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RETOS ACTUALES Y TENDENCIAS EMERGENTES EN TRADUCCIÓN MÉDICA

CURRENT CHALLENGES AND EMERGING TRENDS IN MEDICAL TRANSLATION

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LA TRADUCCIÓ MÈDICA AL SEGLE XXI - REPTES I TENDÈNCIES*

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1. Introducció

Històricament, la traducció i la medicina han anat de la mà. Una breu mirada a la història revela que la traducció mèdica ha existit des de les formes més remotes d'escriptura cuneïforme sobre tauletes d'argila a l'antiga Mesopotàmia. Els arqueòlegs han trobat un diccionari en sumeri, ugarític i accadi que es remunta al voltant del 1300 aC i que conté informació mèdica en forma precientífica. Molt més tard, al segle V aC, trobem el Corpus Hippocraticum, un compendi de textos que va donar lloc a importants avenços i es va estendre a altres llengües i cultures en segles posteriors, com ara a Galè uns 400 anys més tard, l'obra del qual va ser traduïda a l'àrab pels traductors de la Casa de la

* Part d'aquesta recerca s'ha realitzat en el marc dels projectes "La mejora de la comunicación clínica interlingüística e intercultural: nuevas metodologías para la formación de los profesionales sanitarios" (FFI2015-67427-P) i "Estudio del Consentimiento Informado y la Consulta Médica en los contextos español y británico: nuevas metodologías para la mejora de la comunicación clínica" (P1·1B2015-73) finançats respectivament pel Ministeri d'Economia i Competitivitat d'Espanya i per la Universitat Jaume I.

Saviesa a Bagdad al segle IX. Entre els segles IX i XII, les traduccions àrabs es van traduir al llatí, acompanyades de comentaris afegits per altres estudiosos àrabs en els anys intermedis (Montalt 2005). Segons Savage-Smith (2001), els erudits medievals i renaixentistes d'Europa es van fonamentar en les tradicions i traduccions islàmiques com a base dels seus estudis mèdics. Seguint Wallis i Wisnovski (2016), les cultures textuals medievals en general, i la medicina en particular, es poden entendre millor com a productes derivats de processos dinàmics de transmissió, traducció i transformació en què els traductors van tenir una funció clau com a agents actius en la reconfiguració i recontextualització dels coneixements i dels textos.

En els segles posteriors, la medicina es va convertir gradualment en una disciplina científica i va experimentar grans avenços, tot generant una quantitat creixent d'informació i, en conseqüència, una necessitat de transferència de coneixement, comunicació internacional i traducció (Montalt 2013). En les últimes dècades, la traducció i la interpretació mèdica s'han convertit en nínxols importants per a traductors i intèrprets professionals. Les autoritats sanitàries nacionals i internacionals - com ara l'OMS o l'EMA -; empreses farmacèutiques que comercialitzen els seus productes en el mercat global; editorials mèdiques que publiquen els llibres per a la formació de futurs professionals en moltes llengües; fabricants de dispositius mèdics de totes les especialitats; hospitals i altres centres sanitaris tant públics com privats; equips de recerca biomèdica que necessiten publicar les seues investigacions en revistes internacionals, normalment en anglès; o ONG centrades en temes de salut - com ara les que actuen en crisis humanitàries -; totes aquestes es troben entre les moltes organitzacions necessitades de traductors i intèrprets. Així, l'àmbit de la traducció mèdica és ric i variat en gèneres, terminologies, registres, estils, formats, modes, així com en cultures de la salut i restriccions i dilemes ètics.

Aquest ric panorama que se li presenta a la traducció mèdica es veu ampliat per tres forces emergents que estan impulsant l'atenció sanitària i la recerca biomèdica cap a nous territoris: l'atenció centrada en el pacient, la medicina personalitzada i la medicina translacional. Totes tres posen de relleu la importància de la transferència d'informació, la recontextualització i la comunicació i, en aquest sentit, ofereixen nínxols potencials per a traductors i intèrprets (Montalt 2017).

La formació especialitzada en traducció mèdica comença a respondre a les creixents necessitats del mercat amb programes específics centrats en les particularitats d'aquesta activitat professional, en l'especialització en el camp mèdic i en els recursos i eines específics. En un món globalitzat i en el cas d'una professió altament internacionalitzada, com és la traducció i la interpretació,

la formació especialitzada requereix esforços de coordinació i harmonització entre països. Un bon exemple d'aquesta tan necessària cooperació internacional a Europa és l'EMT: màsters europeus en traducció. El seu objectiu principal és millorar la qualitat de la formació del traductor per tal d'augmentar la inserció laboral dels futurs professionals. L'EMT aplega els diferents actors implicats: universitats, empresaris, empleats, institucions governamentals, entre altres, en un esforç per compartir informació i elaborar estratègies en l'àmbit de l'educació superior. El nucli d'aquest projecte és el perfil de competències del traductor, on hom defineix les competències bàsiques - algunes de les quals s'aborden en aquest monogràfic - que els traductors necessiten per treballar amb garanties d'èxit en el mercat actual. Estem convençuts que la recerca pot proporcionar dades i reflexió per facilitar la presa de decisions informades en l'àmbit de l'educació i també en la pràctica professional.

Ara bé, pel que fa a la recerca en traducció mèdica, podríem dir que encara està en una etapa incipient. En el seu estudi bibliogràfic, Franco-Aixelá (2010: 159) assenyala que la recerca sistemàtica generalitzada en traducció i interpretació mèdica es va iniciar a principis del segle XXI i s'ha centrat principalment en els aspectes professionals, la qualitat, la pedagogia, la documentació, les eines i la història. Gran part de la recerca feta anteriorment tenia una orientació predominantment prescriptiva i es limitava a la traducció de textos altament especialitzats. Més recentment, la traducció mèdica ha estat redefinida (Montalt i González 2007; Montalt i Shuttleworth 2012) per incloure-hi no només una gran varietat d'especialitats i conceptes mèdics, sinó també de recursos, textos, situacions comunicatives, organitzacions, contextos i participants. Aquesta perspectiva oberta sobre la traducció mèdica inclou no només textos altament especialitzats sobre recerca biomèdica, sinó també l'educació dels professionals de la salut, l'educació dels pacients, la divulgació i els mitjans de comunicació.

Aquest número especial de MonTI és una invitació a reflexionar sobre la rellevància i l'abast de la traducció mèdica i dels traductors que treballen amb textos mèdics. També és una invitació a explorar com han evolucionat els temes tradicionals de la traducció mèdica - com ara les qüestions terminològiques - i quins nous interessos han sorgit en els últims anys, entre els qual cal destacar la traducció de textos d'experts adreçats a no expert, els perfils professionals dels traductors mèdics, la formació de traductors mèdics o la millora de la comunicació clínica a través de la traducció i la mediació.

2. La qüestió terminològica

L'ús adequat de la terminologia mèdica és una de les condicions bàsiques per a una comunicació exitosa en comunitats sanitàries monolingües i multilingües.

La terminologia mèdica és diversa, no només pel que fa a les diferències evidents entre els idiomes, sinó també a causa de diferències entre registres o canals de comunicació. Algunes característiques de la terminologia mèdica es poden observar a través dels idiomes: influències llatines i gregues, afixació (e.g. *dermatitis*, *conjuntivitis*, *gastritis*) eponímia (e.g. *Parkinson's disease*, *Alzheimer's disease*) o el fenomen dels doblets: parells de paraules de diferents orígens que s'utilitzen en diferents registres, com ara els anglesos *swelling - edema*, *begin - initiate* (Salager 1983; Mićić 2013; Uherová, Horňáková 2013; Džuganová 2013). El que sembla ser particularment problemàtic per als traductors i redactors mèdics és l'adaptació de les seues opcions terminològiques a convencions específiques del gènere i del registre. Salager (1983) divideix els termes mèdics en anglès en tres grans grups: anglès bàsic, anglès mèdic fonamental i anglès mèdic especialitzat. En un estudi recent, Fage-Butler i Nisbeth Jensen (2016) inicialment utilitzaren una divisió en termes tècnics i semi-tècnics, que posteriorment es van substituir per una divisió de cinc categories: termes mèdics definits pel diccionari, termes mèdics definits pel co-text, abreviacions mèdiques, noms de medicaments i termes tècnics col·loquials. En cadascuna d'aquestes categories, les diferències entre no experts i experts serveixen com a eixos de divisió i cadascuna d'aquestes divisions reflecteix el fet que les unitats del registre general també s'utilitzen en la comunicació mèdica.

D'una banda, les unitats lèxiques associades al registre general, els doblets, els sinònims i els termes polisèmics semblen estar en conflicte amb els principis de monoreferencialitat (Gotti 2011) o univocitat (Felber 1984) i la necessitat de claredat i precisió en la comunicació interprofessional (Mitzkat, Berger, Reeves, Mahler 2016). D'altra banda, hi ha una forta tendència a evitar la polisèmia i la sinonímia, i a controlar la terminologia mèdica, la qual actualment està àmpliament estandarditzada, en especial en els àmbits dels registres de regulació i dels informes.

L'aparició dels sistemes d'informació mèdica juga un paper important a l'hora d'augmentar la normalització i el control sobre la terminologia mèdica (Cimino 1998; Awaysheh, Wilcke, Elvinger, Rees, Fan, Zimmerman 2017), ja que les classificacions de termes s'integren en els sistemes d'informació sanitària per permetre l'intercanvi electrònic de dades clíniques. Els sistemes terminològics assistencials faciliten el procés de diagnòstic, presa de decisions, redacció d'informes, entre altres. Una de les classificacions més àmpliament utilitzades és la Classificació estadística internacional de malalties i problemes relacionats amb la salut, la versió actual de la CIM-10 aviat serà substituïda per la CIM-11. És una eina de terminologia estandarditzada desenvolupada per l'OMS i utilitzada en el terreny del diagnòstic i l'epidemiologia. La Classificació

internacional del funcionament, de la discapacitat i de la salut (CIF), també desenvolupada per l'OMS, proporciona un marc per a la descripció de les malalties en els seus quatre apartats: "Funcions corporals", "Estructures corporals", "Activitats i participació" i "Factors ambientals" (OMS 2001). SNOMED CT és un dels principals sistemes de terminologia assistencial; en realitat, és una consolidació de dues terminologies controlades: SNOMED RT i Termes clínics versió 3 (Wang, Barrett, Bentley, Markwell, Price, Spackman, Stearns 2001). Està mantingut per l'Organització internacional de desenvolupament de normes de terminologia de la salut. Els professionals de la infermeria també desenvolupen terminologies formals: la Classificació internacional per a la pràctica de la infermeria (ICNP en les seues sigles en anglès) és un diccionari de termes desenvolupat pel Consell internacional de professionals de la infermeria (ICN en les seues sigles en anglès) per facilitar la descripció i la informació en pràctiques d'infermeria (ICN 2015). La llista anterior no és exhaustiva; de fet, hi ha una gran quantitat de classificacions clíniques (per exemple, ICD, ICF, ICPC, MedDRA, DSM, MEDCIN per al diagnòstic; CPT, CDT, HCPCS per a procediments; almenys diverses classificacions per a infermeria; proves diagnòstiques; dispositius mèdics; entre moltes altre). Una de les raons de les classificacions múltiples és que cap d'elles és universal, tenen diferents finalitats i s'utilitzen en diferents sectors de l'atenció sanitària. No obstant això, han de ser compatibles, ja que les dades es transfereixen entre diferents sistemes. Per tant, la cartografia entre terminologies és, alhora, una necessitat i un repte quan cal alinear terminologies o classificacions per garantir un intercanvi d'informació adequat (Fung 2007, Cardillo 2015).

