

Dining in the dark

Does food taste better in the dark? Charles Spence and Betina Piqueras-Fiszman investigate this and other questions behind a novel dining experience

The last decade or so has seen the steady rise of the 'Dine-in-the-dark' or 'Dans le noir' restaurant, where diners pay to eat and drink in complete darkness. Why are these restaurants popular? Addressing this question requires consideration of several others, such as: Does food really taste better in the dark? And, does dining in the dark provide any meaningful insight into how the blind experience food and drink?

This article argues that it is the constant feeling of surprise, based on the delivery of unusual sensory experiences, that may really make such dark dining experiences so unusual and intriguing for the customers.

Many of us like to dine by romantic candlelight, but how about tucking in when it's impossible even to see your hand in front of your face? Since the opening of the Blindkuh (Blind Cow) restaurant in Zurich in 1999 and the Unsicht (which means invisible) Bar in Cologne, Germany, in 2001, the trend toward dining in the dark has become popular in the UK too, primarily in London, where several restaurants have been established since 2006. The trend has flourished too across Europe, North America and parts of Asia.

Pioneered by the likes of Axel Rudolph, psychologist, and owner of the Unsicht-Bar, the concept was developed with the idea of 'shedding some light' on the sensory world of the blind. This empathic approach is meant – or better said, was originally meant – to place the blind at something of an advantage relative to their normally sighted counterparts. Nowadays, however, the dining experience at this kind of restaurant is actually very different from that of a blind person eating and drinking at a conventionally lighted establishment. The central question that we would like to address in this piece is what, exactly, makes a visit to one of these restaurants so appealing.

First off, it is worth noting that the food in such restaurants is normally served in bite-sized pieces and without bones. Thus, you are far more likely to find yourself with cubes of meat than with a T-bone steak, and with a side-serving of mashed potatoes, say, than with a helping of garden peas. It is, however, not only the presentational aspects of the food that

differ when compared to a normal restaurant. Complex combinations of flavours are also notable by their absence. It turns out that diners can find it difficult to distinguish between flavours in the absence of visual cues. Nor is one offered a full menu: normally, the only decision to be made is between meat, fish, or the vegetarian option (though sometimes there may be a 'surprise' option). Furthermore, the names of the dishes often don't describe the food, or the way in which it will be (or has been) prepared. In fact, in many cases, the food descriptions are, quite simply, mystifying. Take, for example, the main course from the beef menu at Unsicht-Bar: 'Upper nobility embraces the French underworld in a deep dark red river of sensuality'. Here, it could be argued that the intention is to deliver a novel and surprising multisensory experience, especially since most of us are unlikely to have eaten in the dark before.

The social aspects of dark dining

It's often claimed that darkness alters the way in which we relate to others, even those sitting next to us. It's certainly true that the selective sensory deprivation served up by the dine-in-the-dark experience challenges our everyday notion of intimacy and enjoyment when it comes to the social consumption of food. The utter darkness affects how we interact with those around us. Indeed, diners are sometimes intentionally placed at long benches, and hence into close proximity with strangers. Consequently, there is often no place for intimate conversation, and the talk is more likely to revolve around issues such as one's inability to find the tableware. Speaking also becomes fraught with uncertainty: How do you know whether those sitting at your table are really paying attention to your witty repartee if you can't see them? And how can you be sure that prying ears aren't listening in? One finds oneself making audible grunts at the appropriate points in the conversation in order to indicate that one is tuned in to whoever

questions

How does dining in the dark change our perception of food and drink?

Does dining in the dark make food and drink taste better or worse? Why?

resources

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Spence, C., Levitan, C., Shankar, M.U. & Zampini, M. (2010). Does food color influence taste and flavor perception in humans? *Chemosensory Perception*, 3, 68–84.

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happens to be speaking at the time. This may be part of the reason why diners don't generally choose to repeat the dark dining experience at home, no matter how memorable it may have been when experienced at the restaurant.

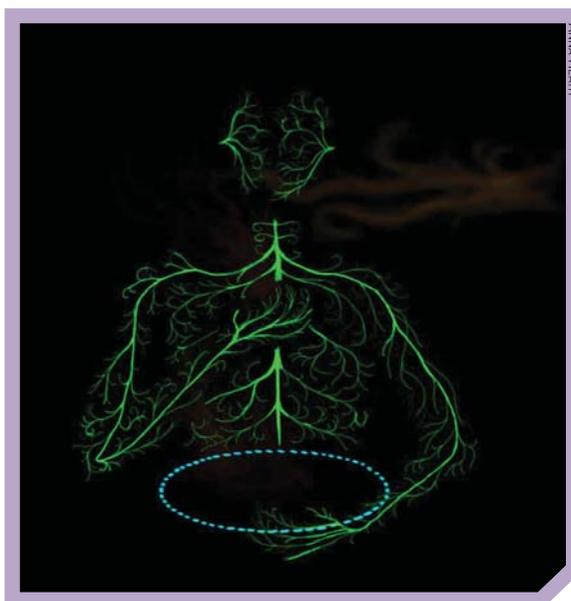
The 'experience economy'

