

Chapter 6

Semantic associations of *chocolate* and *wine* in the Italian and English cultures

6.1. Introduction

The present chapter addresses R.Q.s 1 and 2 in my Research Question list (see Chapter 1 or Chapter 5), by highlighting the semantic associations of *chocolate*, and *wine* in the Italian and English cultures and comparing them. Following the widely used habit of analysing elicited data in fields such as the social sciences, marketing, and also linguistics, the present chapter makes use of elicited data, collected and semantically tagged as described in Chapter 5, Section 5.1.

As we have seen in previous chapters, elicited data have long been a primary source of intelligence for the analysis of personal and cultural thoughts and behaviours in the marketing field (see Chapter 4), as well as other social areas, and relatively recently also linguistics (see Chapter 2). Widely used methods for eliciting data are projective techniques, such as free-word association tasks and sentence writing or sentence completion tasks, which have proven to be useful in eliciting the affective element behind the concepts involved. The data are then analysed qualitatively and/or quantitatively. A possible analytical method is content analysis, i.e. classifying the many words or sentences in a text into a finite number of semantic categories.

Different scientific disciplines have shown interest in highlighting cultural mental associations by semantic analysis of elicited data (see Chapter 2). Still, a standard, common procedure does not seem to exist, since each study applies a different type of statistical analysis, even when they share data of a similar nature (see Chapter 2).

As suggested by Fleischer (1998; see Chapter 2), the cut-off line between individual and cultural mental associations is frequency of appearance across different subjects belonging to the same cultural group. In other words, the more a mental association is shared among a wide number of subjects in a given cultural group, the more that mental association is conventionalised in the given culture and can be considered a specific feature of the culture itself. More specifically, Fleischer (1998) postulates that symbols (concepts) are made up of three components: core field, i.e. a stable, highly conventionalised meaning; current field, a rather generalised, but not yet stabilised element, and connotational field, i.e. the expression of individual meaning. Both core and current field are expressions of cultural meanings. Furthermore, Nobis (1998, summarised in Chapter 2) suggests that conventionalisation grows with time, and that the more a concept is established within a culture, the more complex its behavioural patterns are.

Taking inspiration from the existing literature, the present chapter develops a computational method for highlighting cultural associations in a corpus of elicited sentences about a given node word, and systematically applies it to four different datasets, two in English and two in Italian. The node words under investigation are: *chocolate*, and *wine*.

Specific reasons led to choosing the node words. *Chocolate* and *wine* are concrete nouns with clear though varied referents in both Italy and the UK, but presumably having different cultural roles in the two countries. Indeed, Italy can boast one of the longest traditions in wine production in the world, and wine is a traditional national product as well as a major export good. On the other hand, Great Britain has never been a ‘wine country’ either in terms of production or consumption, although wine is currently largely imported and consumed in the country. As regards chocolate, both Italy and Great Britain can boast a solid tradition in chocolate making, with big national enterprises (e.g. Perugina, Talmone, Novi; Cadbury, Bendicks), as well as small local quality chocolate makers. None of the two countries, however, would probably consider chocolate as a traditional national product. Consequently, we would expect wine to be well-rooted in the Italian culture, but less so in the English one, while chocolate is expected to show similar levels of cultural rooting in both countries.¹

Finally, according to Fleischer, rooting depends on the extension of the highly conventionalised elements (core field), compared to the less conventionalised one (current and connotational fields). According to Nobis, instead, it goes hand in hand with semantic complexity.

6.2 Chocolate

6.2.1 Inter-culture analysis

6.2.1.1 Semantic field analysis

The Italian and English *chocolate* datasets were manually analysed in terms of semantic fields and conceptual domains. For detailed descriptions and discussions of the collecting and coding procedures, of respondents and of their answers, see Chapter 5.

The current section presents and discusses the results of the coding process.

Tables 6_1 and 6_2 list the semantic associations of *chocolate* as they emerged in the English and Italian datasets, in decreasing order of frequency. In the first column, the name of the semantic field is preceded by initials indicating the conceptual domain (e.g. F = Food; FET = Features; FE = Feelings & Emotions). The second and third columns report the Mean number of occurrences of the given field across respondents, and its Standard Deviation. The fourth column highlights the Rank of each field;

¹ Fleischer (2001) and Wilson and Mudraya (2006) use term ‘anchored’ (German: ‘verankert’) to refer to the strong connections that links a concept/event/word to a specific type of culture. My preference for the terms ‘rooted’/‘rooting’ is due to its metaphorical implications: the roots of a tree go deep down into the earth in several directions, not only anchoring the tree into the soil, but creating a sort of underground network that at some point intertwines with the roots of other trees.

ranking is based on mean values. The remaining two columns will be presented and discussed later.

As Tables 6_1 and 6_2 show, the English *chocolate* dataset includes 88 fields out of the 95 in the Codebook, while the Italian *chocolate* dataset (Table 6_2) includes 86 fields out of 95.²

Field	Mean	SD	Rank	G2,1	Cnv	Field	Mean	SD	Rank	G2,1	Cnv
F-product/shape	2.11	2.44	1	0.57	H	LD-drugs & addiction	0.15	0.42	34	0.78	M
FET-quality/type	2.02	1.75	2	0.69	H	L-fantasy/magic	0.13	0.45	35	0.67	H
FET-taste/smell	1.44	1.72	3	0.56	H	E-economy	0.11	0.58	36	0.30	H
FE-happiness	1.33	1.34	4	0.71	M	E-fair trade	0.11	0.44	36	0.67	H
F-food	1.32	1.32	5	0.63	H	P-family	0.11	0.44	36	0.67	H
FE-desire	1.22	1.10	6	0.70	H	E-religion	0.10	0.34	37	0.79	L
H-body	1.09	1.14	7	0.66	H	FE-seduction	0.10	0.31	37	1.00	L
H-health	0.94	1.09	8	0.66	H	FE-guilt	0.10	0.43	37	0.67	H
G-geo locations	0.92	1.42	9	0.59	H	FE-memory	0.09	0.36	38	0.76	M
E-event	0.90	1.08	10	0.67	H	FE-peace	0.09	0.42	38	0.67	H
F-composition	0.78	0.89	11	0.72	M	P-friendship	0.09	0.33	38	0.78	M
FET-quantity	0.64	0.91	12	0.70	H	G-spreading	0.09	0.33	38	0.78	M
F-bakery/cooking	0.62	0.99	13	0.68	H	COM-comparison	0.08	0.27	39	1.00	L
E-transaction	0.62	1.05	13	0.60	H	L-existence	0.08	0.38	39	0.61	H
P-women	0.59	1.01	14	0.65	H	E-work	0.06	0.28	40	0.75	M
F-manufacturing	0.56	0.90	15	0.68	H	LD-theft	0.06	0.28	40	0.75	M
FE-passion	0.55	0.89	16	0.66	H	E-law	0.05	0.26	41	0.73	M
F-drink	0.54	0.70	17	0.75	M	FE-no reaction	0.05	0.21	41	1.00	L
F-recipe	0.53	0.86	18	0.67	H	FE-bribing	0.05	0.21	41	1.00	L
CUL-artistic production	0.53	0.85	18	0.67	H	I-dream	0.05	0.26	41	0.73	M
P-children	0.48	0.97	19	0.61	H	EN-house	0.05	0.21	41	1.00	L
E-time	0.40	0.72	20	0.72	M	EN-tech	0.05	0.26	41	0.73	M
C-gift	0.40	0.64	20	0.78	M	E-language	0.03	0.24	42	0.71	M
H-medicine	0.39	0.62	21	0.78	M	P-royalty	0.03	0.18	42	1.00	L
P-men	0.31	1.21	22	0.54	H	F-storage	0.02	0.15	43	1.00	L
FET-price	0.31	0.65	22	0.65	H	H-dieting	0.02	0.15	43	1.00	L
FET-colour	0.30	0.70	23	0.80	L	E-war	0.02	0.15	43	1.00	L
FE-nice/pleasant/pleasure	0.26	0.58	24	0.67	H	E-history	0.02	0.21	43	NC	
FE-sex	0.26	0.64	24	0.75	M	E-holidays	0.02	0.15	43	1.00	L
FE-unpleasant	0.25	0.65	25	0.61	H	E-driving	0.02	0.21	43	NC	
FET-sweet	0.25	0.53	25	0.72	M	P-gay	0.02	0.15	43	1.00	L
FET-energy	0.24	0.57	26	0.71	M	LD-hiding	0.02	0.15	43	1.00	L
FE-comfort	0.23	0.54	27	0.71	H	EN-nature	0.02	0.15	43	1.00	L
H-beauty	0.22	0.72	28	0.63	H	CUL-culture	0.02	0.15	43	1.00	L
FE-mood	0.22	0.52	28	0.77	M	L-future	0.02	0.15	43	1.00	L
P-sharing/society	0.21	0.51	29	0.77	M	E-playing	0.01	0.11	44	NC	
EN-dirt	0.21	0.59	29	0.62	H	FE-surprise	0.01	0.11	44	NC	
EN-animals	0.20	0.48	30	0.78	M	FE-loneliness	0.01	0.11	44	NC	
P-people	0.18	0.47	31	0.77	M	FE-freedom	0.01	0.11	44	NC	
FE-relax	0.17	0.44	32	0.79	M	FE-persuasion	0.01	0.11	44	NC	
FET-packaging	0.17	0.41	32	0.83	L	P-posh	0.01	0.11	44	NC	
FE-senses	0.16	0.50	33	0.70	H	C-ceremonies	0.01	0.11	44	NC	
FE-love	0.16	0.45	33	0.68	H	C-party	0.01	0.11	44	NC	
FET-physical properties	0.16	0.50	33	0.70	H	S-sports	0.01	0.11	44	NC	