Els sistemes de terminologia internacional i les classificacions es tradueixen a diverses llengües. La CIM-10 es va desenvolupar en anglès i es va traduir a 42 idiomes per traductors experts, tot i que el terme que l'OMS (2010) utilitza per referir-se a la transferència interlingüística és "representació multilingüe" (no "traducció" per emfasitzar l'equivalència desitjada dels conceptes resultants d'un enfocament semasiològic més que no pas una transferència de paraula per paraula.) La CIM-11 es desenvolupa amb assistència informatitzada i experts humans en el procés de validació per assegurar l'equivalència entre conceptes. L'ICNP s'ha traduït fins ara a 19 idiomes, inclòs el polonès (ICN 2015). Com que la classificació original està subjecta a actualitzacions, es requereixen noves traduccions per reflectir els canvis en l'original. Les directrius per a la traducció de l'ICNP reflecteixen l'esforç per l'equivalència transcultural de conceptes en comptes de la traducció de paraula per paraula o "equivalència etimològica". Es recomana als traductors "evitar termes ambigus que tenen més d'un significat" (ICN 2008), el que significa que la polisèmia i la sinonímia s'han

d'evitar. Les directrius de traducció de l'ICN també inclouen recomanacions per evitar frases col·loquials i argot, i una recomanació per abordar les llacunes terminològiques: "si no hi ha cap terme adequat en l'idioma de destinació, traduïu el terme d'origen a un conjunt de paraules utilitzant la definició" (ICN 2008). Aquests enfocaments basats en el coneixement (vegeu Deléger, Merabti, Lecrocq, Joubert, Zweigenbaum, Darmoni 2010) solen involucrar equips de professionals sanitaris i experts en terminologia que realitzen treballs semasiològics i processos de validació abans de proposar termes. Les terminologies o les classificacions també es poden traduir automàticament (o semi-automàticament) amb l'ús de corpus paral·lels i eines d'alineació (Deléger, Merabti, Lecrocq, Joubert, Zweigenbaum, Darmoni 2010). La terminologia coherent, clara i monoreferencial pot millorar l'eficàcia de l'intercanvi d'informació en els àmbits sanitaris i el seu ús adequat en la traducció és un factor de qualitat de vital importància.

3. Qualitat i traducció mèdica

La qualitat de la traducció mèdica pot afectar els processos clínics (vegeu Flores et al. 2003), per la qual cosa la funció de la verificació és un altre aspecte freqüentment destacat. Un procés de verificació vàlid comença molt aviat, en la fase de pretraducció, quan es prepara el text origen i s'assegura el compliment de les convencions i requisits de gèneres o funcions de text específics, com ara la llegibilitat i la claredat. Un mètode de revisió de la traducció bastant freqüent però discutible és la retrotraducció (*back translation* en anglès). L'Associació internacional d'intèrprets mèdics (IMIA en les sigles en anglès) aconsella no aplicar la retrotraducció com a mètode de verificació ja que aquest mètode pot passar per alt "els matisos contextual i d'ús de la llengua meta" (IMIA 2009: 2) així com una traducció literal incòmoda.

Tanmateix, la tècnica de retrotraducció cega s'utilitza amb freqüència en els processos de gestió de la qualitat (vegeu Fernández Piera i Ardura Ortega 2012), especialment en el sector de la investigació mèdica i els assajos clínics, tal i com ho requereixen els comitès d'ètica i les autoritats reguladores en molts països (Grunwald i Goldfarb 2006: 2). Les agències de traducció que s'ajusten a la norma europea ISO 17100: 2015 asseguren la qualitat en l'àmbit dels recursos humans (traductors i revisors competents), la preproducció (com ara la investigació, la viabilitat o l'acord), el procés de traducció (incloent-hi la comprovació, l'edició, la revisió i la correcció) i la postproducció. L'estàndard, però, no proporciona cap mesura per avaluar la qualitat del text traduït i només facilita pautes generals vagues sobre la verificació de la traducció, com ara les relatives a omissions, errors semàntics, gramaticals i d'ortografia, així

com "assegurar el compliment de les especificacions del projecte de traducció rellevants" (ISO 17100: 2015). Les institucions que gestionen textos traduïts desenvolupen els seus propis procediments de verificació de la traducció mèdica. Per exemple, l'Associació internacional d'intèrprets mèdics (IMIA en les seues sigles en anglès) requereix dues verificacions; la Societat internacional per a la investigació en farmacoeconomia i resultats (ISPOR en les seues sigles en anglès) utilitza un mètode de revisió que implica dues traduccions paral·leles, la reconciliació, dues traduccions posteriors, la comparació i la reconciliació, i després una revisió i harmonització del text meta (Andriesen 2006: 15-16).

La traducció paral·lela també es pot aplicar com a mètode de garantia de qualitat autònom: es produeixen dues traduccions paral·leles, després es comparen i s'ajusten si escau (Andriesen 2006: 16). La traducció d'instruments com ara qüestionaris o escales es pot verificar mitjançant un informe de reflexió cognitiva (*debriefing*), és a dir, recollint els comentaris d'un grup representatiu dels lectors de la traducció sobre com entenen la redacció d'una pregunta o afirmació per verificar si és llegible i comprensible, i alhora reflecteix el concepte original (vegeu Engel, Koester, 2014). De fet, la comprensibitat (en el sentit de *lay-friendliness*) i la llegibilitat s'han convertit en factors de qualitat crucials, ja que són essencials en la comunicació entre experts i no experts.

4. Traducció mèdica entre l'expert i el no expert

En traducció mèdica, sovint hi ha una relació bastant simètrica entre l'autor d'un text i el públic destinatari; és el que anomenem traducció d'expert a l'expert. Tanmateix, durant les últimes dècades, el món occidental ha experimentat una creixent demanda per part de persones "normals i corrents" que volen comprendre les seues declaracions fiscals, les factures de serveis públics, els plans de pensions i, per descomptat, la informació relativa a la seua salut. La dècada dels setanta del segle passat va veure el naixement i expansió del moviment del llenguatge planer (*plain language* en la seua expressió en anglès) i, en general, d'una societat menys autoritària que dóna suport a la capacitat de comprensió dels no experts, els quals han de ser capaços d'entendre els textos dirigits a ells. Conceptes com ara l'atenció sanitària centrada en el pacient o l'apoderament del pacient es consideren crucials en la comunicació sanitària actual. El concepte d'atenció sanitària centrada en el pacient es va introduir a finals de la dècada de 1960 com un enfocament més innovador i més psicosocial del pensament mèdic. Va exigir que els professionals de la salut tingueren una visió integral dels seus pacients i inclogueren les necessitats i desitjos dels pacients en els seus plans d'atenció mèdica (vegeu Holmström i Röing

2010, que també revisen les diferents maneres d'entendre tant la centralitat del pacient, la seua capacitació i la seua interrelació). Contràriament a la centralitat del pacient, l'origen de l'apoderament del pacient no es troba dins de l'assistència sanitària, sinó en les teories pedagògiques de Paulo Freire dels anys seixanta i setanta (Askehave et al. 2010). El significat fonamental del concepte és donar poder al pacient, la qual cosa implica fer que el pacient puga prendre decisions importants sobre la seua pròpia salut de forma informada o participar activament en la presa d'aquestes decisions: "L'empoderament és un procés pel qual les persones aconsegueixen un major control sobre decisions i accions que afecten la seua salut." (OMS 1998: 7).

No cal dir que és impossible afirmar que els pacients són el centre de la seua pròpia atenció sanitària o que poden apoderar-se si no comprenen la informació dirigida a ells. En aquest context, el concepte d'alfabetització en salut és fonamental: "L'alfabetització sanitària es pot definir com les habilitats cognitives i socials que determinen la motivació i la capacitat de les persones per accedir, comprendre i utilitzar la informació d'una manera que ajude a promoure i a mantindre una bona salut" (OMS 1998: 10). Cada vegada més, la recerca en comunicació sanitària s'ha centrat en el concepte d'alfabetització en salut, el qual posa l'èmfasi en el fet que, fins i tot entre els no experts, hi ha una gran capacitat d'entendre la informació relacionada amb la salut. Un continu que abasta des de l'absència d'alfabetització en salut, a l'alfabetització funcional en salut, a l'alfabetització interactiva en la salut i a l'alfabetització crítica en salut (Nutbeam 2000). Aquesta àmplia gamma d'alfabetitzacions en salut significa que generalment les traduccions, que funcionen com a una espècie de mitjà de comunicació de masses, és a dir, que potencialment es dirigeixen, per exemple, a tota una població d'un país, ha d'estar orientada al mínim comú denominador.