One key driver behind the growth of dining-in-the-dark restaurants may be the influential idea of 'the experience economy': The powerful notion here, one that has been around at least since Philip Kotler's classic paper on store atmospherics was published back in 1974, but which was repopularised by Pine and Gilmore (1998, 1999), is that consumers are increasingly paying for 'experiences' and not simply for products and services. Indeed, many of the most successful companies in recent years have managed to differentiate themselves in the marketplace by selling engaging multisensory experiences, while at the very same time offering products that aren't necessarily 'la crème de la crème'. Think only of Starbucks coffee (Luttinger & Dicum, 2006, p.159). Perhaps unsurprisingly, Pine and Gilmore's more radical suggestion that companies should start charging customers for the pleasurable experiences that their stores offer shows little sign of catching on. That said, the underlying notion that success in the marketplace is all about 'the consumer experience' seems truer than ever. Think Samsung, Apple, and M&M's experience stores, or Abercrombie & Fitch clothing. These companies have all managed to differentiate themselves and, more importantly, their products successfully

on the basis of the 'experience' that they offer, or at the very least, claim to offer at the point-of-purchase. Indeed, surely one of the only reasons that many of us still frequent bookshops, rather than simply making our purchases online, is the experience that such shops offer – the chance to fondle the covers and sniff that 'new book' smell, while perhaps savouring a freshly made latte.

The dark dining concept fits right in here: what many of these contemporary restaurants are selling is very much 'the experience', and one that is impossible to escape:

'The mist at the Rainforest Café appeals serially to all five senses. It is first apparent as a sound: Sss-sss-zzz. Then you see the mist rising from the rocks and feel it soft and cool against your skin. Finally, you smell its tropical essence, and you taste (or imagine that you do) its freshness. What you can't be is unaffected by the mist.' (Pine & Gilmore, 1998, p.104)



With dining in the dark, rather than delivering a more stimulating multisensory atmosphere or experience than the competition, the counterintuitive idea here is that less (intervening sensory input) can sometimes deliver more in terms of the overall customer experience. It could perhaps be argued that the dark dining concept also plays to the growing concern among some diners that delivering the 'experience' has actually become more important than the food itself in certain eating establishments (e.g. Gill, 2007; Goldstein, 2005).

Taken together, then, there is certainly a sound business case for offering the dine-in-the-dark experience. But what is in it for the customer? Below, we critically evaluate the various arguments that have been put forward over the years in support of the concept.

What happens to our senses?

If, as gourmards often claim: 'Eye appeal is half the meal', what happens if you cannot see the food you are eating? According to folk intuition, the result is a heightening of the other senses: 'You smell better, you are more receptive to differences in texture, consistency and temperature...it's a holistic experience' (Rudolph, cited in Read et al., 2011, p.16). But is it really true? The key question here concerns how the absence of one sense (in particular, vision, what many consider to be our most important sense) affects the perception of food via the other senses, and how our overall eating experiences are impacted as a consequence.

There are at least two competing influences on people's perception of food and drink when the lights go out. On the one hand, visual cues influence our sensory expectations regarding the taste and flavour of foods (e.g. Deliza & MacFie, 1996; Simmons et al., 2005; Spence, 2010a, 2010b). This is referred to by some as 'visual flavour' (Spence et al., 2010). Our hedonic expectations

