

The translation of medical terminology in TV fiction series: the Spanish dubbing of *E.R.*

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Abstract

In this article the authors analyse how medical terminology found in the original version of an episode of the television series *E.R.* has been translated into the Spanish dubbed version. The translations are analysed in terms of translation techniques. A remarkable number of mistakes have been found in the translation of medical terminology, hence lowering the realism of the dubbed version. The relationship between terminology and audiovisual translation is discussed. Methodological issues concerning the corpus and its analysis are presented, examples of deviant translation are given, and the main results of our research are summarised.

Key words: audiovisual translation, dubbing, terminology, medical terms, translation techniques.

Resumen

En este artículo las autoras analizan cómo se traslada la terminología médica del original a la versión doblada al español en la serie televisiva *E.R.* Las traducciones se analizan en términos de técnicas de traducción. En la traducción de la terminología médica se encontrarán un número significativo de errores, lo que rebajará el realismo de la versión doblada. El artículo empieza describiendo la relación entre terminología y traducción audiovisual. A continuación, se presentan aspectos metodológicos relacionados con el corpus y se detallan los resultados del análisis, para terminar estudiando críticamente los resultados principales de la investigación.

Palabras clave: traducción audiovisual, doblaje, terminología, terminología médica, técnicas de traducción.

1. Introduction

Since the 1970s, medical TV series have abounded in the audiovisual landscape: *Dr. Kildare*, *Marcus Welby MD*, *M.A.S.H.*, *E.R.* or *House* are just a few of the best-known examples. These fiction series, which use medical terminology extensively, generally reach the Spanish audience by means of a dubbed version. This article –based on Lozano (2008) – aims to analyse how medical terminology found in the original version is transferred in the Spanish dubbed version. An episode of the series *E.R.* will be used in order to ascertain whether the realism found in the original is conveyed in the target-language version. Our hypothesis, based on the knowledge of one of the authors as a registered nurse, is that a remarkable number of mistakes are to be found in the translation of medical terminology, hence lowering the realism of the dubbed version.

In this article the relationship between terminology and audiovisual translation is first described. Terminology is a well-established discipline with seminal works such as those of Arntz (1989), Sager (1990) or Cabré (1992, 1999, 2003) and her team, among others. The translation of medical terminology for specialists, as in medical journals, has received much attention, some published in linguistics journals and collections of edited papers: see, for example Congost (1994), Gutiérrez (1996, 2005), Tercedor (1999) or López Rodríguez (2001). However, literature on medical screen translation is still meagre.

2. Terminology in audiovisual translation

Despite some serious constraints due to cinematic reasons, the language of fiction films often tries to mimic reality, hence reproducing language in all its variety. Following Hatim & Mason's (1990) adaptation of Halliday's tenets, language can change depending on two elements: users –defined by geographical, temporal, social, (non)-standard and idiolectal features– and use –also called register–. Register is further defined by variables such as mode (channel of communication), field (the subject matter), and tenor (the participants and their relationships). There is no doubt that terminology can be considered a translation challenge related to field although tenor can also play a decisive role regarding how terminology is used.

Transferring these notions to the field of dubbing, Agost (1999) presents language variety as a translation problem and, specifically regarding the field, states that audiovisual translators have to face an infinite array of topics, legal terminology in TV series being a good example. However, Santamaria (2002) envisages terminology from a different perspective:

En estos textos de ficción la terminología cumple unas finalidades distintas que en los textos de no-ficción. La comunicación de información especializada ya no es la función principal de estos discursos, sino que su función básica es caracterizar, como vamos a observar a continuación, el escenario dramático, punto de encuentro de los personajes de la obra, y describir convenientemente a los propios personajes. (In such fictional texts terminology fulfils a different function than that used in non-fiction texts. It is not the communication of specialised information that is the principal function in such discourse, but to characterize the dramatic scene where the protagonists interact, and to portray them conveniently.) (Santamaria 2002. Our translation).

