities.

At the same time, my colleagues and I are working to revalue play itself, so that it is no longer understood as something less important than work but rather interpreted and valued as a form of productive labor itself – and more importantly, an important element in classroom activities. In my teaching, I frequently bring arts and crafts materials to class and encourage students to use these materials for forms of note-taking, and I try to break up lectures and discussions into activities that move students around the class and force them into more directed, collaborative interactions with one another. While these are still efforts in progress, I hope that ultimately my students and I can together become more comfortable with more playful forms of creativity that will, in turn, lead to more complicated and nuanced approaches to the experience part of food studies itself.

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Food as a Lens: Developing Methods for Interdisciplinary Collaboration

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ABSTRACT

Food acts as a universal language and in its essence it is about the moment of connection between individuals and disparate elements. In this inquiry, food and the cooking process is used as a lens to examine both tools and methods for interdisciplinary collaboration. The research occurs primarily in the studio, but also engages participants through workshops. The first was held at an international bi-annual design conference, Tasmeeem, Doha in March 2013. Together, with a group of five individuals we looked at the exploration of fusion food in a group dynamic. The second workshop was held at Design Inquiry in June 2013 on Vinalhaven Island in Maine. A series of kitchen tools were made for use during the weeklong conference.

KEY WORDS

collaboration; design methods; cooking; interdisciplinary practice; tool making

INTRODUCTION: FOOD AS A LENS FOR COLLABORATION

All individuals have unique and complex relationships with food, which encompasses choices they privilege or knowledge they have gathered through experience among many other factors. Everything about eating including what we consume, how we acquire it, who prepares it and who's at the table – is a form of communication rich with meaning. Our attitudes, practices and rituals around food are a window onto our most basic beliefs about the world and ourselves (Harris, Lyon, & McLaughlin, 2005). Within that individuality food, in its essence becomes a unifying element. No matter what an individual's relationship is with food, the act of preparing and eating is universal. Food and cooking implicates us in a whole web of social and ecological relationships: with plants and animals, with the soil, with the farmers, with the microbes both inside and outside our bodies, and, of course, with the people our cooking nourishes and delights. Above all else, what I found in the kitchen is that cooking connects" (Pollan, 2013). The cooking process is a natural lens to explore and construct a common language to engage in interdisciplinary collaboration between different disciplines and working environments.

The complexity of contemporary life and scale of today's problems require many disciplines working together to provide solutions. Organizations such as Mattel, Steelcase, Boeing, Wrigley, Procter & Gamble, and the Mayo Clinic have discovered that innovation labs are powerful tools when they desire to move beyond the barriers that were formed as a result of an assembly line process. In these labs inventors from medicine, business, biology and design to name a few, gather like a swarming beehive to focus on a problem. They brainstorm and tinker with different approaches to generate innovative answers (Weber, Holmes, & Palmeri, 2005). Trends towards open, interdisciplinary environments make it necessary to explore and ultimately create new sharable methods for working together creatively. Nevertheless, numerous challenges such as devising a shared working language, developing trust, having a defined design space, are all present in this process. In addition, the definition of what it means to work interdisciplinarily is often debated. For the purpose of this research it is defined as a working environment that integrates professionals from varying disciplines, but does not hybridize those disciplines in order to approach issues (Bruce et al, 2004).

Interdisciplinary collaboration has a long history in design practice, however it's an activity without substantial theory or development of process in the creative practices; it happens in an ad hoc manner (Poggenpohl, 2004). This occurs most likely because much of design knowledge is characterized by a tacit understanding of the process. Design education is based on building an implied understanding of the process, tools, and materials, demonstrating that knowledge through visual work. A tacit approach to design maintains a sense of mystery, where intuition is the foundation, and learning is based on a master-apprentice model involving close observation and imitation (Poggenpohl, 2009). Not only is industry putting emphasis on interdisciplinary practice so are the complex problems our work is facing, and so it behooves design profession to create a sharable body of knowledge that is both interdisciplinary and disciplined (Cross, 2007).

RESEARCH METHODS

To investigate this postulation, the research is first carried out in the studio, and then engages the community through workshops. The following are two cases in action where participants were asked to be co-designers, playing active roles in shaping the parameters and outcomes of the research. Elizabeth Sanders's work on generative design tools, which provides a common language to empower everyday people to generate alternatives to the current situation, was used as a method to provoke reflection and ownership (Sanders, 2008). The researchers took audio and visual recordings and participants were asked to craft written or visual documentation of their process. All documentation was shared online with the group at the close of the event, and participants were given the option to then make information private or public. Interpretation of that data was done as field research, examining real situations rather than a controlled environment. For the two workshops the researchers' wrote the case studies.

CASES IN ACTION: TASMEEM, DOHA QATAR

The first workshop was held at Tasmeeem, Doha, Qatar an international design conference on hybrid practice. Together with a group the exploration, testing, analysis and enjoyment of food functioned not only as a social cooking exercise, but also as a meta-process for collaborative strategies in art and design. Cooking together also became a means to discuss the conference theme, hybrid practice in art and design. The group was comprised of a diverse set of six participants with varying backgrounds and interests. Individual's motivations to take part in the workshop ranged from exploring medicinal properties of ingredients, cultural identity attached to cuisine, and food writing to name a few. To establish a hybrid process we used fusion cooking as a model because diverse conference participants acted as a micro migrant influx and Qatar's historic relationship to trade routes and nomadic populations made it an ideal place to examine this type of food.

On the first day of the Tasmeeem workshop each person performed an analysis of their recipe, breaking down the flavors, nutritional value, perceived context in which it would be consumed, historical significance, textural relationships, olfactory aspects, timeline, technique and methods used to cook, it's relationship with other meals or foods. Next, the group was introduced to the region with visits to the local fish, vegetable and meat markets, as well as the large supermarket for the necessary ingredients. After gathering supplies, pairs worked collaboratively on modifying their chosen heirloom recipes. A group analysis was then made as to the success and failure of the modified recipe. Throughout the cooking sessions extensive documentation was gathered in the form of audio recordings, images, notes and mapping processes.



Figure 5, 2: Shopping and food selection at the market in Doha, Qatar. Source: Chornyak 2013

It was through cooking, analysis, discussion and documentation that we were able to scrutinize hybridity and examine hybrid practice through the lens of both familiar traditions and exotic new experiences. By creating pairs in the workshop, the

participants were immersed in the new methods and materials of their partners. They were also being asked to subject their own process to focused criticism. It was evident that the established process of dialogue and dissection of each participant's altered recipe aided the transition of individual knowledge from one of tacit understanding to explicit sharable knowledge.

The rhythm of creation and critique allowed for participants to move from "active" focus on process to "passive" reflection, expansion and inquiry. Each cycle ended in a semi formal meal/critique allowing for an open conversation about specific and general successes and failures as participants continued to chew on and digest a range of notions from hybridity to their own practice well after the kitchen had been cleaned and the oven turned off. "How do you make the okra crisper? Should we become generalized or specialized practitioners? How open and fluid are you within your respective discipline? Does hybridity naturally have its own structure or can it easily disintegrate into chaos? How do we place value on food? Where is the rice?" These conversations ranged from "big" ideas to cursory commentary. This led to an appreciation and understanding of individuals in the group as well as understanding of individual perspectives, assisting in knowing not just the what and how, but also the why.

