

Using Roland Barthes' Semiotic Theory and Semantic Parsing to Analyze Baby Brand Identity

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Received: 14 October 2023; **Accepted:** 12 November 2023; **Published:** 5 December 2023

Abstract:

Recent industry reports indicate that over the past five years, the indirect consequences of COVID-19 have led to a decline in birth rates. Interestingly, U.S. online sales of baby products alone have surged by 13.8%. Although projections suggest a potential normalization of online sales in the next five years, the overall trend remains positive. In contrast, China has witnessed a decline in birth rates in 2022 compared to the previous year. However, despite this demographic shift, baby brands continue to experience compounding revenue growth. The report posits that post the economic downturn induced by COVID-19, increasing incomes are making new parents more inclined towards consuming upscale baby products that offer emotional value. Simultaneously, there is a willingness to explore brands providing practical offerings, especially those relevant to infant development. The market still exhibits a substantial demand for baby products in the foreseeable future. This study aims to elucidate the impact of baby brand identity on the emotional dimension of consumers through the application of semiotic principles and statistical analysis using Semantic Differential Scale. By exploring the symbolic meanings embedded in baby products, the study aims to reveal how brand image influences consumer perception in the evolving landscape of baby product consumption.

Keywords:

Baby Brand Identity, Semiotic Principle, Brand Personality Dimension

1. Introduction

1.1. Research Methods and Scope

In today's society, baby products have received a lot of attention as an integral part of infant and toddler development. However, industry reports over the past five years[1] show a general trend of declining birth rates globally, a trend that is believed to be related to the indirect impact of the COVID-19 epidemic. With this trend, the baby products market is facing new challenges and opportunities. At the same time, online sales of baby products in the U.S. are bucking the trend with a growth rate of 13.8%. This has triggered profound thinking about changes in the baby products

market, especially in light of the declining birth rate trend in China, South Korea and elsewhere. The fact that baby brands are still experiencing growing revenues despite declining birth rates has led the researcher to take a keen interest in consumer behavior and brand perceptions in different cultures in the baby products market.

Brand image symbol is a medium to express brand image. In this study, the baby brand image was analyzed in combination with consumer psychology by using semiotic theory and SD statistical methods. Brand image is not a single graphic, but a complete image that can make consumers relate to factors such as product price, quality, positioning, etc. For brand marketing, it is more important to shape a complete brand image than to emphasize the specific functional characteristics of the product. When designing a brand image, the role and value of the brand image can be maximized only if the brand image directly conveys meaning, i.e., the designer must effectively integrate and process the information, and shape a direct visual language to quickly convey the information.

1.2. Study Background and Objectives

This study applies Barthes' theory of semiotics to the semiotic interpretation of brand identity images and summarizes the theoretical background of brand identity based on previous studies. The theory of semiotics provides a way for designers to backtrack their process through the design result, i.e. semiotics can help designers to understand the content of all the associations implicit in the existing brand image. Thus the theory of semiotics can help designers determine the path of image creation. Secondly, the statistical method of SD method can improve the arbitrary part of semiotic analysis and realize objective image evaluation, while the semiotic method can reconfirm the image generation path of the factors extracted from the results of statistical analysis. Thus, the integrated approach of semiotic analysis and SD method contributes to effective image analysis. If this integrated analytical approach can be actively applied in the analysis of brand logos and also in the development of design ideas, it is possible to achieve the original function of the design while being able to maximize the additional emotional level of consumer satisfaction through the design.

The brand analyzed is the brand of the baby carrier that is indispensable at the birth of a baby. Based on NAVER Data Lab's search rankings for baby carriers during 2022 [3], the brands in the top four positions (ergobaby, BabyBjörn, Konny and pognae) were selected and their brand identities were analyzed by comparison.

2. Materials and Methods

2.1. Brand Identity

The word "brand" originated centuries ago from the ancient Scandinavian word "brand", meaning branding, and in ancient Greek and Roman times, when products were manufactured, people would mark their utensils with a recognizable symbol, which was used to express "ownership" as well as to indicate its value. [4], and a reassuring and reliable brand image builds customer favoritism and loyalty. If consumers repeatedly show a biased (rather than random) behavioral response to a brand oil in their purchasing decisions, we call this brand loyalty. [5] And brand loyalty is high, represents that every consumer or user can become a walking live advertisement, naturally will influence the people around them, and thus can introduce new customers more smoothly, and therefore can also bring a steady stream of profits for the enterprise.

