

Introducing Food Experience Design in the Food Studies Curriculum

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Abstract

The growing impact of digital technologies on the activities of food, and the need to develop increasingly complex network systems, both local and global, will require "future supply and food experts," a greater capacity for analysis and in particular, for design new food experience. The introduction of digital technologies in the experience of food could enhance eating behaviors already present in humans, and unleash the new (emergent behavior), in turn affecting ancient human practices, such as those related to the meaning (and values) of eating.

This paper will present the importance (and the need) of teaching a course in Food Studies using interaction design methods and design education perspectives. Design courses aim to accompany the Food Studies students in the study and elaboration of design and visualization projects that take into account the local and global problems with food. The aim of introducing this kind of courses is to design interactions for new cultures of food, where digital technologies are part of and contribute to this evolution.

The need from Food Studies students is not required to design intuitive and immediate answers to problems, but to find solutions that allow the users to create their own routes, and generate new knowledge and culture. Design courses in the food area can allow students to observe the field and realize how technology is used in a given context and can help the students to pay particular attention to the understanding of user needs to be able to explore new design ideas. There will be varying degrees of monitoring and evaluation, with an intervention and direct involvement of stakeholders and end-users. The co-participatory approach combined with the definition of a theoretical framework and development of ethnographic research, will be contemporary and will alternate; both methodologies will compensate each other throughout the duration of the course - both in the analysis phase and in that of envisioning.

Introducing Design courses (Experience Centered Design courses) in the Food Studies curriculum can provide to the students the opportunity to be exploratory moderators of the sessions, users in the stages of collecting comments and opinions, and designers when creating and viewing different elaborated scenarios. Collaborative research and practices between communication designers and other stakeholders can contribute on the creation of more eco-friendly and sustainable food systems.

Key Words

HCI, Food Experience Design, Higher Education, ICT, Food Studies.

Introduction

Globalisation has changed the working context in which the alimentary actors, both public and private, operate, as regards the dynamics of change and the handling of the complexities of what has been created. In the present situation, scientific and technological research into food production forms a part of an economic and competitive context, where, to obtain innovation it is fundamental to consolidate all the actors: enterprise, government and universities. All must pool their knowledge to devise territory-related applications where food will always be a determining factor.

Looking at the example of Italy where subjects such as INRAN (Istituto Nazionale Ricerca Alimentazione e Nutrizione –National Research Center of Nutrition), CNR (The National Research Council) and ENEA (Italian National Agency for New Technologies, Energy and Sustainable Economic Development) are public institutionally oriented organisations, with an important strategic function, but are very often removed from the local enterprises and economy. There are other institutions like the ISS (Italian National Health Service) and the Institute for Research on Biotechnologies/ Genetic Engineering/ Animal Health (Istituti Zooprofilattici) which fulfil the function of monitoring and guaranteeing health issues; but these do not have the tools and means to contribute to any real progress or innovation in the field of food (they are not easily able to work in harmony with the universities, centres of research and design or the actual food enterprises).

The example of systematic design, proposed by Turin's *Politecnico* University in conjunction with the Chamber of Commerce and Slow Food Movement, is only one outstanding example of a slow process where the scientific collaboration between the universities, government and local authorities is slow to assert itself.

Unlike Italy, in other countries, for example, the United States, scientific research into the food sector is carried out mainly by universities countrywide. The American university system is strongly tied to enterprises which subsidise the projects and also influence research choices and strategies. Alternatively there are foundations and international organisations which oversee another part of the study, linked not only to the field of local food production but also and predominantly to the dynamics of the market, exploitation and management of resources at a global level.

It is always more evident (mainly in the United States but in other countries too) that there is a need for a convergence of responsibility on the part of the industrial sector and universities alike. The solution might be that of establishing new responsibilities capable of sustaining processes of development and change. New structures and models of innovation-formation-development are necessary for a competitive growth that is locally sustainable.

In the described context and during the last 15 years a new field of research and study has emerged, called Food Studies, aimed at training professionals in the food system. One training programme, promoted by Food Studies, is aimed at involving the different stakeholders, from researchers to employees in the sector, from producers to consumers; it also aims at promoting the exchange of responsibility and knowledge between industry and universities, between local and global governance, at identifying strategies and means by which to exalt the mankind's profoundest values, that is to evaluate available resources, feed people, interact with others and exalt the cultural identity associated with food. Following prof. Alice Julier [1] suggestion, in this paper we will not refer to Food Studies as a discipline but as a field – because there is a major difference in the US, with fields being connected to and emergent from social activism and practices and not “old” enough to be a discipline per se.

This paper refers to a critical area of interaction – the relationship between the material practices of producing and consuming food, emergent and shifting technologies, and the landscape of design that supports and engages with both of those. There is a great need to re-connect the earlier definitions of technology with our current reduction of the term to only focus on devices with circuitry.