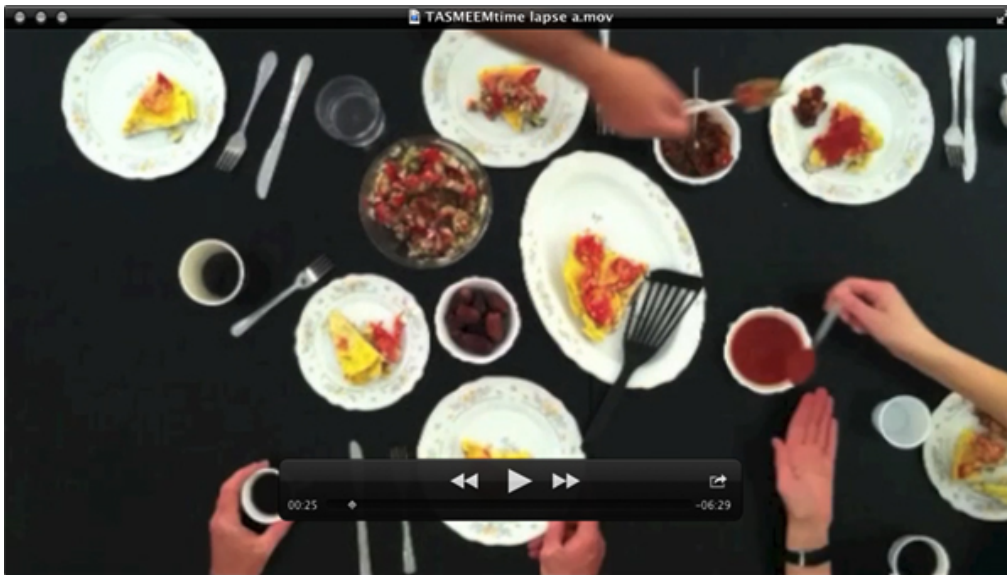


Figure 3: Film still of documentation at Tasmeem, Doha, Qatar. Source: Chornyak 2013

The endeavor demonstrated what participant Jessie Ulmer eloquently wrote, "this process of making not only has the capacity to create great tasting food, but it can also function as a powerful catalyst for conversation and thought. Our cooking and eating naturally gave rise to a collective Socratic dialogue, an ongoing, dynamic, largely inquiry-based conversation that reached far and wide but always returned to cooking and eating. This pattern suggested to me that, ultimately, cooking and eating is much more than the sum of its parts, particularly in the context of hybridity" (Ulmer, 2013).

CASES IN ACTION: DESIGN INQUIRY, VINALHAVEN ISLAND MAINE

The second workshop took place at Design Inquiry, on Vinalhaven Island in Maine. This conference asks each of the twenty-four participants to contribute content, live, work and eat together for the week. For the event we chose to shift the process from the act of cooking and discussion, to one that asked participants to build and or interact with four cooking tools. A cob oven and a ground-oven were made during the week. A wonderbag, a heat retention fabric bag designed to save fuel in third world countries, and a still for distilling alcohol were brought to the island. Those at DI were asked to bring their heirloom recipes, similar to the previous workshop, in-order to establish a constraint in which modifications of materials and practices could be made specific to the cooking tools. The tools imposed restrictions on their users that required participants to adapt what was normally an intuitive and perhaps abstract process to one that was more concrete and could be shared with the group.



Figure 4: Dinner at Design Inquiry. Source: Chornyak 2013



Figure 5: The wonderbag in use in the barn kitchen space at Design Inquiry. Source: Chornyak 2013

For example, during the week the majority of participants were unsure of how to use the wonderbag, what to cook in it, or if to trust it's function. Left to its own devices, the bag probably would have sat on the shelf without a guide to facilitate its use. After several initial discussions between the makers and workshop participants, full control of the bag was given to the first tester. As others witnessed its use and were repeatedly surprised by how hot the spaghetti sauce was or how tender the pork roast was they were more willing to experiment with the tool. This object encouraged dialogue and catalyzed trial and error because of its unfamiliarity, and so the tool's users had to share knowledge amongst the group. Another instance of trial and error and shared process was revealed with the still. After initial education about moonshine participants were given the alcohol postproduction, which they found easily customizable. Combining 1-quart moonshine, bacon and 2 chunks of birch charcoal made Bacon birch moonshine. Spruce and orange rind moonshine was also made that week all for various cocktails.

Though heirloom recipes were not used, bacon, spruce and orange rinds were prevalent in the kitchen and reconfigured for use as a result of ad-hoc group discussion and facilitation.



Figure 6, 7: Building and using the ground oven at Design Inquiry. Source: Chornyak 2013

What was most significant in the weeklong workshop was the creation of an informal, but designated space where others felt comfortable in dialogue. It was evident in the first workshop that cooking, eating and washing up created a level of trust to share ideas and thoughts on the topic. This environment quickly allowed us to know each other's skill sets and points of view. In an interview with Design Inquiry participant Sean Wilkinson, "Everyone was drawn to the hearth, and everyone cycled through that space, so I got to talk to a lot of folks in a really intimate manner. I had the best conversations of the week sitting on the granite wall and waving smoke out of my eyes. We covered all the good stuff: God, sex, food, art, money, work, school, design... and we called a lot of bullshit. People were really honest out there by the fire."

Often in collaboration knowing who you are working with, what their skills are as they related to design aids greatly in the process (Allen, Chornyak, 2012). The cob and ground-oven both fashioned a convivial space because of the sites proximity to the barn space where people were gathering, cooking and eating. Both ovens, though only built by a select few, became an extension of the makeshift barn kitchen and as people tend to congregate around the kitchen, another gathering place was fashioned around the oven. This site created an unstructured time to ruminate on other participant's lectures and work. The conversations were not only on the lectures but family recipes, how to cook various foods, family history, religion, and the nature of design.



Figure 8, 9: Building and using the cob oven at Design Inquiry. Source: Chornyak 2013

CONCLUSION

All individuals have unique relationships with food. This relationship is contingent on numerous factors; some occurring because of physical chemistry and learned habits, others from cultural exposure or community history. Those relationships range in what choices they privilege or knowledge they have gathered through experience. Within that individuality however, food in its essence becomes a unifying element. No matter what an individual's relationship is with food, the act of preparing and eating is universal.

Cooking is a creative, intuitive practice, and learning how to prepare food or design is the result of similar educational conditions. Students gather methods and processes in both activities through prototyping, experimentation, trial and error and critique. Through learning, an individual intuitively individualizes methods; however, those methods are not often articulated or shared. This research looked at an approach to transform that intuitive knowledge into sharable methods to be used, contested or borrowed. It is with these methods that designers can begin to explain and share the design process in interdisciplinary working environments.

What this research has demonstrated is that food is so much more than a basic need for survival. The cooking tools constructed a shared space for conversation regarding the tool itself and methods for use, as well as more general topics. The food created was the thing that drew the group to the table and the act of cooking together built relationships and engendered trust. These feelings were generated through dialogue, both problem solving and conversational. Those who participated in Tasmeeem and at Design Inquiry were from diverse professional backgrounds, yet they were able to have fruitful discussions and debates, which help to establish better working relationships.

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Zen B.B.Q.: Considering Cookery and Culture

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ABSTRACT

After visiting Tokyo Japan, I had the opportunity to experience Japanese cuisine first hand. In my opinion the Japanese gastronomic art is one that must be experienced to be fully appreciated. This visit inspired me to experiment with traditional Japanese recipes using local readily available ingredients that would be familiar to the western palate. To enable me to share my culinary experiences, my focus fell on the recognisable street or snack food of Japan that has become a global niche in today's culinary landscape. To portray this notion of Japanese meets Kiwi Street food consideration from both cultural standpoints are reflected upon. The health benefits of the Japanese diet are well documented and while western cuisine draws some inspiration from Asian low-fat, high-vegetable content recipes, the traditional European higher fat and carbohydrate offerings are the norm in the snack or street food section of the food market. To this end I wanted to examine a combination of Japanese and western influenced food offerings that would help me share my Japanese culinary experience while using accessible, therefore familiar, ingredients. To enable me to deliver this hybrid street food I have designed and built a multi-functional Japanese cooking station in order to mimic in a small way the artistry of the Japanese Chef. The paper will discuss Japanese cuisine not only from an artistic and culinary standpoint but also with a view to how Japanese food culture has and is influencing western food design.