Table 6_1: Semantic associations of *chocolate* for the English

² Semantic field ASSESSMENT is not included in this count, given its peculiarities. In the current chapter, as well as in the following ones, this semantic field will be discussed in the dedicated sections.

Field	Mean	SD	Rank	G2,1	Cnv	Field	Mean	SD	Rank	G2,1	Cnv
FET-quality/type	2.78	1.68	1	0.68	H	L-existence	0.17	0.42	31	0.81	M
F-bakery/cooking	2.03	1.41	2	0.71	H	P-age	0.16	0.37	32	1.00	L
F-product/shape	1.68	1.59	3	0.65	H	FET-genuine	0.16	0.45	32	0.77	M
F-recipe	1.68	1.88	3	0.62	H	F-storage	0.14	0.40	33	0.79	M
F-food	1.51	1.45	4	0.64	H	FE-senses	0.14	0.40	33	0.79	M
FET-taste/smell	1.51	1.23	4	0.71	H	P-women	0.14	0.40	33	0.79	M
G-geo locations	1.32	1.58	5	0.66	H	EN-house	0.14	0.40	33	0.79	M
COM-comparison	0.94	1.19	6	0.60	H	P-friendship	0.13	0.38	34	0.78	M
H-health	0.94	0.93	6	0.74	M	S-sports	0.13	0.34	34	1.00	L
FE-nice/pleasant/pleasure	0.92	1.10	7	0.63	H	E-playing	0.11	0.36	35	0.77	M
FET-quantity	0.92	0.99	7	0.68	H	FE-love	0.11	0.32	35	1.00	L
P-children	0.90	0.87	8	0.73	M	FE-guilt	0.11	0.44	35	0.61	H
H-medicine	0.89	0.97	9	0.70	H	FE-peace	0.11	0.32	35	1.00	L
FE-passion	0.87	1.01	10	0.64	H	FE-loneliness	0.11	0.36	35	0.77	M
CUL-artistic production	0.86	0.96	11	0.70	H	I-dream	0.11	0.48	35	0.68	H
E-event	0.83	0.81	12	0.71	H	FE-unpleasant	0.10	0.30	36	1.00	L
FE-desire	0.79	0.90	13	0.71	H	EN-nature	0.10	0.35	36	0.76	M
F-composition	0.71	0.99	14	0.67	H	CUL-culture	0.08	0.27	37	1.00	L
H-body	0.71	0.79	14	0.72	H	E-religion	0.06	0.25	38	1.00	L
H-beauty	0.63	0.77	15	0.78	M	P-men	0.06	0.30	38	0.73	M
FE-mood	0.63	0.83	15	0.73	M	I-fantasy/magic	0.06	0.25	38	1.00	L
FE-happiness	0.57	0.76	16	0.71	H	E-language	0.05	0.21	39	1.00	L
F-manufacturing	0.54	0.71	17	0.74	M	FE-surprise	0.05	0.21	39	1.00	L
C-gift	0.48	0.86	18	0.65	H	P-sharing/society	0.05	0.21	39	1.00	L
E-transaction	0.46	0.86	19	0.65	H	C-party	0.05	0.21	39	1.00	L
P-family	0.46	0.76	19	0.75	M	EN-tech	0.05	0.21	39	1.00	L
FET-energy	0.43	0.69	20	0.73	H	E-war	0.03	0.25	40	NC	
F-drink	0.41	0.64	21	0.78	M	FE-memory	0.03	0.18	40	1.00	L
H-dieting	0.40	0.73	22	0.69	H	FE-bribing	0.03	0.18	40	1.00	L
FET-physical properties	0.40	0.68	22	0.63	H	G-spreading	0.03	0.18	40	1.00	L
FET-colour	0.38	0.61	23	0.78	M	LD-theft	0.03	0.25	40	NC	
FE-comfort	0.35	0.63	24	0.78	M	EN-animals	0.03	0.18	40	1.00	L
E-history	0.33	0.54	25	0.81	M	E-economy	0.02	0.13	41	NC	
E-time	0.33	0.60	25	0.78	M	E-fair trade	0.02	0.13	41	NC	
LD-drugs & addiction	0.33	0.67	25	0.72	H	FE-competitiveness	0.02	0.13	41	NC	
FE-seduction	0.30	0.59	26	0.70	H	FE-freedom	0.02	0.13	41	NC	
FE-sex	0.27	1.31	27	0.20	H	FE-persuasion	0.02	0.13	41	NC	
FET-sweet	0.27	0.60	27	0.70	H	P-gay	0.02	0.13	41	NC	
FE-no reaction	0.25	0.69	28	0.64	H	P-royalty	0.02	0.13	41	NC	
CUL-studying/intellect	0.22	0.55	29	0.68	H	LD-hiding	0.02	0.13	41	NC	
FE-relax	0.21	0.51	30	0.67	H	C-ceremonies	0.02	0.13	41	NC	
P-people	0.21	0.45	30	0.82	L	L-future	0.02	0.13	41	NC	
EN-dirt	0.17	0.46	31	0.77	M	FET-packaging	0.02	0.13	41	NC	

Table 6_2. Semantic associations of *chocolate* for the Italians

In both cases, the missing fields include the fields CONFIDENCE; SERVING; and EXCESSIVE DRINKING, which is no surprise given that these are fields that were added to the code list while analysing the *wine* datasets, i.e. after analysing the *chocolate* datasets. The remaining fields which are not attested are: STUDYING/INTELLECT; AGE; GENUINE; COMPETITIVENESS; CONFIDENCE; SERVING; and EXCESSIVE DRINKING for English; and PRICE; WORK; LAW; HOLIDAYS; DRIVING; and POSH for Italian. These fields had all entered the coding scheme in the preliminary phases to the current work, after coding two specialized corpora about Chocolate (one in Italian and one in English), and two general corpora in the same languages (see the Appendix).

