

# Are our product preferences shaped in the womb?

CHICAGO, US: Researcher Diana Derval, founder and president of the international firm DervalResearch, has never been afraid of controversy. And that's a good thing, because the science that is her life's work has been known to stir up debate in scientific and marketing circles alike.



In the eternal dispute over the influence of nature versus nurture, Professor Derval's findings come down pretty clearly on the side of nature.

Her investigations have uncovered startling evidence of the profound and lasting influence of prenatal exposure to hormones - particularly sex hormones - on people's likes and dislikes, their sensory reactions to the world around them, and the decisions they make.

Professor Derval has made this research accessible and understandable in her acclaimed book, *The Right Sensory Mix: Targeting Consumer Product Development Scientifically* (Springer, 2010), which has been making waves not only in the field of neuroscience, but also in the marketing world, for the past year and a half. And now *The Right Sensory Mix* has been named finalist for the Berry-American Marketing Association (AMA) prize for Best Marketing Book 2011. Previous finalists for the award include highly praised titles such as; *Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant*, by W. Chan Kim & Renee Mauborgne (2007); *The Long Tail: Why the Future of Business is Selling Less of More*, by Chris Anderson (2007), and *Purple Cow*, by Seth Godin (2005). The results were announced on October 30.

## Honoured

"I am very honoured to be one of the four finalists of the Berry-AMA Book Prize," says Professor Derval, "*The Right Sensory Mix* builds a bridge between science and business and this distinction encourages me and my team to keep on researching human physiology and behaviour." The Berry-AMA prize recognizes books whose groundbreaking ideas have had a significant impact on marketing and related fields. The judges for the Berry-AMA Award are eminent marketing professionals and academics; this year's panel included Richard Lutz, J. C. Penney Professor of Marketing (University of Florida), Erik Gordon (University of Michigan), Gordon Wyner (Millward Brown Inc.), and Valarie Zeithaml (University of North Carolina).

## Studying the interactions between the hormonal systems and behaviour

Behavioural neuroendocrinology, one of Professor Derval's areas of expertise, is the science that studies the interactions between the nervous and endocrine (hormonal) systems and behaviour. Professor Derval's research, based upon thousands of measurements in over 25 countries since 2007, reveals that prenatal exposure to estrogen and testosterone not only has a direct impact on physical traits and behaviour, but on sensory perception and product preferences as well. "We have discovered that people's product preferences are directly linked to the millions of sensors monitoring their body and brain," she says. "The number and distribution of these sensors is greatly influenced by prenatal hormones so that it is possible to predict favourite colours, tastes, scents, shapes, textures, and sounds, almost from the womb."

While it is also true that hormonal fluctuations throughout the normal life cycle can significantly affect mood and behaviour - and people's individual experiences undoubtedly have an effect on some of their likes and dislikes - prenatal hormonal exposures appear to have a profound and lasting influence on many basic preferences and reactions to stimuli. Yet it is easy to see why the information in *The Right Sensory Mix* has created controversy. After all, experts in many fields believe

that environmental influences such as home life and education have a more profound effect on tastes, behaviour, and decision making than biological factors.

## **Adding complexity to gender identity**

Moreover, Professor Derval's research adds a layer of complexity to gender identity, which is often a sensitive area anyway, introducing "gender polymorphisms" and the first physiological segmentation model, the Hormonal Quotient (HQ). "Similarly to what exists in many animal species, we have identified eight gender polymorphisms among humans based on the prenatal influence of hormones - four in male and four in female. We can identify the gender polymorphism, or what we call the Hormonal Quotient (HQ), of an individual based on the gender, ethnicity, and different biomarkers. "Consumers are unique individuals but they are also predictable," Prof Derval explains. "Their preferences and behaviour are directly linked to their Hormonal Quotient (HQ).

The research has yielded a range of fascinating and useful results about consumer preferences. "We know for instance that women with a testosterone-driven HQ are mainly super-inhalers, more sensitive to synthetic fragrances and very likely to prefer fruity scents whereas women with an estrogen-driven HQ are more of medium-inhalers and tend to enjoy floral scents."