This paper presents one of the results of a PhD study research on the evolution and the role played by digital technologies in the cultural transmission and innovation of food practices. The PhD research intended to fill the gaps in both theory and practice by examining the existing and potential design space for HCI (Human Computer Interaction) in the area of human-food interaction.

The main questions answered in this paper are why human-experience design is one of the skills a food expert should possess and an aspect of the profession that should, therefore, be included in Food Studies curricula? How design education can be implemented in Food Studies Curriculum, and what are some tentative “Food Experience Design” course outlines?

The paper is divided in four parts. In the first part the role of designers is discussed: it starts by noting that consumers change their relationship with producers, distributors, the body, the senses and space. Foodscapes are changing and the experiences-bridge is increasing; the digital World can finally interact and communicate with the analogic World, within a single continuum. The user, instead of being a mere observer becomes an active producer of information: the processes of knowledge are changing as well as ways in which users connect with each other.

The second part describes how research into the field of Food Studies is rapidly growing. In this part are assembled the questions which seem, today, to be the most interesting and the most obvious in the development of Food Studies within the academic field. Findings reveal the advisability of using Design research method to study relationships between food and humans, and the implications to design processes thus entailed, is investigated and discussed.

It is possible to design interaction such as to generate new knowledge and eating habits and it is possible to trace some of the more interesting directions and get the opportunity of guiding design towards certain food technologies and cultures. On the basis of these premises, design education seems to be the most suitable way of keeping this in mind and teaching to Food Studies students how exalting positive human experience and creating new ones. As the academic world is interested in this issue, what kind of training should a future food systems expert possess in order to study the mediating role of food and the technologies that support it?

In the third part the term *co-evolutionary design* is discussed and a definition is provided. It introduces *Food Experience Design* as a possible approach to the design of new food experiences; inspired by solutions and projects of other disciplines (industrial design, digital gastronomy, the culinary arts, architecture, environmental studies, critic design and systemic design), Food Experience Design is coming to the fore as a potential tool of investigation, planning and evaluation, to be availed of in connection with all types of Food Projects.

The paper also discusses the opportunity of including Food Experience Design courses in the Food Studies curricula. Food Experience Design course can help Food Studies students to consider the pervasive nature of food, beginning with the different socio-cultural backgrounds that impact on it, and studies levers capable of creating new rituals and influencing human nutritional choices. The idea of an academic course on designing technologies in the area of human-food interaction that celebrate the positive interactions that people have with food as they eat and prepare foods in their everyday lives, is here presented.

The introduction of the Design discipline into academic Food Studies programmes, would add an element of complexity and scientific collaboration to the milieus of food and technologies studies very seldom found to date.

Defining Food Experience: the role of designers in the digital world.

Technology has always changed the relationship between human beings and food in that it has impacted on the value people attribute to food itself. Digital media are multiple communications conductors and permit the transmission of ideas across huge distances and a great speed. These modalities have produced increasingly freer and more efficient communications processes with an outstandingly democratising effect on participation.

Today people expect, more and more often, that objects communicate something to them, as in the case of children who, when presented with a digital device, always look for a button, a sensor or a similar element to press even if the batteries are missing or the implement is unplugged (Antonelli, 2008; Antonelli, 2011). If the twenty-first century is marked, in some way, by the transition of communications from meaning to function, the last 10 years is characterised by a need to communicate which has become vital to existence itself (Experience Centred Design). The designer's task and work do not consist in presenting a vision of something to a person or to many people, but that of providing the conditions capable of facilitating interaction.

This process takes place upon a number of different levels, from the moment when the customer is provided with input, to that when the system permits the user to create outputs, but, above all, during the dialogue which continuous interaction produces during the entire duration of the experience. (Antonelli, 2008; Antonelli, 2011)
Over the past 10 years, it has become clear to all that the Internet and the digital technologies have changed our way of doing things. A part of this transformation can be seen as a form of continuous renewal, and this is the reason why the work of the designer is never static, but always changing.

Nowadays it emerges that digital technology (like all previous technology) has penetrated the field of nutrition (Grimes&Harper, 2008), modifying the food experience, especially as far as activities associated with providing, choosing (buying) and transforming food are concerned. The new digital and web techniques have entered every level of the food chain: from the producer to the final consumer. Developments in

food do not regard so much the nutritional properties of produce as the experiential significances it is capable of conveying, as an instrument.

