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Exploring the rhetorical semiotic brand image structure of ad films with multivariate mapping techniques

Abstract: The aim of this paper is to demonstrate the applicability of multivariate mapping techniques to the exploration of the rhetorical semiotic brand image structure of ad films. By drawing on correspondence analysis and multidimensional scaling, two techniques that are amply used in corpus linguistics and in marketing research, but also on the data reduction technique of factor analysis, it will be displayed how a set of nuclear semes and classemes or an intended semic structure that underlies ad filmic discursive structures may be projected alongside rhetorical figures by its internal stakeholders (i.e., a brand management team, an account planning team or a marketing research team) with view to attaining differential brand associations. The illustration of the exploratory analytical methods takes place by recourse to a corpus of 62 ad filmic texts from 13 sub-brands of the 3 major brands in the UK cereals market and 321 ad filmic segments that resulted from the segmentation procedure. This paper seeks to contribute to advancements in the brand image and advertising rhetoric research streams by addressing distinctive modes of advertising rhetorical configuration at the level of the ad filmic text (as against print ads where the bulk of research on advertising rhetoric has concentrated), and moreover on a segment-by-segment level, rather than treating the ad film as a standalone unit of analysis, by adopting a multimodal outlook to advertising configurations that takes into account not only the verbal or the visual mode, but also interactions among modes, by adopting a product category-specific approach to advertising/brand textuality that draws on rhetorical semiotics and by employing exploratory statistical methods against the background of content analytic output.

Keywords: rhetorical semiotics; ad films; brand image; multivariate mapping techniques

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1 Introduction

The meaning and shaping forces of brand image have been extensively researched in the marketing literature (Dobni and Zinkhan 1990; Stern 2001). “Brand image can be defined as perceptions about a brand as reflected by the brand associations held in consumer memory” (Keller 1998: 93). Brand associations contain the meaning of a brand, hence their value is instrumental as determinants of brand meaning. Brand associations may be further split into core and peripheral associations or associations that are instrumental for building and maintaining a brand’s core (DNA) and associations that are responsible for enriching a brand’s semantic nucleus. It is particularly important to distinguish between these two types of brand image attributes insofar as they circumscribe the essential and non-essential elements of a brand knowledge structure and hence impact directly on a brand’s intended positioning, as well as the extent to which an intended positioning is in fact reflected in consumers’ perceptions.

Advertising constitutes one of the principal semiotic modes whereby brand meaning is generated. “Traditionally, advertising has been a particularly powerful way of communicating a brand’s functional values, as well as building and communicating its emotional values” (De Chernatony 2006: 6). “Advertising has become such a pervasive mode of semiosis in today’s advanced economies that it is now an essential way of knowing the world, particularly through which the arbitrary and culturally determined are made to seem necessary and natural, even as a society is constantly evolving” (Mick et al. 2004: 26).

The vast majority of analyses that have been offered in this research stream pertain to the “decoding” side of advertising and concomitantly to the already attained transformation of advertising expressive elements into brand image attributes, with an undue emphasis on the very encoding process of brand texts (see Solomon and Greenberg 1993). Scholars in the advertising-related literature (e.g., Goldenberg and Mazursky 2008) have made attempts at discerning “depth structures” of ad expressive elements, albeit against a non-rhetorically semiotic informed conceptual background, while linking such “depth structures” neither to intended brand signification, nor to a brand’s semic nucleus as the essential correlate at the plane of content and in a product category-specific framework (Rossolatos forthcoming).

The main argument that is put forward in this paper is that unless a brand image structure is projected in the first place in such a manner that adjoins an intended semic universe to a selected expressive inventory, it is impossible to gauge and furthermore to manage to what extent the resulting brand associations in consumers’ minds do in fact derive from a brand’s communicated expressive inventory (Rossolatos 2014). To this end, the ensuing structuralist rhetorical

semiotic framework for projecting an intended brand image structure aims at bridging this gap between what is intended and what is perceived by the final consumer, with the employment of content analysis and the application of multivariate mapping techniques and factor analysis to the content analytic output.

2 Rhetorical research in advertising: A heavily fragmented research field

Various perspectives, typologies, and taxonomies spanning different disciplines have been offered in order to account for the modes of rhetorical configuration of both static and moving images, such as Foss's visual rhetoric (2005), Groupe μ 's (1992) *Traité du Signe Visuel* ('Treatise on Visual Rhetoric') from a rhetorical semiotic point of view, Kostelnick and Roberts' (2010) from a visual design point of view, McQuarrie and Mick's (1996), McQuarrie and Phillips's (2004), McQuarrie's (2008) from a consumer research point of view.

Groupe μ (1992) provided an updated account of the rhetorical operations (adjunction, suppression, substitution, permutation)¹ that were featured in their first rhetorical treatise (1970), while applying them to visual signs that had been introduced in the first treatise (1970), with further qualifications (see Rossolatos 2012)².

The rhetorical perspective that is offered in this paper has been edified on the taxonomy of rhetorical figures offered by Groupe μ in their first rhetoric (see Rossolatos 2013c), while taking into account for analytical (and not taxonomic) purposes how rhetorical operations function in the province of visual signs. Furthermore, the definitional and operational scope of the involved operations and figures was expanded in order to address the particularities of ad films (Rossolatos 2013c).

Efforts have been undertaken at extending the application of traditional figures mostly to static images (e.g., visual metonymy, Willerton 2005; visual hyperbole, Callister and Stern 2007) and print advertisements (e.g., Durand 1970, 1987; Tom and Eves 1999; McQuarrie and Phillips 2004). The extension of figures to moving images and advertising filmic narratives has been mostly limited to visual

1 These key operations stem from a long tradition, starting with Quintilian (see Sloane 2001 and Nöth 1990).

2 A similar strategy of retaining operations, but dropping figures was pursued by McQuarrie and Phillips (2004) in their taxonomy of operations in print ads.

metaphors and visual metonymies (e.g., Forceville 2007; Forceville and Urios-Aparisi 2009; also see Callister and Stern 2007: 3). By adopting a common classification framework for visual and verbal elements, both purely verbal, purely visual, but also verbo-visual figures and operations may be discerned as being operative in ad filmic texts, while taking into account the evocative powers of the visual mode, namely, “immediacy, verisimilitude, and concreteness that help influence acceptance in ways not available to the verbal” (Foss 2004: 314). To this end, the rhetorical figures were redefined in order to encapsulate visual components, but also modes of interaction between visual and verbal modes in ad filmic texts, as laid out in Rossolatos (2013c). These figures aim to encapsulate salient and frequently recurring modes of rhetorical configuration of ad filmic texts.

