

What makes the hedonic experience of a meal in a top restaurant special and retrievable in the long term? Meal-related, social and personality factors.

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Abstract

Knowing what makes a top gastronomy experience unique and retrievable in the long term is of interest for scientific and economic reasons. Recent attempts to isolate predictors of the hedonic evaluation of food have afforded several factors, such as individual and social attributes, or liking/disliking profiles. However, in these studies relevant variables have been examined in isolation without an integrative perspective. Here we investigated 80 guests enjoying a 23-course meal in a top gastronomy restaurant, in groups of four. Our main question concerned the factors driving the overall evaluation of the meal at its conclusion and after three months. To this aim we administered the Big Five Personality Inventory before the meal, dish-by-dish hedonic ratings, and a multi-dimensional Meal Experience Questionnaire (MEQ) at the end of the meal. Hedonic evaluations of the meal were collected immediately after the meal and three months later. Better immediate overall evaluations were predicted by both the number of peaks in dish-by-dish ratings and by positive ratings of the final dish. Both factors and the number of troughs were also critical for the long-term evaluation after three months. The MEQ dimensions overall interest, valence and distraction predicted immediate evaluations, while the long-term evaluations were determined by interest and high scores on the personality traits agreeableness and conscientiousness. High consistency of the hedonic ratings within quartets indicated the relevance of commensality for the meal experience. The present findings highlight the simultaneous relevance of food- and personality-related factors and commensality for a top gastronomy meal experience in the short and long-run. The uncovered relationships are of theoretical interest and for those involved in designing meals for consumers in various settings.

Keywords: Top gastronomy, Hedonic assessment, Affective memory, Social interactions, Individual differences, Peak-End profiles.

Introduction

Top gastronomy aims to create unique experiences by providing delicious and/or unusual dishes together with special environments. Technological and conceptual innovation has led to the creation of astonishing meals with fascinating and often delightful textures and flavours (e.g., Barham, P., Skibsted, L.H., Bredie, W.L., Frøst, M.B., Møller, P., Risbo, J., Snitkjaer, P., Mortensen, L.M., 2010; Myhrvold, Young & Bilet, 2011; Vega, Ubbink, & van der Linden, 2012). Modern cuisine tries to captivate diners' and critics' increasingly demanding tastes. In the best case, the creator-consumer dyad maximizes both innovation and satisfaction. Top gastronomy is gaining momentum, particularly in tourism and entertainment, if it provides an intrinsic primary benefit or fundamental utility by eliciting strong hedonic responses, such as pleasure and joy (Carroll & Ahuvia, 2006; Hirschman & Holbrook, 1982; Kahneman & Tversky, 1984).

Understanding the determinants of gastronomic experiences is of interest for both commercial and scientific reasons. Knowledge about the factors contributing to customer satisfaction in restaurants may enable chefs to create more attractive meals and restaurant conditions. For science, top gastronomy is an excellent study case to unravel cognitive and emotional aspects of experience and behaviour in outstanding situations, potentially going far beyond gastronomy, providing valuable guidelines for the design also of other experiences (Benz, 2014). Knowledge from both science and economics can be useful to evaluate and improve overall satisfaction in many situations (Fredrickson, 2000). Top gastronomy often pleases and sometimes even amazes the diner with exciting, stimulating, and enjoyable experiences, engaging sensory, cognitive and affective systems, motivating pleasure-oriented behaviours (Alba & Williams, 2013). One should therefore expect that the experience of meals depends on multiple factors, such as the personality of the diner, social interactions during the meal, autobiographical memories, perceptions of food, and the environment (for early and principled treatments see Holbrook & Hirschman, 1982; Klinger, 1971; for a recent review see Spence and Piqueras-Fiszman, 2014).

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61
62 However, as discussed below, many of these aspects remain to be investigated, a task that is
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64 challenging because of the problems of controlling and measuring multiple factors in realistic
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66 contexts. Hence, the present study aimed at identifying several under-studied but potentially
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68 important determinants of the overall hedonic experience of a meal in a top restaurant, by taking
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70 into account: a) *food-related cognitive* and *affective* variables, b) *individual differences* in
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72 personality, and c) *commensality* or *grouping effects* during the mealtime. We focussed on these
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74 factors because previous research has left many open questions about their contributions to the
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76 meal experience (see below). This is of course not to say that other factors such as the
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78 atmosphere of the restaurants, the interactions with the staff, etc., are irrelevant. However, such
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80 factors have partially been studied before (for review see Spence & Figueras-Fiszman, 2014), or
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82 do not lend themselves easily to empirical investigation in a setting as the one employed here
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84 because of low levels of variability (e.g. influence of atmosphere in one single restaurant).

85 86 87 **Food-related factors of cognitive and affective experience**

88
89 One of the most salient goals of modern gastronomy is to provide a wide range of
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91 multisensory experiences (Agapito, Mendes, & Valle, 2013; Alba & Williams, 2013; Holbrook &
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93 Hirschman, 1982; Spence & Piqueras-Fiszman, 2014). Several sensory modalities contribute
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95 simultaneously to the meal's global experience. Therefore, food-related sensory complexity is of
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97 particular interest (Mak, Lumbers, Eves, & Chang, 2013; Schacht, Łuczak, Pinkpank, Vilgis, &
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99 Sommer, 2016), including taste and smell (combining as flavours), the visual appearance of the
100
101 food, the sounds produced by chewing and somatosensation of texture and temperature. Such
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103 multisensory experiences may elicit strong subjective interest, satisfaction and engagement
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105 (Cardello, 1997; Cardello et al., 2000; Giese & Cote, 2000; Sørensen, Møller, Flint, Martens, &
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107 Raben, 2003). Some of these experiences tend to be more pleasurable than others (e.g. sweet vs.
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109 bitter tastes), but strongly depend on the individual preferences and other factors (Alba & Williams,
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111 2013; Logue, 2015). Rich contrasts in mouthfeel, based on textures, flavour or temperature, induce
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113 deep sensations eliciting curiosity and surprise (Biggs, Juravle, & Spence, 2016; Slocombe,
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115 Carmichael, & Simner, 2015; Spence, 2016).

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121 Multisensory factors may interplay with collative-motivational properties, like novelty,
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123 uncertainty, aesthetic experience, and arousal (Berlyne, 1971), motivating the diner to evaluate the
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125 current experience relative to past experiences. This might result in exploratory behaviour related
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127 to the meal (Berlyne, 1960; Howard & Sheth, 1969). Thus, Berlyne suggested that rewarding
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129 stimuli induce some degree of arousal, which may bias attention towards these stimuli (Berlyne,
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131 1967), potentially triggering strong hedonic responses (Levy, 1981; Belasco, 2008). Moreover,
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133 expected rewards, compared to previously experienced reward, may also be an important source
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135 of attentional bias (Pool, Brosch, Delplanque, & Sander, 2016). Hence, the attention to the food
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137 may influence how it is judged (Higgs, 2015). Further, episodic memories of specific meal
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139 experiences affect food choices and decisions about how much and when to eat (Higgs, 2016).
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141 Certainly, both food-related motivation (e.g., expectancies about the novelty of the menu, cooking
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143 innovation, etc.) and perceptual factors (textures, flavours, tastiness, etc.) are biasing the diner's
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145 attention, not only in the immediate and long-term assignment of hedonic value (Kumar, Higgs,
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147 Rutters, & Humphreys, 2016) but also in making follow-up decisions, for example, about revisiting
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149 or recommending the restaurant to others.