KEY WORDS

Japanese; design; experience; cuisine; Zen

INTRODUCTION

This paper considers the values of Japanese cuisine and its contemporary influence on Western food culture. The paper explores a practice-based example. When combining traditional aspects of both Eastern and Western cookery methods and ingredients the work will highlight the melding of two culturally diverse culinary methodologies.

JAPANESE GASTRONOMY

Last year I was fortunate enough to visit Tokyo.

While there, every opportunity was used to experience Japanese cuisine first hand, albeit within a very short time frame. As a chef I had obviously read about and had seen snapshots on television of the freshness and skilfulness used in the Japanese gastronomic arts. This perception however under-delivered on the reality.

One of the leading contemporary Japanese chefs of today, Chef Masaharu Morimoto, discusses the perception of Japanese cuisine in his book *Morimoto, The New Art of Japanese Cooking*, and replies to a customer's observation; "We love what we've eaten, but it was not Japanese food" by stating, "Why isn't it Japanese, and why must it be?" The very notion of authenticity stands on shaky ground, too fluid to be useful as a way to characterize cuisine" (Morimoto, 2007). So-called Japanese staples such as ramen noodles, tofu, sake and soy sauce all have their roots in China, while tempura (lightly battered) styled food is thought to have come to Japan through Portuguese traders.

We look back into Japanese history to find a period of culinary isolation during the Edo period between 1603 and 1867 where Japan had closed her borders to the outside world under the strict social order imposed by the ruling Tokugawa Shogunate. In 1853 American warships under the command of Commodore Matthew C Perry, appeared in the port of Yokohama and forced the opening of trade between Japan with the rest of the known world. This was to be the slow start to the Tokugawa demise (Norimitsu, 2003).

From this point Western influences arrived into Japan from all points, and under the direction from the then Emperor Japan sought to launch an industrial revolution and build a more modern Japan, emulating the perceived wealthy western ideal. New arrivals brought with them new ingredients and eating habits, none more influential than *meat* products which up to that time had not been a Japanese dietary item for centuries, due to its mainly Buddhist religion. Along with western ingredients came the melding of recipes, dairy products such as butters with soy sauces, the marination of protein meat products combined with

vegetable and fermented soy extracts to produce new flavour profiles appealing to consumers across cultural backgrounds (Ono & Salat, 2013). This led to the interaction and blending of cuisines within Japan; it would take another one hundred years for mainstream culinary artistry to flow from east to west.

EUROPEAN-CENTERED GASTRONOMY

The foundations of modern European Culinary Arts, are drawn from classical French cookery, and are predominantly due to the work of one man, Georges Auguste Escoffier, 1846 - 1935. Escoffier is regarded as the father of modern French cuisine. He was recognized as the supreme Master Chef of his time. During his lifetime he established the kitchens of many fine hotels including the Savoy London, the Ritz Hotel Paris and the Grand in Monte Carlo. Escoffier is credited with the implementation of the standard à la carte menu, the introduction of the now classical "mother sauces" and the implementation of the station-based brigade system still in use in today's professional kitchens (Herbodeau & Thalamas-MacMillian, 1955).

Designing this innovative and disciplined brigade structure within the kitchen led Escoffier to develop a hierarchical staffing platform requiring the delegation of responsibilities to different individuals who specialize in certain tasks. Starting at the top with the Chef de Cuisine or Executive Chef and going down through the ranks, Sous Chefs, Chef de Parties, Demi Chefs and Apprentices, through different stations, or sections flowing down to line cooks, dish washers and pantry hands. This ordered structure led to the Kitchen concept of "mise en place" or "everything in its place". This French term refers to, all the ingredients necessary for a dish or for food service to be at the ready, on time and fit for purpose (Christensen-Yule & McRae, 2002). The Escoffier *culture* was implemented in most, if not all, Western kitchens of any note, and by the early 1900s was the norm throughout the European and American culinary worlds.

We move forward in time through to the 1960s where the latest iteration of the term "nouvelle cuisine" or "new cuisine" comes into vogue in the Michelin-starred restaurants of France. The new elite young chefs of these establishments, Paul Bocuse, Alain Senderens, Jean and Pierre Troigros, Alain Chapel and Michel Guerard all embrace this new, light and exotic gastronomic movement that is heavily influenced by Japanese cuisine. The very best products available at the time were sought out from the Les Halles market in the centre of Paris. Their offerings never used any preservatives, frozen food, or any product that was not absolutely fresh (Cengage, 2003). The heavy classical sauces of the French high cuisine were replaced with vegetable purée or infused oils. Even the "à la carte" menu was replaced with a menu card that highlighted the seasonal and fresh availability of the produce from that time and place, all the while emphasizing healthy nutrition in their offerings. This wave of *new cuisine* would spread globally through the 1960s and 1970s and would introduce to the dining public Japanese ingredients, methods and minimalism through food.

In 1960 Shizuo Tsujii opened the first school of French cuisine in Japan, which multiplied the cultural exchanges between the two countries. So much so that Alain Senderens later remarked "the Nouvelle Cuisine is now Japanese" (Cengage, 2003).

A leading example of how Japanese Culinary Art influences the global view on cuisine comes via arguably one of the greatest Culinary designers of today, Rene Redzepi owner and Chef of Noma Restaurant in Copenhagen, Denmark. *Noma* restaurant recently voted the best restaurant in the world at the prestigious 2014 *Top 50 San Pellegrino Awards*, held at London's Guildhall.

Redzepi is moving his whole establishment to Japan for two months in early 2015 to enable the Noma team to learn by immersion from the Japanese ethos, Japanese food ingredients and flavours, methods and cultural values. Redzepi states... "there are plenty of places where food is magnificent but when you go to Japan it's just on a different level" (King, 2014).

DEFINING EXPERIENCE

Inspirational is the word that expresses the tour of the famed Tsukiji Fish Market where the opportunity to experience the freshest, traditionally prepared sushi by a Master Chef was taken with reverential respect.



Figure 1: Tsukiji Fish Market, Tokyo Japan. (Photographs courtesy: R Mitchell, 2013)

At every gastronomic encounter from hotel breakfasts through to street food at Yatai, or “shop stands” I encountered culinary experiences that will have a lasting influence not only on my future professional practice but my personal life as well. This profound experience has led me to further research Japanese food culture, and led me to an understanding of the fundamental principle of balance in the whole food experience.

Risa Sekiguchi author of *Savory Japan* explains this notion of balance further in her work, “The five pillars of culinary tradition” (Sekiguchi, 2013).

The first of the five pillars is the senses. While taste and smell are at the forefront of a gastronomic experience, the visual aesthetic in Japanese cuisine goes beyond the ingredient to simplistic but beautifully designed tableware and utensils. Touch is included through the use of differing textural ingredients, of tactile stoneware (which remains cool to the touch), to lacquerware chopsticks that stay warm. Sound, or lack of, also sets the scene or adds to the ambience of any experience.

Five colours is the second pillar. White, black, red, green and yellow have been traditionally incorporated in Buddhism since arriving from China in the sixth century. Colours help to consider the nutritional value of any meal as well as the visual aesthetic that gives the chef an artist’s palette to design their offering from.

The third pillar, the five tastes: salt; sweet; sour; bitter and umami. Using and balancing these flavour profiles is the challenge for any culinary design project.

The five ways explains the fourth pillar, which denotes five methods of preparation. Raw, simmered, fried, steamed and roasted or grilled cooking gives choice and juxtaposition of textural outcomes, keeping nutritional value and menu variety.