Design research has shifted the focus of investigation in the direction of experiential planning and not only as far as usability is concerned. The ubiquitous and pervasive effect of technology has made the interfaces of food instruments increasingly less visible. Even where the introduction of ICT (Information and Communication Technology) has become consolidated, that is in the context of food research, selection and transformation, a number of unsolved problems and questions (and tensions) continue to exist. In the past, it was the custom and practice handed down from generation to generation (recycling, choice of crops - associated with orographic and climatic conditions - resource management as well as storage, preservation and cooking of foodstuffs) which passed on food-related knowledge and values.

Today, it is the arduous task of the new technology to pass on knowledge and practices, mediating stories and experiences. The transfer of knowledge and know-how requires the active participation of the social actors who become a part of systems increasingly characterised by co-production, where the link between raw material and food-related cultural experience is strong.

In the food field, the arduous task of the designer is that of grasping the food-values that people cannot renounce. Designers must realise the relevance of similar values, principally, for geographical and cultural reasons (therefore grounded in the social and cultural dynamics of a given community) and be able to weave them into the tools and mediations they create. But they must also take into account the fact that the object itself could produce completely different impacts on customers with different 'inner' values. It is difficult, practically impossible, to foresee emerging behaviour; what can be done is devise and create the opportunities favouring it. Trends can be outlined but the specific destinations cannot be anticipated.

There is plenty of room at the interplay between sensorimotor and intentional affordances (Rizzo, Del Monte, Rubegni, & Torsi, 2009); a room that combines the dynamic and evolving relationship between non-mediated and mediated action, a room that needs to be explored and exploited in the design of human interaction with her/his environment (Rizzo, 2012).

For designers today it is not sufficient to balance form and function, it is not sufficient even to attribute meaning to the objects that are to be offered to others. Present-day designers must envisage all the tasks that go before (that is, the intentions underscoring the plan) from a dynamic point of view, in an animated context. The instruments, like the objects themselves, must communicate with people and designers need only write the first draft of the script, leaving the customers to do all the rest. The customers will create dialogues, experiences, applying their own values.

The Design is acquiring new research methods, strategies and terminology drawn from other disciplines. New, less generalist [2], more field-specific forms of design and processing will probably emerge in the future (Bagnara & Pozzi, 2008). On the basis of the exploration carried out for the present paper, it appears more appropriate to speak of "Food Experience Design", even "Interaction Food Design", as a discipline and research method capable of generating innovative interaction and digital instruments to use with and for food as well as new mind-sets and communities.

Why introducing Design courses into the Food Studies curricula?

The current Food Studies curricula include subjects as history, politics, economy, humanities, sciences (environmental, consumer, nutrition sciences), communication, anthropology and sociology. Recently, also themes like visual arts, aesthetics, psychology, neuroscience, and music, started to be included in the Food Studies field. No design courses were designed for being included in any Food Studies programs. The only courses on food and design research based, are provided by the Schools of Arts, some departments of Design, ICT and Architecture (interested on future Food Systems and new ideas for a sustainable World).

Food Studies academic programs are meant to be participatory. Openness towards and relations between universities and the outside world became one of the immediate concerns of Food Studies, even though it was hard to continue. From the following paragraph it is evident that what the Food Studies sector really needs are: a strategy aimed at studying the past and favouring the use of acquired knowledge to understand and to redesign the present; flexible methods and strategies; the possibility of joining different, at times highly divergent, disciplines; being able to study the evolution of this phenomenon from different points of view; designing teaching methods and information tools where the acquisition of knowledge is achieved mainly through practice and experience; devising a communications language and channels capable of promoting integration between stakeholders and guaranteeing the transmission of research results to a heterogeneous audience.

Difficulties on the part of the Food Studies: emergent trans-disciplinary field of research

The growing interest of public opinion in the subject of food has recently urged academia (initially English bodies, later international) to identify a new area of research and study: the Food Studies. In 2004 Guigoni gave the name Food Studies to a group of subjects dedicated to the anthropological, historical, psychological and sociological aspects of food. "This macro discipline will intersect (and sometimes merge) with consumption studies, studies devoted to analysing modes, myths and representations surrounding the consumption practices as well as the values and meanings attributed to food as a commodity by various social groups"[3]

In reality, Food Studies have a long history and background. What we currently called 'Food Studies' have grown quickly into a field and today do not limit themselves to investigating the historical and sociological aspects of food but also the sphere of production, distribution, consumption and communication of food; in particular, the object of Food Studies has shifted its focus towards the problems of agriculture and new methods of stocking, analysing and finding new production and sustainable distribution methods, as well as dwelling on communications systems capable of supporting education and training in the field of food.

The food experience, in terms of enjoyment, art and entertainment still plays a rather marginal role in the Food Studies discipline, and has been relegated to a parallel and complementary sector, for example to Food Design (which includes architecture, industrial design and artistic subjects) and/or Eatertainment [4] (the evolution of more traditional themes like those associated with hotel hospitality and restaurants).