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151 For measuring the subjective experience of meals, several questionnaires have been
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153 developed. Thus, the Mindful Eating Questionnaire (Framson, Kristal, Schenk, Littman, Zeliadt, &
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155 Benitez, 2009) measures the degree of awareness and distraction during the meal. The
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157 questionnaire of Hartwell, Shepherd, Edwards, & Johns (2016), focused on the sensory
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159 components of the meal experience (food quality, taste of food, temperature, etc.). More recently,
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161 some of the present authors developed the *Meal Experience Questionnaire* (MEQ) (Sommer,
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163 Fliedner, Schacht, & Hildebrandt, *in prep.*) to measure the meal experience on several
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165 dimensions. The MEQ has five scales: (1) *Distraction*, the degree of attention towards or
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167 distraction from the food, (2) *Interest*, describing how boring vs. interesting the food was, (3)
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169 *Subjective well-being*, measuring mood from negative to positive, (4) *Valence*, that is, the degree
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171 to which the food was pleasing, and (5) *Sensory Experience*, measuring sensory quality from poor
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173 to good. For details of the MEQ please see below.
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180 Questionnaires are suitable to evaluate the meal experience at a single time point, primarily
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182 after the meal. In addition, multiple moment-to-moment hedonic judgments during a meal can track
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184 the course of experience over time concerning valence (good or bad) and intensity (mild to
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186 extreme) (e.g., Robinson, Blissett, & Higgs, 2011; 2012; Garbinsky, Morewedge, & Shiv, 2014).
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188 Most notably, the Temporal Dominance of Sensations (TDS), reviewed by Schlich (2017), is a
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190 framework dynamically tracking sensation or liking of a portion of food or drink over time. Similar to
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192 other types of experiences, it has also been shown for meals that some moments contribute more
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194 to the global hedonic judgment than others, especially when re-elaborated or consolidated in
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196 memory (Robinson et al., 2011). As an example, the dessert has been reported to be the best
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198 predictor for the wish to repeat a meal (Garbinsky et al., 2014). It seems that the most important
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200 factor accounting for long-term evaluation of an experience is not the ongoing experience during
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202 the meal, but the remembered experience (Kahneman, 2000). This remembered experience is a
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204 function of both the evaluation subsequent to the experience and the pattern of evaluations at
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206 different moments along the experience. This idea was originally evinced and modelled by
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208 Fredrickson and Kahneman (1993) in the so-called *peak-and-end rule*, that is, retrospective
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210 evaluations of an experience depend on the moments evaluated extremely (peaks) and the final
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212 moment or end state (see also, Fredrickson, 2000; Kahneman, 2000). According to the peak-and-
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214 end rule, these hedonic values of different moments during the experience define the *total utility*
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216 (global evaluation) of an experience. Weighing decisions in terms of total utility have been
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218 investigated in a number of domains like food choice or pain assessment (Cohen & Babey, 2012;
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220 Kahneman, 2000).

221 222 223 **Individual Differences and Personality Traits in hedonic experiences**

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225 Clearly, there are individual differences in the evaluation of hedonic experiences. Different cultural
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227 backgrounds, traditions, personal attitudes and personality traits may engage people to appraise
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229 such experiences in different ways at many different levels. Previous food experiences may elicit a
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231 “sixth sense” beyond the given food sensations, enabling the appreciation of irony, provocation, or
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239 misleading perceptions (Adriá & Bielskyte, 2012), which may influence hedonic ratings, depending
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241 on the biography of the individual.
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244 From a more nomothetic view, personality influences the appraisal of experience and,
245 eventually, hedonic evaluation. In this line, Chang, Kivela, & Mak (2010) and Mak, Lumbers, Eves,
246 & Chang (2012) showed that food preferences and consumption motivation largely depend on
247 food-consumption relevant personality traits, like variety-seeking and neophilia-neophobia (Aluja,
248 Garcia, & Garcia, 2003; van Trijp & van Kleef, 2008). Other psychometric tests have been
249 developed to measure individual features like negative affect, social acceptance, restrained eating,
250 and their impact on eating behaviour (Glynn & Ruderman, 1986; van Strien, Frijters, Bergers, &
251 Defares, 1986; Tangney, Baumeister, & Boone, 2004).
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259 One of the most influential theories of personality is the Big Five model (Gosling, Rentfrow,
260 & Swann, 2003; John & Srivastava, 1999; John, Naumann, & Soto, 2008), proposing five broad
261 personality traits: *Extraversion* is associated with sociability, dominance, ambitiousness, and
262 assertiveness. *Agreeableness* relates to being cooperative, caring, and likeable.
263 *Conscientiousness* is associated with persistence, dependability, and being organised. *Neuroticism*
264 relates to instability, stress proneness, personal insecurity, and depression. Finally, *openness* (to
265 experience) is associated with being intellectual, imaginative, and non-conforming. Despite the
266 conceivable relationship between personality traits like openness, neuroticism, or agreeableness
267 with the experience of an episode like a special meal, there are, to our knowledge, no reports
268 about the relationships between the Big Five personality traits and global hedonic judgements in
269 gastronomy and/or meal situations. Personality in food science has been studied mainly under the
270 aspect of health with respect to food choice and eating behaviour (e.g., Keller & Siegrist, 2015;
271 Möttus, Realo, Allik, Deary, Esko, & Metspalu, 2012; Tiainen, Mannisto, Lahti, Blomstedt, Lahti,
272 Perala, et al., 2013).
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Commensality

Although many meals, especially breakfast or lunch, are taken alone, many others (most frequently dinners; Sobal & Nelson, 2003) are commensual, that is, take place in social context. Eating together with others is a basic element of human social life (Flammang, 2009; Rozin, 2005; Simmel, 1997/1910). Also, gastronomic meals are in most cases coupled with social interactions, from choosing a restaurant according to conformity, for example, rankings in gourmet guides or social media, to sharing a meal with colleagues, family, or friends. Commensual meals are claimed to be tastier (Jones, 2007) and they are experienced as more relaxing than solitary meals and loosen cognitive control (Sommer, Stürmer, Shmuilovich, Martín-Loeches, & Schacht, 2013). The special significance of social meals is also reflected in the fact that sharing a meal with an opposite-sex person can trigger more jealousy from one's partner than having a coffee with that person (Kniffin & Wansink, 2012).

One could, therefore, assume that social interactions during a meal bias the hedonic assessments of the meal. On the one hand, verbal and nonverbal communication between diners or with the staff may distract from or even disrupt experiences, precluding in-depth perception of the food. On the other hand, there are some indications that social factors like behavioural conformity (Jones & Pittman, 1982) affect the hedonic experience. Social contagion as implicit social influence or social facilitation of sharing thoughts, ideas or memories about the meal between the diners, also seem to be relevant (Barsade, 2002; Cannon-Bowers & Salas, 2001). In fact, people dining together are likely to exchange opinions, evaluations, and facial expressions – like joy, surprise, or disgust – about the food, which can influence and synchronize the appraisal of the meal (Barthomeuf, Rousset, & Droit-Volet, 2009). Therefore, eating in company may amplify the hedonic aspects of the experience (Boothby, Clark, & Bargh, 2014; Vad Andersen & Hyldig, 2015). Furthermore, positive (and negative) feedback from co-eaters about certain dishes increases (or decreases) liking judgements and positive (or negative) attitudes towards that food (Stok, Verkooijen, de Ridder, de Wit, & de Vet, 2014; Robinson et al., 2012), as well as its subjective evaluation (Nook & Zaki, 2015). A convenient measure of the effects of social interaction in a meal experience is the intraclass correlation coefficient (ICC), quantifying the homogeneity of