Lastly the Five attitudes, which are esoteric Buddhist phrases that are uttered in Zen temples before food is consumed, adding atmosphere and reverence to the meal experience.

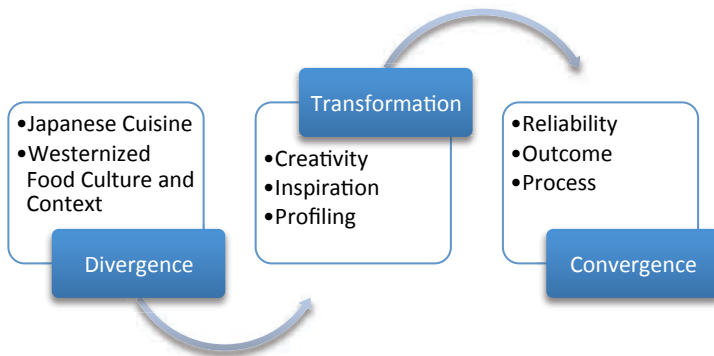
Reading on Zen and Zen methodologies in cookery highlight tranquillity and calmness, ensuring ingredients that are not overly worked. These contribute to the seemingly effortless way the Japanese chef delivers subtle and natural flavours and textures. Soei Yoneda, author of *The heart of Zen Cuisine*, describes these values: “For all of the things Japanese cuisine can teach, the principle of subtlety is paramount to the successful outcome” (Yoneda, 1987, p. 9).

Observing the Japanese people’s cultural awareness surrounding food, and their inherent respect, ingrained in culinary tradition, gave me an insight to how the Japanese food experience offers a focal centre for daily life. This appears almost an escape through food to a less rushed time and place. Physical time is taken to sit, enjoy and digest. Coalescing the observed value sets from both Eastern and Western food practice, it is my intention to propose a new design in a small section of cookery, “Street Food” using methods and flavour profiles that draw from both culinary philosophies.

DESIGNING EXPERIENCE

Without context food is merely sustenance. Designing a food experience requires communication through a cultural prospective. Cramer and Green state in their book, *Food as communication: communication as food* that “a primary reason that we should view food as communication is because it is directly linked to both ritual and culture” (Greene & Cramer, 2011). Food is used to communicate within life’s ritualistic events, birthdays, holidays, weddings and funerals. Considering these events within differing cultures, repetition of food products and expected behaviors occur (Olsen, 2000, p. 343). Using design methods to bridge cultural boundaries and communicate a new experience was the starting point for this project.

In developing an outlet to showcase my East meets West experience, a three-stage design process was used as laid out by John Chris Jones in his book, *Design Methods*. In this model Divergence, Transformation and Convergence are used as headings to break down and separate problem boundaries before changing any methodology necessary, then reintegrating methods to form a process that works well at the systems level (Jones, 1992).



In this context Divergence looks at the two culinary cultures and recognises new possibilities through the combination of cookery methods and flavour profiling. Transformation refers to the iteration and feedback ascertained from building the delivery method (the Cooking station) while developing new recipes using and interacting with both cultures’ culinary ingredients. Convergence allows for a reliable outcome through the final delivery process and the creating of a whole experience through food.

The design allowed the preparation and delivery of many of the favoured street food offerings discovered on this eye-opening trip to Japan.

Principles of balance and harmony of movement were considered throughout the design and build, while taking into consideration the mise en place aspect of delivery at service times. As referred to by Garr Reynolds in *Presentation Zen* “If we open our eyes and are willing to think differently, we can see that there are presentation and design lessons all around us even in something like a beautifully prepared Japanese meal” (Reynolds, 2009).

The design incorporates cookery hardware to enable the preparation of three of the most popular street or snack foods recognizable to the western consumer.



Figure 2: Cooking station. (Photo by Author)

1. Gyoza dumplings filled with pork and cabbage, which are seared in the flat pan on the left then simmered in stock and cooked through.
2. Yakitori skewers of meats and scallion brushed with flavourful dressings and grilled on the central wire grill. This section has an inset charcoal section placement to give the product being cooked an authentic smoked flavour profile.
3. Takoyaki batter spheres of New Zealand smoked salmon, ginger and scallion. This Takoyaki pan on the right of the station lends itself to many variations for contemporary flavours and uses of ingredients.

The design allows for cookery flow of the desired products due to the compact footprint in comparison to individual pans and grills. The heat source which is traditionally charcoal, has been designed to run on gas allowing for more accurate temperature control and speed of setup although charcoal can be used if desired.

The outcome or finished product can be utilized anywhere a normal BBQ or vented kitchen appliance is installed.

CONCLUSIONS

The process of design had an impact on every part of this project.

Drawing from my experiences of Japanese cuisine and wishing to replicate this experience for friends, family and professionally in the educational environment required resolutions to problems and asked the question, “can a modest replica do any kind of justice to, or convey the kind of experience I would like to portray?” The answer to that question through feedback received is a resounding, yes.

Taking the time to design, iterate and gain feedback on each element of the perceived experience eventually culminated in a successful trial of the unit, “a simple B.B.Q. lunch”. This came complete with props of all kinds from Japanese beer, serving utensils and music, which set the scene and put the food in context.

A favoured definition of design comes from a paper on interdisciplinary engineering design at the University of Hong Kong and sums up this project in one sentence; “Design could be viewed as an activity that translates an idea into a blueprint for something beautiful and useful” (University of Hong Kong, 2002).

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Soup Box: Feeding the culture of design research

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ABSTRACT

The School of Design at Otago Polytechnic has attempted over recent years to develop a culture where students and staff are encouraged to share their research interests and attend public lectures given by visiting design researchers and practitioners. In 2013 this all changed with the introduction of an in-house but public programme of design research lectures. Set in a regular lunchtime slot over the winter months in an informal meeting space in between design studios, the SOUP BOX lecture series was for the first time a resounding success, attracting 30-50 regular attendees, and encouraging discussion inside and outside of the school. The simple answer: free soup! Although the smell of a free lunch may have begun as a drawcard for the programme, the interest in a wide range of lecture topics and lecturer experience drew many more out of their classrooms - and off the street - to listen to and debate a wide range of research topics. This paper, like the SOUP BOX series itself, mixes design research theorists to feed the mind with soups to feed the body. It draws upon Baudrillard's (1994) notions of Simulacra and Simulation to consider the adoption of design processes in soup-making, Van Dijk's concept of designers as T-shaped people (Van Dijk 2011) and considers the user, drawing upon Shedroff's six dimensions of experience (Shedroff 2010). In this light-hearted but successful tale, the introduction of food, both for mind and body, coalesces with the rigour and debate expected from a growing research culture.

KEY WORDS

design research culture; reflective practice and the education of makers; experience design; T-shaped people

A collaborative approach to food design: The example of Heston Blumenthal's The Fat Duck

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ABSTRACT

In 1995 Heston Blumenthal opened The Fat Duck in Bray in the United Kingdom. This self-taught chef has taken this once rundown pub and transformed it into a three Michelin star restaurant. Being one of the pioneers of research-informed menu design, the restaurant quickly gained an international reputation when receiving its third Michelin star in 2004 (The Fat Duck 2014). This paper will present research undertaken over three internships and how a sense of belonging is created for both customer and staff to enable the symbolic relationship of innovation and extensive workloads to co-exist. As a customer, often the dining experience begins once they arrive at the restaurant, but Blumenthal intentionally designs a consumer experience that allows them to commence their journey when they book. Upon completing a phone booking the customer has private access to an online presentation stimulating the anticipation of the dining experience. Once at the restaurant the use of intrigue and surprise greets the customer in a range of small interpersonal food experiences. The guest is presented with a range of small dishes which extend beyond the five senses and interact with the consumer on an intellectual and emotional level. The strategic use of nostalgia, emotional reference points and customer interaction are all embraced to design an experience which extends beyond the gustatory to one that operates in a way that creates a dialogue between the chef and the customer. Behind this experience is a dedicated workforce which works up to sixteen hours a day to enable this to happen. To this end, The Fat Duck leadership team adopts a culture of belonging and ownership within the kitchen brigade (Casey 1999). Simple activities such as sitting down and sharing a staff meal and branding staff aprons builds comradeship and ownership of company values within the kitchen environment. Annual football matches, Christmas parties and a simple drink after work allow for the team to socialise together and in turn connect and build a sense of pride and community. With design being a discipline with innovation at its forefront, many lessons can be learnt from The Fat Duck. This design approach adds value to the consumer experience by viewing it as a holistic and integrated package and developing effective teams through a sense of ownership and community (Schouten, et al. 2007). This paper explores the nature of the experience for the guest and the staff and the cultures within the organization which allow for design innovation and company loyalty. It concludes with a discussion about the wider implications and benefits for food experience designers.