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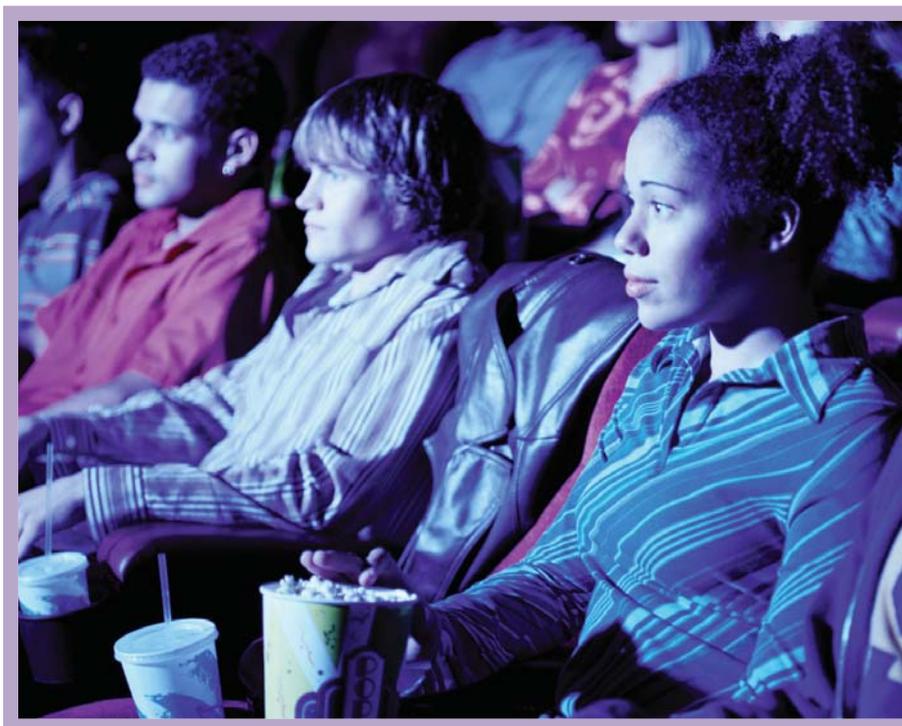
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senses

(Hurling & Shepherd, 2003), our taste evaluations (Spence, 2011; Wilson & Gregson, 1967), and even our total food intake are determined, at least in part, by whatever it is that we happen to see (Linné et al., 2002; Wansink et al., 2005). In addition, a food's colour often provides a reliable indicator as to its quality, to the ripeness of fruit, say, and the likely off-taint in meat and fish. Hence, removing all such visual cues, which are normally available to us both prior to and during consumption is, we would argue, likely to diminish the overall dining experience (Spence, 2010b). No matter whether we realise it or not, sensory expectation and anticipation constitute a good part of the pleasure of a meal.

On the other hand, though, removing vision allows us to concentrate more on the taste and aroma of food and drink (Marx et al., 2003; Wiesmann et al., 2006). We humans have only limited attentional capacity, and vision tends to capitalise on the available neural resources. As a result, we often don't pay as much attention to the other senses as perhaps we should. Indeed, more often than not, what we see ultimately determines what we perceive, even when the other senses may be sending our brains a different message. Colouring certain white wines red can, for example, fool both experts and novices alike into thinking that they are actually drinking a red wine (Spence, 2010a, 2010b).

The key question here then is whether the tastes, aromas and flavours associated with the consumption of food and drink really do become more intense in the absence of vision. Thus far, the limited scientific evidence argues against this intuitive claim. For example, the participants in a study by Scheibehenne et al. (2010) gave similar liking ratings to food no matter whether they ate in darkness or not. This despite the fact that the participants claimed to have paid more attention to the taste of the food in the former case. Unfortunately, though, no assessment was made in this study of whether participants' ratings of flavour



Does having the lights out in the cinema explain why so much popcorn is eaten?

intensity were affected when the lights were turned off. That said, the participants reported that it was significantly more difficult to eat, and that they paid significantly less attention to how much they ate, under cover of darkness. This could be the reason why, when served a supersized portion, those who found themselves in darkness ate almost 20 per cent more than those who could see the supersized portion in front of them. What is more, in the dark, participants tended to underestimate the amount of food that they had eaten, while the reverse was true for those who ate under normal illumination conditions. The latter results might, then, tie-in with the surprise that many of us have experienced at the cinema when, after purchasing a tub of (usually oversized) popcorn, we suddenly realise,

once the final credits start to roll, that we have only a few kernels left!

Another factor that makes the experience of dining in the dark unique and, for some, rather unpleasant is the uncertainty associated with not recognising what it is that we happen to be taking into our mouths and, ultimately, swallowing. This uncertainty may lead to decreased food acceptability ratings, and a decrease in people's willingness to try the food again subsequently (Yeomans et al., 2008). In the absence of visual cues, 'ambiguous foods' (such as beef enchilada) are judged as less acceptable, and what is more, are less likely to be consumed again than when consumed under normal lighting conditions (Wansink et al., 2012). However, for those foods where the initial uncertainty is low, such as, for example,

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crackers, no such reduction in food acceptance, or intent to consume, was observed. Could that be part of the reason, then, why popcorn has become such a staple for those wishing to snack at the cinema? Returning to our earlier discussion, this might also be one of the main reasons why chefs working at dining-in-the-dark restaurants tend to deliver flavours and dishes that are easy for diners to recognise. One can only wonder what diners choosing the 'surprise menu' have to say on this topic, given that they don't even know whether they will be getting fish or meat.