At the end of the '90 the first university courses including Food Studies appeared in the United States, more or less created within Food Science (Nutrition field) and American Studies departments; these provided a methodology, contents, instruments and places for teaching Food Studies and are presently being defined and becoming the subject of debate in the world of Academia. As regards Italy, in 2004, under the auspices of the emerging Slow Food movement, the first International University of Science

Gastronomiche was set up in Pollenzo, and offered academic courses studying the historic, social and communications aspects of food.

In a very short time these courses on food culture and science, like those regarding the impact of food on human behaviour increased. In 2008, a heated debate (still going on) between experts and ASFS [5] professors concerning the contents and methods to be used in teaching Food Studies, started. The best wish that can be expressed for the future is that the broadest possible audience should benefit from the results obtained from this type of study and that the outcome of research at university level be enjoyed by ever increasing numbers.

Among the topics, difficult to resolve, discussed by the Food Studies Scholars we find:

1. The difficulty on the part of the Food Studies field to identify and establish precise study and research methods.
2. Fault finding concerning the type of knowledge Food Studies experts should have to obtain in an academic credible manner.
3. Inexperience in using and planning new ways/ and technological tools of organising and conveying the contents to different audiences.
4. A lack of strategies capable of turning Food Studies into a scientific field of research, recognised also outside of the academic field.

In this paper are assembled the questions which seem, today, to be the most interesting and the most obvious in the development of Food Studies within the academic field, but also in other sectors, such as state and semi-state institutions, industry and public opinion. The questions summarised here are only the tip of an iceberg under which other more or less latent exigencies, to which the discipline of Food Studies is attempting to provide answers, are hidden. The education and training of a group of students in food issues is obviously a challenge which must be taken up not only by the universities.

For researching and understanding: defining a specific epistemology.

The difference between Food Studies and the Food Sciences (or Nutrition Sciences) or the Culinary Arts (Gastronomy) disciplines is in the approach which the latter have always adopted, in defining their disciplinary context with the greatest attention and precision. The first claims a strongly scientific basis (medical, biological, chemical), the latter considers itself as almost belonging to the fringes of art. Nutrition and health have always been framed by and examined for quantitative data, while it has always been difficult to carry out any kind of qualitative research in the field of food. It proves to be particularly difficult when considering the historical evolution of the instruments and objects, narratives, social customs, cultural meanings and values associated with food. (Belasco, Bentley, Biltekoff, Williams-Forson, & Dela Pena, 2011:304).

The boundaries of food and nourishment have expanded, and distinctions between qualitative and quantitative in the context of food study have been reduced. One speaks of communication, proximity, links and building systems where humans are not the focus of the system but become an integral part of the food ecosystem.

Amy Bentley [6] identifies in Food Studies a potential tool and recognises the necessity of using the "usable past" to inspire new ideas, generate solutions to apply to contemporary problems. The question is not the inadequacy of the methods borrowed from the social sciences, as Carolyn de la Pena affirms (Belasco, Bentley, Biltekoff, Williams-Forson, & Dela Pena, 2011:312), but the fact that the theoretical and historical issues these reveal, are not easily identifiable and transferable to the current era.

Alice Julier, in a discussion in the ASFS online, highlights the point that it is not a matter of defining what are or from where the paradigms of research and study for the discipline of food come; but that there is a need to provide a method for those who study food and a strategy to use to analyse and programme both of which could not be based on a single paradigmatic precept; it would be not really useful, concludes Julier, to discover fixed analytical parameters by which to outline the boundaries Food Studies knowledge contents.[7]

For communication and learning: from epistemology to a teaching method

To define a method one must first understand the field of study. Food Studies as a field has now, for the very first time, is providing a scientific status to practices and ideas that were far away from the academia. Food Studies are offering a way of looking at food in a more general way, less specific (or lateral) than other disciplines and opening the way to educational challenges:

1. Food Studies have helped to bring together subjects which were never considered as having a link until now (e.g. medicine with history, economy with architecture, agriculture with sociology, neuroscience with marketing. etc.);
2. Food Studies have helped to legitimise as sciences all the “unnamed” practices associated with food. They bring forms of study and knowledge which were always considered far removed from formal education and cultural transmission, into the universities (i.e.: artisanal works, agriculture practices, family dynamics and the tools related, etc.).

The field of Food Studies requires teaching methods which start from the human experience. A teaching method based on experience means that the students are involved from the beginning in specific activities and that they themselves devise new ways of learning. The aim is to provide students with analytical tools that permit them to study food while building up sets of values that put them in a position to understand food on the basis of their own values. They need, above all, to understand how different studies of and approaches to food may be reproduced and redesigned in different cultures. The purpose is to create university courses which are neither ideological nor politically biased but which aim, rather, at training students to broaden their views in a critical way, in a field as complex as that of food and nourishment (studying it at all levels, from production to end-user phase).

