# The Kitchen of the Future

## Somewhere Between Sci-Fi and Social Design

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> "If all art forms were to disappear, the noble art of cooking would remain."
> (Daniel Spoerri)

It is well known that in the world of Star Trek the "kitchen" consists of a single device, the replicator, which in the 24th century, when addressed, dished up any meal requested within seconds and spares the crew of the Enterprise cooking and washing up. Unlike the practical, but from a culinary point of view somewhat unsatisfying inventions of the early 21st century – for example the liquid food *Soylent* and the food powder *Bertrand* – which are intended to replace traditional meals completely,[1] the replicator enables any object, the atomic structure of which has previously been recorded or programmed, and as such food and meals, to be replicated, in other words reproduced. In the Star Trek world there is therefore no need to drink nutritive solutions, swallow pills, or stir powder to make a mash in order to subsist. You still can eat.

The replicator would also, for example, be able to recreate a retro-menu with several courses à la Eckhard Witzigmann, the "chef of the 20th century"[2], in the space of just a few seconds. To some extent at least, if we are to believe the critics of replicator technology living on the Enterprise, who complain that synthetizing meals at molecular rather than quantum level is the reason why replicated meals taste worse than "real" food.

People living in the 21st century, who are eating ever more convenience meals that are industrially produced according to adapted recipes

**1** | These and similar "foodstuffs" promise to completely meet our nutritional requirements, i. e., they contain all the nutrients the human body – according to present-day medical science – needs to function properly. With a diet of means such as these, the social component of eating plays just as little a role as culinary aspects.

**2** | Alongside Witzigmann, only three other chefs have to date been awarded the title "Chef of the Century" by the renowned restaurant guide *Gault Millau*: Paul Bocuse, Frédy Girardet and Joël Robuchon.

for classic dishes and which are just heated up in the microwave at home or in the office, know full well that replicating comes nowhere close to the original. Providing you have some knowledge of cooking and are not totally dispassionate about it, veal goulash prepared from scratch will always taste better than one that has been industrially replicated. Nonetheless, almost all answers to the question of how we will feed ourselves in the future primarily suggest technological solutions which will replace cooking or at least make it radically easier. The vision of tomorrow's kitchen is of a high-tech-laboratory, crammed full with talking refrigerators, self-cooking stoves and sous vide appliances controlled by smartphone, which just as much take off our hands the work cooking always entails as the sensual experiences handling food can involve.

## The Kitchen Paradox or How Convenience Food Makes the New Desire to Cook Possible at all

At the same time trend researchers and dietary sociologists are saying that cooking is reinventing itself, that young people in particular are standing over pots and pans again, spending hours strolling round and buying from weekly markets and helping out in communal gardens, so as to be able to prepare their meals using genuinely fresh produce.

The apparent paradox of the increasing need among lots of people for the sensual experience of cooking and eating, although ever more ready and semi-prepared meals are being sold disappears quickly if we appreciate that it is the triumphant march of convenience food, the microwave, the dishwasher and fast system catering itself that is creating the conditions for this new desire to cook, bake, and preserve. Liberated from the tiresome task of daily cooking to feed the family, which women in particular saw themselves subjected to until well into the 20th century, it was not until the beginning of the 21st century – in a society geared to individualization and self-realization – that a passion for cooking was able to develop again. For cooking that did not serve to feed mouths every day, but that is a counter to de-sensualized computer work, is a social event, as a tool for performance accomplishments and social distinction.

With this change of cooking's function, our kitchens are changing too. Whereas until into the 1990s the lounge was a showpiece that spoke for us, nowadays we often express our identity through the kitchen. It is the place that says who we are or want to be. As such, design-wise it has long since not been enough for it just to be a functional space that serves the preparation of meals under as effective conditions as possible. Nowadays it should also be fit to express our personality: Our status as connaisseurs or our conscience with regard to resources and the environment, our passion for cooking or health awareness, our down-to-earth attitude or extravagance in culinary matters.

The kitchen is also becoming a multi-tasking space, where people work and make phone calls, do homework and discuss projects; even in homes

with a conventional footprint, in which there is often insufficient space for the kitchen in its new role. Because even if with changing lifestyles the way homes are divided up into classic, one-dimensional functions (cooking here, eating there, working here, learning there, watching TV here, resting there, bathing here, sleeping there) has become anachronistic, the size of kitchens is not automatically increasing. This applies not just to old buildings. With regard to new housing as well, the growing cost of homes and increasing awareness of the environment have reversed the trend: Whereas over the past decades homes became bigger and bigger, the number of square meters per person is now falling and will in future continue to do so, first and foremost at the cost of spaces intended to serve a single function. For this reason the kitchen will once again become multi-purpose, communal space: lounge, workspace, and playroom, for which it also needs totally different "kitchen furniture" that is fit not just for cooking. Innovative engineering makes it possible to integrate the hot plate in a desk or transform a desk into a stove[3] (fig. 1–3). Furthermore, at the flick of the wrist furniture with greater flexibility can make space for other activities, and smart new kitchen appliances not only save space, but also make cooking easier and more productive, such that on the side you can work on your laptop, help your kids with their homework, or play.