Brand image mainly includes the design of the brand's name, logo and slogan, which are important signs that distinguish the brand from other brands. Brand name usually has words, symbols, patterns or a combination of all three, covering all the characteristics of the brand, with good publicity and communication. Logos can help to recognize and associate, so that consumers have positive feelings and favorites. The use of logos provides associations for the product and can reinforce the name and the logo. [6] The use of brand name and brand design visual stimulus to attract the attention and interest of consumers, in order to be able to leave a deep impression in the minds of consumers, so it is very important to establish a good brand image, which is also able to determine the status of the brand in the minds of consumers in an effective way.

Currently, according to NAVER Data Lab during 2022 the top four brand logos of baby carriers have the following characteristics respectively.(i.e. Table 1)

Table 1. Four baby brand images and their characteristics.

Brand	Specificities
	The Ergobaby logo is based on a nautilus motif and the English name of the brand, which represents the spirit of enterprise, flexibility and naturalness that are essential for a good lifestyle.
	The BabyBjörn brand logo consists of a bear and the brand's name.
	Konny's logo features the full body shape of a little penguin with the addition of natural curves, as well as the combination of the logo with the brand's name to form a complete logo.
	The POGNAE logo is based on a small bird with its beak open upwards, combined with the brand's English name to form a complete brand identity.

After studying the characteristics of these four international brand logos, it is easy to find that the main features of all four companies are combined with symbols with symbolic meaning and English brand names. In addition, the main color of the brand is also used to determine the overall color plan of the brand's products and website, so that the main color image in the brand logo and the color of the entire brand's products can be correspondingly linked. And each brand will also be through the logo has the meaning of the graphic symbol to assist in publicity, deepen the brand in the minds of consumers impression.

2.2. Roland Barthes' Semiotics

Roland Barthes' concept of semiotics is, in most cases, no longer a primary concept of signification, but rather a secondary signification that combines the primary signification of a sound image with a concept as a new referent with another referent (a new concept). In his "Rhetoric of Myth", he mentions that we live in a "myth" of modern society all the time. [7] This myth is a system of implicit meanings that uses everyday discourse as the referent and social representations as the referent. Barthes explains that the objective level of meaning is represented by the primary signifier (external meaning), and that the expression and content of this primary signifier combined with the mental expression (signifier) and content (signified) of the secondary signifier is the subjective level of meaning, i.e., the implicit meaning, which is the level of arbitrariness that allows individuals or cultures to attribute different meanings to signifiers.

Table 2. *Primary and Secondary Significance of Barthes' Semiotic Principles.*

1. signifier	2. signified	
3.sign I. SIGNIFIER (primary significance)		II. SIGNIFIED (primary significance)
III. SIGN(secondary significance)		

In media vehicles such as movies, television, advertisements, cartoons and newspapers, most of the linguistic part of the message is closely related to the visual message. However, visual information that does not have a linguistic interpretation, such as Dunhuang cave paintings, everyday family photographs or silent movies, is a visual image without a discourse body. This means that as Roland Barthes said, there is a signifier and a signified in the image. They do not need to be “signified” by the receiver in order to become signs, i.e., they are symbolic images perceived by our senses, and the process of using signs is the process of interpreting them. [8] Therefore, symbol is meaning, no symbol is meaningless. In brand design, the brand image is the symbol, color, graphics, text and other elements are a combination of various meanings, the birth of each brand image needs to consider its meaning, the brand image is a variety of meanings of the association and connection.

Barthes also defines structuralism as a methodology for the study of cultural products, which originates from modern linguistic methodology [9], and proposes three levels of semantic analysis to reveal the operation of meaning.

The first is extrinsic meaning as the first level of order of signification; the second is intrinsic meaning as the second level of order of signification; and the third is myth as the other pole of intrinsic order of signification. The structuralist methodology of semiotics focuses on analyzing the conceptual structure of various cultures rather than the meaning of reality, i.e. structuralism is concerned with how people grasp and define reality.

Therefore, the semiotic interpretive methodology used in this study is to analyze the logos of baby product brands in terms of the formal elements of the logo (symbols, colors, etc.) and the linguistic elements according to Barth's semiotics table (the one above) in order to determine the structural relationships that arise therein.