As regards conceptual domains, both datasets present all the domains considered in the Codebook. Furthermore, in the case of English *chocolate*, no evident clotting of the same domain is visible in any part of the list (i.e. top ranks, as well as middle and bottom ranks are occupied by semantic fields from various domains), while an evident clotting of Food fields in the top 5 positions can be noticed for Italian.

The mean values considered so far, though interesting in so far as they provide a general picture of the semantic fields in each dataset, do not consider distribution of answers across subjects. However, distribution across subjects seems highly relevant,

in order to gain a more precise picture of the cultural vs. individual mental semantic associations of the given node words.

Inspired by Wilson and Mudraya (2006), Molinari's evenness measure (G2;1) was applied to the data to assess the level of conventionalisation within each semantic field.³ Evenness indexes are widely used in biology. Smith and Wilson (1996) introduce the concept of evenness to biologists as follows: "A basic feature of biological communities is the distribution of abundance among species. There are many aspects of this distribution that can be measured, but the simplest feature is evenness. A community in which each species present is equally abundant has high evenness; a community in which the species differ widely in abundance has low evenness". In the current paper, each semantic field is considered as a 'community' or 'area' and each subject as a 'species' or 'taxon' which occurs (in that semantic field) a certain number of times, thus contributing to the composition of that community with a certain number of occurrences. In a comparative experiment on 15 different evenness indexes (Beisel, Usseglio-Polater, Bacmann & Moreteau, 2003), Molinari's G2,1 resulted among the most sensitive to minor changes in abundance in dominant and median taxa and averagely sensitive to changes in rare taxa, which – within the context of our experiments – translates into highly sensitive to even minor differences in the number of occurrences of the given semantic field in each respondent's answers. Molinari's index is computed from raw counts.

As in Wilson and Mudraya (2006) and in Fleisher (2002), evenness values were then divided into three groups, corresponding to high (H), medium (M) and low (L) levels of conventionalisation. Level of conventionalisation is shown by the position of the evenness index with reference to the confidence interval: values that fall below confidence interval indicate a high level of conventionalisation; those falling above confidence interval show a low levels of conventionalisation. The 99% confidence intervals for the *chocolate* data were respectively 0.71-0.79 for English, and 0.73-0.82 for Italian. Please notice that, in this work, due to the presence of tables which are limited in space, all the values are reported rounded to the second decimal, but the analyses were performed using rounding to the fourth decimal, for greater precision. In a few cases, rounding to the second decimal may lead to apparent incongruity, as is the case with FE-MOOD and FET-ENERGY in the Italian *chocolate* dataset (Table 6_2) which seem to have the same evenness value (0.73), but different levels of conventionalization (M and H, respectively). However, such cases of apparent incoherency are very rare and are always explained by having had to round figures to the second decimal because of space limitations.

For an easier reading of results, the evenness values are reported next to mean and SD values in Tables 6_1 and 6_2, in column G2,1, accompanied by indication of their corresponding level of conventionalisation (column Cnv). In the evenness column, NC indicates that the evenness tool was not able to calculate a value for that field, because it contained less than 2 occurrences.

³ Calculations were performed using an evenness calculator written by Ben Smith of Lund University, Sweden, and available at <http://www.nateko.lu.se/personal/benjamin.smith/software>. This highly user-friendly program computes 14 different evenness indexes, including Molinari's.

In both *chocolate* tables, fields with a high level of conventionalisation tend to concentrate in the highest ranks, i.e. the fields with higher mean distributions across subjects seem to be the ones with higher levels of conventionalisation. Low levels of conventionalisation start appearing almost half way through the list and concentrate at the end of it. This seems to suggest that fields with NC values might be considered as having a low level of conventionalisation. However, as we shall see in Section 6.3, *wine* does not show such a neat relation between mean values and level of conventionalisation. Consequently, I shall here ignore all fields marked with NC, not knowing exactly how to assess them.

The distribution of fields across conventionalisation levels is summarised percentage-wise in Table 6_3.

	English	Italian
High	45.45	43.84
Medium	31.17	31.51
Low	23.38	24.66

Table 6_3. *Chocolate* – Percentage distribution of fields across conventionalisation levels

The two cultures show a rather similar distribution of fields across conventionalisation levels. The percentage of fields marked by a high level of conventionalisation is around 45% for English and 44% for Italian. Next comes a good 31% of fields with medium level of conventionalisation, while fields with a low conventionalisation are about 23-24%. In both cases, highly conventionalised fields cover slightly less than 50% of the total. If added to medium conventionalisation fields, however, the percentage of fields which – according to Fleischer – could be considered expressions of cultural meanings reaches about 75-76%.

6.2.1.2 Conceptual domain analysis

The following paragraphs apply the analytical steps described above to conceptual domains. Table 6_4 summarises Mean, SD, Rank, G2,1 and Conventionalisation values for the Italian and English *chocolate* datasets, at this higher level. All values have been computed from raw data, ignoring the existence of subdivisions (semantic fields) within each conceptual domain. However, in the table, the domain name is accompanied by the number of its conceptual fields, in parenthesis.

Both datasets show only three highly conventionalised domains: EVENTS, PEOPLE, and GEOGRAPHY, for the English culture; CULTURE, COMPARISON, and CEREMONY, for the Italian one. In neither case they appear among the most frequent ones in the dataset. A few domains have low levels of conventionalisation: CEREMONY, LOSS & DAMAGE and COMPARISON, in English; LIFE and SPORTS, in Italian. The remaining ones – 8 domains for English and 10 for Italian – have a medium level of conventionalisation. This is schematically summarised in Table 6_5 using percentage values.

ENGLISH						ITALIAN					
Domain	Mean	SD	Rank	G2,1	Cnv	Domain	Mean	SD	Rank	G2,1	Cnv
Food (9)	6.49	4.27	1	0.68	M	Food (9)	8.71	3.59	1	0.77	M
Features (10)	5.54	3.23	2	0.74	M	Features (10)	6.86	2.78	2	0.77	M
Feelings & emotions (23)	5.36	3.33	3	0.67	M	Feelings & emotions (23)	6.02	3.32	3	0.71	M
Health & Body (5)	2.67	1.94	4	0.69	M	Health & Body (5)	3.57	1.97	4	0.71	M
Events (15)	2.49	2.20	5	0.61	H	Events (15)	2.24	1.55	5	0.68	M
People (11)	2.05	2.62	6	0.56	H	People (11)	2.14	1.56	6	0.73	M
Geo (2)	1.01	1.46	7	0.58	H	Geo (2)	1.35	1.63	7	0.65	M
Culture (3)	0.55	0.86	8	0.67	M	Culture (3)	1.16	1.26	8	0.63	H
Environment (5)	0.52	0.94	9	0.67	M	Comparison (1)	0.94	1.19	9	0.60	H
Ceremony (3)	0.43	0.64	10	0.78	L	Ceremony (3)	0.54	0.96	10	0.60	H
Loss & damage (3)	0.23	0.52	11	0.78	L	Environment (5)	0.49	0.82	11	0.66	M
Imagination (2)	0.17	0.57	12	0.70	M	Loss & damage (3)	0.38	0.79	12	0.65	M
Life (2)	0.10	0.40	13	0.63	M	Life (2)	0.19	0.47	13	0.78	L
Comparison (1)	0.08	0.27	14	1.00	L	Imagination (2)	0.17	0.55	14	0.70	M
Sports (1)	0.01	0.11	15	NC		Sports (1)	0.13	0.34	15	1.00	L

Table 6_4. *Chocolate* – Conceptual domains in the English and Italian datasets

	English	Italian
High	21.50	20.00
Medium	57.00	67.00
Low	21.50	13.00

Table 6_5. *Chocolate* – Percentage distribution of domains across conventionalisation levels

So, as was the case with semantic fields, the two cultures show a similar picture in terms of levels of conventionalisation, with 21.5% vs. 20% of highly conventionalised domains, 57% vs. 67% of domains with medium conventionalisation, and 21.5% vs. 13% of domains with low conventionalisation. It is interesting to notice, however, that, passing from semantic fields to conceptual domains, the picture within each culture has changed. A comparison between Table 6_3 and Table 6_5 shows a clear shift from dominance of highly conventionalised fields to dominance of domains with medium level of conventionalisation, in each culture. According to Fleischer's theory, however, this does not alter the already noted predominance of cultural associations of personal associations, as the former are indicated by high plus medium conventionalisation fields, which in these cases amount to about 78.5% for English and 87% for Italian.