Studying and analysing food means studying nutrition both as an object of human activity and, most of all, as an instrument shaping human experience. It means studying the complexity of the relationship between people and food, from the point of view of its biological, filo-genetic, ontogenetic and micro-genetic evolution. Only a study of reality in all its essentiality and diversity can contribute to promoting the discipline of Food Studies scientifically.

For solving problems: from discovery to inter-disciplinary analysis.

Increasingly more often Food Studies have influenced educational matters in other disciplinary areas, and in some cases they have caused some of them to change. It is sufficient to refer to the inclusion of the history of nutrition or anthropology courses in specifically scientific curricula like nutrition and medicine. Today teachers and researchers in Food Studies university departments collaborate almost constantly with scientists, nutritionists and policy makers, with a view to contextualising and enlarging their own research milieus. But there is one great difficulty, that of creating a common ground for communications and understanding capable of accommodating the many different points of view. The academics in question have different backgrounds and specific methodological rationales; they all expound and defend their own theses, using

different terminologies, methods and language modalities. The possession of tools by which to read all these data, although through different lenses, could lay the basis of what might be called a multi-disciplinary approach, or better still, inter-disciplinary, a solution necessary for the advancement of Food Studies.

Trans-disciplinarity is fundamental and promotes exalting flexibility among researchers, through the acquisition of solutions and procedures already rigorously explored and integrated into the research methodologies of other disciplines (from here it will be possible to model new procedures and research methods); the final product is the result of knowledge amalgamated by a principle of coherence rather than knowledge produced by contemporaneous use of different disciplines (multi-disciplinarity). The process of scientific collaboration that Food Studies need must be closer to a co-construction of knowledge, rather than consist in mere exchanges of notions and techniques (methodologies of research).

For sharing knowledge: tools for communicating research data.

Furthermore, research projects should be easy to access and understand, even by people outside of the field of Academia. The research results may not interest only a single policy maker, but be interesting for a larger audience (public and heterogeneous) or a specific geopolitical community. New methods are needed for the “framing and delivery” of research. It is necessary to plan the form and means of communication needed to support its different languages and deliver it to different types of targets, from citizens (eaters), to policy-makers, from industrialists to other scientists and researchers.

It is enough to take a look at the power of images and the way in which the different digital data-visualisation methods, that make difficult concepts comprehensible to a varied group of users, can lay the basis for dialogue and collective awareness. We find ourselves in a context where the material goods (the food produced) are always charged with conceptual, conventional values (food as a tool), differentiated from other objects and tools; on the other hand, abstract issues are continually seeking reification and objectification so as to be considered in inter-subjective and quantitative ways, and in order to maintain prestige as well as economic and social standing. It is necessary to be aware of the fact that there is a significant difference between knowledge and information; the former needs a lot of time to metabolise properly and uses an in-depth, vertical approach to reprocess, re-qualify and adapt its results, which are not usually readily or immediately available. Information, on the other hand, is direct, immediate and horizontal; it permits navigation within a multiplicity of proposals.

Food Studies are not and do not intend becoming accessory to issues related to economics or communications, sociology or psychology, as we see it. There must be a way, a means capable of identifying the origins of food values and of interpreting and conveying these values, like those of the ecosystem on which they depend (Fossali, 2008). The type of knowledge conveyed is inseparable from practices, from the experiences of the end user or groups of end users. It's necessary to produce knowledge and information easily to be shared with end-users.

In conclusion, why introducing Design courses in the Food Studies programs? In an interesting article which came out in September 2011 on Rinf.com, it was asked if it was still necessary to an Academic faculties of design, divided into different branches (critical, systemic, visualisation, information, industrial design programmes, etc.) or, if design aspires to becoming a fundamental subject in all teaching programmes: the acquisition of analytical and planning strategies does not simply facilitate understanding, forecasting and imagining, but teaches us to think (design as “ thinking design”) and to reason. Guta Maura Guedes [8] prophesises that one should begin to teach design to

children, right from their early school years: creativity and the capacity to plan, providing the possibility to change society. Human-experience design is, according to this paper, one of the skills a food expert should possess and an aspect of the profession that should, therefore, be included in Food Studies curricula. A course of this type not only impacts on the flexibility and the originality of the students' problem-solving competence, but it is essential in order to understand and know how to make the best use of the features specific media (digital and non), in different cultures.

How design education can be implemented in Food Studies Curriculum? Co-evolutionary design.