3. Roland Barthes' Semiotics and the Semantic Differential Scale Analysis of Baby Brand Identity

This section should present your findings objectively, explaining them largely, concisely, precisely in the text. You should show how your results contribute to the scientific knowledge in academic community clearly and logically. Results and Discussion may be divided by subheadings, concluding equations, figures, tables, etc.

3.1. Semiotic Analysis

3.1.1. Ergobaby

Table 3. *Analysis of the significance of ergobaby's brand identity 1-1.*

Visual Elements 	signifier	signified	
	Spiral Ring Full brand name in serif Primary colors are gray and orange	Symbolism of the Nautilus Warm orange color Soft gray brand logo	
	SIGNIFIER (implied meaning)		SIGNIFIED (implied meaning)
	Nautilus symbolizes perfect tenacity, creativity and movement Orange is a color full of vitality and energy, reminiscent of health and vitality, grey is a color that reflects a modern sensibility.		Establish the brand image of ergobaby as innovative, energetic and positively fashionable.

Table 4. Analysis of the significance of ergobaby's brand identity 1-2

Language Elements (Brand Identity Name)	linguistic symbol	signified	
	ergobaby	Ergo means “ergonomic” and brands containing the word “Ergo” are certified by the European Union as having products that comply with strict ergonomic standards.	
	SIGNIFIER (implied meaning)		SIGNIFIED (implied meaning)
	Ergobaby products are ergonomically designed.		Ergonomic products better protect the growth and development of the baby's skeleton and relieve new parents of their worries and burdens.

The results of the semiotics and semantic interaction of ergobaby's brand identity (Table 3 and Table 4) show that it is a baby brand company full of modern and scientific juxtaposition with bright and energetic colors that are able to create a thriving and warm corporate image. The meanings generated through semiotic interpretation are largely consistent with the intention of the company, i.e., the symbolism of the orange nautilus, which is tough, creative, and energetic in the brand identity.

3.1.2. BabyBjörn

Table 5. Analysis of the significance of BabyBjörn's brand identity 1-1.

Visual Elements 	signifier	signified		
	Bear cartoon Brand logo in Swedish	Bjorn means “bear” in Swedish. The image of the bear echoes the brand name. Passionate red color The image is clear and concise		
	SIGNIFIER (implied meaning)		SIGNIFIED (implied meaning)	
	Red is a color that represents enthusiasm.		This design style is	

	liveliness, positivity and courage. The image of the bear sends a visual message of friendliness and kindness. The bear is often seen as a symbol of motherhood and nurturing.	in line with the Swedish design style, emphasizing simplicity and functionality. It also establishes a brave and positive brand image characteristic.
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Table 6. Analysis of the significance of BabyBjörn's brand identity 1-2.

Language Elements (Brand Identity Name)	linguistic symbol	signified
	BabyBjörn	Bjorn is of Swedish origin and is usually a boy's name, giving the impression that the name is energetic, versatile and intelligent.
	SIGNIFIER (implied meaning)	
	The combination of BabyBjörn and the red bear image conveys a positive, brave and smart brand image.	
		SIGNIFIED (implied meaning)
		Emphasize the importance of the parent-child relationship. This helps to engage parents and make them feel that the brand is relevant to their parent-child relationship.

The semantic interaction results (Table 5 and Table 6) for BabyBjörn's brand identity show that it is a baby brand company that is both energetic and warm, with a brave and bright red color that creates a positive and friendly corporate image. However, since Swedish is a small language and relatively few foreigners are proficient in Swedish, the graphic symbols in the "BabyBjörn" brand are more directly known than the linguistic symbols.

3.1.3. Konny

Table 7. Analysis of the significance of Konny's brand identity 1-1.

Visual Elements 	signifier	signified
	Full body image of an emperor penguin pup Full English brand name Main colors are beige and black	The emperor penguin pattern conveys a cute image characteristic. The color scheme is elegant and high class.
	SIGNIFIER (implied meaning)	
	Konny's brand theme of the way emperor penguins give birth and raise their chicks resonates with the unfamiliar parenting moments everyone experiences for the first time. The contrast between beige and black adds clarity to the design while emphasizing the	
		SIGNIFIED (implied meaning)
		Demonstrates the warmth of the Konny brand image, conveying a feeling of kindness and caring, and enabling consumers to empathize with it.

	warmth and purity of the beige color.	
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Table 8. Analysis of the significance of Konny's brand identity 1-2.

