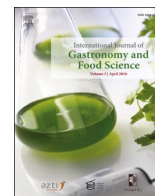




Contents lists available at ScienceDirect

International Journal of Gastronomy and Food Science

journal homepage: www.elsevier.com/locate/ijgfs

Scientific paper

Plating influences diner perception of culinary creativity

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ARTICLE INFO

Keywords:

Visual composition
Plating
Culinary creativity
Gastronomy
Diner characteristics

ABSTRACT

Creativity, defined as the ability to create an object that is both novel and context-appropriate, has received prolific attention in experimental psychology in the fields of the arts, literature, engineering and architecture. Although creativity plays a vital role in haute cuisine, how diners perceive and evaluate culinary creativity in plated dishes remains underexplored. We report a study in which diners were asked to evaluate 16 different platings of the same dish by two chefs in terms of creativity, appropriateness to context, novelty, and overall liking. The dishes were photographed and presented on a computer monitor in a fine-dining restaurant setting. Balance of overall composition on plate, position of main item in composition, and color were systematically manipulated to investigate the effect of these plating-related variables on diners' ratings of culinary creativity. The results show that creativity ratings were influenced primarily by appropriateness ratings and less so by liking and novelty ratings. Regarding the overall composition, diners found colored balanced platings to be more creative than colored unbalanced platings and monochrome platings. Regarding the position of the main item in centrally plated dishes, diners found colored dishes with the main item in the back (12 o'clock) to be the most creative. A content analysis of free-format descriptions provided by the diners revealed that diners also took into consideration culinary skills and techniques as well as esthetic or art-related criteria (e.g., harmony, symmetry) in assessing culinary creativity. At the theoretical level, the results shed light on the respective weight of the novelty and appropriateness criteria in diner perception of culinary creativity. At the practical level, the results can inform chef practices by predicting diner perception and providing new insight in how to develop innovative and creative dishes.

Introduction

Creativity and culinary creativity

In studies of creativity in the context of the arts, literature, engineering and architecture, both naïve and expert participants point to novelty and appropriateness as key criteria by which to judge creativity (Amabile, 1982; Lubart et al., 2003). A novel object is one that is original and unexpected. It can be novel to varying degrees depending on how much it deviates from previous objects. The object intended as creative must also be context-appropriate, that is, it must meet various requirements related to planned situations. According to Lubart et al. (2003), the importance of the appropriateness criterion to creative production is domain-specific. For instance, it carries much more weight in the engineering field (e.g., civil construction) than in the arts.

In the culinary domain, Horng and Lin (2009) sought to devise a

tool to assess culinary creativity based on the Consensual Assessment Technique (CAT) developed by Amabile (1982). To this end, they asked nine culinary experts to assess student products in Chinese cuisine. Based on their interviews with these experts, the authors developed a matrix of culinary creativity criteria along two dimensions: creativity (which included the subcategories of novelty, usefulness-appropriateness, and balance-harmony) and presentation (which included professional preparation and techniques, flavor and seasoning, ingredient manipulation and design). In other words, the criteria of novelty and appropriateness were found to be relevant also to the assessment of culinary creativity. Appropriateness in the context of a fine-dining experience centered on the act of eating refers to the fact that dishes must meet various requirements in terms of cooking, plating and service.

Creativity has been a driving force behind the development of haute cuisine around the world (Beaugé, 2012; Hetzel, 2004). Chossat and Gergaud (2003) examined the quality determinants of fine-dining

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<https://doi.org/10.1016/j.ijgfs.2017.11.006>

Received 3 July 2017; Accepted 18 November 2017
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restaurants in the Gault and Millau guide (2000 edition). They stressed the fact that in French culinary tradition, creativity was linked to the traditional culinary arts merging with food science, art and culture. Peng et al. (2013) interviewed 36 academic chefs and educators experts in Chinese and Western cuisine on the subject of culinary creativity. Their results showed that chefs associated culinary creativity more with technical skill than with creativity in general. Most of the chefs highlighted the fact that culinary creativity rested on fundamental cooking skills and principles, such as knife handling, cooking methods and history, but also on more fundamental knowledge, such as food science and hygiene. Chefs also reported that culinary creativity sprang from adding to traditional dishes in the aim of broadening and breaking with tradition and of surprising and satisfying diners. Finally, Stierand and Dörfler (2012) conducted interviews with 13 chefs from different countries (United Kingdom, Spain, France, Australia and Germany) to investigate the concepts of creativity and innovation in haute cuisine. Most of the chefs referred to the notion of harmony using metaphors and references to the visual arts. They explained that harmonious dishes were composed of three or four main ingredients at most and that the overall outcome had to reflect the chef's signature plating style. Composition, proportion and contrast (visual, olfactory and gustatory) emerged as important criteria. However, there was no consensus among experts regarding culinary creativity, which Stierand and Dörfler, p. 948) (2012) went on to describe as a "nebulous phenomenon".