Most references to terminology in audiovisual translation studies are found in articles dealing with non-fiction: Mir (1999) and Mateu (2005), both professional translators working for the Catalan Television (TVC), highlight terminology as a challenging issue in the translation of documentaries, an opinion confirmed by Matamala (2009a; 2009b), who lists the following difficulties: finding an equivalent, choosing between terminology *in vitro* and terminology *in vivo*, dealing with the absence of terminology, overcoming ambiguity, and dealing with obscure equivalents. Espasa (2004: 193), in an article presenting a general overview of documentary translation, states that terminology is an oft-quoted translation challenge “which is relative to the audience for which the translation is designed”. Finally, Franco, Matamala and Orero (forthcoming), in a book on voice-over tightly linked to non-fictional products, summarise some terminological problems encountered by translators and also put forward some didactic proposals.

All in all, it should be stressed that, although terminology has traditionally been associated to non-fictional products in audiovisual translation, fiction films can be as challenging, especially in productions where terminology is not only used to give a special atmosphere to the product but to reproduce a real professional context.

3. Methodological aspects

This article analyses the medical terminology found in the 22nd episode of the sixth season of *E.R.* (*Urgencias*), both in its original and its Spanish dubbed version. This episode has been selected because the action takes place in different settings and terminology is used in both formal and informal contexts.

After selecting the terminology with the help of an expert in the field, we created a list of what Romero (2005) terms “réplicas”, containing the original English version, the Spanish dubbed version and the technique used. If more than one technique was used in a “réplica”, this was also indicated in the chart, as shown in example (1).

(1)

OV (original version)	DV (dubbed version)	Translation technique
Dr. BENTON: Clamp the auricle.	Dr. BENTON: Pinza (...) _____ (...) la aurícula. [Clamp the auricle]	Literal translation Inadequate equivalent [Auricle= <i>orejuela</i>]

The selected translation techniques were based on Molina and Hurtado (2002), Molina (2006), Hurtado (2007) and, more specifically, on Romero (2003), including: adaptation, linguistic amplification, amplification, borrowing, calque, compensation, linguistic compression, discursive creation, description, elision, established equivalent, generalization, modulation, particularization, substitution, literal translation, transposition, and variation. The concept of inadequate equivalent (Hurtado, 2007: 289) was added to the previous techniques in order to indicate an unsuccessful match.

Following the advice of a medical expert, terms were categorised based on two criteria: the first was their degree of formality in order to differentiate between formal and informal medical terminology. The second was the use of thematic field to propose a sub-classification which includes the following categories: (i) therapeutic actions; (2) traumatic injuries and medical conditions; (3) biometric monitoring devices; (4) internal anatomic structures; (5) drugs and administration of blood products; (6) medical facilities and departments; (7) surgical equipment and instruments; (8) clinical equipment for exploring, processing, draining and obtaining biological samples; (9) clinical furniture; (10) vital signs; (11) body postures and positions; (12) diagnostic tests, and (13) signs and symptoms. Due to the comparatively low number of terms found in colloquial terminology, a single group without subcategories was created for operative reasons.

4. Results and discussion

Results will be presented using the categories established in section 3 and will then be summarised in 4.3. Although synchronisation constraints might have affected the final results and their analysis would prove highly interesting, this paper only takes into account the final broadcast version regardless of any previous changes.

4.1. Formal medical terminology

As far as therapeutic actions are concerned, the most frequently used translation techniques are literal translations (30%), as in example (2), together with established equivalents (26%). Transposition is also used (17%), followed by elision (8%), and borrowing (4%). The number of inadequate equivalents is three (14%): for instance, *sling* is translated by *férrula* when it should read *cabestrillo*.

(2)

OV (original version)	DV (dubbed version)	Translation technique
Dr. BENTON: Right. We've got to revascularize.	Dr. BENTON: Habrá que revascularizar. [We've got to revascularize]	Literal translation

Regarding traumatic injuries and medical conditions, literal translation is again the most widely used technique (51%), followed by established equivalents (18%) and generalizations (9%). Linguistic amplification, compensation, linguistic compression, particularization and transposition depict one example each (3%). Two inadequate equivalents (6%) are found in this category: “dislocation” is translated as *luxación* instead of *dislocación*, and “intussusception” is conveyed by *obstrucción intestinal* where it should be *invaginación intestinal*.

As far as the third category is concerned –“biometric monitoring devices”–, 37% of the terms are transferred by means of an established equivalent, 24% use a literal translation, and 12% resort to amplifications, borrowings or inadequate equivalents, as in (3).