Language Elements (Brand Identity Name)	linguistic symbol	signified
	Konny	Konny is a phonetic variation of the founder's baby's birth name.
	SIGNIFIER (implied meaning)	
	Naming a baby after its birth name allows new parent-consumers to make a trusting connection with the founders.	Using a baby's birth name as a brand name can give a brand a unique personality and emotional connection. This may help build deeper brand loyalty, as people tend to connect more easily with brands that have personal stories and emotional value.

The semantic interaction results of Konny's brand identity (Table 7 and Table 8) show that it is a warm and caring brand that not only wants to bring the softest feeling to babies, but also to protect babies and at the same time pay attention to the state of new parents, which emphasizes the brand's family-friendliness and affinity, and helps to build deeper brand loyalty. The image produced through semiotic interpretation is roughly consistent with the results of semantic analysis, but there are still some differences.

3.1.4. POGNAE

Table 9. Analysis of the significance of POGNAE's brand identity 1-1.

Visual Elements 	signifier	signified
	Image of fledgling with mouth open for food Full name in capitalized English Main colors are black, light blue and red	Chicks are a symbol of infancy. Balanced mix of different color tones.
	SIGNIFIER (implied meaning)	
	The image of a fledgling bird suggests that the brand focuses on the healthy development of babies and also conveys that the brand is as vital and energetic as a newborn. Using the image of a baby bird eating food can inspire a sense of care and intimacy between parents and children, conveying the brand's family-friendliness and care. The combination of warm and cool colors can convey a feeling of warmth, comfort and friendliness. Light blue is usually associated with males and red is usually associated with females. This color combination can be used without favoring a specific gender and is suitable for babies and parents of all genders.	It conveys the idea that POGNAE cares about the growth of infants and actively provides assistance for their development.

Table 10. Analysis of the significance of POGNAE's brand identity 1-2.

Language Elements (Brand Identity Name)	linguistic symbol	signified
	POGNAE	Pognae is the phonetic translation of the Korean word “포그네”, which means “holding a baby”.
	SIGNIFIER (implied meaning)	
	Emphasize the importance of parents holding their babies themselves.	SIGNIFIED (implied meaning) Conveys the brand's focus on providing parents with high-quality, comfortable and convenient baby care products that help parents develop an intimate connection with their babies.

The results of the semantic interaction of POGNAE's brand identity (Table 9 and Table 10) show that the brand establishes a connection with new parents through the image of fledglings eating food, which not only inspires a sense of closeness between parents and children, but also creates a sense of trust in the brand among consumers.

3.2. Statistical and rotated factor analysis results

This study investigates in conjunction with Jennifer Acker's Brand Personality Dimension Scale. The Brand Personality Dimension Scale is a systematic brand dimension scale developed based on the research methodology of personality psychology dimensions, with famous western brands as the research object.

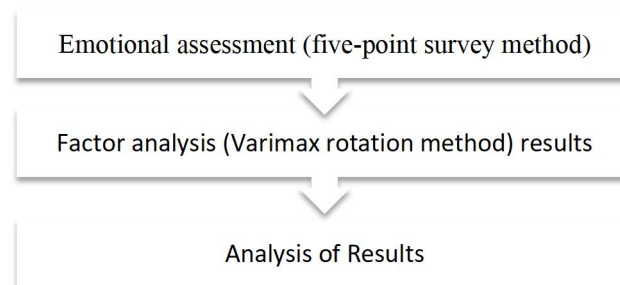


Figure 1. Statistical and analytical processes.

Date of survey: October 31 to November 5

Sample: 100 male and female college students (50 male, 50 female)

Questionnaire: five-point scale survey of elements in the brand personality dimension scale

Results analysis:

Table 11. Statistical results and analysis of ergobaby.

	Factor1	Factor2	Factor3	Factor4	Factor5
Honest		0.844			
Healthy		0.827			
Happy		0.8778			
Bold	0.806				
Heroic	0.867				

Imaginative	0.869				
Stylish	0.816				
Reliable			0.823		
Intelligent			0.759		
Successful			0.817		
Elegant				0.866	
Charming				0.876	
Durable					0.819
Solid					0.814

As shown in Table 11, the influencing factors of ergobaby's brand identity are "bold", "heroic", "imaginative", and "stylish", which is the first factor that can give people a trendy, young, outgoing, and independent brand image. "fashionable", which is the first factor that can give the brand image of fashionable, young and outgoing, and independent. Secondly, the second influencing factors are "honest", "healthy" and "happy", which give consumers a real and warm brand image.