Despite this lack of consensus, there is a growing trend in fine-dining restaurants to position elements in a plate in an unbalanced or asymmetric fashion (Spence et al., 2014). This has been recently investigated in several studies that have shown, for instance, that unbalanced compositions are perceived as more creative by some contemporary chefs (Velasco et al., 2016). Furthermore, based on interviews with chefs, Fernandez et al. (2015) found that fine-dining restaurants no longer applied the classic presentation rule of placing the main item (i.e., the protein) of a composition in the front (6 o'clock). Regarding color, Abrams (2013) highlighted that gourmet dishes were generally composed of several colors, although many chefs felt that an elegant dish rarely comprised more than three or four (Fernandez et al., 2015; Germain, 2015). Finally, some chefs in fine-dining restaurants have reported finding monochrome dishes creative (Deroy et al., 2014; Germain, 2015). In short, these two factors appear to be important considerations in evaluating culinary creativity.

To summarize, a creative culinary product must be novel and appropriate, although other factors seem to be critical in the context of haute cuisine, including not only technical skill and technique, but also personal culture and artistic elements such as harmony, balance and symmetry (Abrams, 2013; Horng and Lin, 2009; Michel et al., 2014, 2015; Stierand and Dörfler, 2012; Zellner et al., 2010).

While the concept of culinary creativity has been partially investigated with chefs (Horng and Lin, 2009; Peng et al., 2013; Stierand and Dörfler, 2012), the perspective of diners remains to be explored in greater depth. After all, diners being the target audience of fine-dining restaurants, their perception should be taken into account in designing a pleasant dining experience (Michel et al., 2014). According to Spence and Piqueras-Fiszman (2014), the growing attention paid nowadays to the visual composition of dishes goes beyond the mere desire to serve food in an enjoyable form. Ingredient properties are now manipulated as structural elements used to create a unique dish.

Culinary creativity according to diners

A number of recent studies have explored how diners perceived different platings. Using photographs in a laboratory setting, Zellner et al. (2010) investigated food attractiveness, willingness to try, and general food liking in four types of composition: monochrome-balanced, colored-balanced, monochrome-unbalanced, and colored-unbalanced. The authors examined whether balance and complexity

(i.e., more color) affected the attractiveness of food as much as they affected the attractiveness of works of art. They found that color increased the attractiveness of balanced compositions but did not affect the attractiveness of unbalanced compositions. Participants were also more willing to try food in a monochrome composition than food in a colored composition. Velasco et al. (2016) also investigated how balance in different compositions of exactly the same ingredients influenced customer preference. Their experiment was conducted online or via an interactive digital platform during a museum exhibit. Their results evidenced a clear preference for balanced presentations over unbalanced ones (asymmetric plating). Like studies conducted with chefs, these two studies showed color and position to be key plating-related parameters. However, the outcome considered was client appreciation of dishes and not culinary creativity.

In a naturalistic dining context, Michel et al. (2015) investigated whether composition (balanced vs. unbalanced) influenced judgment regarding the "artistic value" of food plating, willingness to pay, and overall liking. Main courses were liked more and considered more artistic when the various elements were balanced rather than unbalanced. The participants also reported a willingness to pay significantly more for balanced plating than for unbalanced plating. Zellner et al. (2014) also used a naturalistic dining context to compare diner judgment of two types of composition: classic, where food items were arranged in different quadrants of the plate, and contemporary, where food items were arranged in a spiraling pattern. Diners reported a preference for contemporary compositions and considered these more attractive compared with classic ones. In short, these two studies demonstrated that plating influenced diner perception and appreciation of complex dishes in an ecological setting. However, once again, the focus here was not on how culinary creativity was perceived. In other words, the relationship between "artistic value" and creativity still remained to be investigated.

To summarize, previous studies have shown diner perception of complex dishes to be influenced by plating parameters such as ingredient position and color. However, no study has ever focused on creativity judgments. Against this background, we undertook a study with a twofold objective. First, we investigated the extent to which the definition of creativity proposed in the literature applied to the culinary domain. This definition has been tested in a variety of domains (e.g., arts, literature; see Lubart et al., 2003, for a review). The few existing studies of creativity carried out in the culinary field have focused on how it is perceived by chefs. We sought to extend this investigation to diner perception of culinary creativity and the related concepts of novelty and appropriateness that emerge from the literature. Second, previous studies conducted with diners have highlighted the influence of plating on their judgment of artistic values, willingness to pay, and overall appreciation or liking of food. We hypothesized that plating (color, balance of overall composition in plate, position of main item in composition) would also influence diner creativity judgments just as they have been shown to be related to culinary creativity in studies conducted with chefs. To test our hypotheses, we asked fine-dining restaurant clients to rate dishes in terms of creativity, appropriateness to context, novelty and overall liking. The dishes were created for the study by two chefs with experience in fine-dining restaurants. They were instructed to create dishes that varied in terms of three plating-related variables: balance of overall composition in plate (balanced vs. unbalanced), position of main item in composition (front vs. back), and color (colored vs. monochrome). The dishes were photographed and presented to the diners on a computer monitor in a semi-naturalistic dining context.

Methods

Participants

The study took place in the restaurant of the Institut de tourisme et

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