From a methodological point of view, it is interesting to notice that no direct relationship exists between mean frequency and number of semantic fields composing the domain, or mean frequency and conventionalisation, or conventionalisation and number of fields in the domain.

6.2.2 Cross-cultural comparison

So far we have established that *chocolate* is a concept with a reasonably high number of relatively well-established semantic associations in each of the two cultures, and similar percentage distributions of fields across conventionalisation levels. Furthermore we have seen that, although the two datasets share most of the given semantic fields, the latter do not seem to occupy the same ranks.

Consequently, comparison between the English and Italian datasets at the level of semantic fields could possibly tell us whether differences exist between the two cultures when thinking about *chocolate*, and where these differences lie.

First of all, cross-cultural comparison at the level of semantic fields was performed by applying Spearman's Rank Correlation Coefficient.⁴ This is a non-parametric (i.e. distribution-free) test, appropriate to ordinal scales, which uses ranks of the x and y variables, rather than data (Fowler, Cohen, & Jarvis, 1998, pp. 138-141). Spearman's *r* "describes the overlap of the variance of ranks" (Arndt, Turvey, & Andreasen, 1999, p. 104). Spearman's test showed strong positive correlation,⁵ with Spearman's Rho equal to 0.719 ($p < 0.01$), which suggests that differences between the two datasets do exist, but are rather limited.

In order to try and understand where the cultural differences lie, the datasets were compared using the Welch *t* Test for Independent Samples. T-Tests compare the mean scores of two groups on a given variable; Welch *t* Test for Independent Samples is a "modification of the T-Test for Independent Samples so that it does not assume equal population variances" and has been proven to outperform the ordinary T-Test in almost all circumstances (Fagerland, Sandvik, & Mowinckel, 2011). When comparing two samples with a T-Test, the Null Hypothesis (H0) is that the two samples have the same mean. The Null Hypothesis cannot be rejected when, for the given degrees of freedom (i.e. the total number of subjects -2) and the desired significant value (p), T is lower than the reference value provided in T-Test tables. If T is higher, the alternative hypothesis H1 has to be accepted.

T-Test results were significant ($p < 0.01$) for the semantic fields listed in Table 6_6. In the table, column one lists the name of the semantic field, preceded by initials indicating the corresponding conceptual domain; columns two-five provide the relevant values in the T-test; columns six-nine indicate the field's mean values and conventionalisation levels in the English and Italian datasets. For each field, bold highlights which of the two mean values is the highest.

Consequently, Table 6_6 lists the semantic fields for which the Italian and English population sample taking part in the survey quantitatively differed in their making reference to *chocolate*. But which of these differences are really due to culture and which depend on population sampling?

A look at the conventionalisation level of each semantic field – listed in the table in columns seven and nine, for English and Italian respectively – may help us find an answer to this question. It seems rather safe to state that when a field with a significant T value shows a high level of conventionalisation in one of the two cultures and also a mean value for that culture which is higher than that in the other culture, that difference in means can be taken to be of cultural origins. Consequently, for example, the WOMEN semantic field, which has High conventionalisation in English and Medium conventionalisation in Italian, along with a mean value which is higher in English than in Italian (0.59 vs. 0.14), can be considered a semantic association of

⁴ Correlation was performed using SPSS.

⁵ According to Fowler *et al.* (1998) the strength of a correlation is to be considered very weak when *r* ranges from 0.00 to 0.19, weak when *r* ranges from 0.20 to 0.39, modest for *r* between 0.40 and 0.69, strong for *r* ranging from 0.70 to 0.89, and very strong for *r* between 0.90 and 1.00.

chocolate typical of the English culture. Similarly, the QUALITY/TYPE semantic field, which shows high conventionalization in both cultures, and higher mean value in Italian (2.78 vs. 2.02), will be considered specific to the Italian culture with respect to chocolate. On the other hand, when a field with a significant higher mean in one culture shows a low level of conventionalisation in that culture, the result may depend on the sample, rather than the culture. An example is the AGE semantic field: despite its having higher mean value in Italian than English (0.16 vs. 0.00), it cannot be considered a semantic association of wine specific to the Italian culture, because its conventionalisation level in Italian is Low. Finally, semantic fields with a higher mean and medium conventionalisation level could possibly be considered culturally more frequent when in the other culture they have a high levels of conventionalisation or when they are virtually absent (NC). Nice examples are the BAKERY/COOKING and HISTORY semantic fields: they show higher mean values in Italian than in English, alongside Medium conventionalisation level in Italian vs. High and NC conventionalisation, respectively, in English. All other cases are uncertain, and need confirmation from other population samples.

Field	P	T	Df	st.error of df	Mean values English	Cnv	Mean values Italian	Cnv
Comparison	0.0000	5.6052	66	0.153	0.08	L	0.94	M
F-bakery/cooking	0.0000	6.8030	104	0.207	0.63	H	2.03	M
F- storage	0.0250	2.2866	75	0.052	0.02	L	0.33	M
F-recipe	0.0000	4.5354	80	0.254	0.53	H	1.68	M
H- dieting	0.0001	4.0011	65	0.093	0.02	L	0.40	H
H- medicine	0.0005	3.5873	97	1.139	0.39	M	0.89	H
H- beauty	0.0010	3.3603	128	0.124	0.22	H	0.63	M
E-history	0.0000	4.3301	76	0.072	0.02	NC	0.33	M
FE-nice/pleasant/pleasure	0.0000	4.3306	87	0.152	0.26	H	0.92	M
FE-happiness	0.0000	4.4113	140	0.173	1.33	M	0.57	M
FE-seduction	0.0162	2.4531	86	0.081	0.10	L	0.30	M
FE- mood	0.0006	3.5252	96	0.118	0.22	M	0.63	M
P- women	0.0002	3.7299	119	0.119	0.59	H	0.14	M
P- age	0.0011	3.4203	64	0.046	0.00	NC	0.16	L
P-children	0.0062	2.7787	141	0.152	0.48	H	0.90	M
P- sharing/society	0.0100	2.6154	123	0.061	0.21	M	0.05	L
P- family	0.0016	3.2377	92	0.107	0.11	H	0.46	M
EN- animals	0.0041	2.9272	115	0.056	0.20	M	0.03	L
CUL- studying/intellect	0.0021	3.1956	62	0.070	0.00	NC	0.22	H
FET- quality/type	0.0084	2.6722	136	0.282	2.02	H	2.78	H
FET- genuine	0.0065	2.8157	62	0.056	0.00	NC	0.16	M
FET-price	0.0000	4.4360	86	0.070	0.31	H	0	NC
FET- packaging	0.0011	3.3540	107	0.047	0.17	L	0.02	NC
S- sports	0.0103	2.6356	71	0.044	0.01	NC	0.13	L

Table 6_6. *Chocolate* – Fields showing significant difference in the T-Test

Consequently, the following semantic fields would appear as distinctively more prominent for Italians than for the English, when talking about *chocolate*: BAKERY/COOKING; RECIPE; DIETING; MEDICINE; BEAUTY; HISTORY; NICE/PLEASANT/PLEASURE; CHILDREN; FAMILY; STUDYING/INTELLECT; QUALITY/TYPE; GENUINE. On the other hand, more prominent for the English than for Italians seems to be: WOMEN; and PRICE.