Un cas concret pel que fa a la comunicació sanitària en massa dirigida al no expert és el prospecte de medicament, que va esdevenir un requisit legal (Directiva 92/27/CEE del Consell) el 1992 (aplicació plena el 1999) per garantir que els pacients entenguen la informació rellevant sobre el medicament en qüestió. Molts textos de comunicació sanitària, com ara el prospecte de medicament, es produeixen per primera vegada en anglès i després es tradueixen a altres idiomes (danès en la següent exemplificació) i aquest fet representa potencialment un perill per a la comprensibilitat. Un perill que un traductor mèdic competent pot eliminar. Contràriament a la situació típica de traducció d'expert a expert esmentada anteriorment, la relació entre l'emissor i el públic receptor és, en el cas que estem comentant, asimètrica. En alguns casos, el text original en anglès encara està dominat per un llenguatge expert ja que l'emissor

- que és expert - no ha pogut traduir el missatge intralingüísticament. Però fins i tot en els casos en què el text original és molt comprensible o amigable per al lector no expert, sovint veiem que en la traducció el traductor ha tornat a un registre de llenguatge mèdic expert (Askehave & Zethsen 2000, Nisbeth Jensen & Zethsen 2012, Nisbeth Jensen 2013).

Alguns dels motius principals que expliquen aquest comportament del traductor semblen ser que més de la meitat dels prospectes de medicaments no estan traduïdes per traductors formats com a tals, sinó per persones amb formació mèdica, generalment farmacèutics (Askehave & Zethsen 2000, Nisbeth Jensen 2013). És comprensible que els experts troben dificultats per identificar quines són les expressions que causen problemes de lectura per als profans en la matèria. Tanmateix, fins i tot quan els prospectes de medicaments són traduïts per traductors mèdics formats com a tals, hi ha una tendència a tornar al llenguatge mèdic expert (Askehave & Zethsen 2000, Nisbeth Jensen & Zethsen 2012, Nisbeth Jensen 2013). Això pot deure's a que aquest és el comportament per defecte del traductor mèdic que s'ha convertit en un semi-expert en la matèria i ha perdut la consciència del que el pacient com a lector no expert pot entendre i del que li resulta més difícil d'entendre. Un altre motiu és que l'anglès utilitza terminologia grecollatina per a moltes expressions mèdiques on el danès (i moltes altres llengües) té un terme expert i un terme no expert, fins al punt que els no experts només saben i usen el terme no expert i desconeixen per complet el terme expert (Zethsen 2004). Fins i tot un traductor (en aquest cas danès) format com a tal pot no ser capaç de traduir intralingüísticament part d'aquesta terminologia de base llatina a llenguatge no expert en la cultura meta, una terminologia que en anglès (i encara més en llengües grecollatines com ara el català o l'espanyol) pot ser perfectament comprensible per al no expert.

En traducció/comunicació medicosanitària, es necessiten més investigacions en dues direccions: la primera és documentar les traduccions que poden resultar exitoses pel que fa al significat denotatiu interlingüístic, però que no arriben al grup meta no expert ja que no assoleixen la part intralingüística de la traducció; i la segona és explorar més profundament el motiu pel qual hom no satisfà les necessitats del grup meta. Potser, l'aspecte intralingüístic de la traducció mèdica entre experts i no experts s'hauria d'incorporar en major grau a la formació de futurs traductors mèdics.

5. Les contribucions d'aquest monogràfic

En aquest monogràfic, els autors han abordat un seguit de preguntes d'investigació sobre diversos temes: textos, relacions intertextuals, pacients com

a lectors, ètica, metàfores, formació especialitzada, multimodalitat, qualitat i retrotraducció. Pel que fa a la metodologia, queda palès que aquests temes exigeixen una gran varietat d'enfocaments, sovint en combinació, per respondre a les preguntes de recerca rellevants en la traducció mèdica. Entre aquestes metodologies trobem tant eines quantitatives - com ara la lingüística de corpus o els qüestionaris - com qualitatives - com ara grups de debat, l'observació directa dels participants, l'anàlisi del gènere textual o l'anàlisi conceptual. Noves metodologies de recerca - com ara "l'anàlisi netnogràfica" (vegeu Bundgaard i Nisbeth en aquest volum) estan obrint-se camí en l'àmbit de la traducció mèdica en resposta a nous formats i entorns de comunicació professional.

Entre els gèneres que han cridat l'atenció dels investigadors, alguns són escrits - el prospecte de medicament, el full d'informació per a pacients i el consentiment informat; d'altres són orals, com ara la consulta mèdica i, en part, el consentiment informat. De fet, el consentiment informat s'ha tractat en ambdós modes en el mateix estudi (Elena Pérez en aquest monogràfic), tot posant l'accent en la complexitat de la comunicació entre metge i pacient, i assenyalant un enfocament més integrat de la multimodalitat. Investigacions recents en aquest sentit (Montalt i García-Izquierdo 2016) subratllen la importància de redefinir alguns gèneres crucials com ara la consulta mèdica i el consentiment informat des d'un punt de vista multimodal en el qual convergeixen els modes oral, escrit i audiovisual, i estableixen una fructífera relació de complementarietat en el repartiment de funcions comunicatives.

L'elecció dels gèneres d'aquest monogràfic mostra un clar interès en la traducció entre l'expert i el no expert, on importants asimetries entre les comunitats discursives determinen la forma en què es produeix la comunicació. Les comunitats discursives dels professionals de la salut, especialment metges i infermers, tenen normes i agendes implícites i explícites, així com un estatus social més alt, que donen lloc - i reflecteixen - un clar desequilibri de poder. En comparació amb els pacients, els professionals sanitaris són molt més homogenis i coneixen millor el sistema de salut des de dins, mentre que els pacients generalment són més heterogenis en les seues necessitats, expectatives, coneixements mèdics previs, així com en procedència cultural i lingüística. A més a més, en el cas del consentiment informat, les asimetries tenen conseqüències jurídiques i ètiques. Els professionals sanitaris són cada vegada més conscients de la importància d'oferir als pacients explicacions comprensibles que puguen fonamentar i raonar adequadament les seues decisions. L'any 2016, la Federació espanyola de col·legis oficials de metges a Espanya va publicar una guia de

bones pràctiques sobre el consentiment informat en resposta a les creixents queixes dels pacients.

Es poden observar problemes ètics similars en el cas del prospecte de medicament i del full d'informació per a pacients. Els prospectes de medicaments, com Raquel Martínez assenyala en aquest monogràfic, estan altament regulats en el context europeu per fer que el missatge siga comprensible. Tanmateix, com passa amb el consentiment informat, sembla que hi ha un buit entre la llei i les guies de bones pràctiques, d'una banda, i la realitat, d'altra banda. Aquesta tensió entre els sistemes d'experts i el món real també afecta els full d'informació per a pacients.

Trobem un interès creixent en els estudis de traducció orientats al pacient com a lector. El tema de la comprensibilitat (o llegibilitat) és el focus principal de l'article de Raquel Martínez. En aquest cas, el gènere en joc és el prospecte de medicament, un altre gènere emmarcat en la comunicació entre expert i no expert en el qual el pacient porta a terme una funció fonamental. Elena Pérez se centra en la comprensió del consentiment informat en interaccions mediades per l'intèrpret en què l'element crucial és la signatura d'un document de consentiment informat. En ambdós estudis, les autores arriben a la conclusió que la traducció i la interpretació són un guany i no pas una pèrdua. Els pacients estrangers que són assistits per intèrprets en situacions en què el document del consentiment informat no està disponible en el seu propi idioma, semblen comprendre millor el que signen gràcies a la participació de l'intèrpret per facilitar la comprensió. De la mateixa manera, els prospectes traduïts semblen ser més comprensibles que els escrits originalment en espanyol.

Tanmateix, no sempre és fàcil prendre decisions i sovint sorgeixen dilemes ètics - com ara la confidencialitat, la imparcialitat i la no discriminació - en situacions típicament asimètriques, ja que pot existir una discrepància entre les responsabilitats ètiques i els deures professionals. Com hem vist, sovint la traducció i la interpretació mèdica té un component ètic. Els diferents gèneres es regeixen per diferents normes ètiques (Montalt i González 2007), ja siguen implícites o explícites. Aquest elements ètics són el nucli central en l'article de Carmen Pena-Díaz, qui interroga i observa un grup d'intèrprets mèdics. En el seu estudi, l'autora proporciona exemples convincents de com l'intèrpret ha d'explicar els motius d'alguns comportaments tant dels pacients com dels professionals de la salut per evitar malentesos. Això pot estar en contradicció amb el fet que no es recomana facilitar la informació i no hi ha protocols per ometre informació mentre s'interpreta.

Un altre aspecte que tracten els investigadors en traducció mèdica en aquest monogràfic és la pedagogia. Manuel Cristóbal Rodríguez i Emilio Ortega

centren el seu estudi en el prospecte de medicament en el context francès-espanyol. La seua contribució posa en relleu la utilitat de la lingüística de corpus amb finalitats de traducció i, més concretament, per a la formació de traductors mèdics. Una altra manera d'apropar-se a la formació dels traductors mèdics és a través de la multimodalitat. Partint de la seua pròpia experiència en el context italià, Michela Canepari es planteja l'objectiu proporcionar recursos i solucions motivadores per a l'aula de traducció mèdica. L'ús efectiu de materials audiovisuals per a cursos de traducció mèdica oferts als estudiants que no tenen una formació mèdica contribueix a desenvolupar el lèxic dels alumnes i els seus coneixements previs. Un dels conceptes que explora aquesta autora és el de la traducció intergenèrica.

La qüestió de la traducció intergenèrica en els entorns assistencials es converteix en el nucli de l'article de Muñoz, Ezpeleta i Saiz, però en aquest cas el focus d'atenció és un gènere diferent, el full d'informació per a pacients. La traducció intergenèrica pot implicar la traducció interlingüística, però, per descomptat, sempre la traducció intralingüística. L'article es basa en un estudi empíric dut a terme pel grup de recerca GENTT (Universitat Jaume I) on es van utilitzar diverses estratègies intralingüístiques per fer més efectius els fulls d'informació per a pacients oncològics. Seguint un plantejament bastant innovador, aquestes estratègies van ser validades pels pacients, i els resultats s'utilitzen com a base per a una proposta de formació orientada a millorar les habilitats dels traductors mèdics per tractar aquest tipus de traducció intralingüística.

Una tercera àrea d'investigació que trobem en aquest volum és la retrotraducció en el camp mèdic. Aquest tema és explorat per Kristine Bundgaard i Matilde Nisbeth Brøgger que van realitzar un estudi netnogràfic sobre les actituds dels traductors envers la retrotraducció. Els resultats que aporten les autores indiquen que aquesta eina de garantia de qualitat en particular necessita més atenció, atès que els traductors no sempre coneixen el procediment o no saben el seu propòsit. Una de les possibles solucions és incloure un requisit per informar els possibles traductors del propòsit i les bones pràctiques amb les directrius rellevants.