(3)

OV (original version)	DV (dubbed version)	Translation technique
Dr. CARTER: There it is. Over on the pulse ox.	Dr. CARTER: Está ahí. Encima del oxígeno. [It is over there. On the oxygen]	Inadequate equivalent [Pulse ox(imetre)= oxímetro de pulso]

Concerning internal anatomic structures, literal translation is again extensively used (77%), followed by linguistic amplification and compression (11% each), as shown in (4) and (5). No inadequate equivalents are to be found in this category.

(4)

OV (original version)	DV (dubbed version)	Translation technique
Dr. WEAVER: From there to the IVC into the right atrium and ventricle.	Dr. WEAVER: De ahí a la vena cava, (...) (...) a la aurícula y al ventrículo derecho. [From there to vena cava into the atrium and the right ventricle]	Linguistic amplification ----- Literal translation

(5)

OV (original version)	DV (dubbed version)	Translation technique
Dr. KOVAC: Must have travelled through the femoral vein.	Dr. KOVAC: Debe haber viajado por la femoral. [It must have travelled through the femoral]	Linguistic compression

The linguistic amplification in (4) changes an abbreviation into a noun phrase, which corresponds to standard use in Spanish medical terminology, where abbreviations are not as commonly used as in English. Moreover, this helps synchronise the length of the dubbed version, an effect which is reached by means of a reduction in the second example. This shows how dubbing translators and adaptors are always playing with words in order to fit them into the mouths of the original characters.

In the “drugs and administration of blood products” category, literal translation is again the most usual technique (34%), followed by generalization (6%), as in (6), and compression (12%). Established equivalents (6%) and borrowings (9%) are also used in this category, as in (7)

(6)

OV (original version)	DV (dubbed version)	Translation technique
Dr. CARTER: Okay, titrate 200 of Fentanyl and six of Versed. I'll reduce it.	Dr. CARTER: Vamos a ponerle 200 de Fentanyl y seis de Versed. Yo se la reduciré. [We'll inject 200 of Fentanyl and six of Versed. I'll reduce it]	Generalization

(7)

OV (original version)	DV (dubbed version)	Translation technique
Dr. CARTER: Do you want any Ancef?	Dr. CARTER: ¿Quieres Ancef? [Do you want any Ancef?]	Borrowing

Less frequent options are elision, linguistic amplification and transposition (3% each). Inadequate equivalents are also found (9%), as in (8), where “packed cells” is wrongly translated by *plasma fresco* where it should read *concentrado de hematies*.

(8)

OV (original version)	DV (dubbed version)	Translation technique
Dr. CORDAY: We need six more units of packed cells up here. What are you doing?	Dr. CORDAY: Necesitamos seis unidades más de plasma fresco. ¿Qué estás haciendo? [We need six more units of fresh plasma. What are you doing?]	Inadequate equivalent [Packed cells = concentrado de hematies]

Regarding “medical facilities and departments”, established equivalents are widely used (50%), followed by literal translation (33%), and generalization (17%). An example of the first technique is the following translation:

(9)

OV (original version)	DV (dubbed version)	Translation technique
Dr. CORDAY: Lydia, call the OR. Tell them we're on our way up.	Dr. CORDAY: Lydia, di a quirófano que vamos para allá. [Lydia, tell OR we're on our way]	Established equivalent

“Surgical equipment and instruments” represent another category where generalization is frequently used (50%), as in (10). In this case, the reason is obviously due to synchronisation constraints: the two-syllable expression “ten blade” cannot be conveyed by a long phrase such as *bisturí con hoja del número diez* (literally “ten-blade scalpel”) and therefore only *bisturí* (“scalpel”), is used.

(10)

OV (original version)	DV (dubbed version)	Translation technique
Dr. BENTON: Hold on, hold on. I might need to fly this guy. Ten blade.	Dr. BENTON: Espera. Puede que tenga que llevarme a este. Bisturí. [Hold on. I might need to take this one with me. Scalpel]	Generalization

On the other hand, literal translations (33%) and inadequate equivalents (17%) are also found, as in (11), where “saline sponge” corresponds in this particular context to a *gasa con suero fisiológico* and not to an *esponja con salino*.