The two datasets were compared also at the level of conceptual domains. Spearman's test showed very strong positive correlation, with Spearman's Rho equal to 0.939 ($p < 0.01$). As regards the T-test, the significant results ($p < 0.01$) are

summarised in Table 6_7. The domains which are not listed in the table did not show a statistically significant difference between the two cultures.

Domain	P	T	Df	St.error of df	Mean values English	Cnv	Mean values Italian	Cnv
Food	0.0007	34.511	144	0.643	6.49	M	8.71	M
Health & Body	0.0060	27.918	132	0.324	2.67	M	3.57	M
Culture	0.0013	33.073	102	0.184	0.55	M	1.16	H
Feature	0.0084	26.740	143	0.492	5.54	M	6.86	M

Table 6_7. *Chocolate* – Conceptual domains with statistically significant differences between English and Italian

In all the cases, mean values are higher for Italian. However, only CULTURE shows also a high level of conventionalisation. The other fields show medium conventionalisation. Consequently, following the reasoning applied in discussing semantic field cross-cultural differences, it seems safe to state that CULTURE is the only conceptual domain that clearly distinguishes the Italians from the English in thinking about *chocolate*. The other domains in the list might be distinctive of the Italian culture, but this should be confirmed by further data.

6.3 Wine

6.3.1 Inter-culture analysis

6.3.1.1 Semantic field analysis

The analytical procedure adopted for *chocolate* was applied to the analysis of the *wine* datasets. Tables 6_8 and 6_9 show the semantic associations of *wine* as they emerged in the English and Italian datasets, in decreasing order of frequency.

As in the *chocolate* experiment, Molinari's evenness index was computed and three levels of conventionalisation were distinguished using confidence intervals. The 99% confidence intervals for the *wine* data were respectively 0.73-0.82 for English, and 0.75-0.83 for Italian. For an easier reading of the results, the evenness values are reported in Tables 6_8 and 6_9, in column G2,1, accompanied by indication of their corresponding levels of conventionalisation (column Cnv).

Similarly to what happened with *chocolate*, the two datasets share most of the semantic fields in the Codebook, though with different ranks.

In terms of conventionalisation, the Italian *wine* dataset shows a much higher percentage of highly conventionalised fields than the English dataset (61.64 vs. 47.3), and a much lower percentage of fields in the medium range (12.33 vs. 22.97), as summarised in Table 6_10.

Field	Mean	SD	Rank	G2,1	Cnv	Field	Mean	SD	Rank	G2,1	Cnv
FET-quality/type	2.54	2.06	1	0.66	H	C-ceremonies	0.12	0.36	32	0.81	M
G-geo locations	1.55	2.28	2	0.52	H	H-body	0.11	0.35	33	0.80	M
H-health	1.42	1.37	3	0.68	H	P-people	0.11	0.35	33	0.80	M
FET-taste/smell	1.29	1.20	4	0.69	H	G-spreading	0.11	0.31	33	1.00	L
FET-price	1.11	1.11	5	0.68	H	CUL-artistic production	0.10	0.34	34	0.79	M
F-food	1.10	1.23	6	0.62	H	L-existence	0.10	0.47	34	0.66	H
F-drink	1.02	1.11	7	0.69	H	E-holidays	0.08	0.27	35	1.00	L
E-excessive drinking	0.91	1.21	8	0.65	H	FE-no reaction	0.08	0.27	35	1.00	L
F-composition	0.73	0.82	9	0.71	H	FET-sweet	0.08	0.27	35	1.00	L
FET-quantity	0.70	0.98	10	0.66	H	FE-nice/pleasant/pleasure	0.07	0.25	36	1.00	L
F-recipe	0.67	1.08	11	0.58	H	FE-comfort	0.07	0.25	36	1.00	L
FE-happiness	0.63	0.88	12	0.71	H	FE-mood	0.05	0.27	37	0.75	M
COM-comparison	0.62	1.06	13	0.65	H	FE-memory	0.05	0.27	37	0.75	M
P-women	0.57	1.11	14	0.50	H	P-children	0.05	0.23	37	1.00	L
FE-desire	0.53	0.97	15	0.61	H	LD-drugs & addiction	0.05	0.23	37	1.00	L
E-time	0.48	0.79	16	0.75	M	CUL-studying/intellect	0.05	0.23	37	1.00	L
H-medicine	0.46	0.83	17	0.67	H	E-driving	0.04	0.21	38	1.00	L
P-sharing/society	0.43	0.72	18	0.72	H	CUL-culture	0.04	0.25	38	0.73	M
P-men	0.42	1.05	19	0.30	H	E-economy	0.03	0.18	39	1.00	L
P-posh	0.42	0.78	19	0.72	H	E-history	0.03	0.18	39	1.00	L
FET-physical properties	0.42	0.79	19	0.70	H	FE-senses	0.03	0.23	39	0.71	H
F-manufacturing	0.40	0.74	20	0.64	H	FE-peace	0.03	0.23	39	0.71	H
FE-relax	0.40	0.79	20	0.74	M	LD-hiding	0.03	0.18	39	1.00	L
FET-packaging	0.40	0.68	20	0.74	M	EN-nature	0.03	0.23	39	0.71	H
F-product/shape	0.38	0.70	21	0.75	M	EN-house	0.03	0.18	39	1.00	L
F-bakery/cooking	0.38	0.70	21	0.71	H	FE-confidence	0.02	0.15	40	1.00	L
P-family	0.38	0.88	21	0.62	H	FE-seduction	0.02	0.15	40	1.00	L
FE-unpleasant	0.36	0.82	22	0.56	H	FE-freedom	0.02	0.15	40	1.00	L
F-storage	0.35	0.72	23	0.66	H	P-gay	0.02	0.15	40	1.00	L
E-transaction	0.33	0.60	24	0.73	M	LD-theft	0.02	0.15	40	1.00	L
E-religion	0.33	0.73	24	0.64	H	EN-animals	0.02	0.15	40	1.00	L
P-friendship	0.33	0.73	24	0.71	H	FET-genuine	0.02	0.21	40	NC	
E-event	0.25	0.49	25	0.82	M	H-beauty	0.01	0.10	41	NC	
FET-colour	0.25	0.64	25	0.71	H	E-playing	0.01	0.10	41	NC	
C-gift	0.23	0.54	26	0.78	M	E-war	0.01	0.10	41	NC	
P-age	0.22	0.53	27	0.71	H	E-law	0.01	0.10	41	NC	
C-party	0.19	0.47	28	0.78	M	FE-sex	0.01	0.10	41	NC	
EN-dirt	0.19	0.42	28	0.84	L	FE-surprise	0.01	0.10	41	NC	
FE-passion	0.18	0.46	29	0.77	M	FE-guilt	0.01	0.10	41	NC	
F-serving	0.16	0.40	30	0.83	L	FE-bribing	0.01	0.10	41	NC	
E-work	0.16	0.60	30	0.62	H	I-fantasy/magic	0.01	0.10	41	NC	
E-language	0.15	0.49	31	0.70	H	L-future	0.01	0.10	41	NC	
FE-love	0.12	0.39	32	0.77	M						