3 Rhetorical semiotic conceptual framework for projecting a brand image structure

The conceptual panoply that is employed in this study draws on structuralist rhetorical semiotic terminology, and particularly on the semiotic theory of A. J. Greimas (1966, 1970, 1971, 1976a, 1976b, 1983, 1987; also see Mick 1986, 1987) and the rhetorical semiotic approach to visual and verbal signification that was propounded by Groupe μ (1970, 1992; Rossolatos 2013a, 2013b). The vantage point of Greimas’s epistemological edifice rests with a quest for the primary elements of signification. Greimas’s method, which appeared initially in the form of a semantic theory (1966) and was further elaborated into a full-fledged textual semiotic conceptual armory and methodology, concerns primarily relations and transformations. Brand meaning arises only through relations among elements from the planes of expression and content, while it takes place through various transformations in different levels or strata [*niveaus*] of the so-called generative trajectory of signification (Greimas 1970; Rossolatos 2012). Structuralist semiotics and particularly a generativist approach to the generation and management of brand meaning over time constitutes a most pertinent blueprint (Rossolatos 2013a).

The analytical route that is proposed in this paper seeks to demonstrate how a brand’s semic or brand image structure made up of elementary semantic units (semes) may be explored in relation to an ad text’s modes of rhetorical configuration as rhetorical figures. Rhetorical figures have been shown by Greimas to be indispensable relata that cut across an entire trajectory of signification (spanning an elementary structure of signification, an intermediate structure at a semio-

narrative level and a manifest or discursive structure; cf. Rossolatos 2012, 2014, 2013e), while acting as the “semiotic glue” that adjoins morphologically distinctive elements from the three strata. Furthermore, the proposed analysis of ad filmic texts pursues a combined synchronic/diachronic approach, in line with studies in semiotics, but also in corpus linguistics that are geared towards an understanding of the historical evolution of language (see, for example, Nöth 1990: 63; Wichmann 2008: 194), by attending to ad filmic texts’ structuration in the context of both single filmic texts and across ad films. “Synchronically, we see the set of interpretive conventions as a way to understand the contemporary ‘meaning’ of a brand. By interpreting the evolution of . . . brands, we see the way the . . . meaning of these brands alters over time (i.e., diachronically)” (Hatch and Rubin 2006: 57). In this paper, the findings from the consolidated, diachronic analysis are presented (both levels are addressed more extensively in Rossolatos forthcoming).

The study draws on Groupe μ ’s typology of rhetorical figures that was put forward in their first rhetorical treatise, while expanding the definitions of these figures in order to accommodate the visual modality that is prominent in ad films. I shall refrain from citing anew the list of figures that were employed during the coding procedure of ad filmic segments, which may be found in Rossolatos 2013d, 2013f.

4 Methodology for projecting a rhetorical semiotic brand image structure

The first step in this exploratory endeavor consists of segmenting the selected corpus of ad films in individual segments with the employment of the content analytic software atlas.ti (see Rossolatos 2013c, 2013d, 2013f for further details on the segmentation procedure). The segmentation procedure of the 62 ad films from 13 sub-brands of the 3 key brand players that make up the selected corpus (the UK cereals market) resulted in 321 filmic segments (further details about the featured brands and ad films may be provided upon request).

The second step consists in coding the resulting segments with one or more rhetorical figures and producing relevant descriptive statistics with the aid of atlas.ti, as will be shown in the ensuing section.

The final step consists in applying multivariate mapping techniques and factor analysis to the content analytic output with view to examining the overall covariation patterns in the data-pool and interpreting the output.

5 Discussion of findings

The coding procedure resulted in 323 incidences of rhetorical figures (almost a 1:1 ratio between filmic segments and figures, even though this is not reflective of the actual rhetorical structuration of the concerned films insofar as in many cases each filmic segment was coded with more than one figure, while some segments were not coded at all). Furthermore, the coding procedure with nuclear semes (NSM) and classemes yielded a total of 492 semic incidences, of which 81% are nuclear. Since the focus of this analysis rests with nuclear semes, the following statistical output will revolve around laying out which nuclear semes shape the cereals category's sociolect and what differences emerge in the case of distinctive brands' idiolects. Moreover, since, from a structuralist rhetorical point of view, we are concerned primarily with *relata*, rather than with *pro-filmic* or *ad expressive* elements, as key sources for brand textual differentiation and furthermore as sources for differential figurative advantages, the analysis will proceed by showing which rhetorical figures are responsible for shaping the cereals category sociolect, followed by a focused analysis on the brands that make up our corpus. Starting with the first part of our analysis, the semantic universe of the cereals category was found to consist of the hierarchy of semes that is displayed in Figure 1.

As per Figure 1, 75% of the cereals category's semic universe is made up of nine semes, namely, /energy/, /for the entire family/, /taste/, /for women/, /wholegrain/, /superior performance/, /snappy, crackly, poppy sound/, /chocolatey/ and /shape/. Given the weight of this semic constellation we may claim that these semes constitute the category's sociolect. This certainly holds for semes, such as /energy/, /wholegrain/, /superior performance/, but not for semes such as /for women/, which is purely the province of Special K or /snappy, crackly, poppy sound/ which is the province of Kellogg's Rice Krispies. The two latter semes emerged among the most popular ones that recur in the cereals' sociolect by virtue of their frequent recurrence in the concerned brands' idiolects.

A more accurate depiction, at a preliminary level, of the centrality of each seme in the cereals category's sociolect may be yielded by attending to the average number of brands where each of the nuclear semes occurs (Figure 2). In these terms, seven nuclear semes recurred in more than 3 brands' advertising discourses (from a diachronic point of view). More specifically, /taste/ emerged in 8 brand discourses, /wholegrain/ in 7, /energy/ in 6, /for the entire family/ in 5 and the rest three semes, namely, /chocolatey/, /high in fiber/, and /superior performance/ in 3. The remaining semes emerged in 1–2 brand discourses and hence it may be claimed that they constitute idiolectal aspects. Given that the six semes /taste/, /wholegrain/, /energy/, /for the entire family/, /chocolatey/, and /superior