(11)

OV (original version)	DV (dubbed version)	Translation technique
Dr. BENTON: Dammit! Saline sponge now!	Dr. BENTON: Esponja con salino. [Sponge with saline]	Inadequate equivalent

Concerning “clinical equipment for exploring, processing, draining and obtaining biological samples”, linguistic compressions (14%) and borrowings (14%) are used (see 12), whilst elisions, established equivalents and literal translations depict fewer occurrences (7% each). However, a remarkable percentage of inadequate equivalents are found (50%), such as translating “suction” as *succión* in a context where it should be *aspiración*.

(12)

OV (original version)	DV (dubbed version)	Translation technique
Dr. GREENE: Thirty-two French.	Dr. GREENE: Un 32 F. [A thirty-two F]	Linguistic compression

“Clinical furniture” is a category which uses just two techniques: elisions and inadequate equivalents (50% each), as shown in (13) and (14).

(13)

OV (original version)	DV (dubbed version)	Translation technique
Dr. GREENE: Okay, well don't jump off any gurney.	Dr. GREENE: Bien. Pero no salgas volando. [Okay, but don't fly away (don't get out in a hurry)]	Elision

(14)

OV (original version)	DV (dubbed version)	Translation technique
Dr. CARTER: Is it over on the mayo stand?	Dr. CARTER: ¿No está en las bandejas? [Isn't it on the trays?]	Inadequate equivalent [Mayo stand = mesa de Mayo]

As far as “vital signs” are concerned, established equivalents are usually found (36%), next to linguistic compression (28%), as in (15). In fact, despite the linguistic compression, the translator and adaptor manage to convey almost the same meaning in the target language version, which is under severe synchronisation constraints.

(15)

OV (original version)	DV (dubbed version)	Translation technique
FEMALE PARA-MEDIC: Hold on, pulse is weak and thready.	SANITARIA: El pulso se está debilitando. [The pulse is weakening]	Linguistic compression [thready = filiforme]

Literal translation (20%), linguistic amplification, generalization, elision and inadequate equivalent (4%) are also included in this category.

In connection with “body postures and positions”, only two occurrences are found, literal translation and borrowing being the two techniques implemented. And in the category diagnostic tests, established equivalents are frequent (56%), followed by linguistic compressions (18%), as in (16), linguistic amplifications, elisions, generalizations and literal translations (6% each).

(16)

OV (original version)	DV (dubbed version)	Translation technique
Dr. CARTER: It'll be on the pelvic film.	Dr. CARTER: Debería verse en la placa. [It'll be on the film]	Linguistic compression

Finally, as for “signs and symptoms”, which is the last category in our list, literal translation is the most recurrent technique (40%), next to transposition and established equivalent (20% each), and particularization and inadequate equivalent (10% each).

In conclusion, taking into account all the terminology used in formal contexts, literal translation seems to be the most frequent strategy, showing the willingness

of the translator to reproduce the original. However, this strategy is most widely used in those categories which describe anatomic aspects, treatments, drugs and therapeutic actions, among others, with meanings and equivalents easily found in specialised dictionaries and terminological databases. However, inadequate equivalents and elisions are more frequent in concepts which are not always included in reference works because they refer to daily activities, instruments or furniture, which are more difficult to convey without expert knowledge. This is the case of the category “clinical equipment for exploring, processing, draining and obtaining biological samples” with 50% of inadequate equivalents, and “clinical furniture”, with 50% of elisions and 50% of inadequate equivalents.

4.2. *Informal medical terminology*

Informal medical terminology, or medical slang, refers to those units which belong to the specialised field of medicine but which are nonetheless used in informal contexts, generally among physicians. In this group, 52% of the terms are conveyed by means of an established equivalent, as in (17) and (18).

(17)

OV (original version)	DV (dubbed version)	Translation technique
Dr. WEAVER: I think mainlining Fentanyl in the trauma room qualifies.	Dr. WEAVER: Pincharte un Fentanyl en la sala de trauma es un buen ejemplo. [Mainlining Fentanyl in the trauma room is a good example]	Established equivalent [Mainline (v) = picarse (arg.), chutarse (arg.), inyectarse.]

(18)

OV (original version)	DV (dubbed version)	Translation technique
Dr. BENTON: What is it in you man huh? This week Fentanyl, next week you end up dead or worse like your cousin as some babbling gork in a nursing home...	Dr. BENTON: ¿Sabes a dónde vas? Esta semana Fentanyl, (...) (...) la que viene muerto o acabar como tu primo, idiotizado en un asilo... [Do you know where you're going? This week Fentanyl, next week dead or end up like your cousin, an idiot in a nursing home]	Borrowing Established equivalent [Gork: typical medical jargon. From “God only really knows”, it refers to a complicated clinical case or to an irreversible coma.]