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357 meal experience measures within groups (e.g., diners sharing the same meal), in contrasted to
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359 evaluations across groups.
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362 363 **The present study** 364

365 In everyday situations, an experience is most often a consequence of the joint contribution
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367 of several factors. The contributions of multiple factors are probably especially relevant in
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369 gastronomy. As a minimum, how much a diner enjoys a meal should depend on her or his
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371 openness to new experiences, the type and quality of food served in a particular order, the
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373 friendliness of the staff, and one's company. So far gastronomic science has rarely studied such
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375 factors concurrently and in realistic environments (but see Giboreau, 2017; Hartwell et al., 2016;
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377 Mielby & Frøst, 2010).
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379 In the present study, we investigated a multi-course meal in a top-gastronomy restaurant,
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381 simultaneously considering several factors deemed to be relevant for the gastronomic experience
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383 (*hedonic experience*), in twenty quartets of diners having a meal together. Evaluations of the
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385 overall meal experience were taken a) immediately after the meal, and b) three months later (long-
386
387 term memory). Participants also completed a set of questionnaires, before, during and immediately
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389 after the meal. Applying a multilevel modelling approach, we were interested in how each of the
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391 following factors affects the evaluations of the meal, both immediately after the meal and three
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393 months later: 1) moment-to-moment hedonic evaluations of each individual course of the meal,
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395 analysed according to principles of utility; 2) the decomposition of the immediate experience into
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397 various dimensions as measured by the MEQ; 3) personality traits of the diners. Finally, we
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399 considered 4) the cohesiveness of evaluations within and between quartets, in order to assess the
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401 contribution of commensality on the hedonic experience.
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403 **Methods**

404 **Participants**

405 Participants were 20 quartets, each consisting of two women and two men, who knew each
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407 other, and had made an online reservation for a dinner for four. No attempt was made to
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409 systematically assess the nature of the relationship between the members of a quartet.
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416 Importantly, at the time they made the reservation they did not know about our study. Mean ages
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418 of the 40 men and 40 women were 46.0 ± 8.4 and 44.5 ± 9.1 years, respectively, ranging from 20
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420 to 60 years. A majority of the participants (63.8%) had eaten at high-end restaurants more than
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422 three times before and may therefore be considered as typical customers of such restaurants.
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424 There were no dietary restrictions of the participants at the time of the study. Two of them
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426 had nutritional incompatibilities to garlic and cheese. In their case, the menu was slightly modified
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428 substituting those ingredients without altering the main concept of the dish. Participants came from
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430 Australia ($N=6$), El Salvador ($N=4$), Great Britain ($N=6$), North America ($N=12$), Philippines ($N=8$),
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432 Portugal ($N=4$), Spain ($N=34$), Sweden ($N=4$), and Switzerland ($N=2$). All participants spoke
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434 English or Spanish well enough to understand the questionnaires and to communicate with the
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436 experimenter. As compensation for participation, the 23-course dinners (regular price: 180 Euro,
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438 excluding drinks) were offered at half-price (drinks were priced regularly). After being informed
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440 about the requisites and terms of the study, participants signed informed consent. The study was
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442 performed in accordance with the Declaration of Helsinki and approved by the ethics committee of
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444 the Universidad Complutense de Madrid (UCM).
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446 **Location and Materials**

447 The study took place in the restaurant *Mugaritz* (Errentería, Spain), awarded with two
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449 Michelin stars and rated amongst the Top Ten restaurants (according to
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451 <http://www.theworlds50best.com/list/1-50-winners>), located in a quiet rural environment; the
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453 spacious guest room holds 16 round tables for 4 to 12 guests. The four participants of a given
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455 quartet were seated at a table for four, located next to the other tables, such that the general
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457 atmosphere for our participants was the same as for the other guests. The only difference during
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459 the meal itself consisted in short questions to be answered by our participants via their smart
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461 phones, and in the presence of four web cams located in the middle of the table and each directed
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463 at one of the guests. The webcams did not obstruct visual contact between the participants. Known
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465 to them, no conversations were recorded.
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467 The same 23-course meal (see Appendix A2) was served to all participants, organized in
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469 three sections: starters, main dishes, and desserts. For the four guests in a given quartet, each
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dish was served nearly simultaneously by several waiters. Figure 1 shows one example of each section.



Figure 1. Some examples of the 23 dishes used in the study. *Left:* Hand dish - ‘*Live cannellone*’, *Middle:* Main dish - ‘*...decadentia...*’ (smoked eel and natural flowers), *Right:* Dessert - ‘*An almost impossible bite: sugary porra*’.

The guests completed the following questionnaires and rating tasks before, during, and after their restaurant visit.

A) **Personality questionnaire.** One to two weeks before coming to the restaurant the Big Five Inventory (BFI; Benet-Martínez & John, 1998; John & Srivastava, 1999) was completed in electronic form, consisting of 44 items to be answered on 5-point scales, measuring the personality traits Extraversion, Conscientiousness, Neuroticism, Agreeableness, and Openness.

Demographic data (gender, age) were also collected at this time.

B) **Questions and questionnaire during and after the meal.** Via an online platform installed at the participant’s mobile phones questions were posed that were to be answered on Likert scales ranging from 1 to 10:

(1) *Moment-to-moment hedonic ratings* after each dish (from “I very much dislike it” to “I very much like it”).

(2) *Immediate hedonic ratings* about the whole meal (from “very bad” to “very good”) were obtained directly after the meal.

(3) *Long-term hedonic ratings* about the whole meal (from “very bad” to “very good”) were collected online three months after the meal.

The *Meal Experience Questionnaire* (MEQ, Sommer et al., *in prep.*) was completed after the meal, following the immediate hedonic ratings. The MEQ is currently been developed and

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533
534 evaluated for its psychometric quality in a larger sample of $N = 293$ persons in total, who
535 completed the questionnaire in different meal taking context (everyday canteens and high-end
536 restaurants). Based on these not yet published data the Omega coefficient introduced by
537 McDonald (1999) was estimated as a measure of construct reliability. The MEQ consists of five
538 scales that all showed very good reliability estimates: *Distraction* ($\omega = .84$), *Interest* ($\omega = .86$),
539 *Subjective well-being* ($\omega = .85$), *Valence* ($\omega = .91$), and *Sensory Experience* ($\omega = .86$). Each scale
540 consists of four to five items (see Appendix A1), and each item has to be answered on 6-point
541 Likert scales from 1 (completely disagree) to 6 (completely agree). The final items that were also
542 used in the present study were selected in a rigorous stepwise process of test construction and
543 evaluation including psychometric analyses with confirmatory factor analyses models (Sommer et
544 al, *in prep.*). The MEQ was also implemented on the platform for the smartphones.

555 Procedure

556
557 Table 1 gives an overview of the main phases of the study, including all tasks and
558 questionnaires. In brief, before travelling to the restaurant (Phase I) participants gave their
559 informed consent, provided demographic data and completed the BFI. In the restaurant, at arrival
560 before the meal, the participants of a given quartet were welcomed by the staff, and the
561 experimenter explained the overall procedure. During Phase II, all participants consumed the 23-
562 course meal, according to the standard procedure of the restaurant in that season (e.g., menu,
563 waiter or sommelier explanations, visit to the kitchen, etc.). Depending on the dish, different kinds
564 of alcoholic drinks were offered, for instance, white, red, and sweet wines, homemade beers, and
565 cavas, although not all diners chose to drink alcohol. Each dish was rated about its hedonic value
566 (moment-to-moment hedonic rating) on the smartphone directly after its consumption. Immediately
567 after finishing the whole meal (Phase III), the participants answered the questions about their total
568 meal experience (immediate overall hedonic rating) and completed the MEQ. Before leaving the
569 restaurant, the blood alcohol concentration (BAC) in breath was estimated using a standard
570 alcoholmeter. Phase III lasted around three hours. During Phase IV, three months after the
571 restaurant visit, participants were contacted again via an online platform on their smartphones and
572 were asked to retrospectively rate their hedonic meal experience (long-term overall hedonic rating).