A lack of sensory expectations can even lead to confusion and to the illusory identification of flavours that are actually not present (Piqueras-Fizman & Spence, 2011). Here, one might also want to know what happens if we discover that what we have eaten wasn't what we originally thought it was?

Whenever we consume a food that we can't recognise, we nevertheless still tend to create post-consumption beliefs about what the food actually was. If those beliefs don't match the reality of the situation, should we eventually find out what the food really was, what are the likely consequences?

The experience of eating in a dine-in-the-dark restaurant may also differ depending on whether a diner's eyes are open or not. The reason for this being that closing one's eyes has been shown to lead to a more interoceptive state of awareness (Marx et al., 2003; Wiesmann et al., 2006). By contrast, even in complete darkness, with the eyes open, the brain's attentional and oculomotor systems are more active (what Marx and colleagues describe as a more exteroceptive state of awareness). Thus, it could be argued that, if anything, any beneficial effects on flavour perception of dining in the dark are more likely to be felt by those diners who choose to keep their eyes closed while eating and drinking.

Does dining in the dark capture how the blind experience food?

Another reason that has been put forward for people trying the dine-in-the-dark experience relates to the suggestion that it gives the diner a feeling for how the blind experience food. This is the empathic claim. However, we would

argue that it is unlikely to be true. Why? First, because normally sighted individuals typically have a great deal of stored knowledge concerning the appearance properties of foods and beverages. This means that once they have recognised it via their other senses, they often can't help but create in their minds a potentially vivid mental image of what the food or beverage actually looks like. They may even retrieve information concerning how it has been cooked, and how much they like it (Simmons et al., 2005). This multisensory mental image might well then serve as an input and in some sense feed the cognitive eating process (see Spence, 2011; Spence & Deroy, in press; Wolpin & Weinstein, 1983).

One other important question here is whether the blind taste and/or smell better than the sighted? Despite the fact that a number of researchers have addressed this question over the years, the available evidence is still rather mixed: While some researchers have documented superior olfactory and/or gustatory abilities in the blind (Cuevas et al., 2009), others have failed to observe any such difference (e.g. Rosenbluth et al., 2000). That said, a consensus now appears to be forming amongst researchers that the blind (and this includes the congenitally blind) don't perceive tastes, smells, and/or flavours that the normally sighted cannot. That is, their detection thresholds are no different from those of age-matched sighted control subjects. Where the blind do sometimes excel though is in their ability to put a name to a smell, to label it, something that the rest of us find very hard. In this regard, then, the blind are much like other sensory experts in the food and beverage sector (e.g. wine tasters: Hughson & Boakes, 2001).

Conclusions

Soup, roasted potatoes and meat. Veal? Chicken? Bread, and butter, which we spread messily. Some pudding for dessert. Vanilla? I can't remember. It tasted like vanilla but it might have been chocolate. Maybe it wasn't pudding but it seemed that way. None of the food tasted very good. Bland, bad texture.

Indiscernible tastes and textures. (Lane, 2010, in a review of the *Blindekuh*)

Although it's undoubtedly true that dining in the dark can make for a memorable multisensory experience, the available evidence suggests that you shouldn't go to such a restaurant if you are hoping that the absence of vision will necessarily make the food and drink taste any better. For humans, as for many other species, visual cues play a crucial role in our perception of flavour and in the control of our appetitive behaviours. It turns out that our sensory expectations regarding food or drink play a surprisingly large part in how we actually experience them. Hence, the removal of this important source of sensory information is likely to cause a detrimental effect in terms of the correct identification, and hence enjoyment, of whatever it is that we happen to be consuming. It may also make the diner a little apprehensive. Nor, we would argue, does the dine-in-the-dark experience really give you an impression of what it's like for the blind to eat either. In fact, that food and drink have seemingly lost their taste and flavour is one of the first things that individuals who have lost their sight first complain about (see Rosenblum, 2010).

So, returning to the question with which we started this piece, what exactly makes it appealing to visit one of these restaurants? Rather than making the food and drink taste better, a claim that has yet to be substantiated empirically, or even giving one the sense of how the blind experience food, we would like to suggest that it's the feeling of constant unexpectedness that makes the experience so interesting for diners. In this regard, and this regard alone, dining-in-the-dark shares something with the experience of diners at a typical molecular gastronomy restaurant (see Piqueras-Fizman & Spence, 2012).

Finally, it is perhaps worth noting that although statistics regarding repeat custom at such restaurants are hard to come by, a straw poll of our friends and colleagues suggests that while many enjoyed the unusual sensory experience offered by dining in the dark, few expressed any desire to repeat it.



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