Table 6_8. Semantic associations of *wine* for the English

Field	Mean	SD	Rank	G2.1	Cnv	Field	Mean	SD	Rank	G2.1	Cnv
FET-quality/type	3.61	2.26	1	0.72	H	FE-relax	0.19	0.54	32	0.67	H
G-geo locations	1.81	1.47	2	0.71	H	EN-dirt	0.18	0.46	33	0.77	M
F-manufacturing	1.58	1.51	3	0.67	H	CUL-culture	0.18	0.53	33	0.80	M
F-recipe	1.55	1.40	4	0.65	H	LD-drugs & addiction	0.16	0.45	34	0.77	M
H-health	1.50	1.17	5	0.70	H	C-party	0.16	0.49	34	0.64	H
F-food	1.48	1.11	6	0.70	H	H-body	0.15	0.40	35	0.79	M
FET-quantity	1.31	1.14	7	0.74	H	FE-mood	0.13	0.34	36	1.00	L
P-friendship	0.94	0.99	8	0.70	H	FE-passion	0.13	0.34	36	1.00	L
FET-taste/smell	0.85	0.88	9	0.73	H	FE-peace	0.13	0.50	36	0.67	H
F-bakery/cooking	0.82	0.88	10	0.73	H	EN-house	0.13	0.46	36	0.80	M
E-language	0.77	0.82	11	0.71	H	F-product/shape	0.11	0.45	37	0.61	H
H-medicine	0.76	0.88	12	0.67	H	FE-desire	0.11	0.37	37	0.77	M
FE-happiness	0.74	0.96	13	0.63	H	FE-comfort	0.11	0.37	37	0.77	M
F-storage	0.66	0.89	14	0.72	H	P-posh	0.11	0.48	37	0.68	H
E-event	0.66	0.94	14	0.67	H	L-existence	0.11	0.45	37	0.61	H
FE-unpleasant	0.66	0.85	14	0.74	H	E-holidays	0.10	0.30	38	1.00	L
E-excessive drinking	0.65	0.83	15	0.73	H	P-sharing/society	0.10	0.30	38	1.00	L
FET-physical properties	0.65	0.91	15	0.70	H	FE-memory	0.08	0.27	39	1.00	L
E-transaction	0.56	0.88	16	0.66	H	G-spreading	0.08	0.27	39	1.00	L
FE-confidence	0.55	0.74	17	0.70	H	EN-tech	0.08	0.33	39	0.75	H
FE-nice/pleasant/pleasure	0.52	0.76	18	0.74	H	FE-senses	0.06	0.25	40	1.00	L
F-composition	0.48	0.70	19	0.73	H	FE-love	0.06	0.25	40	1.00	L
CUL-artistic production	0.47	0.74	20	0.70	H	FE-seduction	0.06	0.25	40	1.00	L
CUL-studying/intellect	0.47	0.76	20	0.70	H	FE-loneliness	0.06	0.25	40	NC	
F-drink	0.45	0.80	21	0.69	H	P-age	0.06	0.25	40	1.00	L
P-family	0.45	0.99	21	0.68	H	E-economy	0.05	0.22	41	1.00	L
F-serving	0.40	0.71	22	0.64	H	FET-energy	0.05	0.22	41	1.00	L
COM-comparison	0.39	0.64	23	0.72	H	H-dieting	0.03	0.18	42	1.00	L
E-religion	0.39	0.71	23	0.73	H	E-law	0.03	0.18	42	1.00	L
C-gift	0.37	0.66	24	0.72	H	P-women	0.03	0.18	42	1.00	L
FET-packaging	0.37	0.68	24	0.72	H	P-men	0.03	0.25	42	NC	
EN-nature	0.35	0.68	25	0.72	H	P-royalty	0.03	0.18	42	1.00	L
E-driving	0.34	0.54	26	0.81	M	C-ceremonies	0.03	0.18	42	1.00	L
FET-price	0.34	0.63	26	0.71	H	H-beauty	0.02	0.13	43	NC	
E-time	0.32	0.78	27	0.66	H	E-playing	0.02	0.13	43	NC	
FET-colour	0.29	0.64	28	0.71	H	FE-sex	0.02	0.13	43	NC	
E-work	0.27	0.45	29	1.00	L	FE-competitiveness	0.02	0.13	43	NC	
FET-genuine	0.27	0.52	29	0.80	M	FE-freedom	0.02	0.13	43	NC	
E-history	0.24	0.64	30	0.59	H	I-fantasy/magic	0.02	0.13	43	NC	
P-children	0.24	0.43	30	1.00	L	I-dream	0.02	0.13	43	NC	
FE-no reaction	0.23	0.53	31	0.68	H	LD-hiding	0.02	0.13	43	NC	
FET-sweet	0.23	0.56	31	0.68	H	S-sports	0.02	0.13	43	NC	

Table 6_9. Semantic associations of *wine* for the Italians

	English	Italian
High	47.3	61.64
Medium	22.97	12.33
Low	29.73	26.03

Table 6_10. *Wine* – Percentage distribution of fields across conventionalisation levels

This result is in line with expectations, *wine* being a major and long-standing traditional national product for Italy, but a relatively recent import product for England. However, in both cultures, the sum of high and medium conventionalisation fields – i.e. the fields which highlight cultural meanings – amounts to about 71% and 74% for English and Italian respectively.

6.3.1.2 Conceptual domain analysis

The following paragraphs apply the analytical steps described above to conceptual domains. Table 6_11 summarises Mean, SD, Rank, G2,1 and Conventionalisation values for the Italian and English *wine* datasets, at this higher level. All values have been computed from raw data, ignoring the existence of subdivisions (semantic fields) within each conceptual domain. However, in the table, the domain name is accompanied by the number of its conceptual fields, in parenthesis.

ENGLISH						ITALIAN					
Domain	Mean	SD	Rank	G2,1	Cnv	Domain	Mean	SD	Rank	G2,1	Cnv
Features (10)	6.80	4.12	1	0.67	M	Features (10)	7.97	3.33	1	0.78	M
Food (9)	5.20	3.37	2	0.67	M	Food (9)	7.55	3.08	2	0.77	M
People (11)	2.96	3.07	3	0.56	H	Events (15)	4.40	2.04	3	0.76	M
Events (15)	2.85	2.11	4	0.68	M	Feelings & emotions (23)	3.89	2.62	4	0.66	H
Feelings & emotions (23)	2.70	2.13	5	0.65	M	Health (5)	2.45	1.61	5	0.70	M
Health (5)	2.00	1.89	6	0.65	M	People (11)	2.00	1.68	6	0.63	H
Geo (2)	1.66	2.29	7	0.53	H	Geo (2)	1.89	1.52	7	0.72	M
Comparison (1)	0.62	1.06	8	0.65	M	Culture (3)	1.11	1.29	8	0.69	H
Ceremony (3)	0.54	0.81	9	0.72	L	Environment (5)	0.74	0.97	9	0.75	M
Environment (5)	0.27	0.58	10	0.72	M	Ceremony (3)	0.56	0.78	10	0.71	M
Culture (3)	0.20	0.45	11	0.80	L	Comparison (1)	0.39	0.64	11	0.72	M
Loss & damage (3)	0.11	0.38	12	0.77	L	Loss & damage (3)	0.18	0.46	12	0.77	M
Life (2)	0.11	0.48	12	0.65	M	Life (2)	0.11	0.45	13	0.61	H
Imagination (2)	0.01	0.10	13	NC		Imagination (2)	0.03	0.18	14	1.00	L
Sports (1)	0.00	0.00	14	NC		Sports (1)	0.02	0.13	15	NC	

Table 6_11. *Wine* – Conceptual domains in the English and Italian datasets

Disregarding the domains for which the evenness index could not be computed, the English dataset shows two highly conventionalised domains: PEOPLE, and GEOGRAPHY; three domains with low levels of conventionalisation: CEREMONY, CULTURE, LOSS & DAMAGE; and eight domains with medium conventionalisation: FEATURES, FOOD, EVENTS, FEELINGS & EMOTIONS, HEALTH, COMPARISON, ENVIRONMENT and LIFE. The Italian dataset shows four highly conventionalised domains: FEELINGS & EMOTIONS, PEOPLE, CULTURE, and LIFE; one domain with low levels of conventionalisation: IMAGINATION; and nine domains with medium conventionalisation: FEATURES, FOOD, EVENTS, HEALTH, GEO LOCATIONS, ENVIRONMENT, CEREMONY, COMPARISON and LOSS & DAMAGE.