Seme	% in the total corpus	Seme	% in the total corpus
NSM/energy/	15.04%	NSM/inverted Britishness/	1.25%
NSM/for the entire family/	12.53%	NSM/unique recipe/	1.25%
NSM/taste/	10.03%	NSM/love/	1.00%
NSM/for women/	9.77%	NSM/sexiness/	1.00%
NSM/wholegrain/	9.02%	NSM/stardom/	1.00%
NSM/superior performance/	6.77%	NSM/flavor/	0.75%
NSM/snappy. crackly. poppy sound/	5.01%	NSM/uncertainty avoidance/	0.75%
NSM/chocolatey/	3.76%	NSM/best ingredients/	0.50%
NSM/shape/	3.76%	NSM/crunchy taste/	0.75%
NSM/ludic/playful consumption experience/	2.51%	NSM/heritage/	0.50%
NSM/ludic/playful/nutty user profile/	2.51%	NSM/keeping heart healthy/	0.50%
NSM/combating bloatedness/	2.26%	NSM/straight from nature/	0.50%
NSM/simplicity/	2.01%	NSM/value-for-money/	0.50%
NSM/makes you slim/	1.50%	NSM/approval/	0.25%
NSM/feeling good/	1.25%	NSM/fortification/	0.25%
NSM/high in fiber/	1.25%	NSM/fun/	0.25%
		Total	100%

Fig. 1: Cereals category hierarchy of semes (atlas.ti output)

performance/ emerge more densely both in terms of number of brands as well as frequency of recurrence, we may infer that they constitute the concerned category's key value drivers or the semic drivers of the category's sociolect.

In terms of associative type by brand, that is to what extent semes concerned attributes, benefits or attitudes, as per Figure 3, we notice that attitude (39%) and attribute (36%) related semes constitute the bulk of the category's semic universe in almost equal proportions, followed by benefits (24%).

As regards the differential distribution of types of semes by brand (Figure 3), we notice that Kellogg's breakfast cereals, Kellogg's Special K, Kellogg's All Bran, Kellogg's Crunchy Nut, Weetabix Minis, and Nestle Cheerios feature an above category average incidence of attitudes; Kellogg's Rice Krispies, Kellogg's Coco Pops, Kellogg's Crunchy Nut, Kellogg's Frosties, Weetabix Minis, Weetos, Nestle Cheerios, Nestle Shreddies, and Nestle Shredded Wheat feature an above category average incidence of attributes; Kellogg's Coco Pops, Kellogg's All Bran, Kellogg's Frosties, Weetabix, Weetos, and Nestle Shreddies feature an above category average incidence of benefits.

Semes	Brands														total
	Kellogg's breakfast cereals	Kellogg's Special K	Kellogg's Rice Krispies	Kellogg's Coco pops	Kellogg's All Bran	Kellogg's Crunchy Nut	Kellogg's Frosties	Weetabix	Weetabix Minis	Weetos	Nestle Cheerios	Nestle Shreddies	Nestle Shredded Wheat		
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
NSM/approval/	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
NSM/best ingredients/	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1
NSM/chocolatey/	0	0	0	24	0	0	0	0	25	25	0	0	0	0	4
NSM/combating bloatedness/	0	0	0	0	28	0	0	0	0	0	0	0	0	0	2
NSM/crunchy taste/	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
NSM/crunchy/	0	0	0	6	0	0	0	0	0	3	0	0	0	0	1
NSM/energy/	0	0	7	41	0	0	42	45	0	28	0	25	0	15	15
NSM/feeling good/	0	0	0	0	16	0	0	0	0	0	0	0	0	0	1
NSM/flavor/	0	0	0	0	0	0	0	0	0	0	0	0	11	1	1
NSM/for the entire family/	44	0	0	0	0	0	0	19	50	0	41	22	0	13	13
NSM/for women/	0	72	0	0	34	0	0	0	0	0	0	0	0	0	10
NSM/fortification/	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
NSM/fun/	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
NSM/heritage/	0	0	7	0	0	0	0	0	0	0	0	0	0	0	1
NSM/high in fiber/	0	0	0	18	6	0	0	0	0	0	0	0	0	0	1
NSM/inverted Britishness/	0	0	0	0	0	12	0	0	0	0	0	0	0	0	1
NSM/keeping heart healthy/	0	0	0	0	0	0	0	0	0	0	0	0	7	1	1
NSM/love/	15	0	0	0	0	0	0	0	0	0	0	0	0	0	1
NSM/ludic/playful consumption experience/	0	0	0	0	0	24	0	0	0	0	0	0	0	0	3
NSM/ludic/playful/nutty user profile/	0	0	0	0	0	24	0	0	0	0	0	0	0	0	3
NSM/makes you slim/	0	15	0	0	0	0	0	0	0	0	0	0	0	0	2
NSM/sexiness/	0	10	0	0	0	0	0	0	0	0	0	0	0	0	1
NSM/shape/	0	0	0	0	0	0	0	0	0	0	32	9	0	4	4
NSM/simplicity/	0	0	0	0	0	0	0	0	0	0	0	0	30	2	2
NSM/snappy, crackly, poppy sound/	0	0	69	0	0	0	0	0	0	0	0	0	0	0	5
NSM/stardom/	0	0	14	0	0	0	0	0	0	0	0	0	0	0	1
NSM/straight from nature/	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1
NSM/superior performance/	7	0	0	0	0	0	0	27	0	22	0	0	0	0	7
NSM/taste/	0	3	0	0	13	39	58	0	13	0	5	16	15	10	10
NSM/uncertainty avoidance/	11	0	0	0	0	0	0	0	0	0	0	0	0	0	1
NSM/unique recipe/	0	0	0	0	0	0	0	0	0	3	0	13	0	1	1
NSM/value-for-money/	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1
NSM/wholegrain/	0	0	0	6	0	0	0	8	13	17	22	16	37	9	9
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Fig. 2: Distribution of semes by brand (atlas.ti output). Note: Cells highlighted in grey denote that the seme is encountered at an above category average level in the concerned brand's semantic universe

Brands	Kellogg's breakfast cereals	Kellogg's Special K	Kellogg's Rice Krispies	Kellogg's Coco pops	Kellogg's All Bran	Kellogg's Crunchy Nut	Kellogg's Frosties	Weetabix	Weetabix Minis	Weetos	Nestle Cheerios	Nestle Shreddies	Nestle Shredded Wheat	Total
Semes	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Attitudes	67	80	21	6	52	56	0	27	57	0	47	28	33	39
Attributes	17	3	71	50	19	44	58	11	43	52	53	40	58	36
Benefits	17	17	7	44	29	0	42	62	0	48	0	32	8	24
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Fig. 3: Distribution of semes by brand according to associative type by attributes, benefits, attitudes (atlas.ti output)

Pursuant to the initial analyses pertaining to the category's sociolect in terms of semic drivers, further analyses were conducted with view to determining patterns of co-occurrence among semes, modes of rhetorical configuration and brands. To this end, a series of correspondence analyses, factor analysis, and multi-dimensional scaling analysis were conducted.