Finalment, Sylvie Vandaele s'ocupa de les metàfores mèdiques i les seues traduccions, tancant el monogràfic amb una visió diacrònica. L'autora mostra que els índexs de conceptualització en salut i ciències de la vida formen xarxes lèxiques estables que es poden observar en textos mèdics contemporanis i antics. Són estables però no fixades: les xarxes lèxiques són "conjunts oberts" amb espai per a la creativitat, especialment en el discurs de divulgació. L'autora també dóna espai a un debat rellevant sobre la funció de la traducció automàtica i assistida tant en la professió com en els contextos educatius.

Aquest debat tecnològic prendrà força en el futur ja que la tecnologia pot generar canvis radicals en els rols socioprofessional i la formació del traductor mèdic. La investigació sobre intel·ligència artificial i traducció automàtica neuronal, juntament amb el desenvolupament de llenguatges controlats i la expansió de l'anglès com a *lingua franca*, segurament tindran un impacte en la interpretació i la traducció medicosanitària. Alguns dels gèneres altament rutinitzats - com ara els articles de recerca o els resums de les característiques del producte en la indústria farmacèutica -, així com alguns dels processos més mecànics en l'àmbit de la gestió terminològica multilingüe, probablement es beneficiaran de l'automatització. A més, alguns avenços tecnològics milloraran la comunicació multimodal, incloent-hi noves aplicacions mòbils per a pacients que facilitaran una comunicació més personalitzada, més directa i més ràpida.

Al mateix temps, en l'era de la medicina personalitzada i l'atenció centrada en el pacient, no seria massa arriscat anticipar un creixement de la traducció humana amb alts graus d'adaptació (a públics, cultures, formats, etc. molt definits) i de creativitat on l'atenció a l'individu és primordial. En aquest panorama emergent, la qualitat no es limita a la precisió terminològica i l'accessibilitat al coneixement factual, sinó que inclou dimensions interpersonals i actitudinals com ara la construcció de l'emoció i l'empatia en els textos i les interaccions, i els seus efectes sobre la salut dels pacients. Es tracta d'un nou repte, alhora que un desenvolupament prometedor, que pot obrir vies d'investigació i pràctica professional en un tipus de comunicació altament sensible, on les paraules no només són portadores d'informació mèdica, sinó també desencadenants d'emocions que, si es gestionen correctament, poden contribuir al benestar - o, per contra, convertir-se en un obstacle - del lector o interlocutor meta.

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BIONOTAS

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MEDICAL TRANSLATION IN THE 21ST CENTURY – CHALLENGES AND TRENDS*

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1. Introduction

Historically translation and medicine have gone hand in hand. A brief look at history reveals that medical translation has existed since the oldest forms of cuneiform writing on clay tablets in Ancient Mesopotamia. Archeologists have found a dictionary in Sumerian, Ugaritic, Akkadian and Hurrian dating from around 1300 BCE containing medical information in its pre-scientific form. Much later, in fifth century BCE Greece, we find the Corpus Hippocraticum, a body of texts that inspired further study and spread to other languages and cultures in subsequent centuries, such as in the work of Galen some 400 years later, whose work was translated into Arabic at the House of Wisdom in

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Baghdad in the ninth century CE. Between the ninth and the twelfth centuries, Arab translations were in turn translated into Latin, together with commentaries added by other Arab scholars (Montalt 2005). According to Savage-Smith (2001) medieval and early modern scholars in Europe drew upon Islamic traditions and translations as the foundation for their medical studies. Following Wallis & Wisnovski (2016) medieval textual cultures in general, and medicine in particular, can best be understood as products of dynamic processes of transmission, translation and transformation in which translators played a key role as active agents in reshaping and recontextualising knowledge and texts.

In subsequent centuries, medicine gradually turned into a scientific discipline and made huge progress, generating an ever-increasing amount of information as well as compelling needs for knowledge transference, international communication and translation (Montalt 2013). In recent decades, medical translation and interpreting have become important niches for professional translators and interpreters. National and international health authorities – such as the WHO or the EMA –, pharmaceutical companies selling medicines in the global market, medical publishers providing books for the future professionals in myriad languages, medical devices manufacturers for all medical specialties, public and private hospitals and other health centres, biomedical research teams – in need to publish their results in international journals in English –, and NGOs dealing with complex public health issues – such as those encountered in humanitarian crises – are among the many organisations in need of translators and interpreters. Thus, the scope of medical translation is rich and varied in genres – ranging from research articles to biomedical patents to fact sheets for patients –, terminologies, registers, styles, formats, modes as well as in health cultures and ethical restrictions and dilemmas.

This rich scenario for medical translation is further enhanced by three emerging forces that are driving healthcare and biomedical research into new territories: patient-centred care (PCC), personalised medicine (PM) and translational medicine (TM). All three bring to the fore the importance of information transfer, recontextualisation and communication, and therefore offer potential niches for translators and interpreters (Montalt, forthcoming).

Specialised training in medical translation is starting to respond to the fast-growing needs of the marketplace with specific programmes covering the particulars of this professional activity and focusing on domain specialisation, specific resources and the tools of the trade. In a globalised world and in the case of a highly internationalised profession such as translation and interpreting, specialised training requires efforts of coordination and harmonization among countries. A good example of this much-needed international cooperation

in Europe is the EMT – European Master's in Translation. Its main goal is to improve the quality of translator training in order to enhance the labour market integration of young language professionals. EMT brings together different stakeholders – Universities, employers, employees, governmental institutions, etc. – in an effort to share information and devise strategies in higher education. At the core of this project is the EMT translator competence profile defining the basic competences that translators need to work successfully in today's market, some of which are addressed in this issue. Our belief is that research can provide data and reflection to support informed decisions in the area of education and also in that of professional practice.

However, as far as research in medical translation is concerned, it is still at an incipient stage. In his bibliographical study Franco-Aleixà (2010: 159) points out that widespread systematic research in medical translation and interpreting only started at the beginning of the 21st century and has focused primarily on professional aspects, quality, pedagogy, documentation, tools and history. Much of the research done before then had a predominantly prescriptive orientation, and focused mainly on the terminological issues related to highly specialised texts. More recently medical translation has been redefined to encompass not only a great variety of specialities and medical concepts, but also of resources, texts, communicative situations, organisations, contexts, and participants. This open perspective on medical translation includes not only highly specialised texts about biomedical research, but also the education of health professionals, patients' education, popularisation, and the media.

This special issue of MonTI is an invitation to reflect on the relevance and scope of both medical translation and translators working with medical texts. It is also an invitation to explore how the traditional topics of medical translation – such as terminological issues – have evolved and how new interests have emerged in recent years, including expert-to-lay translation, the professional profiles of medical translators, the training of medical translators, or the improvement of clinical communication through translation and mediation.

2. The terminology issue

Appropriate use of medical terminology is one of the core conditions for successful communication in monolingual and multilingual healthcare communities. Medical terminology is diverse not only in terms of the obvious differences between languages, but also due to differences between registers or communication channels. Some features of medical terminology can be observed across languages: Latin and Greek influences, affixation (e.g. *dermatitis, conjunctivitis, gastritis* and also *fail-failed-failure*) eponymy (e.g. *Parkinson's*

disease, Alzheimer's disease) or the doublet phenomenon – pairs of words of different origins which are used in different registers, e.g. *swelling – edema, begin – initiate* (Salager 1983, Mićić 2013, Uherová, Horňáková 2013, Džuganová 2013). What seems to be particularly problematic for medical translators and writers is adapting their terminological choices to genre-specific and register-specific conventions. Salager (1983) divided English medical terms into three groups – basic English (BE), fundamental medical English (FME) and specialised medical English (SME). In a recent study Fage-Butler and Nisbeth Jensen (2016) initially used a division into technical and semi-technical terms, which was later replaced with a five-category division: dictionary-defined medical terms, co-text-defined medical terms, medical initialisms, medication brand names and colloquial technical terms. In each of those divisions the lay/expert differences serve as axes of division and each of those divisions accounts for the fact that units from the general register are used in medical communication.

On the one hand, lexical units associated with general register, doublets, synonyms, and polysemous terms seem to be in conflict with monoreferentiality (Gotti 2011) or univocity (Felber 1984) principles and the need for clarity and precision in interprofessional communication (Mitzkat, Berger, Reeves, Mahler 2016). On the other hand, there is a strong tendency to avoid polysemy and synonymy, and control medical terminology, which is now to a large extent standardized, especially in regulatory registration and reporting areas.

The advent of medical information systems plays an important role in increasing standardization and control over medical terminology (Cimino 1998, Awaysheh, Wilcke, Elvinger, Rees, Fan, Zimmerman 2017) as term classifications are integrated into healthcare information systems to enable electronic exchange of clinical data. Healthcare terminology systems facilitate the diagnosis process, decision-making, reporting etc. One of the most widely used classifications is the International Statistical Classification of Diseases and Related Health Problems, whose current version ICD-10 will soon be replaced with ICD-11. It is a standardized terminology tool developed by the WHO and used in diagnostics and epidemiology. International Classification of Functioning, Disability and Health (ICF) – also developed by the WHO –provides a framework for describing health conditions in its four chapters: 'Body functions', 'Body structures', 'Activities and participation' and 'Environmental factors' (WHO 2001). SNOMED CT is one of the leading healthcare terminology system, which is in fact a consolidation of two controlled terminologies: SNOMED RT and Clinical Terms Version 3 (Wang, Barrett, Bentley, Markwell, Price, Spackman, Stearns 2001). It is maintained by the International Health

Terminology Standards Development Organisation (IHTSDO). Formal terminologies are also developed by nurses: the International Classification for Nursing Practice (ICNP) is a dictionary of terms developed by the International Council of Nurses (ICN) to facilitate description and reporting in nursing practice (ICN 2015). The above list is not exhaustive; in fact, there is an abundance of clinical classifications (e.g. ICD, ICF, ICPC, MedDRA, DSM, MEDCIN for diagnosis, CPT, CDT, HCPCS for procedures, at least several classifications for nursing, diagnostic tests, medical devices etc.). One of the reasons for the manifold classifications is that none of them is a universal one – they serve different purposes and are used in different sectors of healthcare. Nevertheless, they need to be compatible since data are transferred between different systems. Therefore, mapping between terminologies is both a necessity and a challenge when terminologies or classifications need to be aligned to ensure adequate information exchange (Fung 2007, Cardillo 2015).