Fig. 1

Fig. 2

Fig. 3

**3** | Functional cooking tables, which at the same time can be used as a hob, dining table or desk, and as such as a communication and multimedia information zone, no longer feature only in theoretical designs (http://www.moritzputzier.com/the-cooking-table, accessed on Nov. 21, 2016), but are also included in the ranges of well-known manufacturers of kitchens and kitchen appliances such as Miele and Bulthaup (http://www.mega-kuechen.ch/bulthaup/news-bulthaup, accessed on Jan. 26, 2016).

## As a Social Event Cooking Inspires Design Ideas, Which as Social Design Go far Beyond Mere Object Design

Tomorrow's kitchen will not only integrate nature and engineering symbolically. It will become a place where food is not only stored as well as possible, prepared, and eaten, but also cultivated and the organic waste recycled for further use as compost or biogas. Several good reasons speak in favor of this: Ecological and health-related ones, just as much as less (at least perceived) dependency on the food industry, but primarily the pleasure of gardening and experiencing nature (fig. 4). And because vegetarian cuisine in particular produces a lot of organic waste, engineers and designers are searching for efficient, resource-saving solutions for the "waste problem": Though ideas such as the bio-converter kitchen island for producing the gas for cooking from waste produced in the kitchen are still future dreams, they are an indication of the way things are going.

Fig. 4

In future, changed eating habits and diets will influence how kitchens are designed and fitted out. Whereas microwaves and deep fat fryers fit the bill superbly for convenience food, when it comes to vegetarian and vegan cuisine there are totally different requirements in terms of fittings, work areas, and appliances: in most cases, more ingredients have to be cleaned, washed, and chopped up, more space is needed for sprouting glasses and more and better storage containers for spices. And, of course, there ought to be room for a grain mill and a climatic cabinet, in which herbs and lettuces can be grown regardless of the season.[4]

**4** | In collaboration with a professional chef, Austrian designers have designed a model kitchen for vegetarian cooking (www.vooking.at, accessed on Jan. 26, 2016). Numerous start-ups, as well as established companies are working on indoor gardening concepts, which will make it possible to grow herbs, shoots, and vegetables in small kitchens as well (see for example https://grovelabs.io/, accessed on Nov. 21, 2016).

Fig. 5

Fig. 6

Fig. 7

Whether another piece of equipment that is currently getting a lot of hype – the 3D food printer – will be the rage in the kitchen of the future will depend on whether it is able to trigger innovations with regard to eating and diets. The first, soon to be ready for market products – e. g., the 'Bocusini' by the German company Print2Taste GmbH, which is explicitly being advertised as a "plug&play food printer" are targeting playful uses: Decorating Grandad's birthday cake with sugar lettering in his 8-year

old granddaughter's handwriting, serving mashed potato shaped like an octopus with tentacles and bulging eyes, or draping intricate marzipan patterns over an ice cream dessert.

Of greater interest in this respect is the approach adopted by the British designer and researcher Susana Soares, who in the course of her 'Insects Au Gratin' project[5] "feeds" the 3D printer with basic products that are not exactly commonplace in our diet, namely insects, which are turned into flour and mixed with cream cheese before coming out of the printer as high-protein decorative "biscuits". Not least of all the project is a reminder that it is often only new technologies that make valuable basic products out of available resources. Just as the invention of the combustion engine once created a meaningful and profitable use for oil, for which apart from as fuel for petroleum lamps there had previously been none, the 3D printer could make it possible to use a readily available source of protein in the the human diet; even for those of us who do not exactly relish the idea of biting into a locust or eating mealworms. The first devices suitable for breeding insects and mealworms at home and thus turning the kitchen into a protein production plant that will cover our own needs are now ready for series production, and will be available during the course of 2017.[6]

Apart from the technological advances, the kitchen of the future opens up a totally different social perspective that goes beyond families and households: Pre-arranged communal cooking in large neighborhood kitchens, in corporate communal kitchens, in which cooking becomes a regular part of team building activities, or in commercial communal kitchens, of which until late 2015 Jamie Oliver ran the successful prototype in the form of his 'Recipease' in London's trendy Notting Hill district. These kitchens are not primarily about food intake, but about the experience of cooking and eating together. In them it is not meals that are replicated, but rather a human practice that goes back thousands of years.

**5** | See www.susanasoares.com/index.php?id=82, accessed on Nov. 21, 2016.

**6** | The products "Farm432" and "The Hive" (fig. 5–7) were developed by the Austrian design studio "Livin" and are currently being produced in Hong Kong (see http://www.livinstudio.com, accessed on Nov. 21, 2016).