The first correspondence analysis was conducted among the data that make up the brands x nuclear semes matrix (Figure 2), with view to discerning areas of differential associations on a semic level, by taking into account the overall co-variance among the data. "Correspondence analysis is a method of data analysis for representing tabular data graphically. Correspondence analysis is a generalization of a simple graphical concept with which we are all familiar, namely the scatterplot" (Greenacre 2007: 1). The rationale of correspondence analysis consists of reducing a data-set to as many salient dimensions as possible (Hoffman and Franke 1986: 215). "The graphical relationships between the rows and the columns of the table X that result from correspondence analysis are based on the idea of representing all the row and column categories and interpreting the relative positions of the points in terms of the weights corresponding to the column and the row" (Hardle and Simar 2007: 306). "The proximity of a particular row to a particular column indicates that this row (column) has a particularly important weight in this column (row). In contrast to this, a row that is quite distant from a particular column indicates that there are almost no observations in this column for this row (and vice versa)" (Hardle and Simar 2007: 310). The relative weight of association between the rows and columns of Figure 2 is displayed in the graphical output of the respective correspondence analysis (Figure 6), which was produced from the contingency table's (semes x brands) data with the program XLStat. Since the probability value (p-value) was found to be lower than

Chi-square (observed value)	2084.75
Chi-square (critical value)	430.69
DF	384
One-tailed p-value	< 0.0001
Alpha	0.05

Fig. 4: Chi-square independence test semes x brands (XLStat output)

the Alpha level, the null hypothesis for independence between the variables (semes, brands) was rejected (see Figure 4).

Further to the discernment of a significant association between brands and semes, the cumulative percentage of the first two factors' eigenvalues was calculated with a view to discerning whether the significant association between brands and semes was of sufficient weight that would allow for proceeding with the graphical display of the correspondence analysis output. In these terms, as per the results displayed in Figure 5, the cumulative eigenvalue of the first two factors was 35.41% (F1 17.92%, F2 17.49%), suggesting a medium weight of association (in the context of a rule of thumb that suggests that a high associative weight may be gauged from the incidence of an at least 60% cumulative percentage of the first two factors; cf. Hardle and Simar 2007: 311).

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
Eigenvalue	0.936	0.914	0.778	0.600	0.566	0.447	0.387	0.245	0.142	0.114	0.061	0.035
%variance	17.918	17.487	14.889	11.482	10.835	8.563	7.402	4.690	2.711	2.181	1.177	0.665
%cumulative	17.918	35.406	50.295	61.776	72.611	81.174	88.577	93.267	95.978	98.159	99.335	100.000

Fig. 5: Eigenvalues and variance percentages for semes x brands (XLStat output)

This medium weight of association is evinced in the graphical output of Figure 6 where, with the exception of a strong association between Rice Krispies, All Bran, Special K, Crunchy Nut, and Kellogg's Breakfast Cereals and their corresponding semic universes, the rest of the brands and semes tend to concentrate around the middle of the map (cf. Greenacre 2007: 74), which is suggestive of an unclear and tenuous link or that the link between semes and brands is diffuse. "The very low inertia is seen in the closeness of the row profiles to the centroid" (Greenacre 2007: 79). In other words, the two dimensions of the correspondence analysis

map do not account sufficiently for the total variance in the data. “The asymmetric map functions well when total inertia is high, but it is problematic when total inertia³ is small because the profile points in principal coordinates are too close to the origin for easy labeling” (Greenacre 2007: 80). However, “[correspondence analysis] should be regarded as a way of re-expressing the data in pictorial form for ease of interpretation – with this objective any table of data is worth looking at” (Greenacre 2007: 80). Insofar as the proximity of the data points on the map allows for making inferences about the association between the examined variables, the relative proximity of brands to semes yields an interesting picture of the extent to which each a brand’s semic universe is sufficiently differentiated from the rest.

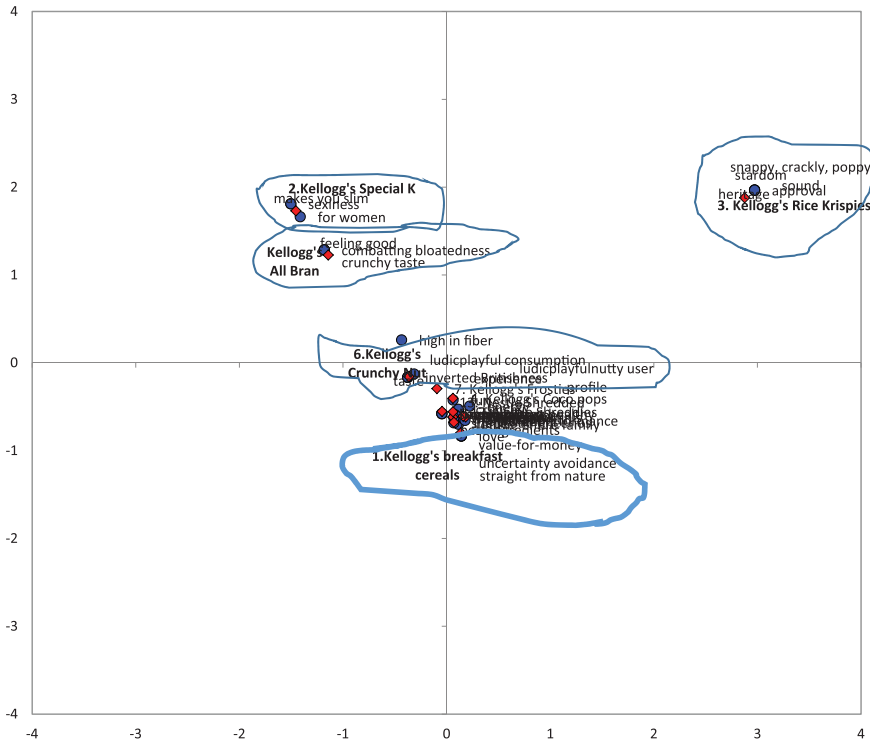


Fig. 6: Correspondence analysis scatterplot of rhetorical figures by brand

3 “The total inertia of a cross-tabulation is a measure of how much variation there is in the table” (Greenacre 2007: 81).

In order to further examine which semes and brands contributed differentially to the total inertia of the table the individual row and column inertia scores for attributes and brands were summed and then percentages of each seme and brand inertia scores were calculated, as per Figure 8. “The investigation of these components of inertia (analogous to an analysis of variance) plays an important supporting role in the interpretation of CA. They provide diagnostics which allow the user to identify which points are the major contributors to a principal axis and to gauge how well individual points are displayed” (Greenacre 2007: 81).