Table 1. Questionnaires administered in the four phases of the study

Phase I At home, days before the meal	Phase II In the restaurant, during the meal	Phase III In the restaurant, after the meal	Phase IV At home, 3 months later
✚ Demographic data	✚ Hedonic (liking) ratings for each of 23 dishes	✚ Immediate overall hedonic rating	✚ Long-term overall hedonic rating
✚ Big Five Inventory		✚ Meal Experience Questionnaire	
✚ Informed consent		✚ Blood alcohol concentration measurement	

Data analysis

The data collected in this study were structured hierarchically, with quartets as higher-level units and participants as lower units (for a detailed description on hierarchical regression analysis, see Hedeker, 2003; Woltman, Feldstain, MacKay, & Rocchi, 2012). We expected that participants from a given group would be more similar than participants from different groups. Given these data conditions, we used multilevel regression analysis to estimate to what extent the global hedonic ratings can be predicted by the variables of interest – that is, moment-to-moment hedonic ratings, MEQ scores, and personality trait scores – while accounting for grouping effects in quartets immediately after the meal and three months later (Phase III and IV). We also calculated the intraclass correlation coefficient (ICC), indicating the variance of the dependent variables (global hedonic ratings) between and within quartets as an additional estimate of grouping effects. Furthermore, we tested mean differences in global hedonic ratings between Phase III and IV by means of analysis of variance (ANOVA).

Concerning the multilevel model, we tested the relationships and the magnitude effect (based on the regression coefficients) between predictive variables of interest and the outcome variable (hedonic ratings) at Phases III and IV. Because predictors were measured in all participants, their average effects across all entities within the quartets can be estimated. These effects are referred to as *fixed effects*. Further, as the outcome variable was collected at two-time

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652 points during the study, these were coded by a dummy variable Phase (Immediate vs. Long-term,
653 corresponding to Phases III and IV, respectively). Thus, we analysed the effects of each predictor
654 variable for each phase separately. However, we were not interested in the differential effects of
655 the phase on the predictors' influence on global hedonic ratings. Therefore, we fitted zero-intercept
656 models aiming to estimate two slopes for each predictor. The slopes indicate the relationship
657 between the outcomes (global hedonic ratings) collected at each phase (Immediate and Long-
658 term) and the predictors included in the model. Because the estimates of each phase are
659 characteristics of each quartet and can vary randomly across quartets, they are referred to as
660 *random effects*. The multilevel model was applied separately for the explanatory variables of
661 interest, to address different research questions:

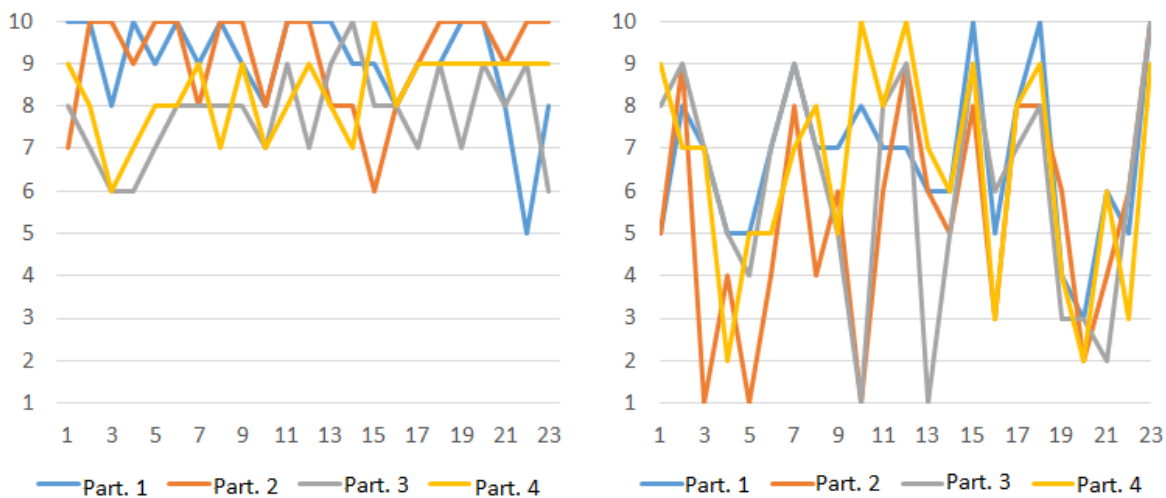
- 671
672 a) To assess the extent to which quartets differ from each other on average in their immediate
673 and long-term global hedonic ratings, we modelled the baseline or empty model (no
674 predictors). Based on the estimates provided by this model we then calculated the Intraclass
675 Correlation Coefficient (ICC) indicating the amount of variance in global hedonic ratings
676 between the quartets as compared with the total variance (within and between quartets).
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678 b) To test whether global hedonic ratings can be explained by moment-to-moment hedonic ratings
679 of the individual courses according to the peak-and-end rule (Fredrickson & Kahneman, 1993),
680 we used the number of peaks and troughs across the moment-to-moment ratings and the end
681 state value as predictive variables of hedonic ratings. Figure 2 displays two examples of
682 moment-to-moment profiles in two quartets. The left panel depicts a quartet with similar ratings,
683 whilst the quartet on the right depicts divergent ratings. From such profiles, we extracted the
684 following predictor variables: a) *Number of peaks* (defined as the number of times a diner rated
685 with his/her maximal liking value across the meal); b) *Number of troughs* (defined as the
686 number of times a diner rated with his/her minimum liking value); c) End peak (dichotomous,
687 yes/no = 1/0; defined as the presence of a maximal liking value for the last dish). Moreover, d)
688 *Peak Total Utility* (U_p), and e) *Trough Total Utility* (U_t) were also computed, as follows:

$$U_p = (\text{Mean number of peaks} + \text{End peak})/2$$

$$U_t = (\text{Mean number of troughs} + \text{End peak})/2$$

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711 c) In order to determine, which aspect of the meal experience dimension is predictive of short-
712 and long-term hedonic evaluation, we assessed the relationship between scores on the scales
713 of the MEQ (*Distraction, Interest, Subjective well-being, Valence, and Sensory experience*) and
714 the immediate and long-term global hedonic ratings.
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719 d) To examine whether particular personality dimensions explain immediate and long-term global
720 hedonic ratings, we tested the relationship between these ratings and individual scores on the
721 Big Five personality dimensions: *Openness, Conscientiousness, Extraversion, Agreeableness,*
722 *and Neuroticism.*
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727 For all models, maximum likelihood estimation was used. The models were computed
728 separately for the above-mentioned blocks of predictors to maintain statistical power, given the
729 sample size of 80 persons nested into 20 quartets.
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750 **Figure 2.** Examples of peak-trough-end profiles in two quartets, showing different distributions of
751 peaks (individual maximal liking values) and troughs (individual minimal liking values). The end
752 value corresponds to the liking/disliking rating of the last dish (#23). 'Part.1' to 'Part.4' refer to
753 individual participants within a quartet.
754