KEY WORDS

collaborative design, culinary practice, food design

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Maize Culture: Tortillas As A Material Of Design

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ABSTRACT

With this paper we wish to explore morphological possibilities for tortilla as a way of innovation and preservation of a relevant element in Mexican gastronomic culture; "The Maize Culture". In this study tortilla is seen and appreciated by its physical properties and use as a material of design considering technical, sensorial, cultural and social factors. Many experiments were carried out during the process of creation, deriving new forms and applications for tortillas.

KEY WORDS

culture; maize; tortilla; innovation; Mexico; food design

INTRODUCTION

"Yellow maize and white maize became flesh, from maize dough arms and legs of man were made. Only corn enter into the flesh of our parents, when our ancestors were created "

— *Quote of the Popol Vuh*³¹

We cannot see the tortilla as a finished product without considering the cultural significance of it and the ancestral contexts of the main material; maize.

For a better understanding and creative process, we studied the historical origin, social context and making process, but also the morphology, the structure and the physical properties of current tortillas. Resulting in experimental projects that aim to impulse the future of this traditional food in risk due to the wide range of processed foods currently available in the market.

FACTS

- UNESCO named mexican Gastronomic Culture in 2010 as "*Intangible Cultural World Heritage*".
- Mesoamerican territory contributed to world cuisine with: corn, beans, chilli, avocado, vanilla, cocoa, pumpkin, tabacco, cotton, among others.
- Maize is the central axis of mexican cuisine, domesticated over 8000 years ago. It is the grain with higher benefit between: cost and nutrition. Thanks to the discovery of nixtamalization³² it could be transformed into smooth dough with better performance and higher nutritional benefits.
- From the process described above tortillas were created; Nowadays, tortillas are created the same way as in 8000 years before (Barros, 2005).

³¹ Mayan legend that describes to creation of the universe (origins of the document are controversial).

³² A process whereby maize kernels are soaked and cooked in water with lime. This improves flavor, aroma and nutritional value and enhances the bioavailability of calcium in our body.

ISSUES

- According to estimated rates cited in Mexican National Chamber of Industrialized Maize (CANAMI in Spanish: *Cámara Nacional del Maíz Industrializado*) (Puente 2005) in the last 5 years the consumption of tortilla decreased 26% per capita, giving way to fast and junk food.
- Industrialized and highly processed products have impoverished current Mexican diet, competing with traditional food vastly consumed before and that have proven its efficiency for centuries.

TORTILLA CURRENT VARIATIONS

In the following diagram are listed the current presentation of tortilla, shape and size variations.

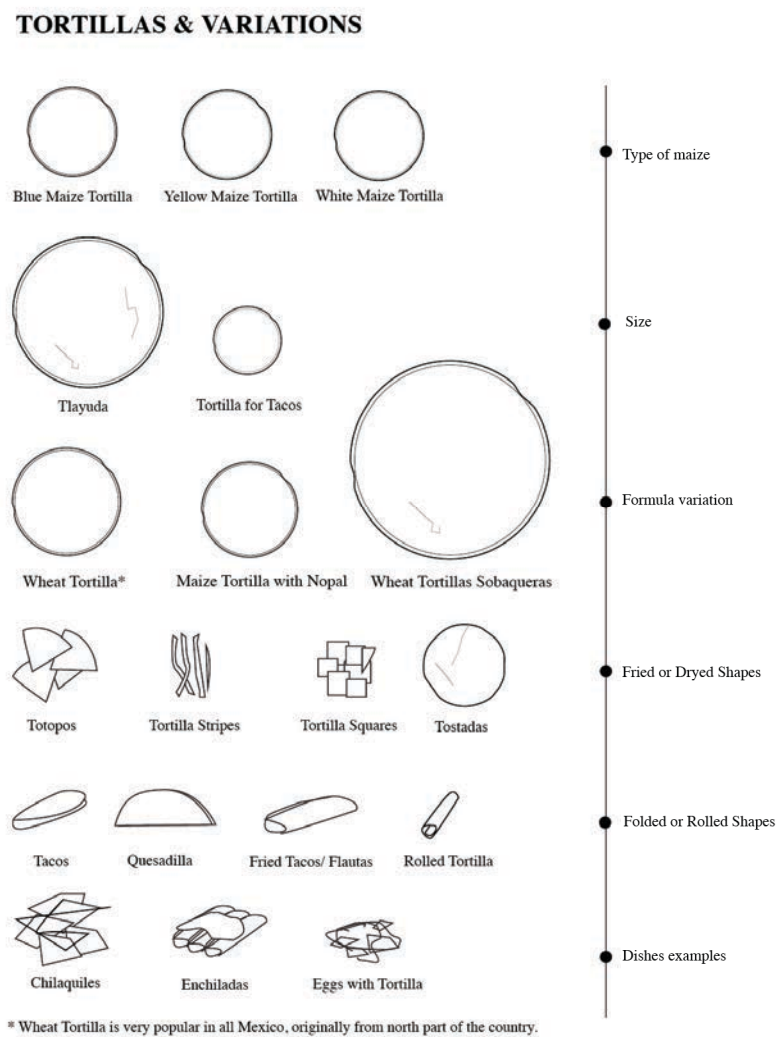


Figure 1: Tortilla variations. Source: Victoria Molina 2014

TORTILLA LAB

Is it possible to explore new possibilities for tortilla?

After a brainstorming process (Figure 2) about the use and meaning of tortillas, were carried out several experiments to transform this material innovatively; processes such as die cutting, cutting, drying and frying were used, but also different types of maize such as white, yellow and purple maize (figure 3).