International terminology systems and classifications are translated into a number of languages. ICD-10 was developed in English and translated into 42 languages by expert translators, although the term that the WHO (2010) uses to refer to interlingual transfer is "*multilingual representation*" (not "*translation*" to emphasise the desired equivalence of concepts resulting from a semasiological approach rather than word-for-word transfer. The ICD-11 is being developed with computerized assistance and human experts in the validation process to ensure equivalence of concepts. The ICNP has so far been translated into 19 languages, including Polish (ICN 2015). As the original Classification is subject to updates, new translations are required to reflect the changes in the original. The Guidelines for the translation of the ICNP suggest striving for cross-cultural equivalence of concepts rather than word-for-word translation or "etymological equivalence". Translators are advised to "avoid ambiguous terms that have more than one meaning" (ICN 2008), which means that polysemous and synonymous terms are to be avoided. ICN guidelines for translation also include recommendations to avoid colloquial phrases and jargon, and a recommendation on tackling terminological gaps: "if there is no appropriate term in the target language, translate the source term into a set of words using the definition" (ICN 2008). Such knowledge-based approaches (cf. Deléger, Merabti, Lecrocq, Joubert, Zweigenbaum, Darmoni 2010) usually involve teams of healthcare professionals and terminology experts who perform semasiological work and validation processes before suggesting final target terms. Terminologies or classifications can also be translated automatically (or semi-automatically) with the use of parallel corpora and alignment tools (Deléger, Merabti, Lecrocq, Joubert, Zweigenbaum, Darmoni

2010). Consistent, clear and monoreferential terminology can improve the effectiveness of health information exchange and its adequate use in translation is a critical quality factor.

3. Medical translation quality

Medical translation quality may affect clinical processes (cf. Flores *et al*. 2003), which is why the role of verification is another frequently emphasised aspect. A valid verification process starts as early as in the pre-translation phase when the source is prepared and includes assuring compliance with the conventions and requirements of specific text genres or functions, such as readability and clarity in expert-lay communication. A fairly frequently applied but debatable method of translation review is back-translation. The International Medical Interpreters Association (IMIA) advise against applying back-translation as a method for verification for the reason that it might not reveal "the target language contextual and usage nuances" (IMIA 2009: 2) or awkward literal translation. Nevertheless, the blind back-translation technique is frequently used in quality assurance (cf. Fernández Piera & Ardura Ortega 2012), especially in the sector of medical research and clinical trials, as it is required by Ethics Committees and regulatory authorities in a number of countries (Grunwald & Goldfarb 2006: 2). Translation agencies which conform to European Standard ISO 17100:2015 ensure quality in the area of human resources (competent translators, revisers and reviewers), pre-production (e.g. enquiry, feasibility, agreement), the translation process (including check, revision, review and proofreading) and post-production. The standard, however, does not provide any measures for assessing the quality of the translated text and only gives vague general guidelines on checking the translation, such as omissions, semantic, grammatical and spelling mistakes, and "ensuring compliance with relevant translation project specifications" (ISO 17100:2015). Institutions which handle translated texts develop their own medical translation verification procedures, e.g. the International Medical Interpreters Association (IMIA) requires two verifications, the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) uses a review method which involves two parallel forward translations, reconciliation, two back-translations, comparison and reconciliation, then a review and harmonisation of the target text (Andriesen 2006: 15-16). Parallel translation can also be applied as a standalone quality assurance method: two parallel translations are produced, then compared and adjusted, if necessary (Andriesen 2006: 16). The translation of instruments such as questionnaires or scales can be verified by means of cognitive debriefing, i.e. collecting feedback from a sample group

on how they understand the wording of a question or statement to verify if it is readable and lay-friendly while reflecting the original concept (cf. Engel, Koester 2014). In fact, lay-friendliness and readability have become crucial quality factors as they are essential in expert-lay communication.

4. Expert-lay medical translation

In medical translation, there is often a rather symmetrical relationship between the author of a text and the target audience. In other words, expert-to-expert translation. However, during the past decades, the Western World has seen an increasing demand from "ordinary" people who want to be able to understand their tax returns, utility bills, pension schemes and not least information pertaining to their health. The 1970s saw the rise of the Plain Language movement and in general a less authoritative society supports the policy that non-experts should be able to understand texts directed at them. Concepts like patient-centeredness and patient empowerment are considered crucial in modern health communication. The concept of patient-centeredness was introduced in the late1960s as a new and more psychosocial approach to medical thinking. It required health care professionals to have a holistic view on their patients and include the patients' needs and wishes in their medical care plans (see Holmström & Röing 2009, who also provide a review of the many different ways of understanding both patient-centeredness, patient empowerment and their interrelation). Contrary to patient-centeredness, the origin of patient empowerment is not found within health care but in Paulo Freire's pedagogical theories from the 1960s and 1970s (Askehave *et al*. 2010). The fundamental meaning of the concept is of course to put someone into power, which implies making the patient able to make or participate actively in making important decisions regarding their own health on an informed basis: "Empowerment is a process through which people gain greater control over decisions and actions affecting their health" (WHO 1998: 7).

It goes without saying that it is impossible to claim that patients are at the centre of their own health care or to empower patients if they do not understand information directed at them. In this context, the concept of health literacy is important: "Health literacy represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good *health*" (WHO 1998: 10). Increasingly, research within health communication has been focused on the concept of health literacy, which emphasizes the fact that even among laymen, ability to understand health-related information ranges from no health literacy, to functional health literacy, to interactive

health literacy and to critical health literacy (Nutbeam 2000). This wide span of health literacies means that generally translations, which function as mass communication (i.e. potentially aimed at for example an entire population) need to be targeted at the lowest common denominator.

A case in point as far as mass health communication aimed at the layman is concerned is the European Patient Information Leaflet (PIL), which became a legal requirement (Council Directive 92/27/EEC) in 1992 (full implementation in 1999) to ensure that patients understand important information about their medication. Many health communication texts, such as the PIL, are first produced in English and then translated to other languages (Danish in the following exemplification) and this fact potentially poses a danger to lay-friendliness. A danger which a good medical translator can remove. Contrary to the expert-to-expert translational situation mentioned above, the relationship between the sender and the target audience is now an asymmetrical one. In some cases, the English source text is still dominated by expert language as the sender, the expert, has failed to translate intralingually. But even in cases where the source text is very lay-friendly, we often see that the translator has reverted to a certain degree of expert medical language in the translation (Askehave & Zethsen 2000, Nisbeth Jensen & Zethsen 2012, Nisbeth Jensen 2013). Some of the main reasons for this seem to be that more than half of the PILs are not translated by trained translators, but by people with a medical background (typically pharmacists) (Askehave & Zethsen 2000, Nisbeth Jensen 2013). Understandably, experts find it hard to identify which expressions cause readability problems for laymen. However, even when the PILs are translated by trained medical translators, there is a tendency to revert to expert medical language (Askehave & Zethsen 2000, Nisbeth Jensen & Zethsen 2012, Nisbeth Jensen 2013). Perhaps because this constitutes the default for the medical translator who may have become a semi-expert within the field of medicine and has lost acute awareness of what people in general would understand and what they would find difficult. Also, English uses Latin/Greek-based terminology for many medical expressions where Danish (and many other languages) has an expert term and a layman term to an extent where non-experts will only know and use the layman term (Zethsen 2004). Even a trained translator may fail to translate some of this Latin-based terminology intralingually, because it is perfectly lay-friendly in English.

Within medical translation/health communication, more research is needed for at least two reasons: first to document the translations which may well be successful as far as the interlingual denotative meaning is concerned, but which fail to reach the layman target group by failing to carry out the intralingual

part of the translation; and second: to explore more in depth why the target group is not met. Perhaps, the intralingual aspect of expert-to-lay medical translation should also to a larger degree be incorporated in the training of future medical translators.

5. The contributions of the present volume

In this issue, the authors have addressed a number of research questions about a range of topics – texts, intertextual relationships, patients as readers, ethics, metaphors, specialised training, multimodality, quality and back translation. Regarding methodology, this issue shows that a variety of approaches are needed – often in combination – to respond to the relevant research questions in medical translation. These methodologies include quantitative tools – such as corpus linguistics or questionnaires – as well as qualitative approaches – such as focus groups, direct observation of participants, genre analysis or conceptual analysis. New research methodologies – such as 'netnographic analysis' (see Bundgaard & Nisbeth in this issue) – are making their way into medical translation to respond to new formats and environments of professional communication.

Among the genres that have attracted the attention of researchers, some are in the written mode – patient information leaflet (PIL), fact sheet for patients (FSP), and informed consent (IC) – and some others in the oral mode – the medical consultation (MC) and the IC. In fact, the IC has been dealt with in both modes in the same study (Elena Pérez in this issue), acknowledging the complex nature of doctor-patient communication and pointing at a more integrated approach to multimodality. Recent research along these lines (Montalt & García-Izquierdo 2016) underlines the importance of redefining crucial genres such as the medical consultation and the informed consent from a multimodal point of view in which the oral, the written and the audio-visual modes converge, perform certain functions and complement each other in fruitful ways.

The choice of genres of this issue shows a clear interest in expert-to-lay translation, where important asymmetries between the discourse communities involved determine the way communication takes place. The discourse communities of the health professionals – in particular doctors and nurses – have their own implicit and explicit norms and agendas as well as higher social status, which results in – and reflects – a clear power imbalance. In comparison with patients, the health professional collective is far more homogeneous and knows the health system better. On the other hand, patients are more heterogeneous in needs, expectations, previous medical knowledge as well as in cultural and linguistic backgrounds and origins. In the case of the IC the

asymmetries have legal and ethical consequences. Healthcare professionals are becoming more aware of the importance of offering the patients comprehensible explanations that can inform their decisions adequately. In 2016 the national organization that gathers all professional colleges of doctors in Spain published a guide of good practices regarding the IC in response to growing complaints from patients.

