

USING AN ITALIAN DIACHRONIC CORPUS TO INVESTIGATE THE “CORE” PATTERNS OF THE LANGUAGE OF SCIENCE*

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Abstract

The aim of this paper is twofold. First, to help in establishing the true extent of the influence of scientific English on its Italian counterpart, especially at the level of the meaning-making practices of the Italian scientific community. Second, to provide a small contribution to the hypothesis of “core” patterns in scientific language across different languages following Halliday (1993). To achieve both aims, the linguistic evolution of a specialist subject field (medicine) which has been particularly influenced by English has been monitored over a 60-year time span (1939-2000) by investigating a small corpus, mainly on the topic of seborrhea and acne, consisting of original texts in Italian taken from textbooks on dermatology aimed at university students. The specific patterns of scientific language which are being monitored for measuring variation over time are mainly by-products of “grammatical metaphor”, which Halliday and Martin (1993) see as the most characteristic feature of the written “discourse for doing experimental science” (nominalization, choices for Theme and New, simple structure of clauses and sentences, etc.).

1. Introduction

The influence of English on the Italian LSPs – especially at the lexical level – is a well-documented phenomenon (among others, cf. Dardano 1994 and Cartago 1994). Such an influence has also been postulated on the patterns of text production in terms of a higher level of linearity and comprehensibility, at least for the special language of economics (Cozzi 1996: 327). To a certain extent,

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this would also entail that, in the last 30 years or so, under the influence of the English language of science, a variation has occurred in the meaning-making practices of the Italian scientific community (cf. Lemke 1991). In this paper I tentatively aim to test the true extent of the influence of scientific English on its Italian counterpart at linguistic levels other than terminology. In so doing, I also hope to provide a small contribution to the hypothesis of “core” patterns in scientific discourse across different languages, which is implied in Halliday’s “prototypical syndrome of features that characterizes scientific English” (1993: 54). To this end, I have monitored the evolution of the specialized subject field of dermatology over a 60-year time span with a small corpus (60,411 words) of texts, mainly on the topic of acne, written by a variety of authors and belonging to the genre “textbook on dermatology”. The specific patterns of scientific language monitored for development over time are mainly by-products of “grammatical metaphor”, the process whereby meanings are multiply-coded at the level of grammar, which Halliday and Martin (1993) see as the most characteristic feature of the written “discourse for doing experimental science”. These patterns are: simple structure of clauses and sentences, choices realizing the theme, nominalization and cohesive devices of conjunction.

The basic assumption underlying my study is that, under the influence of English, the Italian language of science has varied its patterns of text production in terms of a higher level of technicality and abstraction (cf. Martin 1991). To monitor this hypothesized evolution, I investigated the lexicogrammatical patterns used for organizing information in portions of the different texts ‘doing the same things’, i.e. describing the age of onset of acne, and defining and classifying the terms “comedone” and “acne”.

2. The corpus

According to the typology of corpora proposed by Laviosa (2002: 33-38), this is a written corpus which is sample (portions of texts selected according to the topic of interest, i.e. acne), diachronic (texts produced over a relatively long time span, i.e. 1939-2000), terminological (texts originating within a specialized subject field, i.e. dermatology), and single monolingual (one set of texts all in Italian).

However, it should be noted that, looking in more detail at the “sample” category, the sample texts contained in the corpus can really be considered to be full texts because of the very nature of the textbooks they were taken from, which are divided into various chapters/sections, each centred on a different topic.

The corpus is also predominantly (18 out of 20 texts) non-translational, consisting of Italian texts by authors – highly reputed academics whose

textbooks were very influential in their own time – writing in their native language.¹ The only texts which are translational (Andrews & Manganotti 1964; Fitzpatrick *et al.* 1992), i.e. not originally produced in Italian but translated from English, make up between the two of them only 2,489 words out of the total 60,411 (4.1%) and have been included to provide a benchmark for the comparison between the predominantly non-translational element of the corpus and two original English textbooks (Rook *et al.* 1979; Caputo *et al.* 1990).