The idea proposed here, that is, that of including Design courses in Food Studies programmes, stems from the idea that digital technology and the world of interaction associated with it (food and ICTS) are already an integral part of the world of food culture and therefore should be included in programmes that study and investigate it:

- In order to study food as a product and as a cultural instrument it is necessary not only to apply inter-disciplinary methods to the field but also to examine the historical and cultural evolution of the food artefacts which have contributed most to changes in human social practices.
- Specifically, Interaction Design (is engaged in research concerning information technologies (IT) for communication, learning and complex systems) is always seeking new areas of responsibly trying to underpin a common vision, or rather, to facilitate the shaping of human-tool (digital and non) relations. The methods and practices of Interaction Design can be exploited by teachers in order to plan new training activities, new analytical methods and didactic courses which allow us to get to know the world in which we live.
- Including Food Experience Design courses in the academic Food Studies programmes can permit students to view solution-oriented planning, the production of ideas, of tools, of food-associated activities and contents in a synergetic way. Unlike the traditional approach to design, where the focus is on form and, more recently, on content and meaning, Interaction Design methods endeavours, firstly, to define how the artefacts may perform and how, in parallel, they may be expected to convey, evoke, inhibit or exalt potential components, in particular novel and emerging perceptions of humanity. Interaction consists in planning the behaviour of the artefacts and the characteristics, which this behaviour conveys. (Rizzo, 2012)

Learning to design an interaction in the field of food means being able to envisage and create models capable of supporting the abilities and knowledge of the users in relation to their social and cultural contexts. Therefore, this paper proposes the setting up of academic courses, dedicated to future food experts, interested in creating interaction between people, objects, space and in planning food experiences with the help of digital technology. The aim of a similar course would be that of planning new food-culture interaction where digital technology plays a considerable role. The key idea of Design courses for Food Studies should be to plan interactive artefacts and to create new food experiences, in which the emergent behaviour of the people becomes the true added value (Cole, 1996). The aim should be to plan new food cultures and must be developed together with the community of the user so that the new functionality will support the exigencies of the final users. The hypothetical courses should unify hands-on practice and theory. The final results can be the production of contents for the food communication systems, interactive and digital tools, new media, media for information design, new interactive narrative or visual techniques and tools, virtual environments and multimedia solutions for food activities, present and future. The planning methodology

taught in the courses will be based on a co-evolutionary process where the following phases are carried out simultaneously:

1. concept design.
2. design technology.
3. activity design.

The purpose is to teach the students in such a way that every aspect of the process depends on and influences all the others (Rizzo et al., 2003). The co-evolutionary approach to design allows a continuous enrichment of meaning to surround the core concept, as the procedure is progressive: ideas are based on connectivity and developed through the use of “metaphor” (envisioning); they are constantly checked and supervised with the stakeholders and end-users. A model of design that uses a co-evolutionary process can be developed by the students. Specifically, design can be modeled as a parallel search for both design requirements and design solutions.

Example of Syllabus: “Experience Food Design for innovative food cultures.”

Short Course description

Food, nourishment and flavour go well beyond the palate. Our era is thus the best possible time to re-qualify the cultural value of the man- food relationship in positive terms. The social relevance and urgency of a vast operation of rethinking that relationship make it one that cannot be postponed any longer; we must respond at the root to the needs and desires of people. Food culture is the most effective way of redefining the man-food relationship in concrete terms. Just think of increasingly more complex urban systems. Availing of technology, students can contribute to heightening a sense of neighbourhood, creating virtual links with authentic street life, making people prouder of a particular area or context, providing creative tools, and inventing and/or forming new communities. The city of tomorrow, the urban environment, the relational context of neighbourhoods, districts and relations with the outside, are issues of great importance today and concerning which ICT and HCI might prove to be of crucial importance. Food Experience Design means taking into account both the users and context in which they live. The cultural aspect of food, as well as the diversity of individuals in the community, can never be overlooked. Transparency and a sense of reassurance, simplification and transportability, the dilatation of time and recovery of conviviality, the definition of new paradigms for consumption and buying behaviour, are interpretative keys to people’s need of roots, territoriality and culture, that is, of interaction.

This course is motivated by the impact that digital technologies are increasingly having on tasks related to food, and the need to develop increasingly complex network systems, both local and global. The goal is to re-design food end-user experiences. The aim of the course, as well as the purpose of the concepts, will be not to suggest new products for the market, but to show how it may become possible, thanks to HCI (Human Computer Interaction) and Interaction Design methods, to go beyond the intentions of the users. By studying the interactions of positive everyday activities, future concepts will be developed. The ultimate purpose will be that of proposing some tools that may affect the future of human culture (and not simply food culture).

This course combines historical, theoretical, and experiential learning in an applied studio format with supplemental lecture, film, and assigned text presentation. The course will use Experience Centered Design approaches to the subject matter, and

active participation by the students will be an essential element of the course. No previous design skills or experience is required, but a basic knowledge of Food History or Food Anthropology is a useful starting point.