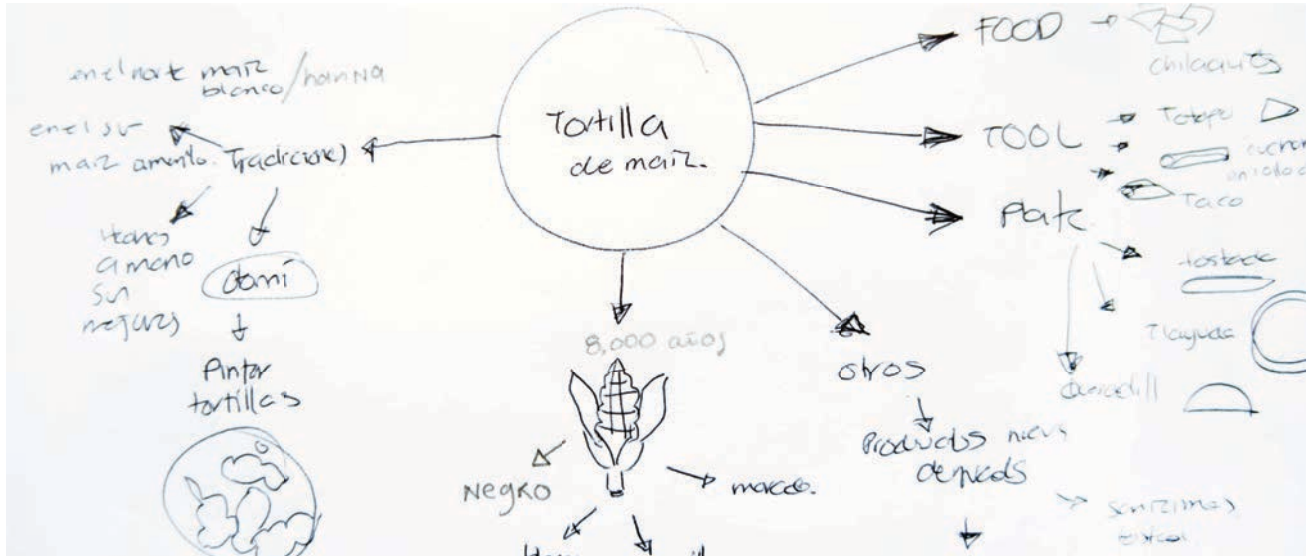


Figure 2: Brainstorming process. Source: Victoria Molina 2014



Figure 3: Purple maize. Source: Victoria Molina 2014

EXPERIMENTS

Experiments are described below, for this case we use different instruments such as cutter, cookie molds, design software, printing machine, cooking tools and other ingredients like sugar and oil.

1. Salsa tasters

The degree of spiciness in the different Mexican salsas varies from table to table and even from day to day. For taste the flavor of a salsa, we create salsa tasters; a figurative and understandable design to take a small taste and choose the perfect one for you between many samples. (Figure 5-7)



Figure 4: Different process of drying salsa tasters. Source: Victoria Molina 2014

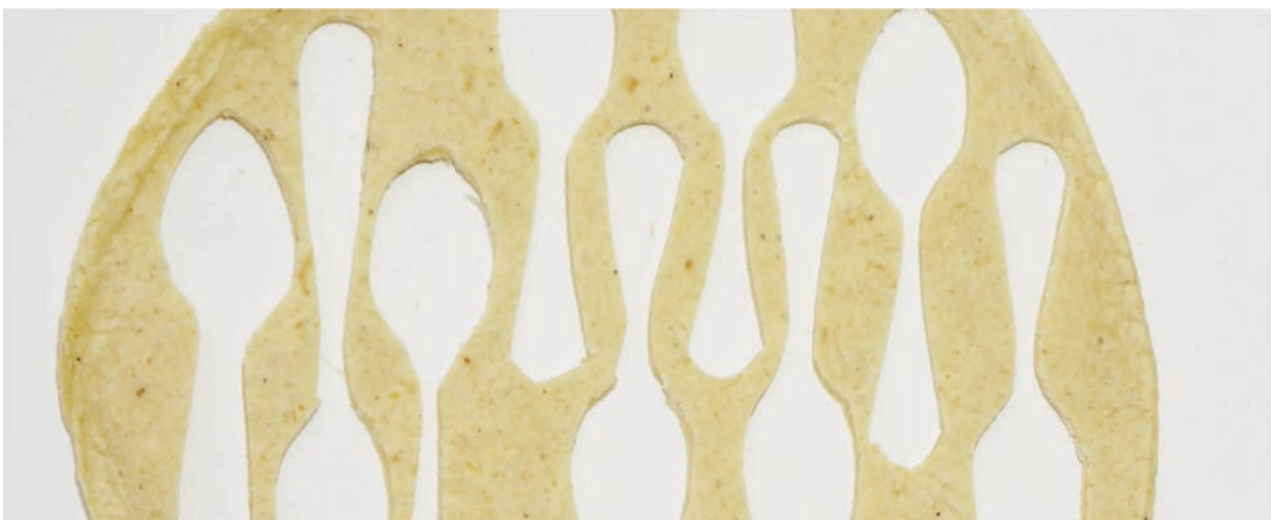


Figure 5: Leftovers. Source: Victoria Molina 2014



Figure 6: Example of use and presentation. Source: Victoria Molina 2014

2. Tortillas as decoration and signalling

The aim of this experiment was to develop a decorative element that can serve not only as food, but also as an information item. In this case were used traditional elements inspired in "*papel picado*" (traditional mexican craft) to make a sweet fritter, but this technique can be use also to show a brand, the name of the guest, the host or others.



Figure 7: Tortilla cutting as “papel picado” (Mexican traditional craft). Source: Victoria Molina 2014



Figure 8: Fried tortilla with sugar. Source: Victoria Molina 2014



Figure 9: Example of use and presentation. Source: Victoria Molina 2014

3. Edible Guacamole⁶ and Totopo Plates

In Mexican culture guacamole is always placed on the center of the food table, people grab *totopos* (See Figure 1) and start eating them. We wanted to explore a new possibility for this dish, with more global and cleaner proposal for different kind of events, the tortilla was transform in the shape of a flower and baked with oil. (Results are shown in Figure 10 and 11).



Figure 10: Different shape explorations and variations. Source: Victoria Molina 2014



Figure 11: Human scale and interaction with the food. Source: Victoria Molina 2014

4. Tortilla Typography

We decide to create typography as a way to communicate messages and create ambience in tables or plates. (Figure 12).



Figure 12: Example of text made of tortillas. Source: Victoria Molina 2014

In Mexico, all the components of the maize are used, cane and corncob are used to feed animals, corn husk; to wrap *tamales*, maize silk; to make tea and also tortillas leftovers are used to prepare multiple dishes like fried snacks, chilaquiles, totopos or eggs with tortilla.

CONCLUSION

As we make food design a tool to support the dissemination, preservation and food innovation, we can strengthen culinary techniques and processes to support the diversity of large and small communities.

According to the food design experiments we can infer that the tortilla is a noble material to work with and possibilities are infinite. Even if the results can easily vary according to weather conditions, maize variety and preparation methods, the final results were feasible and positive.

We can conclude that the future of the world depends on the mutual enrichment and this is how with our culture and our cuisines can contribute to the rest of humanity.

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New Models of Product Design within the Food Production Arena

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ABSTRACT

The traditional supply-based model of food production and manufacturing is being challenged. It is competing against new and innovative production and development models utilising design methodologies that place the end user at the core of development. The result is consumer-driven products that contain the shared value of the consumer and producer (Porter, M, 2011). These products are resulting in an evolution of the top-down development schematic to one based on co-creation with the consumer. The contemporary nature of this shift has meant the ability to measure and rationalise the cognitive purchasing process of the consumer is still limited (Dr David Person, pers. comm. 19 May 2014). There is an irony that, in order to successfully launch new products, an understanding of the customer is imperative (Canada Business Network, 2009). This new sophisticated environment is making it necessary for food developers and producers to navigate interdisciplinary collaborations and adapt philosophies from areas previously considered unrelated to remain relevant to their customers and stay financially viable. This paper seeks to investigate, through the use of case studies: 1. Enterprises that are adopting new and previously unrelated philosophies and the effect it is having on their business; 2. Where the use of interdisciplinary collaborations have been successfully utilised; 3. The design process as an enabler for change within the food production arena.

KEY WORDS

co-creation; interdisciplinary; food service; innovation

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Nordic Sound Bite – Redefining Food Design as Pop-culture

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ABSTRACT

In this paper we describe the process and method for developing the concept Nordic Sound Bite. Based on the idea of a playful cross-sensorial collaboration between music and food, bands are partnering up with food designers creating a culinary experience corresponding to the identity of the band. When food and music is co-designed to strengthen the concert experience, food plays a more artistic role than it usually takes. Food design in this context can strengthen the existential experience of being and being together. The findings are based on the initial Nordic Sound Bite presented at the JaJaJa Festival in London, November 2013. The musical DNA of the five bands; Mew, Sin Fang, NoNoNo, Sakaris and Kid Astray was translated into sound bites, and “served” to 5,000 festival guests. This is a pilot project that aims to create a position where food design can play a more strategic and powerful role than just being an add-on to a meal.