However, due to the objective difficulty of finding in libraries medical textbooks dating before 1980, because of the obvious problems linked to the relatively quick ‘ageing’ of their contents, there are at least two discrepancies in the design of the corpus:

- 1) the texts published in 1939 have a much lower level of similarity concerning the topic, because they do not deal specifically with acne but much more generally describe diseases manifesting themselves via dermatological signs (e.g. chicken-pox, rubella);
- 2) the word counts of the sub-corpus for the 1960s/1970s and the sub-corpus for the 1990s are considerably smaller than the size of the other two sub-corpora:

Time span	1930s/1940s	1960s/1970s	1980s	1990s/2000
Total word count	24,988	6,526	19,102	9,795

Table 1. Word count of each sub-corpus

Moreover, of the three texts published in the 1960s/1970s, one is a translation (Andrews & Manganotti 1964) and one (Tagliavini 1973) more strictly belongs to the genre “compendio”, i.e. a small guide on the morphology of dermatological diseases, where the text is only ancillary to the illustrations.

The corpus has been investigated both automatically – by using the Oxford University Press WordSmith Tools Suite – when looking for lower-level features in individual words and word-clusters (e.g. cohesive devices and nominal groups), and manually, when searching for higher level patterns in and between clauses and sentences.

3. Sentence and clause structure

Different languages present information in a different order and therefore vary quite considerably in the way their syntax encourages different types of sentence

¹ My thanks go to prof. Carmelo Scarpa for his invaluable help in suggesting most of the textbooks included in the corpus and for finding them.

structure and thematization, even though some genres are more different than others (cf. Maia 1997). Given that Italian syntax, just like other Romance languages, allows for a greater complexity of structure than English, I started my analysis by considering the average sentence and paragraph lengths in the texts of the corpus, expecting to find a progressive shortening of both over time:

Time span	1930s/1940s	1960s/1970s	1980s	1990s/2000
Mean sentence length	53.76	25.64	37.85	32.16
Mean paragraph length	545.70	130.21	212.42	140.11

Table 2. Word count of mean sentence and paragraph length

As shown from Table 2 above, sentence and paragraph lengths have indeed reduced over time, though not in the gradual way I expected. The sharp drop in the figures for the 1960s/1970s, however, can be at least partially explained by the imbalance in the corpus design mentioned earlier. Interestingly, without the translational text (Andrews & Manganotti 1964) the values for the 1960s/1970s sub-corpus show a slight increase in both parameters (sentence length = 26.62 and paragraph length = 136.56), which goes some way to corroborating my prediction of a progressive shortening of sentence and paragraph length over time, combined with the tendency of translators to maintain the sentence structure of the source text. However, in this word count a sentence has been typically considered as ending with a full stop, question mark or exclamation mark (and followed by a capital letter), a constraint which does not take into account the possibility that some functional changes may have occurred in Italian punctuation rules over the 60 years spanned by the corpus, possibly also under the influence of English discourse. For example, let us consider the following four instances, all dealing with the age of onset of acne, where such a functional evolution of punctuation seems in fact to emerge:

- (1) La malattia compare frequentemente all'epoca della pubertà (di qui il nome di acne giovanile); ha decorso molto cronico con alternative di miglioramenti e di esacerbazioni: scompare qualche volta spontaneamente coll'avanzare dell'età, oppure sotto cure opportune generali e locali, ma si ripresenta con facilità. In alcuni casi si vede la malattia presentarsi per la prima volta nella età adulta: spesso sono in giuoco in questi casi moventi interni speciali (vedi eziologia). (Radaeli 1948)
- (2) L'acne è una condizione molto comune nell'adolescenza: nella sua forma conclamata interessa il 40-50% dei giovani; questa incidenza aumenta notevolmente se si tiene conto della occasionale presenza di comedoni e pustole soprattutto nei maschi della stessa fascia anagrafica. Compare alla pubertà tra gli 11 e i 13 anni e raggiunge la più alta incidenza tra i 15-17 anni. Le forme più gravi si osservano in circa il 3% dei maschi, meno frequentemente nelle donne. (Angelini & Vena 1985)

(3) L'acne volgare colpisce in genere soggetti con un range di età variabile da 13 a 24 anni con ampie oscillazioni individuali. L'acne può persistere o anche comparire oltre questa età e ad essere colpita, in questi casi, più di frequente è la donna. (Vena & Cassano 1998)

(4) Esordisce alla pubertà con un picco di incidenza e gravità fra i 14 e i 17 anni nelle femmine e fra i 16 e i 19 anni nei maschi. È rara l'insorgenza in età più precoce e la durata oltre i 30 anni. (Rebora & Marchesi 2000)

Whilst all four excerpts consist of paratactically related clauses (both below and above the clause complex level), there is a progressive reduction in the use of colons and semi-colons, which in the two most recent excerpts have been substituted by full-stops. In this respect, excerpt (2) provides an intermediate link in this gradual shift between the earlier (1) use of colons and semi-colons – where commas could have in fact been more congruently used (all first three clauses have the same grammatical Subject *malattia*) – and the two most recent excerpts.