Semes (rows)	Inertia	% of ttl inertia	Indexed inertia	Brands (columns)	Inertia	% of ttl inertia	Indexed inertia
Approval	0.032	0.61%		1.Kellogg's breakfast cereals	0.526	10.07%	131
best ingredients	0.069	1.32%	44	2.Kellogg's Special K	0.675	12.91%	168
Chocolatey	0.208	3.99%	132	3. Kellogg's Rice Krispies	0.861	16.47%	214
combating bloatedness	0.259	4.95%	163	4. Kellogg's Coco pops	0.264	5.05%	66
crunchy taste	0.029	0.55%	18	5. Kellogg's All Bran	0.523	10.01%	130
crunchy	0.038	0.73%	24	6.Kellogg's Crunchy Nut	0.663	12.69%	165
energy	0.225	4.31%	142	7. Kellogg's Frosties	0.107	2.04%	27
feeling good	0.144	2.75%	91	8.Weetabix	0.286	5.47%	71
flavor	0.104	1.98%	65	9. Weetabix Minis	0.060	1.15%	15
for the entire family	0.220	4.21%	139	10. Weetos	0.247	4.73%	61
for women	0.515	9.85%	325	11. Nestle Cheerios	0.339	6.49%	84
fortification	0.025	0.48%	16	12. Nestle Shreddies	0.144	2.75%	36
fun	0.056	1.08%	36	13. Nestle Shredded Wheat	0.532	10.17%	132
heritage	0.064	1.22%	40	total (inertia). average (% of inertia)	5.225	8%	100
high in fiber	0.118	2.27%	75				
inverted Britishness	0.109	2.09%	69				
keeping heart healthy	0.069	1.32%	44				
love	0.138	2.64%	87				
ludicplayful consumption experience	0.219	4.19%	138				
ludicplayfulnutty user profile	0.219	4.19%	138				
makes you slim	0.139	2.66%	88				
sexiness	0.093	1.77%	58				
shape	0.241	4.61%	152				
simplicity	0.276	5.29%	174				
snappy, crackly, poppy sound	0.640	12.24%	404				
stardom	0.128	2.45%	81				
straight from nature	0.069	1.32%	44				
superior performance	0.176	3.37%	111				
taste	0.211	4.04%	133				
uncertainty avoidance	0.104	1.98%	65				
unique recipe	0.093	1.78%	59				
value-for-money	0.069	1.32%	44				
wholegrain	0.126	2.42%	80				
total (inertia), average (% of inertia)	5.225	3.03%	100				

Fig. 7: Contribution of each seme and brand to the total inertia

From the calculation of individual row and column inertias we may discern the following: In terms of rows (semes) /snappy, crackly, poppy sound/ and /for women/ account for 22% of the entire rows' inertia. The relatively high contribution of these two attributes to the total variance may also be gauged from their highly distanced placement from the centroid of the map (Figure 10). In terms of columns, Special K and Rice Krispies account for 29.39% of the entire columns' inertia which may also be gauged from their highly distanced placement from the centroid of the map (Figure 10).

The second correspondence analysis mapping exercise sought to determine whether there is a significant association between brands and rhetorical figures and if yes what is the weight of this association.

As per Figure 8, since the p-value is lower than Alpha value the null hypothesis about the independence between the two variables was rejected and hence it was confirmed that there is an association between the distribution of the values of rhetorical figures by brand.

Chi-square (observed value)	1194.859
Chi-square (critical value)	366.977
DF	324
One-tailed p-value	< 0.0001
Alpha	0.05

Fig. 8: Chi-square independence test rhetorical figures x brands (XLStat output)

Further to the rejection of the null hypothesis about the independence of variables, the weight of this association was determined by attending to the cumulative eigenvalue of the first two factors as per Figure 9.

The cumulative percentage (31.5%) of the first two factors (F1, F2) of Figure 9 is suggestive of a medium weight of association in the distribution of rhetorical figures by brand. This is evinced in the scatterplot (Figure 10), where the data points

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
Eigenvalue	0.618	0.571	0.542	0.429	0.402	0.309	0.287	0.186	0.160	0.147	0.072	0.047
%variance	16.400	15.162	14.369	11.387	10.661	8.202	7.623	4.922	4.248	3.892	1.898	1.237
%cumulative	16.400	31.561	45.930	57.317	67.978	76.180	83.802	88.725	92.973	96.864	98.763	100.000

Fig. 9: Eigenvalues and variance percentages for semes x brands (XLStat output)

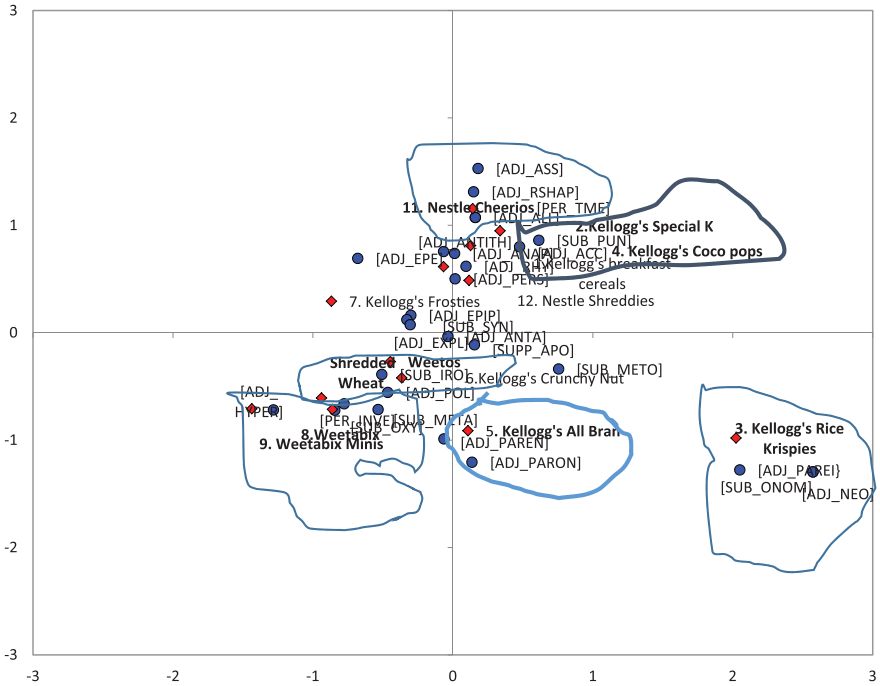


Fig. 10: Correspondence analysis scatterplot of rhetorical figures by brand

from the two variables tend to be concentrated around the centroid of the map. However, despite the medium weight of association we may still discern patterns in the relationships between rhetorical figures and brands by cross-referring between the indexed incidence of rhetorical figures by brand (Figure 12) and the proximity of semes to figures in the correspondence analysis scatterplot (Figure 10).