We find a growing interest in patient-oriented translation studies. The issue of comprehensibility – or readability – is the main focus in "Análisis del efecto de la traducción (inglés-español) en la legibilidad del prospecto de medicamento" by Raquel Martínez Motos. In this case, the genre at stake is the PIL, another genre framed in expert-to-lay communication in which the patient plays a crucial role. Elena Pérez focuses on the comprehensibility of the IC in interpreter-mediated interactions in which the crucial element is the signature of an IC form. In both studies the authors reach a similar conclusion: that translation – and interpreting – is a gain rather than a loss. Foreign patients who are assisted by interpreters in situations in which the IC form is not available in their own language, seem to understand better what they consent to because of the interpreter's involvement in facilitating understanding. Similarly, translated PILs seem to be more comprehensible than originally-written PILs in Spanish.

However, it is not always easy to make decisions and ethical dilemmas – such as confidentiality, impartiality and non-discrimination – often arise in asymmetrical situations because there may be disagreement between ethical responsibilities and professional duties. As we have seen, ethical issues are often involved in medical translation and interpreting. Different genres are governed by different ethical norms whether they be implicit or explicit. They take centre stage in the article by Carmen Pena-Díaz, who questions and observes a group of medical interpreters. In her study, she provides convincing examples of how the interpreter needs to explain the reasons for certain behaviours of both patients and health professionals in order to avoid misunderstanding. This may be at odds with the fact that facilitating information is not recommended and there are no protocols for omitting information whilst interpreting.

Another area that researchers in medical translation explore in this issue is teaching. Manuel Cristóbal Rodríguez and Emilio Ortega focus their study on the PIL in the context French-Spanish. Their contribution emphasizes the usefulness of corpus linguistics for translation purposes, and more specifically, for training medical translators. Another way of approaching the training of medical translators is through multimodality. Starting from her own experience in the Italian context, Michela Canepari aims at providing motivating resources and solutions for the medical translation classroom. Effective use of audiovisual

aids for medical translation courses offered to non-medical students contributes to developing students' lexicon and background knowledge. One of the concepts this author explores is that of intergeneric translation. The issue of intergeneric translation in healthcare settings becomes the core in the article by Muñoz, Ezpeleta & Saiz, and in this case the focus is on a different genre, fact sheets for patients (FSP). Intergeneric translation may involve interlingual translation, but of course always intralingual translation. The article is based on an empirical study carried out by the GENTT Research Group (Universitat Jaume I, Spain) in which a series of intralingual strategies were used to make real fact sheets for cancer patients more comprehensible and effective for these readers. In an approach that is not often seen, these strategies were validated by the patients, and the results are used as the basis for a training proposal aimed at improving medical translators' skills for dealing with this type of intralingual translation.

A third area of inquiry that we can find in this issue is back translation in the medical domain. This topic is explored by Kristine Bundgaard & Matilde Nisbeth Brøgger who performed a nethnographic study of translators' attitudes towards back-translation in the medical domain. Their results indicate that this particular quality assurance tool needs more attention since translators do not always know the procedure or are unaware of its purpose. One of the possible solutions is including a requirement to inform prospective translators of the purpose and best practices in relevant guidelines.

Finally, Sylvie Vandaele focuses on medical metaphors and their translation, closing the issue with a diachronic view. She shows that conceptualization indices in health and life sciences form stable lexical networks which can be observed in contemporary and ancient medical texts. They are stable but not fixed: lexical networks are "open sets" with room for creativity, especially in the popularization discourse. She also engages in a relevant discussion about the role of machine and assisted translation both in the profession and in the educational contexts.

This technological discussion will develop in the future because technology may bring radical changes in the role of the medical translator as well as in translator training. Research into artificial intelligence and neural machine translation together with the development of 'controlled languages' and the further spread of English as a *lingua franca* will surely have an impact in healthcare interpreting and medical translation. Some of the highly routinized genres – such as research articles or summaries of product characteristics in the pharmaceutical industry – as well as some of the more mechanical processes in the field of multilingual terminological management are likely to benefit

from automatization. In addition, some technological advances will improve multimodal communication, including new apps for patients that facilitate more personalized, more direct and faster communication.

At the same time, in the era of personalised medicine and patient-centred care, it would not be too risky to anticipate a growth of human translation with high degrees of adaptation – to specific audiences, cultures, media, formats, etc. – and creativity where attention to the individual is paramount. In this emerging scenario quality is not restricted to terminological accuracy and accessibility to factual knowledge but includes interpersonal and attitudinal dimensions such as how emotion and empathy are conveyed in texts and interactions, and how they affect the health of patients. This is a promising new development that can open up avenues of enquiry and professional practice in a type of highly sensitive communication where words are not merely carriers of medical information but also triggers of emotions which, if dealt with properly, may contribute to the well-being of the target reader or interlocutor, or, conversely, become a hindrance.

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ANÁLISIS DEL EFECTO DE LA TRADUCCIÓN (INGLÉS-ESPAÑOL) EN LA LEGIBILIDAD DEL PROSPECTO DE MEDICAMENTO

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Resumen

El presente artículo es una aproximación al estudio de los posibles efectos de la traducción inglés-español en la legibilidad de los prospectos de medicamentos. Se basa en la realización de un análisis cuantitativo y cualitativo de los elementos que intervienen en el grado de legibilidad de un corpus de 150 prospectos seleccionados de acuerdo con unos criterios ajustados a ese fin. Los resultados y conclusiones extraídos tras el análisis servirán para determinar si el proceso de traducción puede influir en el grado de legibilidad en los textos traducidos frente a los originales y, de ser así, en qué medida lo hace.

Abstract

"Analysis of the effects of translation (English-Spanish) on the readability of patient information leaflets"

This paper focuses on the potential effects of translation from English into Spanish in the readability of patient information leaflets. It is based on the quantitative and qualitative analysis of the elements involved in the degree of readability of a corpus of 150 patient information leaflets specifically selected for this purpose. The results obtained and the conclusions reached after the analysis may be used to determine whether the translation process has any impact on the degree of readability of translated texts against original ones and, if so, to which degree does it affect.

Palabras clave: Prospecto de medicamento. Traducción. Legibilidad. Género. Corpus.

Keywords: Patient information leaflet. Translation. Readability. Genre. Corpus.

1. Introducción

El presente artículo tiene su origen en un artículo anterior (cf. Martínez Motos 2012) en el que se llevaba a cabo una revisión de los modelos de evaluación de la calidad de los prospectos en inglés y en español, y se proponía la aplicación de un nuevo modelo que analizara el efecto de la traducción en la producción de prospectos legibles y fáciles de usar.

La implementación de dicho modelo incluía diversas fases y metodologías. La primera fase consistía en el análisis de determinados aspectos de naturaleza cualitativa y cuantitativa en un corpus seleccionado según unos criterios previamente establecidos de acuerdo con el objetivo investigador. La segunda fase incluía información relativa a los usuarios a través de un cuestionario. La tercera añadía datos de tipo extratextual mediante un estudio de casos orientado a la descripción del entorno profesional en el que se traducen textos similares a los analizados previamente. Finalmente, la triangulación de los resultados permitiría extraer conclusiones presumiblemente diferentes a las presentadas en trabajos anteriores que abordaban el estudio de los prospectos desde otras perspectivas.

El objetivo de este artículo es presentar parte de los resultados obtenidos en el análisis cuantitativo de un corpus, es decir, de la implementación de la primera fase. Más concretamente, los relacionados con el grado de legibilidad que se observa en los prospectos originales en español frente a los traducidos a ese mismo idioma desde el inglés. En otras palabras, determinar si el proceso de traducción puede influir en el grado de legibilidad de los textos traducidos frente a los originales.

En los apartados siguientes se revisa el concepto de *legibilidad* y se realiza una triple aproximación al prospecto como objeto de estudio, como objeto de armonización jurídica y como género, con una breve descripción de los trabajos previos más relevantes. En el estudio empírico, se presentan los criterios de selección del corpus analizado, así como una descripción de la metodología empleada para su análisis. Posteriormente, se exponen los resultados cuantitativos y una descripción cualitativa de estos. En el último apartado se abordan las conclusiones extraídas del estudio.

2. Conceptos y elementos clave de objetivo investigador

Trabajos de autores como Askehave & Zethsen (2000, 2002), Clerehan, Hirsh & Buchbinder (2009), Gal & Prigat (2005), Hoste *et al*. (2010) y Pander Maat & Lentz (2010) constituyen el punto de partida del presente artículo. Según estos autores los prospectos no se ajustan a las necesidades lingüísticas y comunicativas de sus potenciales destinatarios, a pesar de los esfuerzos realizados tanto por la industria farmacéutica como por las autoridades competentes. En otras palabras, los prospectos presentan dificultades de legibilidad y facilidad de uso para el receptor lego. La búsqueda de una posible respuesta a esta cuestión lleva a plantearse la siguiente hipótesis general: los prospectos presentan problemas de legibilidad para el receptor lego y el uso inadecuado del lenguaje sería la principal causa de ello. Si a esto le añadimos que algunos prospectos son el resultado de un doble proceso de redacción y posterior traducción, cabe plantearse también la siguiente pregunta: ¿es el proceso de traducción inglés-español un factor determinante en la elaboración de prospectos con un grado de legibilidad más elevado?, ¿cuáles presentan más problemas de legibilidad, los originales o los traducidos?

Ante estas preguntas es preciso explicar el concepto de *legibilidad*. Para ello es necesario partir de dos términos en inglés: *readability* y *legibility*. Al referirse al primero, Dubai (2004: 3) lo define como "what makes some texts easier to read than others. It is often confused with legibility, which concerns typeface and layout". De igual modo, Göpferich (2009: 48) distingue entre ambos conceptos y señala que "layout and design characteristics (macro-typography), the fonts used and other paraverbal features (micro-typography), as well as nonverbal elements" son los elementos que determinan la *legibility*. Sin embargo, a pesar de tratarse de dos términos que expresan conceptos diferentes, los diccionarios bilingües Oxford y Collins Cobuild únicamente ofrecen un posible equivalente en español: *legibilidad*. La Real Academia Española define este término como "cualidad de lo que es legible" y por legible entiende lo "que se puede leer". Por lo tanto, partimos de un único término en español tradicionalmente empleado como equivalente de dos términos en inglés que expresan conceptos distintos.