Closely linked to the greater length of sentences is the issue of their grammatical intricacy, with clause complexes in earlier texts tending indeed to contain more clauses than later texts but with no comparable shift from a hypotactic to a paratactic type of relation between clauses. Though the earlier Italian texts contain undoubtedly more hypotactical links than the later ones,² their level of grammatical intricacy is still relatively low compared to contemporary non-specialized texts.

A more fundamental shift is exemplified in Text 1 (Appendix) and marks the transition to a progressively more technical and abstract scientific discourse, as reflected in the gradual building up of that “taxonomizing focus” which Martin (1991) sees as distinguishing scientific discourse from other types of texts. Though Martin’s observation is of course valid for scientific discourses other than English, as far as the Italian corpus on acne is concerned in the earlier texts such taxonomies do indeed exist³ but tend to be “implicit” in Trimble’s sense, in that “all of the classifying information is included but is not stated as such” (Trimble 1985: 90). As such they are not “complete” explicit classifications, providing three kinds of information: the item being classified, the class to which the item belongs and the basis (or bases) for classification (Trimble 1985: 86). Whilst the first excerpt (Radaeli 1948) in Text 1 is merely a physical description of the comedone, in the second (Monacelli & Nazzaro 1967) the relational process (*costituiscono*) introducing comedones in the very first clause

2 See for example in Radaeli (1948) the hypotactical clause (*se il follicolo viene...*) in the first definition of “comedone” in Text 1 (Appendix).

3 As for example the extended classification of different types of jaundice taking up to three-quarters of the whole text in Ferrari (1939).

establishes some level of abstraction by identifying *comedones* as the *lesioni elementari primitive* of acne and then roughly distinguishes them into two subclasses on the basis of the differences between them (*incassati in un orifizio follicolare* and *disposti alla sommità di una piccola rilevatezza biancastra rotondeggiante*). The classification of comedones becomes progressively more explicit and elaborate in the later texts until, in the most recent one (Rebora & Marchesi 2000), the taxonomy is built first by establishing a superordinate (*Il comedone è una dilatazione dell'infundibolo del pelo...*) which is then broken down in two subclasses (*comedoni aperti* and *comedoni chiusi*), both elaborated by the appositions “*punti neri*” and “*punti sottopelle*” and defined in terms of the differences between them (*con orifizio dilatato di colore scuro* vs. *con orifizio molto piccolo..., vere microcisti follicolari*).

Such an evolution makes it not unreasonable to hypothesize that, under the influence of the English pedagogic discourse of medicine, its Italian counterpart may have acquired a standardized pattern for constructing explicit (complete) taxonomies. The tendency to taxonomize and, more generally, to heavily organize and classify information in checklists, seems in fact to be a feature of the English discourse of science and, in the case of acne, in both the English textbooks taken as reference (Rook *et al.* 1979 and Caputo *et al.* 1990) comedones are classified very explicitly indeed.

Turning now to definitions, the rhetorical organization of the texts of the corpus does not show an equally clear evolution as in the pattern of classification. Text 2 (Appendix) consists of the definitions of “acne” in all the texts of the corpus but two (Radaeli 1948 and Ribuffo 1987), where the pathology is never formally defined. In all cases, the definition of acne is also the first sentence of the text⁴ and consists of a Token (the technical term to be defined),⁵ an identifying relational process (*è, si intende, si definisce*) and a Value (the information needed to define the term) (cf. Martin 1991: 311-313). The ten definitions vary in terms of the amount and precision of the information they provide: in Trimble’s sense (1985: 75-79) most are simple, i.e. made up of one sentence (Andrews & Manganotti 1964; Monacelli & Nazzaro 1967;

4 In both the texts where acne is not formally defined, the first sentence focuses instead on the symptoms and signs of acne: “Nella sintomatologia dell’acne volgare bisogna portare l’attenzione sopra due ordini di fatti; le alterazioni della secrezione e della eliminazione del sebo cutaneo ed i fatti infiammatori follicolari e perifollicolari” (Radaeli 1948); “Il quadro inizia con seborrea e comedoni (acne comedonica), i quali si presentano come punti neri localizzati a livello dell’orifizio follicolare. Compaiono successivamente, sempre in sede follicolare, lesioni a carattere infiammatorio sotto forma di rilievi papulosi e di pustole (acne papulopustolosa)” (Ribuffo 1987).