755 Results

756
757 First, we describe results corresponding to multilevel regression analyses (a-d), followed by
758 the ANOVA testing the differences in global hedonic ratings (e). Finally, the relationships between
759 blood alcohol level and global hedonic ratings will be shown (f). Figure 3 summarizes the
760 significant relationships obtained in the multilevel regression analyses.
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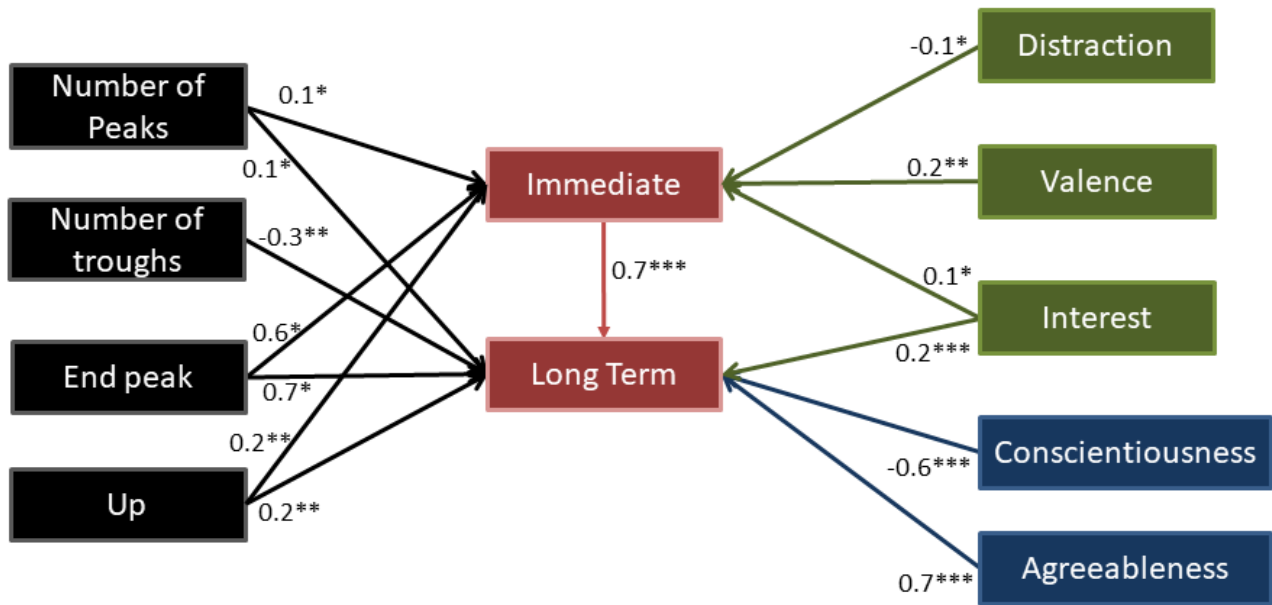


Figure 3. Contributions (regression coefficients) of main factors on the global hedonic assessment at two different stages of the study. Only the significant regression results (b values) are shown ($p < .05$, $p < .01$, $p < .001$). The multilevel model was applied separately for different predictor blocks represented by colours in the figure (black: moment-by-moment ratings; dark green: MEQ; blue: Big Five personality inventory).

(a) Average hedonic evaluations within and between quartets across the meal experience

A baseline model without predictors explored the relative effect of between- and within-subject source variance on the hedonic ratings (Table 2). The extent to which quartets differ in their global hedonic ratings in each phase is reflected in the ICC: 0.62 and 0.74 for immediate and long-term ratings, respectively. Immediately after the meal, the variance between quartets was larger than within quartets and this difference increased in the long-term. Hence, the degree of similarity of ratings within quartets increased over time.

Table 2. Main results of the baseline model, showing the bias in the inter-subject dependency in hedonic ratings.

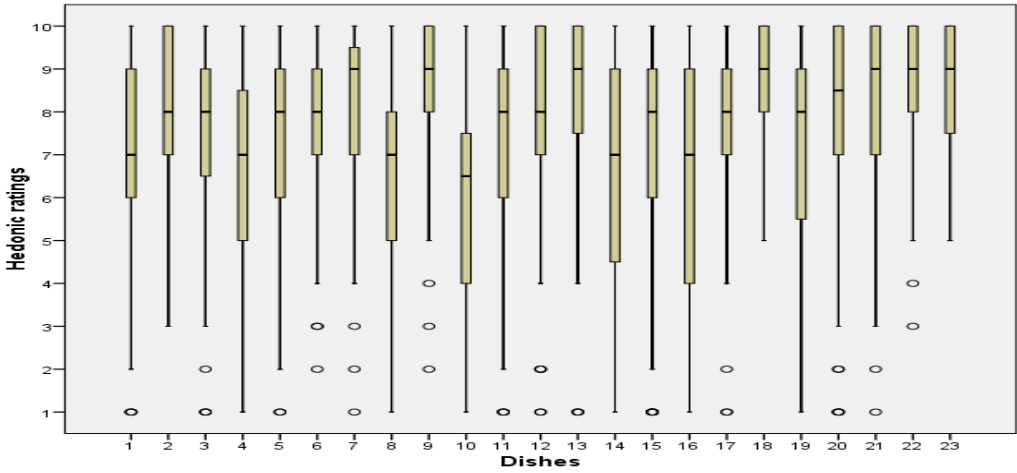
Phase	Source	<i>b</i> (SD)	<i>p</i> -level	ICC
Immediate	Quartet	2 (.75)	<.01	.62
	Subject	1.22 (.22)	<.0001	
Long-term	Quartet	4.7 (1.7)	=.005	.74

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Subject	1.7 (.31)	<.0001
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(b) Relationships between moment-to-moment hedonic ratings and global hedonic ratings

Figure 4 shows the mean hedonic ratings to each dish, range of data and the SDs/SEs across participants. In Supplementary material related to this article, a box plot depicts further statistical information across dishes. Mean number of peaks and troughs during the meal were 5.7 (Range = 1 to 19, SD = 4) and 1.9 (Range = 1 to 7, SD = 1.2), respectively. Mean Up and Ut were 9.2 (Range 7.5 to 10, SD = 0.8) and 5.9 (Range= 3 to 8.5, SD = 1.5), respectively. The number of peaks during the meal was positively related to the immediate hedonic ratings ($b = 0.1; p < .05; b$ indicating the non-standardized regression weight) as was the rating of the final dish (end state) ($b = 0.6; p < .05$). With each additional scale point in the number of peaks across the meal course, the global hedonic ratings after the meal increase by 0.1 scale points. A relative increment in the number of peaks for the final dish yields an increment of 0.6 scale points. Moreover, increasing the number of peaks and the rating of the final dish were also positively related with long-term hedonic ratings ($b = 0.1; p < .05, b = 0.7; p < .05$, respectively). Conversely, increasing the number of troughs during the course of the meal decreased the long-term hedonic ratings ($b = -0.33; p < .0001$). The Up index was positively related to both immediate and long-term ratings ($b = 0.2; p < .01; b = 0.2; p < .01$, respectively).