More specifically, we notice a very specific pattern of differential modes of rhetorical configuration in the cases of Rice Krispies (pareikonopoeia, onomatopoeia, and neologism), Weetabix, Weetabix Minis, and Nestle Shredded Wheat (hyperbole), Shredded Wheat and Weetos (irony), Kellogg's All Bran (parenthesis, paronomasia), Nestle Cheerios (assonance, reshaption), pun, accolorance, rhyme (Kellogg's Special K and Coco-Pops).

Correspondence analysis is particularly pertinent in discerning differential modes of rhetorical configuration among brand discourses in a given category, as it takes into account the entire co-variance levels among the data of a brands x figures matrix. The scatterplot output should always be checked against the original data in order to confirm whether the proximity between brands and figures makes sense.

Rhetorical figure	Atlas.ti code	Total	Rhetorical figure	Atlas.ti code	Total
Metaphor	[SUB_META]	12.7%	Apocope	[SUPP_APO]	1.5%
Personification	[ADJ_PERS]	11.8%	Paronomasia	[ADJ_PARON]	1.2%
Accolorance	[ADJ_ACC]	10.8%	Epiphora	[ADJ_EPIP]	0.9%
Anaphora	[ADJ_ANAP]	6.2%	Parenthesis	[ADJ_PAREN]	0.9%
Inversion	[PER_INVE]	6.2%	Rhetorical question	[SUPP_RHEQ]	0.9%
Hyperbole	[ADJ_HYPER]	5.3%	Assonance	[ADJ_ASS]	0.6%
Antanaclasis	[ADJ_ANTA]	4.6%	Alliteration	[ADJ_ALL]	0.3%
Pareikonopoeia	[ADJ_PAREI]	4.3%	Neologism	[ADJ_NEO]	0.3%
Irony	[SUB_IRO]	4.3%	Polysyndeton	[ADJ_POL]	0.3%
Reshaption	[ADJ_RSHAP]	4.0%	Tmesis	[PER_TME]	0.3%
Antithesis	[ADJ_ANTITH]	3.7%	Asyndeton	[SUPP_ASY]	0.3%
Metonymy	[SUB_METO]	3.7%	Ellipsis	[SUPP_ELL]	0.3%
Expletion	[ADJ_EXPL]	2.2%	Litotes	[SUPP_LIT]	0.3%
Onomatopoeia	[SUB_ONOM]	2.2%	Anacolouthon	[PER_ANAC]	0.0%
Oxymoron	[SUB_OXY]	2.2%	Anagram	[PER_ANAG]	0.0%
Epenthesis	[ADJ_EPE]	1.9%	Antimetabole	[PER_ANTIM]	0.0%
Rhyme	[ADJ_RHY]	1.9%	Paradox	[SUB_PARA]	0.0%
Pun	[SUB_PUN]	1.9%	Aphaeresis	[SUPP_APH]	0.0%
Synecdoche	[SUB_SYN]	1.9%	Suspension/Silence	[SUPP_SUSSIL]	0.0%
			Zeugma	[SUPP_ZEU]	0.0%
			Total		100%

Fig. 11: Hierarchical ranking of the incidence of rhetorical figures across the entire corpus (atlas.ti output; see Rossolatos 2013c, 2013d, 2013f for definitions of figures)

In order to further determine co-occurrence patterns (Oakes 1998; Biber et al. 2004; Gries 2009; Biber and Conrad 2009) among the nuclear semes that make up the sociolectal semantic universe of the cereals product category and reduce them to salient dimensions, a factor analysis was conducted. “In a factor analysis, the correlations among a large number of variables (i.e., the linguistic features) are identified, and the variables that are distributed in similar ways are grouped together. Each group of variables is a factor – which is then interpreted

	Kellogg's breakfast cereals	Kellogg's Special K	Kellogg's Rice Krispies	Kellogg's Coco pops	Kellogg's All Bran	Kellogg's Crunchy Nut	Kellogg's Frosties	Weetabix	Weetabix Minis	Weetos	Nestle Cheerios	Nestle Shreddies	Nestle Shredded Wheat
[ADJ_ACC]		■		■								■	
[ADJ_ALL]				■									
[ADJ_ANAP]	■	■		■									
[ADJ_ANTA]				■	■	■							
[ADJ_ANTITH]	■	■						■					■
[ADJ_ASS]											■		
[ADJ_EPE]				■			■				■		
[ADJ_EPIP]												■	■
[ADJ_EXPL]	■									■		■	
[ADJ_HYPER]								■	■				■
[ADJ_NEO]			■										
[ADJ_PAREI}			■		■								
[ADJ_PAREN]					■	■							
[ADJ_PARON]					■								
[ADJ_PERS]	■			■						■	■	■	
[ADJ_POL]						■							
[ADJ_RHY]		■		■		■						■	
[ADJ_RSHAP]				■							■		
[PER_ANAC]													
[PER_ANAG]													
[PER_ANTIM]													
[PER_INVE]						■	■	■					
[PER_TME]				■									
[SUB_IRO]						■	■	■		■		■	■
[SUB_META]					■	■	■	■		■		■	■
[SUB_METO]	■		■			■						■	
[SUB_ONOM]			■										
[SUB_OXY]						■							■
[SUB_PARA]													
[SUB_PUN]		■	■	■							■		
[SUB_SYN]	■	■				■				■			
[SUPP_APH]													
[SUPP_APO]					■						■		
[SUPP_ASY]							■						
[SUPP_ELL]		■											
[SUPP_LIT]													■
[SUPP_RHEQ]											■		
[SUPP_SUSSIL]													
[SUPP_ZEU]													

Fig. 12: Indexed incidence of rhetorical figures by brand. Note: Cells highlighted in yellow denote that the rhetorical figure is encountered at an above category average incidence in the concerned brand's semantic universe