5 In Binazzi (1985), where the Token is referred to anaphorically as *così*, the technical term “acne” is the title of the section, only one line above the definition.

Panconesi 1982; Binazzi 1985; Sapuppo 1986; Fitzpatrick *et al.* 1992; Rebora & Marchesi 2000), as opposed to complex (or expanded), i.e. definitions incorporating a description and/or classification (Angelini & Vena 1985; Cerimele & Saccabusi 1988; Vena & Cassano 1998). In the vast majority of cases, the simple definitions are formal, i.e. containing all three basic defining elements – the term being defined, the class of which it is a member and the sum of the differences distinguishing this term from all other members of the class. Only in one case (Sapuppo 1986) is the simple definition of acne non-formal, i.e. containing no clear statement of the differences.

Definitions, however, provide a very good example of the evolution of some of the choices which realize the Theme in the texts of the corpus. From a comparison between the two earliest definitions of acne in the corpus (Andrews & Manganotti 1964; Monacelli & Nazzaro 1967), in the translational text (1964) the term to be defined is Subject-Theme in an unmarked topical position (*L'acne volgare è...*), whilst in the non-translational text (1967) the term *acne giovanile* is encapsulated in a prepositional phrase (Adjunct) (*Con il nome di acne giovanile ... si intende...*) in a marked pre-topical position. Assuming that the translation (1964) has maintained the same word order as its original,⁶ such a difference is consistent with Evangelisti's (1994) findings in her contrastive analysis of Italian and English textbooks on psychology: in English definitions, the term to be defined was introduced straight away and functioned as Subject-Theme (*X is...*), whilst in Italian definitions there was a preference for the less linear and compact structure *Con X ci si riferisce a...*, where the term to be defined was encapsulated in a prepositional phrase in a marked pre-topical position followed by an impersonal verb functioning as topical Theme (cf. *si intende* in Monacelli & Nazzaro 1967 and *Si definisce* in Binazzi 1985). As all the later texts in the corpus except Binazzi (1985) and Rebora & Marchesi (2000) use the pattern *X is...*, it is not unreasonable to speculate an influence of English on Italian definitions in the choice of the Token as realizing the Theme.

Turning now to the choice of the characteristic elements which realize the Theme outside definitions, rather expectedly in later texts the most recurrent Themes are nominalizations, whilst in earlier texts there was a wider variation of thematization in relation to a higher flexibility of word order of Italian compared to English. In partial accordance with Nwogu & Bloor's (1991: 380) findings relating to medical research articles, I found a progressive increase of the following two syntactical items functioning as Theme: "simple/complex nominal group" (functioning as non-agent Subject of passive clauses) and "prepositional phrase (Adjunct) plus nominal group". As for the third typical

6 Cf. both the English textbooks taken as reference: "Acne is a chronic inflammatory disorder (...)" (Rook *et al.* 1979) and "Acne is an extremely common disorder (...)" (Caputo *et al.* 1990).

realization found by the two researchers, i.e. “adverbial group (Adjunct) plus nominal group”, an analysis of the adverbs ending in the suffix *-mente* has yielded the following results:

	Sentence-initial adverbial groups⁷	Total hits	%
1939-1948	16	260	6.15
1964-1973	4	105	3.80
1982-1988	25 ⁸	219	11.41
1992-2000	12	131	9.16

Table 3. Word count of adverbs ending in *-mente*

Looking at the percentage column of the Table above, an increase of adverbs in thematic position seems indeed to emerge, though not as progressively as expected, whilst the low percentage for the 1964-1975 set could once again be partially explained by the discrepancy in the corpus design mentioned in section 2. The high percentage of sentence-initial adverbs in the 1982-1988 set could be ascribed to a particularly marked influence of English word-order rules on Cerimele and Saccabusi’s (1988) language, whose text, in fact, also happens to be the longest for this time span (7,745 words). Interestingly, however, at the level of individual texts, the one having the lowest percentage of hits per 1,000 tokens (3.58%) in the whole corpus is the translational text by Fitzpatrick *et al.* (1992), with the possible exception of the even lower percentage (1.89%) relating to the very brief compendium (530 words) by Tagliavini (1973).