Literal translation is also used in 13% of the instances, as in (19), as well as linguistic compression (7%), elision (5%), generalization (5%), transposition (2%), and particularization (2%). Inadequate equivalents are used in 7% of the instances, as in (20), where a mistranslation is also found for a non-medical unit (“run into a parking booth” should be “estrellarse contra la garita del parking”).

(19)

OV (original version)	DV (dubbed version)	Translation technique
OB DOCTOR: What? Call Psych. Give it a shot.	OBSTETRA: Llame a psiquiatría. Inténtelo. [Call Psych. Give it a try]	Literal translation

(20)

OV (original version)	DV (dubbed version)	Translation technique
Dr. CARTER: We've got a combative single MVA. Ran into a parking lot booth.	Dr. CARTER: Un paciente _____ bastante desorientado. Se estrelló dentro del parking. [A quite disoriented patient. Crashed in the parking lot]	Particularization [MVA: Motor Vehicle Accident] _____ Inadequate equivalent [combative = <i>agresivo</i>]

4.3. Summary of results

The data above can be summarised in the following chart:

Table 1. Summary of results

Number of <i>réplicas</i> in the episode: 827		
Number of <i>réplicas</i> with terminological units: 192 (23%)		
Number of strategies used: 223		
Categories		
Occurrences	Percentage	
Literal translation	65	29%
Established equivalent	61	27%
Inadequate equivalent	23	10%
Linguistic compression	21	9%
Generalization	17	7%
Transposition	9	4%
Elision	9	4%

Borrowing	8	3.5%
Linguistic amplification	5	2%
Particularization	3	1.3%
Compensation	1	0.4%
Amplification	1	0.4%

From this data, various conclusions can be drawn: first of all, there is a remarkable presence of *réplicas* with medical terminology, which correspond to 23% of the whole episode. Undoubtedly this gives realism to the series, a realism which is generally conveyed in the translation by means of literal translations and established equivalents. However, it should be noted that some terms are transferred by means of inadequate equivalents (10%), generalizations (7%), linguistic compressions (9%) or are even deleted (4%). This could be due to various reasons:

- (i) the audiovisual translator might have been aware of the lack of medical knowledge of the target audience, hence wanting to use more recognisable terms. Generalizations could be partly due to this reason although this strategy may be considered somewhat patronizing by some of the viewers;
- (ii) audiovisual translators do not specialise on the topic but on the channel (audio + visual) and the transfer modes used (dubbing, subtitling, voice-over, etc.). This means that they must get familiar with terminology from completely distinct fields in an extremely short time span, which might cause some documentation and terminological problems;
- (iii) dubbing a series implies synchronising the translation to the body movements (kinetic synchrony), to the lips (lip-synch) and to the duration of the original speech (isochrony). This often compels either the translator or the adaptor –who can be either two different professionals or one professional doing both tasks– to slightly alter the meaning of the original, by means of elisions or linguistic compressions if the text is too long, which is normally the case in the English/Spanish combination.

All in all, the Spanish dubbed version of this episode complies with the orality requirements of the genre and uses adequate translation strategies to convey medical terminology in most instances, showing only 10% of inadequate equivalents. These mistakes are probably not detectable by the non-specialist and generally correspond to categories which are not easily found in reference works.

5. Conclusions

In conclusion, this study has proven that our initial hypothesis, based on the intuition that medical terms are not transferred correctly in dubbed series in Spanish, was partly false since only 10% of the medical terminology in the sample analysed was inadequately conveyed. In most instances audiovisual translators resort to a wide array of strategies to translate medical terms correctly, being literal translations and established equivalents the most used techniques.

However, this small percentage of inadequate equivalents —which probably goes unnoticed by the lay audience— can shock experts and give the impression that the dubbed version includes serious mistakes. Although our conclusions cannot be extrapolated due to the limited size of our corpus, there is no doubt that it opens new research venues. Larger corpora which include more episodes and which take into account the changes during the dubbing process would shed some light on a still rather underanalysed area.

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References

Agost, R. 1999. *Traducción y doblaje: palabras, voces e imágenes*. Barcelona: Ariel.