Table 12. Statistical results and analysis of BabyBjörn.

	Factor1	Factor2	Factor3	Factor4	Factor5
Honest	0.761				
Healthy	0.827				
Happy	0.761				
Bold		0.738			
Heroic		0.840			
Imaginative		0.725			
Stylish		0.795			
Reliable			0.778		
Intelligent			0.864		
Successful			0.867		
Elegant				0.857	
Charming				0.859	
Durable					0.799
Solid					0.882

As shown in Table 12, BabyBjörn's brand identity is considered to have elements such as honesty, health and happiness, and the second element is passionate, so when judging the image, the overall image is judged to give an image of sincerity and creativity.

Table 13. Statistical results and analysis of Konny.

	Factor1	Factor2	Factor3	Factor4	Factor5
Honest	0.748				
Healthy	0.865				
Happy	0.781				
Bold		0.739			
Heroic		0.814			

Imaginative		0.819			
Stylish		0.839			
Reliable			0.821		
Intelligent			0.837		
Successful			0.847		
Elegant				0.824	
Charming				0.857	
Durable					0.796
Solid					0.873

As shown in Table 13, Konny's brand identity is considered to be "honest", "healthy," "bold," "imaginative," and "a brand with a lot of imagination." "Bold", "Imaginative", and "Honest". Therefore, it is judged that the overall brand image is homey, real and cozy, unique and modern.

Table 14. Statistical results and analysis of POGNAE.

	Factor1	Factor2	Factor3	Factor4	Factor5
Honest		0.777			
Healthy		0.808			
Happy		0.789			
Bold	0.840				
Heroic	0.750				
Imaginative	0.796				
Stylish	0.801				
Reliable			0.773		
Intelligent			0.830		
Successful			0.873		
Elegant				0.878	
Charming				0.812	
Durable					0.852
Solid					0.850

As shown in Table 14, the pognae brand identity is perceived as having a sense of "honesty", "wholesomeness", and "boldness", and therefore, when evaluating the image, it is evaluated as having a pragmatic, artistic, and unique brand image.

3.3. Synthesize and Analyze

For ergobaby the semiotic interpretation produces a brand image of a tough, energetic and healthy baby and it can be seen that the brand's intention is quite consistent with the meaning produced by the semiotic interpretation. The Semantic Differences Scale reveals two main elements of the brand image. The first is a positive image of passionate, energetic and stylish, giving a bright and positive feeling. The second is an honest, healthy and happy brand image. Therefore, it can be found that there is a great similarity between the brand image of tough, energetic and healthy as interpreted through semiotics and the image of energetic, fashionable, healthy and happy as produced by the semantic differential scale.

For BabyBjörn, it can be seen that the semiotic interpretation produces a brand image that is enthusiastic, lively, smart and brave. Secondly, the Semantic Differences Scale reveals two main factors of the brand image, the first being honest, healthy and happy and the second being enthusiastic and creative. Therefore the interpretations generated by semiotics and the interpretations generated by the semantic scale are also largely consistent. It shows that the brand image is created and communicated according to the intention of the brand.

For Konny, it can be seen that the semiotic interpretation produces an image of a warm, caring and family friendly brand of baby products, and secondly, the semantic difference scale also reveals that Konny is a new light of the brand which is family oriented, cozy and uniquely modern, therefore the image produced by the semiotic and the interpretation produced by the semantic scale are also quite consistent.

For POGNAE it can be seen that the semiotic interpretation produces an image of a safe, cozy and parent-child friendly brand. Secondly, the main factors in the semantic differential scale are health, honesty and uniqueness respectively. The results of the semiotic interpretation differ somewhat from the results tallied in the semantic differential scale, indicating that the brand's production intentions were not fully communicated.

4. Conclusions

In this study, we analyzed the top four baby brand images through semiotic interpretation and a semantic differential scale produced with brand personality dimensions.

First of all, for the semiotic interpretation and the scale statistics yielded quite similar analytical results. Therefore such a statistical method of semantic differences can be validated in design. Secondly some of the brands have some differences in terms of design intent from the methods interpreted in this study, which again illustrates the need for semiotic interpretation.

However, this study also has some limitations. The sample size was not widely set during the statistical process and only 20 generations of college students were surveyed. Therefore the results may not reflect the opinions of different age groups.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

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