	NSM/best ingredients/	NSM/chocolatey/	NSM/combatting	NSM/crunchy/	NSM/energy/	NSM/for the entire	NSM/for women/	NSM/fortification/	NSM/fun/	NSM/high in fiber/	NSM/inverted	NSM/keepin heart	NSM/love/	NSM/ludic/playful	NSM/ludic/playful/nutty	NSM/makes you slim/	NSM/sexiness/	NSM/shape/	NSM/simplicity/	NSM/snappy, crackly,	NSM/stardom/	NSM/straight from	NSM/superior	NSM/taste/	NSM/unique recipe/	NSM/value-for-money/	NSM/wholegrain/	total
[ADJ _ ACC]																												
[ADJ ANAP]																												
[ADJ ANTA]																												
[ADJ ANTIITH]																												
[ADJ ASS]																												
[ADJ EPE]																												
[ADJ EPIP]																												
[ADJ EXPL]																												
[ADJ HYPER]																												
[ADJ PAREI]																												
[ADJ PARON]																												
[ADJ PERS]																												
[ADJ _ POL]																												
[ADJ _ RHY]																												
[ADJ _ RSHAP]																												
[PER _ INVE]																												
[SUB _ IRO]																												
[SUB _ META]																												
[SUB _ METO]																												
[SUB _ ONOM]																												
[SUB _ OXY]																												
[SUB _ PUN]																												
[SUB _ SYN]																												
[SUPP _ APO]																												
[SUPP _ ELL]																												
[SUPP _ RHEQ]																												

Fig. 13: Indexed incidence of rhetorical figures by seme. Note: Cells highlighted in yellow denote that the rhetorical figure is encountered at an above category average incidence in the concerned brand’s semantic universe

functionally as a dimension of variation” (Biber et al. 2004: 278). After nine iterations and pursuant to the recalculation of the factor loadings with varimax rotation⁴, a four-factor solution was yielded, as per Figure 14.

Positive factor loadings (i.e., with a value of above +0.3; as per the 0.3 cut-off point suggested by Biber et al. 2004: 279) of individual semes by dimension (factor) are highlighted in yellow (Figure 14). The labeling of each factor, as noted by Biber et al. (2004) is a matter of interpretation, based on the function that each underlying semantic dimension (i.e., factor) is intended to fulfill. “Because features with larger loadings are more representative of the factor, they are also more useful in the functional interpretation of the factor)” (Biber et al. 2004: 279).

Factors	F1 safe and economic choice	F2 heritage and approval	F3 indulgence	F4 health and wellness
Semes				
NSM/taste/	-0.254	-0.241	0.897	-0.040
NSM/wholegrain/	-0.232	-0.277	-0.342	-0.642
NSM/energy/	-0.114	-0.099	-0.350	-0.259
NSM/for the entire family/	0.495	-0.137	-0.157	-0.296
NSM/chocolatey/	-0.182	-0.157	-0.406	-0.122
NSM/high in fiber/	-0.158	-0.152	-0.216	0.534
NSM/superior performance/	0.023	-0.126	-0.315	-0.259
NSM/crunchy/	-0.185	-0.157	-0.406	-0.044
NSM/for women/	-0.091	-0.063	-0.010	0.540
NSM/heritage/	-0.068	0.990	0.022	0.000
NSM/shape/	-0.010	-0.081	-0.066	-0.194
NSM/unique recipe/	-0.078	-0.093	-0.106	-0.170
NSM/approval/	-0.068	0.990	0.022	0.000
NSM/best ingredients/	0.986	-0.030	0.041	0.001
NSM/combating bloatedness/	-0.104	-0.134	-0.024	0.787
NSM/crunchy taste/	-0.104	-0.134	-0.024	0.787
NSM/feeling good/	-0.104	-0.134	-0.024	0.787
NSM/flavor/	-0.148	-0.117	-0.024	-0.345
NSM/fortification/	-0.136	-0.123	-0.318	-0.177
NSM/fun/	-0.111	-0.086	-0.221	0.116
NSM/inverted Britishness/	-0.143	-0.130	0.897	-0.093
NSM/keeping heart healthy/	-0.148	-0.117	-0.024	-0.345
NSM/love/	0.986	-0.030	0.041	0.001
NSM/ludic/playful consumption experience/	-0.143	-0.130	0.897	-0.093
NSM/ludic/playful/nutty user profile/	-0.143	-0.130	0.897	-0.093
NSM/makes you slim/	-0.054	-0.016	-0.001	0.265
NSM/sexiness/	-0.054	-0.016	-0.001	0.265
NSM/simplicity/	-0.148	-0.117	-0.024	-0.345
NSM/snappy, crackly, poppy sound/	-0.068	0.990	0.022	0.000
NSM/stardom/	-0.068	0.990	0.022	0.000
NSM/straight from nature/	0.986	-0.030	0.041	0.001
NSM/uncertainty avoidance/	0.986	-0.030	0.041	0.001
NSM/value-for-money/	0.986	-0.030	0.041	0.001

Fig. 14: Factor analysis output (XLStat; after varimax rotation; 4-factor solution; factors with loadings greater than 0.3 highlighted in yellow)

⁴ “The varimax rotation makes the interpretation easier by maximizing the variance of the squared factors loadings by column. For a given factor, high loadings become higher, low loadings become lower, and intermediate loadings become either lower or higher” (XLStat 2014).

In this respect, by attending to the semantic contiguity of the positively loading semes on each dimension, the following labels were attached to the four factors (or semic drivers of the cereals category):

F1 safe and economic choice (positive loading of semes /uncertainty avoidance/, /for the entire family/, /best ingredients/, /value-for-money/). This dimension is clearly the territory of Kellogg's cornflakes (cf. Figure 2).

F2 heritage and approval (positive loadings of semes /heritage/, /approval/, /snappy, crackly, poppy sound/ and /stardom/). This dimension is clearly the territory of Kellogg's Rice Krispies (cf. Figure 2).

F3 indulgence (positive loadings of semes /taste/, /inverted Britishness/, /ludic, playful consumption experience and user profile/. This dimension is clearly the territory of Kellogg's Crunchy Nut (cf. Figure 2).

F4 health and wellness (positive loadings of semes /high in fiber/, /combating bloatedness/, /for women/, /feeling good/). This dimension is mainly the territory of Kellogg's All Bran and Kellogg's Special K (cf. Figure 2).

In order to discern the overall similarity in the semantic universe of the brands that make up the selected corpus a multidimensional mapping exercise was also conducted. The "multidimensional scaling technique [MDS] is a pictorial representation of the relationships inherent in a dissimilarity matrix" (Oakes 1998: 253). "MDS enables us to map objects (brands) spatially, so that the relative positions in the mapped space reflect the degree of perceived similarity between the objects (the closer in space, the more similar the brands)" (Kohli and Leuthesser 1993: 13).

Initially, a correlation matrix was produced with view to discerning brand similarities across all nuclear semes. The correlation matrix is displayed in Figure 15.

Then MDS was applied to the correlation matrix, yielding two effective dimensions, against which the brands were plotted, as per Figure 16.