Para tratar de resolver esta cuestión, autores como Suárez Muñoz & Suárez Ramírez (2013: 417) distinguen entre *legibilidad*, ligada a los elementos tipográficos y visuales (color, gráficos, organización), como equivalente de *legibility*, y *lecturabilidad* (no recogido en el Diccionario de la Real Academia Española), que depende de los elementos relacionados con el contenido textual que determinan la facilidad del texto para ser leído y comprendido sin esfuerzo, como equivalente de *readability*. Otros, como Barrio Cantalejo *et al*. (2008b:

136) únicamente emplean el término *legibilidad*, pero diferencian ambos conceptos en inglés en función de si el adjetivo que lo determina es *tipográfica* o *lingüística*, a saber:

> La legibilidad es el conjunto de características tipográficas y lingüísticas del texto escrito que permiten leerlo y comprenderlo con facilidad. La legibilidad tiene dos dimensiones complementarias. La legibilidad tipográfica, que viene condicionada por el tamaño, forma, diseño y disposición espacial de los caracteres gráficos del texto y la legibilidad lingüística, en la que, a su vez, se distinguen dos subtipos: la legibilidad gramatical, que tiene que ver con la estructura y la construcción gramatical del texto y la legibilidad léxica, que se interesa por el significado de las palabras.

A lo largo del presente artículo se empleará el término *legibilidad* en referencia a la *legibilidad lingüística*, tal cual la conciben Barrio Cantalejo *et al*. (2008b), ya que se adecua mejor al objetivo investigador y, además, lo relacionan con la evaluación de textos dirigidos a pacientes mediante el empleo de una metodología de análisis que incluye la Escala INFLESZ, que explicaremos más adelante.

3. Triple aproximación descriptiva al prospecto

En las últimas dos décadas se ha observado un notable incremento en la literatura tanto en inglés como en español en torno a los prospectos de medicamentos. Entre los argumentos que justificarían el creciente interés por el estudio y análisis de esta clase de documentos parece ganar peso el señalado por Jensen (2012: 237), para quien "patients today demand transparency and enough information in order to make informed choices about a proposed treatment option, or about taking a specific medication, etc."

En otras palabras, los pacientes, potenciales destinatarios y usuarios de prospectos (entre otros textos de divulgación médica), han pasado a desempeñar un papel activo en la gestión de su propia salud "as a result of a patient empowerment process within the healthcare system facilitated by means of a wide range of empowerment tools" (Askehave & Zethsen 2010: 105). Entre dichas herramientas, parecen haber adquirido especial relevancia las medidas políticas adoptadas con el objetivo de que "people can participate in an informed way in the management of their own health" (Hall 2006: 271). Es decir, se trata de medidas dirigidas específicamente a garantizar el acceso a información relevante y adecuada sobre tratamientos, medicación y procedimientos quirúrgicos por parte de los pacientes. Con respecto a la adopción de este tipo de medidas de índole política y administrativa, argumentan Connor *et al*. (2008: 117) que "the degree to which a patient comprehends written messages related

to prescription medications may be an important factor influencing patients' adherence to directives about medication use".

Así pues, se observa una toma de conciencia en torno a los problemas de legibilidad y facilidad de uso de los textos de divulgación médica en general y de los prospectos en particular, si bien parece que tal y como señalaban Askehave & Zethsen (2002: 15) "in spite of all the intentions, complex and ambiguous texts still abound in expert writing for the general public", entre ellos, los prospectos. Hasta el día de hoy, esta afirmación no ha sido rebatida de manera contundente y definitiva, y abre la puerta al planteamiento de nuevas perspectivas de abordaje y análisis de los posibles factores que influyen en este hecho. Para ello, es necesaria la revisión previa de los aspectos determinantes del *prospecto* desde su triple consideración como: a) objeto de armonización jurídica, b) género y c) objeto de traducción.

3.1. El prospecto como objeto de armonización jurídica

En territorio de la Unión Europea, los medicamentos se comercializan acompañados de un documento estandarizado, cuya producción y distribución está regulada en el marco de legislación europea, a la cual están sujetos todos los estados miembros. Concretamente, las autoridades europeas han legislado esta materia en forma de directivas (Directiva 2001/83/CE y Directiva 2004/27/CE), un instrumento legislativo mediante el que se establecen únicamente los objetivos que cada país debe alcanzar, dejando en manos de las autoridades nacionales la elección de la herramienta legislativa que regulará el modo en que lo harán. A ello hay que añadir la creación del llamado *Working Group on Quality Review of Documents (QRD)*, en el seno de la Agencia Europea del Medicamento, cuya misión es comprobar, promover y garantizar la claridad y legibilidad de los prospectos, para lo cual publicó en 2014 una serie de directrices básicas bajo el título *Compilation of QRD decisions on stylistic matters in product information*.

Con el fin de garantizar la inclusión de toda la información legalmente obligatoria en el lugar adecuado y mediante un tipo de lenguaje adaptado a las necesidades del paciente, los estados miembros y la Agencia Europea del Medicamento acordaron también la elaboración de una herramienta para la revisión de la calidad de los documentos que permitiera armonizar el modelo y que se tradujo en la publicación de unas plantillas bajo el nombre de *Quality Review of Documents (QRD) templates*. Se trata de unas plantillas creadas también por el QRD de acuerdo con la legislación vigente y los parámetros lingüísticos establecidos en el documento elaborado por el Comité Farmacéutico

de la Comisión Europea (2009) bajo el título *Guideline on the Readability of the Labelling and Package Leaflet of Medicinal Products for Human Use*

España, como país miembro de la Unión Europea, adoptó las directrices incluidas en las directivas antes aludidas y puso en marcha iniciativas orientadas a garantizar su cumplimiento, como la publicación en 2004 de un documento titulado *Plan Estratégico de Política Farmacéutica* y la designación del Comité Técnico de Información de la Agencia Española de Medicamentos y Productos Sanitarios, AEMPS, como responsable de la fijación de nuevos criterios que permitan garantizar la mejora de la comprensión de los prospectos. Dicho organismo basaba la falta de comprensión en el hecho de que "en muchas ocasiones la información es excesiva, ininteligible o inadecuada", en consonancia parcial con la Asociación Española de Derecho Farmacéutico, ASEDEF, en cuyo documento publicado en 2007, bajo el título *La redacción del prospecto: recomendaciones para mejorar su comprensión*, apuntaba a factores como el empleo de términos científicos, abreviaturas, ausencia de dibujos aclaratorios o información en algunos apartados, así como falta de actualización de información, entre otros.

Además, tanto la obligatoriedad de incluir un prospecto acompañando a cada medicamento, como las exigencias a las que están sujetos los productores con respecto a su formato y contenido son, a día de hoy, el resultado de cambios introducidos en la legislación europea, hasta tal punto que la autoridad competente puede llegar a rechazar una solicitud de autorización si la información contenida en el prospecto o, en su defecto, en el envase, no se ajusta a lo dispuesto en la normativa establecida para tal fin. En resumen, el prospecto está sujeto a una serie de requisitos legales que determinan en gran medida su formato y contenido y que, en última instancia, influyen también en su grado de comprensión.

3.2 El prospecto como género

El prospecto se concibe como género o "forma convencionalizada de texto que posee una función específica en la cultura en la que se inscribe y refleja un propósito del emisor previsible por parte del receptor" (cf. García Izquierdo 2002: 3). El grupo GENTT ha establecido una clasificación de los géneros médicos. El primer nivel clasificatorio lo constituye la categoría de macrogénero; el segundo nivel, el género; y el tercero, si procede, el subgénero. De acuerdo con ello, el género prospecto de medicamento se incluiría bajo el paraguas del macrogénero *textos clínicos* y carece de manifestaciones concretas en forma de subgénero (cf. García-Izquierdo 2009: 129-133).

Por su parte, Askehave & Zethsen (2003) analizaron detenidamente la situación comunicativa en la que se crean y utilizan los prospectos y los elementos que intervienen en ella y los categorizaron dentro de lo que denominaron como comunicación pública "that occurs when a company or an organization communicates with the general public" (cf. Askehave y Zethsen 2003: 23), que engloba géneros caracterizados por su distribución y recepción a gran escala, dirigidos a un público heterogéneo, en los que la relación entre emisor y receptor es asimétrica, la interacción entre ambos es impersonal, anónima y controlada por el emisor, la comunicación entre los anteriores se produce a través del género en cuestión que a su vez ha sido creado de acuerdo con los requisitos establecidos en uno o varios documentos de tipo legislativo y cuya función es prescriptiva.

En referencia específica a los prospectos, Gamero Pérez (2001: 82) les atribuye una doble función, expositiva y exhortativa, "por el hecho de que está dirigido al mismo tiempo al médico (a quien interesa sobre todo la descripción científica del producto) y al paciente (a quien interesa saber cómo administrarse el medicamento y qué precauciones tomar)". De igual modo, García Izquierdo (2008: 2) lo concibe como un género "predominantemente instructivo con elementos expositivos orientado al paciente y utilizado como puente entre este y la comunidad farmacéutica, entendida como los laboratorios fabricantes y comercializadores del medicamento y las instituciones que regulan esa fabricación y comercialización". Por su parte, Montalt i Resurrecció & González Davies (2007: 57) clasificaron los géneros en el ámbito de la medicina en función de dos parámetros: el propósito retórico global del emisor (que en el caso de los prospectos sería el instructivo) y la función social global del texto (que en el mismo caso correspondería a la realización de actividades domésticas habituales como seguir una dieta o un tratamiento).

En el presente trabajo se comparte la idea de la doble función de los prospectos; sin embargo, la distinción entre dos tipos de destinatarios señalada por Gamero Pérez (2001) entraría en contradicción con la asimetría entre el emisor y el receptor que caracterizaría a los prospectos como un tipo de comunicación pública. Además, como señala Mercado López (2003a: 83):

> […] el emisor del prospecto es un profesional sanitario, específicamente un director técnico o médico de un laboratorio farmacéutico. El receptor del mensaje es el consumidor o usuario. Los profesionales sanitarios, por su parte, poseen otro tipo de texto para consulta, la ficha técnica, de carácter más especializado que el prospecto por lo que descartamos que sea esta comunidad discursiva el receptor principal.

En resumen, el prospecto como género constituye el canal por el que la comunidad farmacéutica (emisor) transmite un mensaje con la finalidad de informar e instruir al paciente (destinatario) sobre el uso seguro de un producto farmacéutico y el modo de obtener el mayor beneficio de este o cómo tomar un medicamento de manera correcta, eficaz y segura.