## **The old stereotypes are falling away**

The gender stereotypes of old are falling away, and of course no one literally believes that little girls are made of sugar and spice or that boys are made of snails and puppy dog tails. Nor does anyone literally accept as true that women are from Venus and men are from Mars. At the same time there's been a great deal of research about the influence of testosterone on men, and estrogen on women, but the influence of testosterone on women and the influence of estrogen on men have been less documented." In *The Right Sensory Mix* each types of men and women, whether they are testosterone, very-testosterone, balanced or estrogen, are studied in considerable detail.

DervalResearch has shed light on the preferences of testosterone-driven women, estrogen-driven women, and a range of other "gender polymorphisms" - and the company has even devised a way to segment and predict consumers based on their "gender polymorphisms" with the proprietary Hormonal Quotient (HQ) profiles, which can be determined with a simple test anyone can take.

DervalResearch has also created a series of geographical research tools to help global brands zero in on their target consumers' preferences. One such tool is the firm's series of Sensory GeoMaps, which pinpoint the sensory perceptions of consumers in local markets. "We have found that sensory perception varies between geographical areas," says Professor Derval. "For example, Chinese people will be mainly nearsighted and be relaxed by short-wave colours like blue, whereas Australians are almost all farsighted and are relaxed by long-wave colours like red. To help companies adapt their products and services to each country, or decide which emerging market they should focus most of their efforts on, we have built Sensory GeoMaps for over 50 countries, detailing the sensory perceptions of consumers in each area."

## Industries adopt Derval's new approach

Professor Derval new approach to marketing has been adopted by a wide range of industries - food and beverage, electronics, luxury items, fashion, cosmetics, automotive, pharmaceuticals, advertising, leisure, and tourism, to name but a few - who already benefit from knowing their consumers' HQ to design the right products, harmonize their product range, and increase their innovation hit rate.

*The Right Sensory Mix* includes a multitude of these business cases from Sofitel, Red Bull, Nintendo, and has received acclaim from many respected marketing professionals, such as Philip Kotler, the S.C. Johnson & Son Professor of International Marketing at the Kellogg School of Management. Professor Kotler said, "Diana Derval has written the best book that I have seen on the critical role of the five senses in determining our brand preferences. Her writing is lively, full of relevant case studies, and rich in insights. No marketing department or new product department must proceed without first reading this book."

Wai Wong, marketing manager accessories at Sephora Paris, said, "Thanks to her discovery concerning the relationship between hormones and sensory sensitivity, Diana Derval proposes an amazing scientific approach to accurately profile consumers, according to their Hormonal Quotient (HQ)."

## Neuromarketing

Beyond neuroendocrinology, Professor Derval's work has contributed to a fascinating - and again, slightly controversial - area called neuromarketing, which combines advanced neuroscience with market research. Her findings target hormonal influences on all of the senses: vision, touch, taste, smell, hearing, and proprioception (the ability to sense our own movement and position). And it's not just about helping firms deliver the best consumer experience; Professor Derval emphasizes the importance of understanding physiological mechanisms and not only for business purpose "Ernest Starling (1866-1927), Nobel Prize and discoverer of the first hormone, brilliantly formulated that "The physiology of today, is the medicine of tomorrow." 'Her research will surely make it easier to adapt medical, public, and private services to individuals - whether they're Martian, Venusian, or just your everyday Earthlings.

## About DervalResearch:

DervalResearch is reputed to be the only market research firm able to predict consumers' sensory perceptions, purchasing behaviour, and product preferences based on their physiological profile and Hormonal Quotient (HQ). Operating worldwide, the firm has helped leading brands including Philips, Sofitel, Sephora, and Sara Lee, design the right sensory mix for their target consumers, evaluate the opportunities for emerging markets, and increase their innovation hit rate.

For more information see the DervalResearch website, [www.derval-research.com](http://www.derval-research.com).

Read more about the Hormonal Quotient (HQ) and take a fun test online here: <http://www.derval-research.com/archive/2009/12/16/calculate-your-hormonal-quotient-by-dervalresearch.html>

Take the five-minute book tour here: <http://www.derval-research.com/archive/2011/10/27/the-right-sensory-mix-book-tour.html>

For more information about Sensory GeoMaps see <http://www.derval-research.com/sensory-geomap>

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