I also found a very slight but rather consistent increase in the thematization – and, more generally, in the use – of selected conjunction groups functioning as logical connectors between clauses and sentences. The only conjunctive which seems to have clearly shifted its position at the beginning of the message is *d'altra parte*, whilst *in effetti*, *in realtà* and *d'altronde* seem to have suddenly appeared in the Italian language of dermatology – both as sentence openers and not – in the 1980s. Both the shift in the position of *d'altra parte* and the rather recent appearance of *in effetti*, *in realtà* and *d'altronde* might once again be not unreasonably explained by the influence of a literal translation of the English

7 Sentence-initial adverbials are those occurring after a full-stop, a semi-colon, a colon and an open parenthesis sign and can also be pre-modified by grammatical items like *più* (e.g. *Più frequentemente*) and *solo* (*Solo raramente*).

8 Mostly, though not exclusively, in Cerimele & Saccabusi (1988). An interesting observation about the influence of English on Italian punctuation is that in the 1982-1988 texts sentence-initial adverbials are only occasionally followed by a comma, whilst in the 1992-2000 set they usually are.

adversative conjunctive expressions *on the other hand* (mostly sentence opening) and *in fact*.

	1939-1948		1964-1973		1982-1988		1992-2000	
	s.i.	other	s.i.	other	s.i.	other	s.i.	other
In effetti	-	-	-	-	1	1	1	-
In realtà	-	-	-	-	1	1	2	-
D'altronde	-	-	-	-	5	-	1	-
In primo luogo	-	1	-	-	-	-	1	-
In tal modo	-	2	-	-	3	-	1	1
Nonostante	1	-	-	-	-	-	2	1
D'altra parte	1	1	-	-	-	-	4	-

Table 4. Word count of specific conjunctive expressions (s.i. = *sentence initial*)

4. Nominal style

Nominalization is the linguistic resource par excellence of technicality and abstraction (Martin 1991: 315). This feature is also to be found in Radaeli's (1948) text, where the use of grammatical metaphors is more frequent than expected, e.g. in Text 1 ... *dovuta ad un aumento di secrezione con secondaria (instead of "al quale ha fatto seguito una") ipercheratosi dello sbocco follicolare; ... è ammissibile che alla determinazione dei (instead of "a determinare i") fatti infiammatori acneici concorra l'azione di microrganismi*. Still, in the corpus there is a progressive increase of nominalizations. This shift of emphasis on objects rather than processes – with the resulting grammatical foregrounding of identifying relational processes – can be found especially in the explanatory portions of the texts, which are organized through actions ordered in time (cf. Martin 1991: 323). For example, in Text 1 (Appendix) the material process *se il follicolo viene compresso fra due unghie si vede che il punto nero si solleva seguito da una specie di vermicciattolo bianco-gialliccio untuoso al tatto* is realized verbally as a clause in Radaeli (1948) and also in Panconesi (1982) a few lines after the definition of "comedone",⁹ but – if referred to at all – in later texts is realized nominally (*la spremitura*):¹⁰

9 ... *dà origine alla formazione del cosiddetto filamento seborroico (che può essere osservato macroscopicamente spremendolo ad esempio dalle ali del naso di un soggetto "seborroico") considerato il pre-comedone* (Panconesi 1982).

10 As further evidence of the progressive nominalization of the Italian medical language, in the first two excerpts of Text 1 the material verbal process *lascia/fa*

La spremitura del follicolo pilosebaceo corrispondente lascia uscire un filamento biancastro, untuoso e molliccio, di 2-3 mm di lunghezza (...) (Monacelli & Nazzaro 1967);

La spremitura del follicolo fa uscire (...) il comedone, formazione biancastra cilindrica, costituita da sebo, cellule cornee (...) (Binazzi 1985);

La sua spremitura dà adito alla fuoriuscita di un corpicciolo vermiforme biancastro (Sapuppo 1986);

Con la spremitura dei comedoni aperti si ottiene l'uscita di materiale grasso vermicolare (Cerimele & Saccabusi 1988).