As per the proximity of brands in the two-dimensional space of the resulting MDS map we may discern that Special K and Kellogg's All Bran share similar semic universes, and the same holds for Kellogg's Breakfast cereals, Weetabix Minis, and Nestle Cheerios, for Kellogg's Coco Pops and Weetos. Kellogg's Crunchy Nut, Weetabix, and Kellogg's Rice Krispies maintain a quite differentiated semic identity, based on their overall interaction patterns with the rest brands.

The MDS exercise offers a different outlook compared to the previously displayed factor analytic exercise. Even though both factor analysis and MDS essentially reduce data to salient dimensions, MDS, by virtue of being customarily used as a 2-dimensional solution (at most 3-D solution) affords to offer a snapshot of

	Kellogg's breakfast cereals	Kellogg's Special K	Kellogg's Rice Krispies	Kellogg's Coco pops	Kellogg's All Bran	Kellogg's Crunchy Nut	Kellogg's Frosties	Weetabix	Weetabix Minis	Weetos	Nestle Cheerios	Nestle Shreddies	Nestle Shredded Wheat
Kellogg's breakfast cereals	1.000	0.089	0.093	0.132	0.139	0.127	0.092	0.297	0.725	0.067	0.590	0.362	0.132
Kellogg's Special K	0.089	1.000	0.061	0.086	0.662	0.056	0.031	0.078	0.067	0.097	0.075	0.093	0.076
Kellogg's Rice Krispies	0.093	0.061	1.000	0.006	0.096	0.087	0.003	0.002	0.079	0.037	0.082	0.048	0.091
Kellogg's Coco pops	0.132	0.086	0.006	1.000	0.086	0.123	0.418	0.610	0.132	0.731	0.067	0.430	0.036
Kellogg's All Bran	0.139	0.662	0.096	0.086	1.000	0.079	0.133	0.122	0.057	0.151	0.095	0.060	0.053
Kellogg's Crunchy Nut	0.127	0.056	0.087	0.123	0.079	1.000	0.561	0.111	0.065	0.138	0.034	0.155	0.112
Kellogg's Frosties	0.092	0.031	0.003	0.418	0.133	0.561	1.000	0.420	0.109	0.283	0.003	0.606	0.167
Weetabix	0.297	0.078	0.002	0.610	0.122	0.111	0.420	1.000	0.253	0.721	0.226	0.649	0.002
Weetabix Minis	0.725	0.067	0.079	0.132	0.057	0.065	0.109	0.253	1.000	0.218	0.685	0.539	0.127
Weetos	0.067	0.097	0.037	0.731	0.151	0.138	0.283	0.721	0.218	1.000	0.025	0.404	0.149

Fig. 15: Correlation matrix of nuclear semes by nuclear semes for all brands in the corpus (XLStat output)

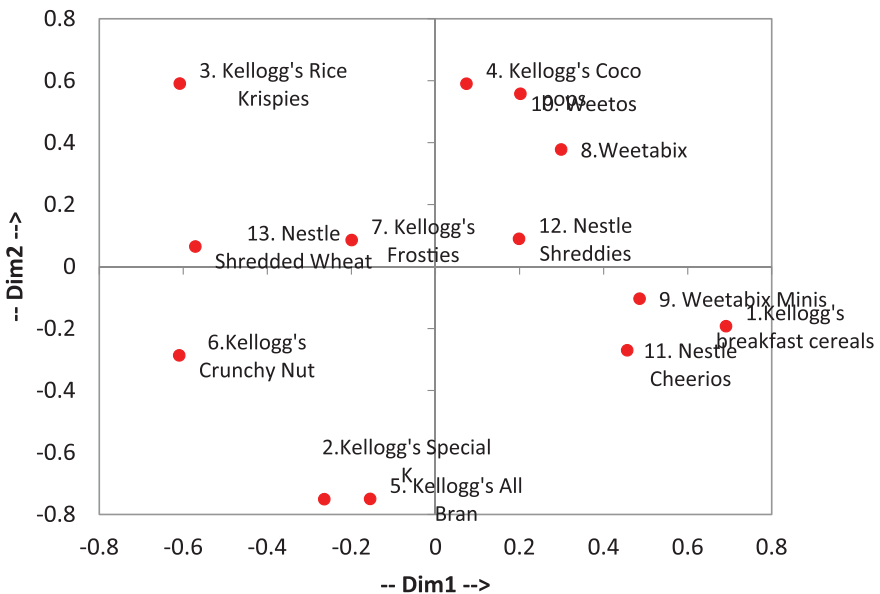


Fig. 16: MDS map of all brands based on their degree of semantic similarity (XLStat output)

brand similarities in terms of their semic universe in a 2-dimensional space. Factor analysis offers a different outlook on the semic organization of the semantic space of a product category, by yielding more salient dimensions against which brands may be compared, and hence enlarging the discriminating scope of the underlying semantic dimensions. The employment of both techniques in the exploration of the modes of patterning of a product category's sociolect affords to yield complementary angles whereby a semic universe may be approached. Let it be noted that whereas in traditional consumer research, MDS is applied to paired evaluation test data (i.e., where consumers are requested to rate pairs of brands based on their degree of perceived similarity), in corpus linguistics and, by extension, in semiotic research, the degree of semic similarity among the brands that make up a corpus is calculated indirectly, by applying multidimensional scaling to the output of a correlation matrix. The corpus linguistic approach adopted in the above exercise that consists of a projected brand image structure at an encoding stage may and should be compared and contrasted with emerging consumer data in the context of tracking surveys and the production of perceptual maps (cf. Myers 1996: 203).

6 Conclusions

This paper sought to demonstrate the usefulness of employing multivariate mapping techniques that are amply employed in corpus linguistics and marketing research in order to explore the distinctive modes of rhetorical-cum-semic configuration of ad filmic texts. By using a series of techniques, such as correspondence analysis, multidimensional scaling and factor analysis, different and salient facets of brands' rhetorical structures were explored in the context of total co-variation patterns among the data that make up the selected brands' semantic and rhetorical structure.

The above analyses are particularly pertinent for projecting brand image structures at the very encoding stage of ad filmic texts, by attending to how a brand's semic structure alongside rhetorical relata emerge in specific ad filmic segments. The resulting associations in consumers' minds may then be compared and contrasted through gap analyses with the above exploratory exercises in an iterative and ongoing fashion in the context of tracking surveys.

The proposed methods of analysis for exploring distinctive modes of ad textual configuration are instrumental for the attainment not only of a distinctive semic structure, but, moreover, of differential figurative advantages *qua* distinctive modes of rhetorical configuration (Rossolatos 2013d). This is a novel facet in the exploration of patterns of ad textual configuration that calls for further

inter-disciplinary research between corpus linguistics, semiotics, rhetoric, and advertising.

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