KEY WORDS

food design; food with a purpose; pop-culture; nudging; digital natives; systematic methods; cross-collaboration; creative industries

INTRODUCTION

The sharing of a sound bite during a concert makes a large gathering of individuals transform into a community. When everyone enjoys a peculiar intriguing food experience at the same time, it evokes an awareness of the social and strengthens the sense of belonging: a sense of being part of something larger than the yourself. The sound bite is designed to strengthen not just the musical experience but to make you discover life and music in a new ways. Targeting young people of today, whom are born individuals searching for their communities (Duncan, 2014).

When food and music is co-designed, food plays a much more artistic role than it usually takes. In this context food design can perform with a strength that makes people aware of the very moment, strengthening the existential experience of being and being together. The knowledge of how food design can influence the social behaviour can be a component of knowledge in the work of improving decisions about health, wealth and happiness. A knowledge summarized in ‘Nudge Theory, where the theory, as a concept in the behavioural science, claims that positive reinforcement and indirect suggestions has a far greater impact on both the identification, incentives and decision making of groups and individuals alike, than any direct instruction or traditional advertising (Thaler & Sunstein, 2008).

The Nordic Sound Bite is a pilot project that aims to create a position where food design can play a more strategic and powerful role than just being an add on to the meal. A way of producing food that draws on methodology and thinking from the creative industries rather than from the food industry. Historically food production has been placed under the Ministry of Food, Agriculture and Fisheries and improvements within the field of food production has been and still is regarded as a matter of efficiency and optimizing production. In the New Nordic Food II project Food & Creative Industries, we have dedicated some time and effort to explore food as a creative tool to investigate what would come up if we imagined it as being an art form equal to architecture, music and fine arts (Nordic Council of Ministers, 2010).



DESIGN THE FOOD FUTURE

Today we tend to regard the meal as separated from art experiences but it has not always been like that. The historical co-existence between theatre and the banquet goes back to ancient Greek theatre. In both Roman and Greek tradition, a dinner party included music, reading, theatre and dance. The link between food and music is dated back to the early cave paintings (e.g. Lascaux Caves) where a common dance and the sharing of food have been pictured (e.g. Harsloef, 2013).

Only in recent time has eating and art become separated. Today it is rare to see successful collaboration where culture and food interact and create new experiences. They tend to stay within their own sector and collaborate within their own well-known field. We have decided to challenge that and provide new collaboration methods and concepts that can conjoin food designers with other creative sectors. The concept is reproducible in other contexts with new teams of designers, musicians and chefs and it inspires people to think outside the box and create new networks of creative people from professions as different as farmers, designers and musicians. The concept aims to create a structure or a framework with the tension and dynamic that helps new ideas to evolve.

The reason why we do this is because we can see that the future cultural consumer around the world will not look like those we know today. Young people who are born in the digital age have been growing up with unlimited and expanding access to information and entertainment (Tapscott, 2008). They are used to handling a high degree of complexity and they will probably, as cultural consumers, show us an openness to cross over cultural products that we have never seen before. Their expectations will be very different from previous generations. Their capacity and habit of consuming high amounts of multifaceted information make them hard to satisfy with the classical type of cultural products and events. They are ready for something more challenging and ambiguous. Something that is not similar to what they know. They are in search of the unexpected, never seen before and if it is too easy, they move on, because that is the digital behaviour they grew up with (Schultz Hansen, 2011).



Figure 1: Sound Bite for Mew: “Share M” - A sharable lollipop (Dill - vinegar – smoke)
©Lillian Santos Herberg

They do not expect the classic division between concerts, sports architecture, dance, eating, etc. Their generation will consider arts, design and food as one big melting pot and combine them in ways we could not have imagined. When this generation enters the creative industries as designers and agenda setting employees, we can expect to see a whole range of new categories within the field of cultural production and events and their audience will be waiting for that to happen. Waiting for surprising, border crossing, identity-transforming experiences with a high degree of performativity and complexity. As described by Pine and Gilmore, in the transformation economy, the consumer is an aspirant seeking some form of change, where meaning and interaction are the prerequisites (Pine & Gilmore, 2012). They are probably going to have a nostalgic relationship with the classical art forms and their institutions (theatre, concert, museum, library). They will invent cultural experiences and products without considering if it belongs to one modernistic category or the other. This openness forms a whole range of new play zones where food design can play an important role.

We need to tear down the barriers and create cross-over products and experiences matching the contemporary society with all its complexity. Food design plays an important role in this development because it in its roots has a self-awareness and reflexivity that is similar to other art forms. As we see it, the food designer works with the tools and awareness of the artist. He/she might not be able to cut a carrot as precisely as the world's best chef but he/she can create a concept and juggle his/her knowledge of sweet, sour, bitter and salt in a way that surprises you and makes you discover the world, not just the food, in new ways. The branch of New Nordic Food that collaborate with the creative industries wants to encourage chefs to seek new collaborators outside their own comfort zone and bring their capacities into play in new constellations.

We have therefore decided to establish a range of projects aiming to develop new networks and methods and combine food and the creative industries in new ways in order to meet the future demands. As a result of these projects, debates and experimentation, we have created a toolbox containing methods and thinking concerning the design process, the cross sectoral collaboration and the performative aspects.



Figure 2:
Sound Bite
for Sakaris:
“Dream on!”
- White
balloons
with
meringue
dots
(Meringue -
lingonberries
- salt)
©Monica
Santos
Herberg

THE PROCESS

The concept of the Nordic Sound Bite is based on the idea of a playful cross-sensorial collaboration between music and food. Young Nordic bands are partnering up with food designers creating a culinary experience corresponding to the identity of the band. The taste and design of the sound bite is based on a definition of the musical DNA of each band and shaped into a format and a performance that can be 'served' at a concert.

Instead of just creating a music + food event, we wanted to integrate music into the food design and create something that had a spin off effect on the concert. It requires the knowledge from professions as different as chefs, musicians, designers and venue managers. Therefore the collaboration has to be managed in a way that opens up all the different assumptions within the different areas towards each other in order to create a conjoined complexity of interests and dreams. To make the sound bite capable of entering a concert in an elegant and precise way, it requires a tool box for each phase of the design process extending from the initial idea, recruitment of designers, planning the performance and to the final execution and communication of the event.

By using a systematic method, it is possible to merge music and eating and create a stronger and more layered experience than just music. It is a complex task and there is a wide range of decisions on many different levels to be made along the way. They range from strategic decisions about vision and purpose to design, materiality and marketing. This is in brief and condensed form how a sound bite is created.