This shift towards the nominal style is closely connected to a corresponding depersonalization and objectification of discourse, entailing the gradual disappearance of the researcher as participant. In particular, concerning the use of personal reference, this is one of the aspects of cohesion distinguishing earlier from later textbooks. For example, the first person personal pronoun *noi* has been found only in De Filippi (1939) (2 hits) and Radaeli (1948) (1 hit); the clitic *ci* has been found in Ferroni (1939) (3 hits), De Filippi (1939) (5 hits) and Radaeli (1948) (2 hits), and only once in Vena & Cassano (1998); the possessive pronoun *nostr** occurs once in Ferrari (1939), twice in Radaeli (1948) and once in Andrews & Manganotti (1964). Personal structures are scarce in later textbooks,¹¹ which points to a progressively lower focus on the researcher as a participant and, more generally, on individuals.¹² Yet, writing about neuropsychology, Sacks (1985, quoted by Francis & Kramer-Dahl 1991: 340) made a plea for the human element when he said that medicine is a discipline on the borderline between the natural “hard” sciences and the human “soft” sciences, and therefore its scientific rigour should be tempered by the fact that it has the human subject at its centre, a sentiment that it is difficult to disagree with.

uscire (plus Object) becomes an abstract relational process realized by the structure empty verb (*dà adito/si ottiene*) plus nominal group in the last two excerpts.

- 11 Of course a more thorough search could be conducted, e.g. for items in the first-person plural ending in *-amo* and *-emo*.
- 12 A further example of such a progressive depersonalization is provided by the count of the occurrences of the inanimate item *studi* as Theme-Subject of a predicate usually referring to an animate agent (e.g. *evidenziare, indicare, presentare etc.*). The influence of English can once more be hypothesized on the basis of the increase over time of such pattern: out of a total of 11 hits in the corpus for the item *studi* (1 in Ferrari 1939, 1 in Angelini & Vena 1985, 1 in Ribuffo 1987, and 8 in Vena & Cassano 1998), the specific pattern under consideration occurred 5 times, 4 of which in the 1998 text (and the remaining one in the 1987 text).

5. Conclusions

There are three speculative conclusions that can be drawn from this study. The first is related to the question: To what extent has English influenced Italian text production patterns in this particular genre? Based on my findings, I believe that the increase over time of any of the patterns taken into account can indeed be correlated to the influence of the norms and conventions of scientific English on its Italian counterpart. Of course these results should be further substantiated in the same corpus by similar findings in different patterns, such as the investigation of generic organization, aspects of modality and the use of the passive voice. Another possible field of enquiry could be opened up by the cross-checking of these results against findings from searches conducted on a bilingual comparable corpus made up of the Italian texts considered in this study and a number of English textbooks on the same topic, possibly published over the same time span. However, one important fact that has emerged from this study and should not be overlooked is the different degree of anglicization of the discursive patterns of different authors writing in the same years (especially in the 1982-1987 texts), a lack of consistency that could be investigated not only in relation to the authors' personal style and mastery of the Italian language, but also in terms of more objective factors such as the age of the authors and the pedagogic function of the texts they are writing.

The second conclusion relates to the question: To what extent does such an influence entail a shift toward higher readability? Going back to Cozzi's (1996: 327) observation for the Italian LSP of economics that the influence of English has resulted in a higher level of linearity and comprehensibility, it could be argued that the higher degree of cohesion, syntactic simplification (higher frequency of parataxis and nominal style) and explicitness (of classifications and definitions) found in the diachronic corpus could result in a discourse which is more easily accessible by learners. However, it must also be said that, as for its English counterpart, the massive – and occasionally excessive and inappropriate – use of grammatical metaphor in the resulting Italian discourse makes it so lexically dense and “incongruent” that at times – as Halliday (1993: 70, 84) himself has remarked – one cannot help feeling that discourse is unnecessarily made more difficult to understand than it need be. In this sense, ‘learning science’ is not strictly the same thing as learning the language of science and the authors of textbooks should be motivated not only by the functional constraint of purpose (higher objectivity) but also by the contextual constraint of the assumption that the level of knowledge of their readers is relatively low (cf. Nwogu & Bloor 1991: 382-383).