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887
888 **Figure 4.** Box plot showing min-max values, medians, 25%-75% quartiles, and outliers,
889 corresponding to the liking/disliking ratings across the 23 dishes.
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891 (c) Relationships between MEQ scores and global hedonic ratings

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893 The range of the MEQ scales scores were: *Distraction*: Range = -1.9 to 0.3; *SD* = 0.62
894 (around a mean of -0.91); *Interest*: Range = -0.9 to 1.9; *SD* = 0.69 (around a mean of 0.94);
895 *Subjective Well-being*: Range = -1.1 to 1.9; *SD* = 0.76 (around a mean of 0.87); *Valence*: Range =
896 -1.7 to 1.6; *SD* = 0.92 (around a mean of 0.59); *Sensory Experience*: Range = -1.8 to 1.5; *SD* =
897 0.88 (around a mean of 0.48). Thus, these variables show considerable variance and can be
898 considered as predictors of immediate and long-term hedonic ratings. *Distraction* while eating was
899 negatively related with immediate hedonic ratings ($b = -0.1, p < .05$). *Interest* in the meal was
900 positively related with immediate hedonic ratings ($b = 0.1, p < .05$) and with long-term hedonic
901 ratings ($b = 0.2, p < .001$). *Valence* was positively related to immediate hedonic ratings ($b = 0.2, p$
902 $< .005$). *Interest* explained hedonic ratings at both phases similarly, that is, hedonic for each
903 additional scale point for interest ratings increased by 0.1 and 0.2, respectively. In contrast,
904 *Valence* of the meal was positively predicting hedonic ratings only immediately after the meal.
905 *Distraction* had a negative impact on the overall hedonic ratings after the meal. The scales
906 *subjective well-being* and *sensory experience* did not predict predictors of overall hedonic ratings.
907 Accordingly, both immediate and long-term hedonic ratings seem to be mainly related to *interest* in
908 the meal, whilst distraction and valence influenced hedonic evaluation only immediately after the
909 meal but not in the long term.
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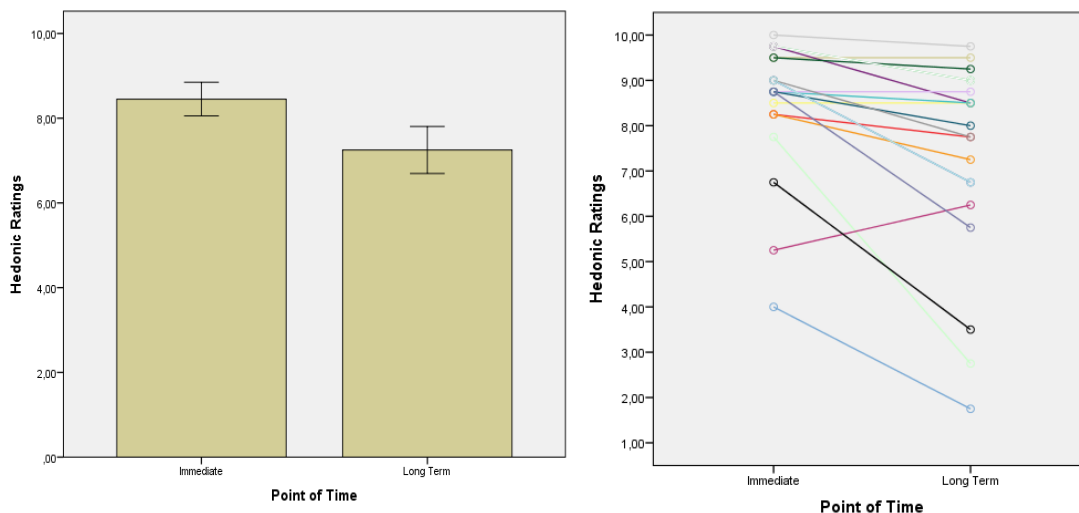
927 (d) Relationships between personality traits and global hedonic ratings

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929 Mean scores (and standard deviation) of personality traits were: Openness: 3.69 (Range =
930 2.3 to 4.9; *SD*=0.52), Conscientiousness: 3.95 (Range = 2.5 to 5; *SD*=0.57), Extraversion: 3.46
931 (Range = 2 to 5; *SD*=0.67), Agreeableness: 3.81 (Range = 2.2 to 5; *SD*=0.45) and Neuroticism: 2.4
932 (Range = 1 to 4.4; *SD*=0.69). Considering personality traits, they did not show any relationship to
933 the immediate global hedonic rating. However, *agreeableness* was positively related to long-term
934 hedonic ratings ($b = 0.7, p < .05$), that is, the more agreeable the participants, the higher were their
935 hedonic ratings in the long term. In contrast, *conscientiousness* was negatively related to long-term
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947 hedonic ratings ($b = -0.6, p < .05$), meaning that conscientious participants remember the meal
948 experience as less positive. The remaining traits (openness, extraversion and neuroticism) did not
949 show any relationship with the global hedonic ratings.
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953 (e) Global hedonic ratings and differences as a function of phase

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955 The left panel of Figure 5 depicts immediate and long-term global hedonic ratings. Mean
956 hedonic ratings immediately after the meal were fairly high (Range = 2 to 10, $M = 8.4, SD = 1.78$)
957 and slightly decreased after three months (Range = 1 to 10, $M = 7.2, SD = 2.49$). We did not find a
958 statistical difference in hedonic ratings between Spanish and English participants, neither at
959 immediate ($t_{78} = -0.9; p = .37$) nor at long-term ($t_{78} = -1.2; p = .24$). The Pearson correlation index
960 between hedonic ratings immediately and after three months was $r = 0.7, p < .001$. The mean
961 difference between immediate and long-term ratings was statistically significant, $F_{1,19} = 14.3; p =$
962 $.001; \eta^2_p = .43$. Right panel Figure 5 shows that the variability in the outcome variable among
963 quartets increased from immediate to long-term. Grouping participants into their corresponding
964 quartets (Fig. 5, right panel) resulted in a significant difference between the immediate and long-
965 term global hedonic ratings, $F_{19,38} = 6.4; p < .0001; \eta^2_p = .87$).
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992 **Figure 5.** Left: Means and SDs of hedonic ratings at two moments: Immediately after the meal and
993 3 months later. Right: Means of hedonic ratings as a function of quartet. Each line represents one
994 of the 20 quarters included in our study.
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1006 **(f) Blood alcohol concentration**
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1008 Mean blood alcohol concentration was 0.35 mg/l (IC 95%: 0.29 – 0.4). Alcohol was not
1009 related to the outcome variables, neither immediately after the meal ($b = 0.44$; $p > .2$) nor after
1010 three months ($b = -0.33$; $p > .4$). No significant results were found including alcohol variable as a
1011 predictor in the multilevel model. Hence blood alcohol content due to alcoholic beverages
1012 consumed during the meal did not significantly affect the outcome variables.
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1020 **Discussion**
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1022 This study investigated factors that might make the experience of sharing a meal in top
1023 gastronomy special and retrievable after three months. These factors were investigated in
1024 combination within a real gastronomic setting (with some limitations), and in regular customers. An
1025 overview of results is given in Figure 3. The following discussion is organized around groups of
1026 variables that influence hedonic ratings in the short and long run, that is, moment-to-moment
1027 hedonic evaluations and their utility profiles, specific dimensions of the meal experience, the
1028 personality traits of diners, and their mutual influence on hedonic judgments (commensality).
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1036 **Moment-to-moment Ratings and Utility Profiles**
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1038 How are overall hedonic judgments related to moment-to-moment evaluations and the
1039 peak-trough-end patterns? The number of positive moments (peaks) during the meal weakly
1040 predicted a more positive overall hedonic rating immediately after the meal and three months later.
1041 A stronger but negative relationship was – unsurprisingly – found for the number of negative
1042 moments (troughs) with long-term hedonic evaluations. One of the strongest predictors of overall
1043 evaluation was the rating of the final dish. If the rating of the final dish was a peak, also the overall
1044 meal was rated positively, immediately and in the long term. **If dessert was highly liked, chances**
1045 **were good that the whole meal got a high estimation.** Third, following the peak-and-end rule
1046 (Fredrickson & Kahneman, 1993), we calculated the utility profiles U_t and U_p (see Methods) of
1047 which U_p weakly predicted global hedonic ratings at time points, in line with the idea that the higher
1048 the *experienced utility*, the higher the *remembered utility* (Kahneman, Wakker, & Sarin, 1997).
1049 **Interestingly, the positive moments (peaks during the meal and at the end) had the same positive**
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1065 contribution to long-term (recalled) overall evaluation as immediately after the meal. In contrast, the
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1067 number of troughs predicted recalled overall evaluation only in the long term. It seems that isolated
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1069 minima in the gastronomic experience pattern influence overall judgments only after reworking and
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1071 consolidation in memory.