In percentage terms, the conventionalisation picture is as summarised in Table 6_12.

	English	Italian
High	15.00	19.00
Medium	62.00	64.00
Low	23.00	7.00

Table 6_12. *Wine* – Percentage distribution of domains across conventionalisation levels

In parallel with what happened with semantic fields, the Italian culture, compared to the English one, shows a greater number of highly conventionalised domains and a lower number of domains with low conventionalisation. Furthermore, the sum of high and medium conventionalisation domains amount to 75% and 83% respectively.

Furthermore, as was the case with *chocolate*, passing from semantic fields to conceptual domains, the picture within each culture has changed in two ways: 1. while in the case of semantic fields both cultures showed dominance of highly conventionalised fields, in the case of domains the leading level of conventionalisation is the medium one; 2. the total amount of semantic meanings has increased.

Finally, no direct relationship exists between mean frequency and number of semantic fields composing the domain, or mean frequency and conventionalisation, or conventionalisation and number of fields in the domain.

6.3.2 Cross-cultural comparison

Let us now compare the two cultures at the level of semantic fields, to see whether significant differences exist. As with *chocolate*, semantic field comparison between the English and Italian datasets performed by applying Spearman's Rank Correlation Coefficient showed medium-high positive correlation, with Spearman's Rho equal to 0.735 ($p < 0.01$). Furthermore, the *wine* datasets were compared using Welch *t* Test for Independent Samples. T-Test results were significant ($p < 0.01$) for the semantic fields listed in Table 6_13.

Following the logic applied with *chocolate*, the fields with a significant T value and which show a high level of conventionalisation in one of the two cultures along with mean values for that culture which are higher than for the other culture will be considered indicative of cultural differences. The fields with a significant higher mean in one culture but a low level of conventionalisation in that culture, will be ignored as the result may depend on the sample, rather than the culture. Finally, the semantic fields with a higher mean and medium conventionalisation level will be considered culturally more prominent only if in the other culture they show a high level of conventionalisation or are virtually absent. All other cases are uncertain, and need confirmation from other population samples.

Field	P	T	Df	st.error of df	Mean values English	Cnv	Mean values Italian	Cnv
F- product/shape	0.0038	2.9395	150	0.092	0.38	M	0.11	H
F- bakery/cooking	0.0013	3.2867	110	0.133	0.38	H	0.82	H
F- drink	0.0003	3.6947	150	0.154	1.02	H	0.45	H
F-manufacturing	0.0000	5.7245	81	0.207	1.58	H	0.40	H
F-recipe	0.0001	4.3831	151	0.200	1.55	H	0.67	H
E-language	0.0000	5.8467	151	0.106	0.77	H	0.33	H
E- event	0.0022	3.1487	83	0.130	0.25	M	0.66	H
E- driving	0.0001	4.0889	73	0.072	0.04	L	0.34	M
FE-confidence	0.0000	6.6104	151	0.080	0.55	H	0.02	L
FE- desire	0.0003	3.7065	123	0.112	0.53	H	0.11	M
FE-nice/pleasant/pleasure	0.0000	5.2408	151	0.086	0.52	H	0.07	L
P-women	0.0000	3.7979	151	0.142	0.03	L	0.57	H
P- men	0.0011	3.3454	104	0.115	0.42	H	0.03	NC
P- children	0.0024	3.1236	84	0.060	0.05	L	0.24	L
P-friendship	0.0001	4.3530	151	0.139	0.94	H	0.33	H
P- posh	0.0032	2.9924	149	0.102	0.42	H	0.11	H
P- sharing/society	0.0001	3.942	129	0.084	0.43	H	0.10	L
P- people	0.0033	3.0121	90	0.036	0.11	M	0.00	NC
EN- nature	0.0006	3.5868	70	0.090	0.03	H	0.35	H
CUL- artistic production	0.0004	3.6746	78	0.100	0.10	M	0.47	H
CUL-studying/intellect	0.0001	4.8607	151	0.085	0.47	H	0.05	L
FET- quality/type	0.0033	2.993	123	0.359	2.54	H	3.61	H
FET- quantity	0.0009	3.3953	118	0.178	0.70	H	1.31	H
FET- genuine	0.0005	3.6392	74	0.069	0.02	NC	0.27	M
FET-price	0.0000	4.9567	151	0.156	0.34	H	1.11	H

Table 6_13. *Wine* – T-Test results

Consequently, I would consider the following semantic fields as distinctively more prominent for Italians than for the English, when talking about *wine*: BAKERY/COOKING; EVENT; WOMEN; NATURE; ARTISTIC PRODUCTION; QUALITY/TYPE; QUANTITY; GENUINE; PRICE. On the other hand, more prominent for the English than for the Italians are: PRODUCT/SHAPE; DRINK; MANUFACTURING; RECIPE; LANGUAGE; CONFIDENCE; DESIRE; NICE/PLEASANT/PLEASURE; MEN; FRIENDSHIP; POSH; SHARING/SOCIETY; PEOPLE; and STUDYING/INTELLECT.

As regards conceptual domains, Spearman's test showed very strong positive correlation, with Spearman's Rho equal to 0.942 ($p < 0.01$). Furthermore, the domains with statistically significant differences at the Welch t Test ($p < 0.01$) are listed in Table 6_14.

Domain	P	T	Df	st.error of df	Mean values English	Cnv	Mean values Italian	Cnv
Food	0.0000	4.4579	138	0.572	5.20	M	7.55	M
Event	0.0000	4.5729	134	0.340	2.85	M	4.40	M
Feeling	0.0038	2.9547	112	0.401	2.70	M	3.89	H
Environment	0.0010	33.912	90	0.138	0.27	M	0.74	M
Culture	0.0000	5.3482	71	0.171	0.20	L	1.11	H
Features	0.0001	4.1143	138	0.836	11.41	M	7.97	M

Table 6_14. *Wine* – Conceptual domains with statistically significant differences between English and Italian

Only domains FEELINGS and CULTURE emerge as clearly distinctive for the Italian culture. The other domains in the list, having medium level of conventionalisation in both cultures are more ambiguous, and further data are needed.

6.4 Semantic field ASSESSMENT

The manual coding scheme, used in coding the whole datasets, included four types of assessment (Positive, Negative, Neutral and Undecided), and the four elicited datasets showed a majority of positive sentences, a somehow smaller number of neutral sentences, followed by an even smaller number of negative sentences, and a few undecided sentences, as summarised in Table 6_15. In the table, the numerical values are percentages of the total number of sentences in each dataset.

	Positive	Negative	Neutral	Undecided
English <i>chocolate</i>	53.92	19.03	26.35	0.69
Italian <i>chocolate</i>	54.21	11.85	32.75	1.19
English <i>wine</i>	46.00	19.60	27.69	6.70
Italian <i>wine</i>	53.59	14.49	29.62	2.29

Table 6_15. ASSESSMENT field results in the elicited datasets

Such an analysis, although clearly limited in scope, is sufficient for the purposes of the current work and is a suitable reference term for the methodological comparisons which will be performed in the following chapters.

