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commentary

The Total Food Effect
An Original View on Foods' Placebo Effects

Commentary. The Total Food Effect: Exploring Placebo Analogies in Diet and Food Culture.

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The paper co-authored by Cory S. Harris and Timothy Johns aimed to extend the well-known concept of placebo effects from its primary focus in medication to the foods we eat. This was an ambitious project, which proved to be convincing. Innovative and well-documented facets of placebo effects are explored, from their historical perspective to both the micro- and macro-contexts that can help us to better understand this phenomenon. The present comment provides additional thoughts on placebo effects in history; some of the marketing issues associated with them; as well as some of the behavioural neuroscience behind placebo effects in foods.

The historical perspective on placebo effects related to foods reveals that this phenomenon is not new. One might add the original contribution of Paracelse—a Swiss alchemist and medical doctor born at the end of the fifteenth century—to the history of placebo provided in the paper. Paracelse was a strong believer in the power of imagination, and when everything else had failed, he administered (with elaborate gestures) a secret powder he kept in a sword handle. That "treament" produced, more often than not, miraculous effects that one can now consider as true placebo effects. The present paper touches on the possible effects of the charismatic personality of the prescriber, which can be of prime importance in eliciting a placebo effect. Indeed this strategy has been widely applied in the marketing of a variety of food and non-food products alleged to cure diseases, in which people wearing white doctors' or scientists' coats attest to the value of a product. Many of these marketing strategies—based as they are on the scientific study of human behaviour—attempt to maximize the placebo effects of a given food or drink.

With regards to the extremely lucrative dieting industry, analogies to placebo are rather limited—at least in the long term. But the paper's claim of "at times remarkable success" of these is a bit exaggerated, when one takes into account the documented 95–97% failure rate of popular diets and weight loss products over 5 years (Barner, 1991).

Another important issue related to placebo effects in food intake requires an understanding of the mind and body processes involved. Ingestive behaviour is complex and our knowledge of it is limited. Food intake is controlled by many factors—physiological, interpersonal, cultural, and even sensory factors—all integrated by learning. This learning could be the result of repeated exposure to a sensory cue (odour, taste, colour) that has been paired with a nutritional consequence. The resulting behaviour (conditioned response) produced can then be triggered by exposure to the sensory cue only. Our recent research over the last decade indicates an intake-reinforcing effect from rewarding physiological signals from nutrients ingested after food deprivation (Jarvandi, Booth & Thibault, 2007; Jarvandi, Thibault & Booth, 2007, 2009; Thibault & Booth, 2006; White, Mok, Thibault & Booth, 2001). However the evidence for such a learning mechanism comes from rats. If learning of this sort can

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also occur in the human brain, such unconscious reward could constitute a major step forward in the difficulty of reducing intake of energy in obesity (Booth, Jarvandi and Thibault, 2011 submitted).

Placing the placebo effect in this context is another issue that requires careful consideration of the brain's reward centres (whether dopaminergic or opiate.) However, the idea that it might explain some placebo effects is rather intriguing. The paper postulates how reward from foods may act as a positive or a negative reinforcer for food intake. But we should also be aware of some recent findings that show obese individuals' reward circuitry seems to operate differently from that of normal-weight subjects. One study showed that brain regions that control motivation to eat high-calorie foods are modulated differently in obese individuals (Page et al, 2011). This could explain why some of these foods are more appealing to the obese than to normal-weight individuals. The recognition of documented bodily and brain events contributing to placebo effects should stimulate further research on the effects of the mind on human behaviour.

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