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1073 The present findings converge with reports that particular moments during an experience
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1075 can disproportionately influence global affective memory (Ariely, 1998; Kahneman, 2000; Rozin &
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1077 Goldberg, 2004) in the long term. Robinson et al. (2011) put strawberry preserve either on top or at
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1079 the bottom of a yoghurt dessert, aiming at a “bland” or a “pleasant end”, respectively. In line with
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1081 the peak-and-end rule they observed an effect of the end taste on the remembered liking of the
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1083 yoghurt in unrestrained eaters, as well as an effect of the peak taste on remembered liking for a
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1085 meal. Therefore, the peak-and-end rule seems to be a useful heuristic of human behavior that is
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1087 also applicable to gastronomic experiences. Although there are exceptions: Rode, Rozin, &
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1089 Durlach (2007) found no obvious signs of peak or end effects on remembered enjoyment for a
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1091 meal. Possibly, the variance in the valence in these studies was more limited than in the present
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1093 high-end gastronomy meal and therefore did not yield comparable results aligning with the peak-
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1095 and-end rule.

1096 **Dimensions of the Meal Experience**

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1098 We had designed a questionnaire with separate scales inspired by research on the
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1100 subjective experience of narrative prose. Such an approach may be a suitable model for top
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1102 gastronomy because meals and the environment in which they are served aim to provide special
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1104 experiences, comparable to other domains providing (positive) experiences, like literature, music,
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1106 or entertainment (Benz, 2014; Sommer et al., 2014).

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1108 The only MEQ scale that was related to the recalled overall experience in the long-term was
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1110 the *Interest* that had been taken in the meal. Hence, interesting as well as novel and surprising
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1112 experiences have an impact on how diners remember the hedonic value of the meal experience in
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1114 the long-term. This result is in line with previous findings (e.g. Cardello et al., 2000; Vad Andersen
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1116 & Hyldig, 2015). In terms of seeking for rewarding stimulation, a food experience is, therefore,
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1118 similar to other types of experience. Accordingly, motivation theories established that individuals
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1124 actively look for stimulation to maintain a critical level of arousal (Köster & Mojet, 2007). To this
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1126 end, diners focus their attention to those food instances that trigger strong hedonic responses
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1128 (Belasco, 2008; Berlyne, 1967; Levy, 1981).
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1130 The immediate overall evaluation of the meal was also determined by the *Interest* taken in
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1132 the meal – albeit weaker than in the long term. The strongest immediate positive impact was
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1134 exerted by the *Valence* dimension. Valence in the MEQ refers to the tastiness or palatability of the
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1136 food, that is, as a hedonic component of food reward (Higgs, 2016). Rogers and Hardman (2015)
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1138 argued that liking is usually experienced as part of the pleasantness of eating, when directing
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1140 attention to tasting is involved. This linking of liking and attention is in line with the other results
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1142 from the MEQ, that the immediate overall evaluation is negatively related to *Distraction*, meaning
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1144 that attending to the food allows the diner to appreciate its subtleties, so his or her immediate
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1146 hedonic evaluation is higher. One potentially confounding factor could be commensality (see
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1148 below), that is, the presence and interaction with the companions on the table might have
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1150 distracted the individuals from the palatability of the food. Conversely the interactions might have
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1152 contributed to focus attention to certain aspects of the food. Clearly, these issues deserve further
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1154 study.

1155 Together with the finding that long-term affective memory is selectively affected by interest
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1157 and the number of relative minima (troughs) demonstrates that the remembered evaluation in the
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1159 long-term is not just a faded copy of the immediate evaluation. It is qualitatively different in terms of
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1161 its determinants, presumably relating to the specific role of the factors under study in memory
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1163 consolidation, where interest and (relatively) negative experiences dominate over pleasure. Note
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1165 however, that among the effects discussed so far the valence of the end state (final dish) was the
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1167 most powerful both immediately and in the long term.

1168 **Personality**

1171 What is the impact of personality on the overall hedonic meal evaluation? Two results stick
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1173 out. First, personality findings appeared only relevant for the long-term remembered experience.
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1175 Second, in the long-term overall hedonic judgments were positively affected by *agreeableness* and
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1177 negatively by *conscientiousness*. These personality traits were among the best predictors of long-
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1183 term overall meal evaluations. Hence, in our study participants who are more cooperative, caring,
1184 and likeable (high on agreeableness) tend to make more positive judgements about the experience
1185 in the long run. Conversely, *conscientiousness* predicted the long-term hedonic assessment of the
1186 meal experience into the opposite direction. Apparently, diners that are more organized, careful,
1187 and reliable, were soberer and less positive or euphoric than others in their long-term ratings.
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1193 These findings might be encompassed according to a *hedonic dimension* related to
1194 *agreeableness*, and a *utilitarian dimension* related to *conscientiousness*. In line with this view,
1195 Mehmetoglu (2012) suggested that utilitarian benefits drive goal-directed consumption, in contrast
1196 to hedonic benefits that stimulate experiential consumption. Therefore, we could argue that
1197 conscientious diners were inclined to have a more instrumental perspective (cost vs benefits) to
1198 make hedonic ratings accessing and matching their memories with actual moments (Millar &
1199 Tesser, 1986). While agreeable diners were inclined to base their evaluations on enjoyment in the
1200 experience (Holbrook & Hirschman, 1982). It seems therefore that the latter are mainly seeking for
1201 novelty, distinctiveness, and sociality satisfaction (Giacalone, Duerlund, Bøegh-Petersen, Bredie,
1202 & Frøst, 2014; Yeomans, Chambers, Blumenthal, & Blake, 2008). Finally, it is to note that findings
1203 on personality have been interpreted in a specific gastronomic context. In other hedonic contexts,
1204 agreeable and conscientious people could make either more positive or more negative evaluations.
1205 For that reason, the generality of the relationship of personality with different kinds of gastronomic
1206 context (immediate and in retrospective), should be subject to further study.
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1220 Commensality

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1222 As a final question, we were interested in the agreement within quartets of diners about
1223 their overall judgements. Interestingly, the Intraclass Correlation Coefficient (ICC) indicated a high
1224 consistency of hedonic ratings within quartets. Indeed, consistency within quartets immediately
1225 after the meal (ICC = 62%) can be considered as good (Cicchetti, 1994), while it increased to
1226 almost excellent values (ICC = 74%) three months later. It seems therefore that hedonic
1227 judgements were weighted on social cues like intercommunication, sharing opinions, etc., at both
1228 time points. It is likely that along with enjoying culinary experiences themselves, subjective hedonic
1229 cues tend to be shared among participants, both directly via verbal communication, and indirectly

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1242 via facial emotional reactions and non-verbal communication. This seems a reasonable
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1244 consequence of the social linkage communicating the actual experience (Rozin et al., 2005).
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1246 Moreover, the finding that quartets increased in hedonic rating coherence in the long run may be
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1248 explained by the fact that participants within the quartet were families, friends, couples, and/or
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1250 work mates and are likely to have been in contact after the meal and possibly brought their
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1252 opinions about the meal experience into agreement. Several studies also supported the impact of
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1254 social contagion about ideas, attitudes or cognitions when evaluating hedonically pleasurable
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1256 experiences (e.g. Barsade, 2002; Barthomeuf et al., 2009), as well as the impact of group norms
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1258 on biasing food preferences (Nook & Zaki, 2015).