The third and last conclusion relates to the question: To what extent do the results of the study confirm Halliday's postulation of “core” patterns in the

discourse of science across different languages? The specific patterns of scientific discourse which I have monitored for development over time (simple structure of clauses and sentences, choices realizing the Theme, nominalization and conjunctives) are all by-products of grammatical metaphor and therefore have all – to a greater or lesser extent – characterized the Italian texts of the corpus well before the 1960s-1970s,¹³ the decades when English supposedly started to exercise its influence. This is true also for other features such as a “taxonomizing focus” and the preference of both languages for building definitions through relational processes of the identifying type. A clear pattern that seems to emerge from the study, however, is that through its influence English has greatly amplified some features of the Italian discourse of science, such as the nominal style and the related progressive depersonalization of prose. Following Lemke’s dynamic perspective of text production,¹⁴ such changes should be mostly viewed in the light of the mind-boggling progress made by medical research in the last 60 years and the consequent evolution in the practices and the discourse of the Italian scientific community. From this point of view, the influence of scientific English on other scientific languages such as Italian can be considered as the construction of an increasingly technical and abstract scientific discourse across different languages, functioning as a common “semiotic technology” (cf. Martin 1991: 307), because it enacts today’s broad consensus about what constitutes scientific practice (cf. Halliday 1993: 67). Consequently, the evolution of the Italian language of dermatology under the influence of English should not be seen in negative terms as a loss of individuality and distinctiveness but rather as a positive step towards a true internationalization of the paradigms of science.

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13 Cf. Halliday & Martin (1993: 15), who see in Galileo’s Italian prose an example of instantiation of grammatical metaphor, i.e. the union of nominalization with recursive modification of the nominal group that is the semiotic realization of the birth of science.

14 “[...] the text is a product and a record of meaning-making processes which are essentially dynamic. These processes are social semiotic practices, the signifying practices of a community” (Lemke 1991: 36).

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APPENDIX

Text 1

Definitions of “comedone”

Il comedone si presenta come un punto nero della grossezza di un capo di spillo o di un grano di miglio che occupa lo sbocco dilatato di un follicolo: se il follicolo viene compresso fra due unghie si vede che il punto nero si solleva seguito da una specie di vermicciattolo bianco-gialliccio untuoso al tatto. Il comedone è costituito da cellule cornee e da sebo. (Radaeli 1948)

I comedoni costituiscono le lesioni elementari primitive; appaiono come piccoli punti neri più o meno evidenti, incassati in un orifizio follicolare o disposti alla sommità di una piccola rilevatezza biancastra rotondeggiante. La spremitura del follicolo pilosebaceo corrispondente lascia uscire un filamento biancastro, untuoso e molliccio, di 2-3 mm di lunghezza, con l'estremità biancastra o nerastra in rapporto all'ossidazione dei lipidi della cheratina e all'accumulo di polvere sulla parte scoperta. (Monacelli & Nazzaro 1967)

Il comedone così formato (miscela di strato corneo, di germi, di lieviti, di lipidi e di pelo) può essere aperto verso l'esterno con il quale parzialmente comunica attraverso il tappo ipercheratosico-pigmentario (punto nero) o chiuso perché il poro residuo del follicolo è divenuto solo virtuale. (Panconesi 1982)

La più semplice è l'acne comedonica, caratterizzata dalla presenza di un rilievo papulo-nodulare biancastro miliare, del diametro di 1-2 mm, sulla cui superficie, con l'aiuto di una lente, si può riconoscere lo stoma accollato (comedone chiuso) oppure dilatato ed ostruito da materiale nerastro (comedone aperto). La spremitura del follicolo fa uscire, in entrambi i casi, il comedone, formazione biancastra cilindrica, costituita da sebo, cellule cornee, detriti e germi: la zona nera nella parte distale del comedone aperto è costituita da polvere e da melanina. (Binazzi 1985)

La massa cheratinica e lipidica piuttosto compatta che in questo modo viene a formarsi, riempiendo il lume dell'unità pilosebacea, forma un tappo a livello della apertura dilatata, dando così origine ad un comedone chiuso (“punto bianco”). Se invece questa massa comedonica protrude dal follicolo, si ha un comedone aperto (“punto nero”: il colore è legato all'ossidazione dei lipidi). Con l'ulteriore distensione del follicolo le pareti si fissurano e si rompono: ciò porta al passaggio nel derma di sebo, cheratina e batteri ed alla conseguente

formazione delle lesioni infiammatorie (papule, pustole, noduli, cisti). (Angelini & Vena 1985)

L'epitelio in tale sede mostra infatti un'esaltata attività proliferativa ed un turnover cellulare accelerato; la conseguente ipercheratosi provoca l'ostruzione del dotto pilosebaceo. In tal modo insorge il comedone chiuso, che, attraverso processi infiammatori, può evolvere nelle altre lesioni tipiche dell'acne; il comedone aperto, invece, si forma quando le alterazioni della cheratinizzazione interessano anche l'acroinfundibolo; in quest'ultimo caso però il suo contenuto può essere agevolmente eliminato. (Vena & Cassano 1998)