Course phases

The course consists of an initial theoretical part where the basics of interactive design are presented. The students start by analysing and studying food and the instruments of food as they developed in history and in various cultures. They work in groups on objects chosen by themselves. The students are free to choose scenarios (exploration, selection, transformation or enjoyment of food) to focus on and develop the design process. When defining their objectives, the groups will start from common experiences (close to or far from their own value parameters).

The course includes observation of users in the field and the study of how technology affects and is used in different contexts. Shared observation and ethnographical research will require the profound involvement of the users and a specific understanding of the context. Tools and research techniques such as diaries, tracing experience and 'future workshop sessions' will be an integral feature of the course. During the course, a series of co-design meetings will be organised involving the users so that concept projects may be planned immediately around daily experience. Various levels of control and assessment are envisaged with the intervention and direct involvement of the stakeholders and the end users.

Course Methods

Future workshop sessions. Future Workshop, a method whereby students envision and design the interactions between current and future technology and activity. The Food Experience Design course will include three structured workshop sessions:

- First workshop session (brainstorming phase): While studying the activities of the user, an analysis must be carried regarding the technologies available and which may be best suited to the artefacts in question. (Different questions can be used to start the brainstorming: i.e. What we value? What special local food/eating things do we need to protect and enhance now and into the future? What we can create to enhance or design food cultures? What will economic, social and environmental prosperity in the food field mean to us?) The benchmarking operation involved, envisages the examination the best-qualified technologies to employ, by examining the most outstanding and interesting examples provided by similar projects, from which it is possible to draw inspiration.
- Second workshop session (intermediate phase) "students will collaborate to envisage future activities related to technology design, build models of the contexts of use for future technologies, act out scenarios of use for their models, re-conceive their scenarios in relation to present-day technologies, list problems with implementing the scenarios, explore the gap between current and future technology and activity, and end by listing requirements for future technology" (Vavoula & Sharples, 2007, p.2). Students diaries are an excellent source of data. The solicited diaries are guided by a set of open-ended questions designed to encourage students to focus on daily activities (eating, buying, producing, transforming food and reflect on the social and human food values).
- Third workshop session (final phase): the concepts validation. Concepts validation is a process of presenting design concepts to users (and to other groups of students) to discover whether the users feel that these concepts address their food needs, desire,

ideas, eating habits and values. It also allows us to get feedback from users on ideas. The combination of validation of user need and feedback from users can then be used to narrow down the most interesting design concepts (3-4 concepts maximum for each group of students).

The main goal of using Future Workshops is to understand the possibilities for interactions between new technologies and emerging activity in the future. Students have the opportunity to analyse the role different technologies will come to play in people's lives, by problematising whether, and if so how, people's aspirations might be satisfied by technology.

Co-Design Meetings

In brief, the first phase of Food Experience Design course for Food Studies should focus on users and their activities. The main aim of this phase is to identify the needs and the opportunities capable of promoting the concept design phase, where the principal sources of inspiration and all the requirements of the project are established. It is important, right from this phase, to involve the end-users and, if possible, a project reference community, availing of different techniques, including interviews, focus groups and ethnographic observation. Only through the study of the needs expressed by stakeholders during similar researches it will be possible to identify the direction and the objectives that will direct the design project.

The generation of concept. It is therefore developed parallel to user-analysis and investigation of technological devices, availing dynamically of the input emerging from brainstorming sessions, from the study of context and from the benchmarking of technology (in order to define the aims and constraints, progressively and in greater detail). Producing a series of concepts, organised in scenes, serves, ultimately, to define and represent the aims of the project in narrative form, ready to be used or developed in the successive stages of the programme (Rizzo & Bacigalupo, 2004) and its implementation.

Design Heuristic Guidelines

A number of heuristic guidelines are provided to the students (i.e.: educate the users & help users be creators, help users to be "hometelligent", be hyper-local & create local networks, ...) to delineate new food exploration, selection, transformation and fruition experiences. The heuristic design is not meant to be rigidly binding, but aimed simply at defining, with greater accuracy, the project's domain and context, that is, food, both as a medium and product of culture. Whatever the form or the size of the food objects and instruments of the future assume, students have the task of working and planning for the entire world, to communicate and enrich the lives of people by exalting their emotions, their movement in space, profundity and freedom of interaction and the acquisition of knowledge.