From a cultural perspective, however, the current analysis of semantic prosody would benefit from extension. In particular, two possible analytical procedures have already been identified: 1. looking at the distribution of the Positive and Negative

categories across the various fields/domains;⁶ 2. analysing the evaluative adjectives that collocate with the two selected key words.⁷

6.5 Conclusions

The present chapter has outlined the semantic associations of the key words *chocolate*, and *wine* in Italian and English minds, as they emerge from the four datasets of elicited data collected. These results will be used in the next chapters as terms of comparison for methodological investigations in the use of different types of data samples and tagging systems.

The following paragraphs summarise the procedures applied and the results obtained, along with some further methodological considerations and a brief discussion of how these data confirm the cultural systems theories used as reference framework. Finally, the last few paragraphs discuss some limitations of the analyses performed and suggest directions for further research.

Observation of the ranking of semantic fields and conceptual domains based on mean values provided a general picture of the most frequent semantic associations in each data set. This picture, however, is approximate, as it disregards distribution of answers across subjects.

A more precise picture was obtained by applying Molinari's evenness index, and by assessing the level of conventionalisation expressed by each value, classified into three groups: High, Medium and Low. Consequently, in each culture and for each node word, it was possible to establish which fields and domains showed high, medium or low level of conventionalisation, respectively corresponding to Fleischer's core, current and connotational fields.

The results are in keeping with expectations. Although *wine* is well established in both countries – with the sum of core (H Cnv elements) and current field (M Cnv elements) predominating over connotational field (L Cnv elements) in both datasets –, among Italian respondents, for whom it is a long-standing traditional national product, the percentage of highly conventionalised semantic fields is remarkably higher than among the British ones, and the percentage of low conventionalisation fields is remarkably lower. A similar picture appeared also from the analysis of conceptual domains.

Chocolate, too, appears as a well-established symbol in both cultures, both at the level of semantic fields and conceptual domains. Differently from *wine*, however, the distribution of high, medium and low conventionalisation fields and domains is almost identical in both datasets, which confirms our initial hypothesis of *chocolate* having similar rooting in the two countries.

Finally, for each node word, the English and Italian semantic associations were compared by means of Welch *t* test, in order to highlight the cases when the difference in means was statistically significant. T-test results were then triangulated with

⁶ A quick look at the data suggests that, when performing this type of analysis, it will be important to consider only the semantic fields/domains which show a minimum number of hits, alongside a significant difference between Positive/Negative Assessment.

⁷ Methodological inspiration could be taken from the works by Baker (2006), and Aggarwal, Vaidyanathan and Venkatesh (2009), reviewed in Chapter 2.

conventionalisation results, in order to better understand which differences can be safely attributed to culture and which to circumstantial elements, such as population sampling.

Cross-cultural comparisons in terms of conceptual domains highlighted very few, and sometimes ambiguous, differences. Indeed, conceptual domains – though highly useful in the construction of the coding scheme and in its application – proved less useful than semantic fields in cultural and, even more so, cross-cultural analyses. This is most probably due to the fact that they are very wide as categories, and consequently less sensitive as indicators of difference.⁸

At the level of semantic fields, the Italians seem to distinguish themselves from the British for their more frequent matching of *chocolate* to the following concepts: BAKERY/COOKING; RECIPE; DIETING; MEDICINE; BEAUTY; HISTORY; NICE/PLEASANT/PLEASURE; CHILDREN; FAMILY; STUDYING/INTELLECT; QUALITY/TYPE; GENUINE. On the other hand, more prominent for the English than for Italians seem to be: WOMEN, and PRICE. As regards *wine*, the following semantic fields emerged as distinctively more prominent for the Italians than for the English: BAKERY/COOKING; EVENT; WOMEN; NATURE; ARTISTIC PRODUCTION; QUALITY/TYPE; QUANTITY; GENUINE; PRICE. On the other hand, more prominent for the English than for Italians were: PRODUCT/SHAPE; DRINK; MANUFACTURING; RECIPE; LANGUAGE; CONFIDENCE; DESIRE, NICE/PLEASANT/PLEASURE; MEN, FRIENDSHIP; POSH; SHARING/SOCIETY; PEOPLE; and STUDYING/INTELLECT.

Finally, The results of the present study suggest some further general considerations.

A look at the semantic fields which are absent with reference to both key words in the same culture suggests that field presence/absence depends on the key word, rather than the culture. In fact, only one field is systematically absent in the English datasets (COMPETITIVENESS), and none in the Italian ones. This supports the use of dedicated coding systems for different node words.

Furthermore, these experiments suggest that, although the relation between the frequency of occurrence of a semantic field and its conventionalisation is evident, its exact nature might not be a simple and direct one. The quantitative nature of this relation is worth further investigation.

Finally, the current results are in keeping not only with Fleischer's theory but also Nobis's one. The *wine* experiment clearly confirmed that longer standing of a concept (*wine*) in a given culture (Italy) corresponds to stronger cultural rooting, here expressed in terms on higher percentage of highly conventionalised semantic fields. The second of Nobis' hypotheses, postulating greater semantic complexity of longer standing concepts, is supported in the *wine* experiment not by the overall number of semantic fields associated to the given concept, but by the greater number of semantic elements which are shared by several respondents, i.e. those semantic fields or conceptual domains with high levels of conventionalisation.

⁸ This is in keeping with results in Guerrero, Claret, Verbeke *et al.* (2010), reviewed in Chapter 4.

The inter-culture analyses performed in this chapter only provide a list of the concepts to which the key words are associated in each culture, but they cannot in any way explain the type of (or reason for) the association. Further steps, such as analysis of individual concordance lines, are needed to understand the exact link between key word and semantic field. Such analyses are beyond the scope of the current investigation, but will be considered in future extensions of this work. Nevertheless, I believe that analyses of this type may be adopted in the exploratory phases of marketing (or cultural) research, where research aims to outline problems, collect information, eliminate impractical ideas, and formulate hypotheses (see Chapter 4, Section 4.1.2).

The current results, however, have limitations deriving from not having controlled the composition of the two population samples (described in Chapter 5). Although the English and Italian groups of respondents show some overall similarities (a majority of university students in the 18-25 age range; data collected in both Northern and Southern areas of the two countries), no precise data is available as regards variables such as the respondents' age, gender or occupation. Consequently, some doubts remain as to the impact of population sampling on the (cross)cultural results. A first confirmation will be provided by comparing the current results to Web data (Chapter 10). Further confirmation could be found by applying, for example, one or more of the following:⁹

- Replication of the study, possibly also with a larger sample size and/or more stratified random sampling.
- Other elicitation methods (e.g. story writing).
- Depth interviews and focus groups, possibly with deliberate attempts to elicit and probe the concepts that showed cultural differences (e.g. ask Italian and English respondents deliberately about women and chocolate and see if there is a difference in how they talk about the subject).
- Content analysis (visual as well as verbal) of representative samples of chocolate/wine advertising from UK and Italian companies addressing the local audience.

For the time being, we will have to accept these results as they are. Should further research disconfirm this cultural comparison and cast doubts on the frequency-plus-T-test method adopted here, nevertheless, the methodological investigations of the chapters that follow will still be valuable. In fact, from now on the focus of the research will shift from finding a suitable way to highlight cultural differences to comparing different types of data and/or coding schemes.

⁹ To my best knowledge, no research on chocolate and wine that matches mine or that is in any way useful to explain, confirm or disconfirm my results seems to be currently available.