Il comedone è una dilatazione dell'infundibolo del pelo contenente soprattutto cheratina, ma anche lipidi, pigmenti melanici, batteri microaerobi (specialmente *Propionibacterium acnes*) e peli. Si distinguono comedoni aperti con orifizio dilatato di colore scuro ("punti neri") e comedoni chiusi con orifizio molto piccolo ("punti sottopelle"), vere microcisti follicolari. (Rebora & Marchesi 2000)

Text 2

Definitions of "acne"

L'acne volgare è una malattia infiammatoria cronica dei follicoli pilosebacei, caratterizzata da comedoni, papule, pustole, cisti e noduli; l'affezione è sempre preceduta da una seborrea. (Andrews & Manganotti 1964)

Con il nome di acne giovanile (da ακνη= punta) si intende una dermatosi molto comune caratterizzata da manifestazioni cutanee polimorfe, costituite prevalentemente da comedoni, papule e pustole, che si manifesta nel periodo puberale in soggetti con terreno seborroico. (Monacelli & Nazzaro 1967)

L'acne, detta anche acne volgare o acne polimorfa o acne giovanile, è una dermatosi cronica infiammatoria del follicolo pilosebaceo e del tessuto perifollicolare caratterizzata dalla presenza di comedoni, pustole, papule, papulo-pustole, eventualmente di noduli e cisti, localizzata al volto e al torace di giovani di entrambi i sessi, dal decorso prolungato e, nei casi più gravi, dal trattamento assai difficile. (Panconesi 1982)

L'acne è una dermatosi cronica infiammatoria del follicolo pilosebaceo a patogenesi multifattoriale. Essa è clinicamente caratterizzata dalla formazione di comedoni aperti e chiusi, papule, pustole, papulo-pustole, noduli e cisti ed interessa le aree ricche di ghiandole sebacee, quali il viso, le spalle e le regioni

mediotoraciche. L'afezione risolve spontaneamente nei primi anni della seconda decade di vita. (Angelini & Vena 1985)

Si definisce così (ακμή in greco significa fioritura) una dermopatia caratterizzata da lesioni del follicolo pilo-sebaceo nelle sedi della seborrea. (Binazzi 1985)

L'acne volgare o giovanile è una forma morbosa estremamente frequente che senza predilezione di sesso insorge in genere alla pubertà e tende a risolvere verso il 20°-25° anno di età; non raramente si evidenzia familiarità. (Sapuppo 1986)

Definizione. L'acne volgare è una malattia del follicolo pilo-sebaceo che inizia con cheratinizzazione anomala della porzione più bassa dell'infundibolo (infrainfundibolo), con accumulo di materiale sebaceo e cheratinico e conseguente dilatazione del follicolo stesso (comedone), che secondariamente va incontro a flogosi. È caratterizzata dalle seguenti lesioni che possono essere tra loro variamente associate: comedoni, papule, pustole, noduli, cisti. Tale molteplicità giustifica la denominazione di acne polimorfa; in genere primo a comparire è il comedone che è lesione non infiammatoria. Esito non obbligatorio è la cicatrice che può essere atrofica o cheloidea. (Cerimele & Saccabusi 1988)

L'acne è un'inflammazione cronica dell'unità pilo-sebacea di alcune aree (volto e tronco); compare nell'adolescenza e si presenta sotto forma di comedoni, papule, noduli, cisti o papulo-pustole; spesso, ma non sempre, esita in cicatrici atrofiche o ipertrofiche. (Fitzpatrick *et al.* 1992)

L'acne è una patologia che interessa l'unità pilosebacea. A dimostrazione di ciò depone anche il fatto che i follicoli pilosebacei rappresentano l'unica struttura follicolare reperibile nella cute acneica e che il loro numero risulta molto più elevato nei soggetti affetti da acne. (Vena & Cassano 1992)

Per acne si intende un processo infiammatorio delle unità follicolo-sebacee caratterizzato da papule, pustole e talvolta noduli ed esiti cicatriziali, la cui lesione elementare è il comedone. (...) Le acni si distinguono in acni endogene e acni esogene. (Rebora & Marchesi 2000)