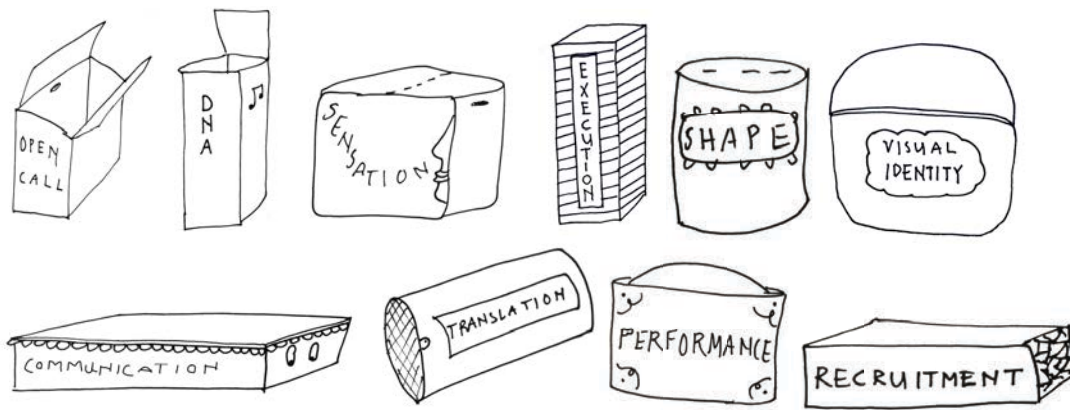


Figure 3: The central elements in the design process

- **Open Call.** When we receive an invitation from a venue or a booker, we make an open call to food designers from the relevant regional areas. In the announcement, we specify the skills and characteristics needed.
- **Recruitment.** Based on the profile and description of qualifications, we select the group of food designers suitable for the task.
- **Musical DNA.** The band or bands who are part of the collaboration are asked to hand in a 20 sec. sound piece of their musical identity – the sound they regard as their core sound.
- **Translation.** The food designers are given the musical DNA from the bands and asked to sense and describe the bodily experience of the sound – one sense at a time.
- **Sensation.** The food designers are invited into a sensation lab that contains a wide range of aromas and tastes from the regional kitchen. They are asked to pick a maximum of 3 tastes that correspond the most with their subjective experience of the sound.
- **Shaping.** The taste has to find its materiality to correspond with the original sound experience. Is it dust? In a teabag? Or maybe a cracker?
- **Visual identity.** Designers and food designers decide how practicality and aesthetics can work together in a format suitable for a concert crowd.
- **Performance.** Collaboration takes place between the venue, the concept developers and the food designers. A site specific performance plan is worked out.
- **Execution.** Since there is no test possibility, the performers are thoroughly directed on how to execute the sound bite performance.
- **Communication.** Marketing and press material is written and edited and placed to reach new target groups of foodies, hipsters and new audiences who are up for challenging experiences more than traditional concerts.

The tools within each of the above phases makes it possible to merge music and food into a multisensory experience and when the design process is executed in a firmly structured way, it shows that the band is able to recognize its own identity in the sound bite. This might not be a core finding or contain a huge potential for the project but interesting still that a sensorial non-verbal communication can take place in such a precise way.

Music is a bodily experience and so is food. Therefore the aim has been to create a sensorial bodily experience that needs no further explanation. Where everything is said by the taste and the performance of the sound bite. To create something that corresponds with the knowledge hidden in the body.

For bands that are already out there making a living, it might not be of great importance but for bands who are struggling to find their own identity, suffering from doubts and struggling to find the right direction, it is both an encouragement and a way to support them. Finally, it adds an extra to their concert experience.

Like a bite that accesses the irrational subconscious level of joy and meaning. That makes it all make sense. (Winnicott, 2005)

CONCLUSIONS

When food design enters the arena of music, it becomes part of the popular culture. It then has the potential of reaching a broader and a more diverse part of the population than just the food connoisseurs. Disguised as pop culture, the sound bite can introduce new challenging tastes to the audience and play an educational role of broadening their tolerance to foreign and unknown tastes. In the concert setting, it is introduced to young people as part of a party without the admonishing advice about health and nutrition. No recipe or cookbook would be able to introduce young people to unknown spices, herbs and tastes in the way the concert can. By being used strategically, it can create awareness of local overseen commodities and inspire new non-foodies to explore food more. It challenges conservatism within food and stimulates curiosity among the broader population.

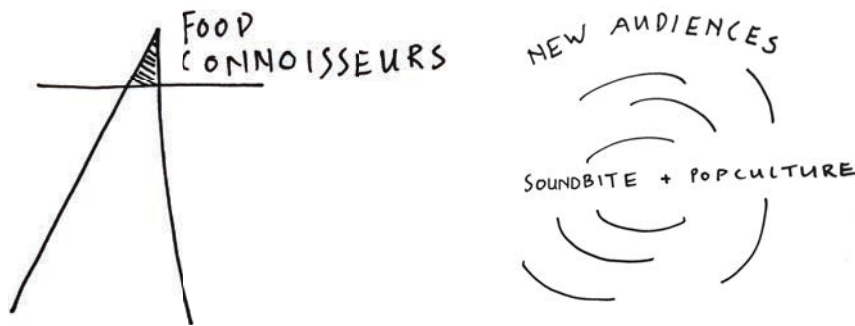


Figure 5: Broader audiences for creative food experiences

The sound bite is an initial step to meeting the future consumer with a challenging product and thereby recognizing the demands of a new and digital generation who are used to surprising constellations from the Internet. Introducing food design in concert settings is a way of testing if they are ready for new and challenging cross over experiences.

For the time being it also functions as a signature event at the concert. A mayor part of the press reviews of the concerts mentioned the peculiar food event (e.g. Wilkinson, 2013). Because it is still surprising, it has the potential of branding the bands, the event, and the regional culture.

For the food industry, the concept stretches the idea of what food can be. Creating awareness of food as more than food is a much-needed disturbance of the stereotypes existing within the agricultural sector and in the food industry. During the industrialization food its production in the Nordic countries has suffered from an efficiency strategy and is now permeated by a functional approach and by the idea that bulk production is the only way to survive (Qvortrup, 2003). Showing food in other contexts as part of an artistic discourse, can set an example of how food can be perceived as something else than just functional and nutritious and thereby inspire politicians and decision makers to support food producers to search for new ways of both producing and staging their commodities.



Figure 6: Sound Bite for NONONO: Pump & Pass On: Three spray bottles (Sea buckthorn – liquorish – apple cider – caramel) ©Sebastien Dehesdin

The way we categorize food design defines or restricts what we can think about it. Even though the Sound Bite still requires trained chefs when it comes to the juggling with ingredients, texture and consistency, it could just as well be regarded only as a cultural product. Doing this opens up a fundamental change in *the why* of food design. Defining it food will probably bring along the usual habits related to the general structures within the food sector. It takes us down the traditional road of cooking, serving and communicating the recipes in a cookbook. If it is regarded as art, we start to think about it in cultural contexts becoming more aware of the hidden assumptions, rituals and traditions within the food field and thereby able to challenge them. This is not to say that the whole food and agricultural sector has to be relocated, but changing the perspective allows us to challenge the assumptions and this opens up new perspectives and creates new possibilities.

The possibilities are many. As said before, food design can strengthen the values of sharing and belonging. It can educate young people and show them new playful ways of creating food. It is no longer part of a sophisticated and slightly elitist group of connoisseurs but reaches out to broader audience (Figure 5). It can also create a visual feeling of *communitas* for all participants, both at the venue during a concert, after a concert - when there are still visible traces of a Sound Bite scattered around the space, and even as second screen communication through blogs, tweets and instagram (Nordic Sound Bite, 2013). It becomes a branding tool for the music industry and the regional culture and it can be part of agendas rooted in the cultural sector. The method and the idea are both flexible and dynamic and can therefore be extended to music festivals, sport events and art openings.

This concept is developed as a pilot project within the New Nordic Food project Food & Creative industries together with curator and designer Nikolaj Danielsen and project manager Elisabet Skylare. The pilot project was executed in close cooperation with the Ja Ja Ja Festival Committee, the three emerging food designers, selected through an open call; Hafdis Sunna Hermannsdottir, Ayhan Aydin and Josefin Vargö, co-ordinator Kristina V. Pedersen, Madeleines Food Lab in Copenhagen and the Roundhouse in London (Danielsen & Skylare, 2014).



Figure 7: Social interaction at the Ja Ja Ja Festival, Roundhouse, London 2013. ©Lillian Santos Herberg

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