Arntz, R. 1989. *Introducción a la terminología*. Madrid: Fundación Germán Sánchez Ruipérez: Pirámide.

Cabré, M.T. 2003. “Theories of terminology. Their description, prescription and explanation”, *Terminology* 9(2), 163-200.

Cabré, M.T. 1999. *La terminología. Representación y comunicación*. Barcelona: IULA, UPF.

Cabré, M.T. 1992. *La terminología: La teoria, els mètodes, les aplicacions*. Barcelona: Les Naus d’Empúries.

Congost, N. 1994. *Problemas de la traducción técnica: los textos médicos en inglés*. Alicante: Universidad de Alicante.

Espasa, E. 2004. "Myths about documentary translation". In Orero, P. (ed) 2004 *Topics on audiovisual translation*. Amsterdam/Philadelphia: John Benjamins, 183-197.

Franco, E., A. Matamala and P. Orero. Forthcoming. *Voice-over translation: an overview*. Frankfurt: Peter Lang.

Hatim, B. and I. Mason. 1990. *Discourse and the Translator*. London: Longman.

Hurtado, A. 2007. *Traducción y traductología: introducción a la traductología*. Madrid: Cátedra.

López Rodríguez, C. L. 2001. El cotexto como restrictor semántico en textos especializados. In Muñoz, C. (coord) *Trabajos en lingüística aplicada*. Barcelona: AESLA.

Lozano, D. 2008. *Aproximación a la traducción de la terminología médica de series dobladas al español: el caso de 'Urgencias'*. Unpublished MA thesis. Department of Translation and Interpreting, Universitat Autònoma de Barcelona.

Matamala, A. 2009a. "Main challenges in the translation of documentaries". In Díaz-Cintas, J. (ed.) *New Trends in Audiovisual Translation*. London: Multilingual Matters, 109-120.

Matamala, A. 2009b. "Translating documentaries: from Neanderthals to the Supernanny", *Perspectives. Studies in Translatology*, 17(2). 93-107.

Gutiérrez, B. 1996. "La influencia del inglés sobre nuestro lenguaje médico", *Med Clin (Barc)*, 108, 307-313. Retrieved November 9th, 2008, from <http://www.sepeap.es/Hemeroteca/EDUKINA/Artikulu/Vol108/m1080807.pdf>

Gutiérrez, B. 2005. *El lenguaje de las ciencias*. Madrid: Gredos.

Mateu, J. 2005. "La innovació en la traducció de documentals", *Quaderns divulgatius*, 26. Retrieved November 9th, 2008, from http://www.escriptors.cat/pagina.php?id_text=992.

Mir, J. 1999. "Documentaries: problems and solutions", *Quaderns divulgatius*, 12. Retrieved November 9th, 2008, from http://www.escriptors.cat/pagina.php?id_text=326

Molina, L. 2006. *El otoño del pingüino. Análisis descriptivo de la traducción de los culturemas*. Castelló: Universitat Jaume I.

Molina, L. and A. Hurtado. 2002. "Translation Techniques Revised: A Dynamic and Functionalist Approach", *Meta*, XLVII (4), 498-512.

Romero, M. G. 2005. "La traducción de dialectos geográficos y sociales en la subtitulación: mecanismos de compensación y tendencia a la estandarización". In R. Merino, J. M. Santamaría and E. Pajares (eds) 2005 *Trasvases Culturales: Literatura, Cine, Traducción*. Vitoria: Universidad del País Vasco, 243-259.

_____. 2003. *Un estudio descriptivo sobre la traducción de los dialectos geográfico-sociales del italiano al español en el ámbito audiovisual: doblaje y subtitulación: la traducción de IL POSITANO*. Unpublished research project. Department of Translation and Interpreting, Universitat Autònoma de Barcelona.

Sager, J.C. 1990. *A Practical Course in Terminology Processing*. Amsterdam/Philadelphia: John Benjamins.

Santamaria, L. 2002. "Culturemas en la traducción audiovisual". On-line MA in AVT. Module 1, Unit 10. Bellaterra: Universitat Autònoma de Barcelona.

Tercedor, M. 1999. "La fraseología en el lenguaje biomédico: análisis de las necesidades del traductor", *Estudios de Lingüística del Español*, 6. Retreived on June 10th from <http://elies.rediris.es/elies6/>.