Conclusion

If the discipline of Food Studies (in the most mature sense possible) serves to broaden the horizons of definitions of food, it is obvious that it must also take into account the impact and the role of technology and artefacts on the evolution of social practices, directly or indirectly related to food. Technology has always impacted on the value and vision of the food quality in a community. Placing the experience of the user at the centre of qualitative relationships with food means departing from the idea that there food possesses a quality and an objective value of its own, and recovering the more immaterial aspects of the emotions and suggestions associated with meals. It means studying food not just as an object of human activity but above all, as a cognitive tool,

which influences individuals and therefore defining quality for them. The quality of food is a human quality, a quality of experience. When one speaks of tradition and its renewal in the present, of memory and its reification implies invention, or better still, reinvention, re-proposing and re-functioning which the culture of food continually produces: innovation within the food experience milieu. The role of technology in this sense has always been and will continue to be fundamental.

In this paper we have explored Food Experience Design as a possible approach to the design of new food experiences. It is coming to the fore as a potential tool of investigation, planning and evaluation, to be availed of in connection with all types of Food Projects. Food Experience Design considers the pervasive nature of food, beginning with the different socio-cultural backgrounds that impact on it, and studies levers capable of creating new rituals and influencing human nutritional choices.

Design courses will set out in a dynamic manner to carry the weight of the technological evolution and innovation impacting on relationships between people and food. Designing through Food Experience Design shows how it is possible to connect people to others by availing of technological products and services now a common feature of our lives. It means starting from a project of culture and creating unlimited connections between users, machines, interfaces and other users. And not only that. Implementing Design in the food field means not only making technology easier and more fun to use but, most of all, studying people's behaviour and evaluating how to exalt and re-structure it. Tomorrow's communities need new, flexible and different modes of cultural mediation, like the research and implementation methods that design itself needs to be able to outline them. Introducing design courses in the Food Studies curriculum can provide the students the opportunity to be the moderators of the exploratory sessions, the users during the phase devoted to collecting comments and opinions, the designers during the creation and examination of the different scenarios studied. This acknowledgement can change Food Studies curricula development, making them more creative by emphasizing individuals' existing resources, their capacity to think and create innovations. Further research is needed to understand how design thinking and learning can have an impact on the effectiveness of Food Studies based learning programs.

Notes

1. Prof. Alice Julier is the director of Food Studies at Chatham University. Her suggestion was extracted from PhD thesis feedback on "Food Experience Design. Designing interaction for new food culture" by Sonia Massari.
2. According to IDEO rationale, a designer need not be an expert in any specific field, but must be able to apply interaction design techniques and methods to all sectors, with the help of experts in the various fields.
3. From A La Carte by Guigoni (2004), consultable online at <http://www.etnografia.it>.
4. The word Eat-ertainment is the combination of terms as Eating and Entertainment.
5. The Association for the Study of Food and Society (ASFS) in USA.
6. Amy Bentley is a professor in Food Studies at the University of New York. She is considered the first "Food Studies" professor ever in the US.
7. From a reflection by Prof. Alice Julier.
8. She is the President of Esperimenta, an international association of design based in Lisbon.

References

- Antonelli, P. 2008. *Design and the elastic mind*. New York: The Museum of Modern Art.
- Antonelli, P. 2011, *Talk to Me, Design and the Communication between People and Objects*, New York: The Museum of Modern Art.
- Bagnara, S., & Pozzi, S. 2008. Fondamenti, Storia e Tendenze dell'HCI. In A. Soro, *Human*

Computer Interaction. Monza: Polimetrica International Scientific Publisher:17-45

Belasco, W., Bentley, A., Biltekoff, C., Williams-Forson, P., & Dela Pena, C. 2011. The Frontiers of Food Studies. *Food And Culture Society Journal*, 14 (3), September: 301-313.

Cole. 1996. *Cultural Psychology A Once and Future Discipline*. Cambridge:Harvard University Press.

Fossali, P. L. 2008. Sette condizioni per le Scienze Gastronomiche. *Scienze Gastronomiche Il piacere di pensare il cibo*, 4:54-86.

Grimes, A., & Harper, R. 2008. Celebratory Technology: New Directions for Food Research in HCI. *CHI2008*. Florence: ACM:467-476.

Rizzo, A. 2012. On Mediation and Play. In *Encyclopedia of Human Interaction Design*.

Rizzo, A., Del Monte, M., Rubegni, E., & Torsi, S. 2009. The interplay between sensory- motor and intentional affordances. *Workshop on Children & Embodied Interaction*. Como: Alissa Antle at IDC09.

Rizzo, A., Marti, P., Decortis, F., & Moderini, C. 2003. The POGO story world. In E. Hollnagen, *Handbook of cognitive task design*. London: Laurence Erlbaum.

Vavoula, Giasemi N., & Sharples, M. 2007. Future Technology Workshop: A Collaborative Method for the Design of New Learning Technologies and Activities. *International Journal of Computer Supported Collaborative Learning*, 2(4), December