1260 **Strengths and Limitations**

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1262 To our knowledge the present study is the first to investigate at a large scale the experience
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1264 in a complex meal setting in a top restaurant. This is clearly not a typical meal situation, but it is not
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1266 irrelevant from a consumer's or producer's point of view. From a scientific point of view, it is a
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1268 situation that maximizes factors of interest that may also contribute to the experience of everyday
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1270 meals. In this sense, it would be of great interest to use the present findings as a starting point for
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1272 studies of other meal situations.

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1274 This brings us to the limitations of the present study, which investigated a single multi-
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1276 course meal – common for all guests – in a single – exceptional – restaurant. Although this has the
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1278 advantage of controlling for the variation inherent across restaurants and meals, it begs the
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1280 question of generalizability. Therefore, it would be desirable to replicate and extend our results also
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1282 to other restaurants.

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1284 Critical factors might be the costs and the experimental situation. Guests received their
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1286 meals at half the normal price. Because drinks were served at regular prices, this rebate was not
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1288 as big as it might sound (around 80 Euro in total). Nevertheless, it is conceivable that the rebate, in
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1290 combination with the knowledge to take part in a scientific study, including videos being taken,
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1292 might have influenced the meal experience. However, most participants stated that these factors
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1294 did not notably affect their experience of the meal situation.

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1301 The recruitment procedure for our participants was designed to target typical customers of
1302 the restaurant; because the rebate was not known in advance, we only recruited guests that were
1303 prepared to pay the normal prize. Therefore, we may assume that the socio-economic status of our
1304 participants was relatively high and the generalization of the observed relationships to the general
1305 population would be of great interest.
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1311 Finally, we have to concede that there are a number of influences of potential interest that
1312 we decided not to study. For example, we did not assess subjective evaluations of the
1313 atmospherics of the restaurants or the service. As these factors were designed to be largely
1314 constant across days and diners by the restaurant, we did not expect that atmosphere-related
1315 variance would contribute as much to the total experience as the factors studied, while avoiding
1316 further increasing the intrusiveness of the study. In any event, the present study provides novel
1317 insights into several factors that seem to influence the overall meal experience in a situation that is
1318 both unique and close to realistic, a line of research that needs to be continued and extended.
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1327 **Conclusions**

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1329 Our findings provide new insights into what determines meal experiences and their
1330 memorability in top restaurants. From our findings both theoretical and practical conclusions may
1331 be drawn. As we saw a negative impact on long-term overall evaluation by dishes that were judged
1332 as being below average (troughs), a practical advice regarding the order of dishes is obviously to
1333 avoid such negative outliers. However, we should note here, that a deliberate dramaturgy in top
1334 gastronomy may include one or more dishes that are not “delicious” but may serve an important
1335 purpose within the context of the whole composition. For example, such trough dishes may serve
1336 as anchors for the immediate evaluation of the other dishes or they may specifically enhance the
1337 episodic memories (not in the focus of the present paper) for the dishes eaten. It is also noteworthy
1338 that the final dish rather than the hedonic peaks across all dishes, had a decisive influence on
1339 memorability. Hence, after a mishaps or annoyance during a meal a good overall emotional
1340 memory might be saved by the restaurant by offering a complimentary dish, drink, or even a small
1341 non-food surprise gift as a concluding highlight.
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1360 A second advice may be that the interest taken in the dishes rather than the overall valence
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1362 of the meal is critical for positive long-term memories of the experience, meaning that the creativity
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1364 invested in designing interesting and novel dishes – one of the aims of current top gastronomy – is
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1366 indeed rewarded by positive long-term evaluations by the guests.
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1368 It turned out that more agreeable persons retain better long-term evaluations of the meal.
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1370 Although there is little that can be done to regulate the selection of guests, it is important to know
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1372 that guests with a more agreeable personality may be more willing and ready to express their
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1374 opinions in social networks and might therefore be important multipliers of opinions about the
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1376 restaurant.
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1378 Overall, we identified a number of situational and personality factors that determine the
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1380 evaluation of a meal in a top restaurant. These factors are somewhat specific for short- and long-
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1382 term evaluations, with the latter being dominated by the personality of the guest, relative negative
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1384 peaks in the evaluation of individual dishes, the final dish, the interest taken in the meal, and the
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1386 opinions of the meal companions. Although our results were derived in a special situation and
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1388 sample and should be replicated and extended, the recommendations derived from these results
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1390 should be applicable also to more common situations, like family restaurants or private dinners.
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1427 Spain.
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1832 **Appendix**
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1834 **A1: Scales and corresponding items of the meal experience questionnaire**
1835

1836 **Distraction**
1837

1838 I was fully concentrated on eating the dish
1839

1840 I forgot the world around me while eating
1841

1842 My thoughts were digressing again and again while I was eating.
1843

1844 I was distracted while eating.
1845

1846 I was eating the dish rather on the side.
1847

1848 **Interest**
1849

1850 The dish had a boring taste.
1851

1852 While eating I was excited to know what the next bite would taste like.
1853

1854 The dish had an exciting taste.
1855

1856 While I was eating I absolutely wanted to know what the rest of the dish would taste like.
1857
1858

1859 **Subjective Well-being**
1860

1861 Eating the dish has lifted my mood
1862

1863 The food and taste experience was intensive for me
1864

1865 While eating I got more and more calm inside.
1866

1867 The dish stimulated real emotions within me.
1868

1869 I was feeling really happy.
1870

1871 **Valence**
1872

1873 The eating was a pure delight for me.
1874

1875 The dish tasted excellent.
1876

1877 I liked eating the dish.
1878

1879 I felt pleasure while eating.
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1881 I was completely satisfied while eating.
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1883 **Sensory Experience**
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The dish looked terrible.

The dish did not have any flavor.

The dish was well seasoned.

All the different ingredients of the dish matched perfectly.

The dish was served appealingly on the plate.

I liked the dish.

A2: Menu

Dish #

1. Vegetal bestiary.
2. "The belly button of a monk". Macaron.
3. Lacquered duck neck with herbs and dry grains.
4. 7 spice Rattle.
5. Live cannellone.
6. Walnut omelette.
7. Cultural textures. Several layers of dressed Kokotxas.
8. Tigernuts with caviar.
9. ...decadentia...
10. A black banana with shrimp paste.
11. Mousse of cream and stone crab.
12. A thousand leaves...
13. Daily catch, beetroot and horseradish.
14. Ail glacé.
15. Cod tongues in a bone marrow emulsion.
16. Beef candy.
17. Whithered flowers on horseback.
18. The cheese.

1948
1949
1950 19. Starched handkerchief of fruit and flowers.
1951
1952 20. Anis waffle.
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1954 21. Whiskey pie.
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1956 22. An almost impossible bite: sugary porra.
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1958 23. The seven deadly sins.
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