3.3 El prospecto como objeto de traducción intergenérica e intralingüística

En la Unión Europea, en función del territorio para el que se solicita y la posesión o no de autorización previa en algún país miembro, se distinguen cuatro posibles procedimientos de autorización de comercialización de los medicamentos y de su correspondiente prospecto: el nacional, el de reconocimiento mutuo, el descentralizado y el centralizado. Este último es el que nos interesa especialmente, ya que el proyecto de prospecto que se presenta ante la Agencia Europea del Medicamento junto con la solicitud de autorización de comercialización está originalmente redactado en inglés y, una vez aprobada su autorización, ha de traducirse a las 23 lenguas oficiales de la Unión Europea.

Si bien en el apartado 4 clasificamos y describimos los trabajos realizados en torno a diversos aspectos del prospecto como género, en este punto destacamos los trabajos de Montalt i Resurrecció y García Izquierdo (2013) y de Askehave y Zethsen (2000) por la inclusión de conceptos como traducción intergenércia e intralingüística en relación con el prospecto y otros textos de divulgación médica. Concretamente, Askehave y Zethsen (2002) apuntan a dos factores determinantes como posibles causas de la existencia de prospectos en la UE que, a pesar de las medidas adoptadas, no cumplen con éxito sus objetivos comunicativos. Dichos factores están relacionados con la traducción: a) la traducción *intergenérica*, que tiene lugar cuando se extrae y transfiere la información de la ficha técnica al prospecto; aquí conciben el concepto de *traducción* en un sentido distinto al tradicional de una lengua a otra, sino de un género a otro; b) la traducción *interlingüistica*, en el sentido tradicional de traducción entre lenguas, cuando el borrador de prospecto en inglés se traduce a otras lenguas.

Por tanto, la traducción intergenérica que se lleva a cabo en el proceso de producción es un factor determinante para la legibilidad y facilidad de uso de los prospectos, ya que conlleva la selección de la información relevante para el receptor no especialista y su transferencia a un documento perteneciente a un género distinto utilizando un lenguaje adecuado a dicho receptor. A este se añade un factor determinante adicional en el caso de los prospectos que, con posterioridad, se deben someter al proceso de traducción interlingüística.

4. Estudios previos sobre el prospecto como género

Las investigaciones realizadas en torno a los prospectos en las últimas dos décadas se han servido tanto de metodologías cuantitativas como cualitativas. Así, la aplicación de una metodología cuantitativa se basa en el empleo de fórmulas de legibilidad como herramienta de evaluación de géneros médicos destinados al público general (cf. Hedman 2008, Hardwood y Harrison 2004, Buchbinder *et al*. 2001, Ley y Florio 1996) y de los prospectos (cf. Ballesteros Peña y Fernández Aedo 2013,Barrio Cantalejo *et al*. 2008a/b, Mottram y Reed 1997). La aplicación de estas ecuaciones matemáticas arroja una puntuación que corresponde a una previsión estadística del grado de alfabetización que debe tener un lector medio para ser capaz de leer y comprender documentos relacionados con la salud. Hay una variedad de fórmulas (cf. Dale-Chall, Flesch-Kincaid, índice SMOG y FOG, índice de Flesch-Szigriszt, Escala INFLESZ) fácilmente aplicables, si bien su validez y utilidad como única herramienta de análisis ha sido puesta en entredicho por algunos autores. No obstante, es posible encontrar estudios híbridos que combinan la aplicación de fórmulas de legibilidad con otros métodos, como la realización de entrevistas y grupos focales (cf. March Cerdá, 2010). También se han publicado trabajos dirigidos a la obtención y cuantificación estadística de datos en torno a la presencia o no de determinados elementos terminológicos (cf. Delaere *et al*. 2009, Hoste *et al*. 2008, 2010).

En el caso de la metodología cualitativa, es posible distinguir dos posibles aproximaciones aplicadas a los textos relacionados con la salud en general y los prospectos en particular. Por un lado, los llamados *estudios de recepción,* también conocidos como estudios de validación por parte del usuario (en inglés, *consumer-tests o user-tests*), son estudios de carácter empírico centrados en la obtención de datos relativos a la percepción y/o satisfacción de los usuarios con los prospectos mediante la aplicación de distintas estrategias investigadoras como entrevistas (cf. Connor *et al*. 2010, Barber et al. 2009, Wolf *et al*. 2007), grupos focales (cf. Dickinson *et al*. 2013; Raynor *et al*. 2004, Koo, Krass y Aslani 2002), cuestionarios (cf. Pander Maat y Lentz 2010, Clerehan *et al*. 2009, Berry *et al*. 2004, Berry, Michas y Bersellini 2003, Dickinson, Raynor y Duman 2001); o incluso una combinación de los tres (cf. Jensen 2013, Hirsh *et al*. 2009). Se trata, pues, de estudios que ponen el foco de atención en los resultados, ya que los datos analizados permiten describir el efecto producido por un texto en el lector (grado de comprensión, satisfacción y percepción con respecto a su usabilidad para el propósito perseguido).

Por otro lado, dentro de la metodología cualitativa destacan también los estudios textuales, que permiten estudiar y evaluar cualitativamente los prospectos mediante el análisis de sus elementos textuales, lingüísticos, estilísticos o gráficos y que puede realizarse desde diferentes enfoques: a) la traductología (cf. Askehave y Zethsen2000a, 2002, 2003, 2006, 2008; Cacchiani 2006); b) la lingüística funcional sistémica (cf. Clerehan, Hirsh y Buchbinder 2009, Clerehan y Buchbinder 2006, Clerehan, Buchbinder y Moodie 2005, Hirsh *et al*. 2009); c) el análisis del discurso (cf. Fage-Butler 2011a, 2011b; Askehave y Zethsen 2010; Connor *et al*. 2008; Dixon-Woods 2001).

4.1 Estudios sobre el prospecto como género en España

En España es posible clasificar los estudios realizados en esta materia en dos grupos en función de los investigadores involucrados y los objetivos perseguidos: a) los realizados por investigadores vinculados al mundo de la traducción, la mayoría centrados en el análisis contrastivo de un corpus paralelo inglés-español a partir del enfoque de la lingüística funcional sistémica (cf. Martí Ferriol 2016; García Izquierdo 2008; Mercado López 2003a, 2003b, 2004; Ruiz Garrido *et al*. 2006; Ruiz Garrido, Fortanet Gómez y Palmer Silveira 2008; Vázquez y del Árbol 2013, 2014); b) los llevados a cabo por profesionales del ámbito biosanitario, cuyo principal objetivo es determinar la legibilidad lingüística de un corpus en español analizándolo mediante la aplicación de fórmulas de legibilidad (cf. Ballesteros Peña y Fernández Aedo 2013, March Cerdá *et al*. 2010, Barrio Cantalejo *et al*. 2008 a/b).

Por su relevancia destacamos el estudio llevado a cabo por Barrio Cantalejo *et al*. (2008), que analizaron la legibilidad gramatical de 55 prospectos de medicamentos mediante la aplicación del denominado Índice de Flesch (fórmula matemática que divide en 7 tramos una escala de 0 a 100 puntos para determinar el grado de legibilidad de un texto). Por otra parte, el trabajo de March Cerdá *et al*. (2009) presenta la particularidad de combinar métodos de investigación cualitativa (entrevista semiestructurada y grupo focal) y cuantitativa (fórmula de legibilidad). Por último, Ballesteros Peña y Fernández Aedo (2013) analizaron la legibilidad lingüística de un corpus compuesto por los prospectos de los 30 medicamentos más dispensados en España mediante la aplicación del índice de la aplicación informática denominada INFLESZ 1.0, que permite evaluar la legibilidad de un texto escrito en español según el Índice de Legibilidad de Flesch-Szigriszt (IFSZ).

5. Criterios de selección del corpus

En los estudios sobre el prospecto realizados con corpus en España arriba mencionados, la selección de los textos que componen su corpus se realizó en función de tres criterios: a) enfermedades más comunes en un rango determinado de edad y; b) traducciones u originales en inglés y en español (cf. Ruiz Garrido, Palmer Silveira y Fortanet Gómez 2008; García-Izquierdo 2007; Mercado López 2003b, 2004); mientras que otros se han decantado por c) medicamentos más vendidos (cf. Vázquez y del Árbol 2013, 2014; Ballesteros Peña y Fernández Aedo 2013; Barrio Cantalejo *et al*. 2008a/b; March Cerdá *et al*. 2010).

El corpus analizado en el presente estudio está compuesto por dos subcorpus de textos paralelos, monolingües (en español), textual y cerrado. En la selección de los prospectos que los componen, se aplicaron básicamente dos criterios: a) la fuente; y b) la lengua. Es decir, se analizaron prospectos autorizados y publicados bien por la Agencia Europea del Medicamento (subcorpus de traducciones al español), bien por la Agencia Española de Medicamentos y Productos Sanitarios (subcorpus de originales en español). La selección de estos dos organismos como fuente de datos está justificada por los siguientes motivos: a) el acceso al texto completo a través de Internet en una página *web* oficial y fiable; b) la posibilidad de descargar un número elevado de documentos; c) la disponibilidad de prospectos en español (traducidos en el caso de la EMA y originales en el caso de la AEMPS); d) la disponibilidad de prospectos sometidos a un procedimiento de autorización similar y, por tanto, sujetos a una serie de requisitos legales.

Asimismo, optamos por no incluir en el corpus los medicamentos de uso hospitalario, ya que en esos casos el paciente no suele tener acceso al prospecto antes de su administración, que está sujeta al criterio casi exclusivo de los profesionales sanitarios. Del mismo modo que ocurre en el caso de las vacunas, cuya administración suele estar establecida en un calendario fijado por las autoridades sanitarias y, salvo en los casos en que hay que adquirirla en una farmacia por no estar incluida en la cobertura del sistema sanitario, el paciente no tiene acceso al prospecto antes de su administración. Aunque puede obtenerse el prospecto a través de otras vías (como las páginas *web* de las que hemos extraído nuestro corpus) no son documentos a los que cualquier persona tiene acceso en todos los casos, sino que deben darse otras variables (disponibilidad y capacidad de uso de Internet o disposición del profesional sanitario a entregarlo en caso de encontrarse ingresado).

La principal desventaja de recurrir a estos criterios es la falta de control de dos variables: el proceso y los responsables de la elaboración de los documentos.

Ahora bien, el control de dichas variables no es necesario para alcanzar los objetivos del presente trabajo, ya que estos se centran en la detección e identificación de determinados elementos que influyen en la legibilidad de los prospectos, no en la búsqueda de los motivos que pudieran ser parcial o totalmente responsables de ellos en el caso de que se dieran. Una vez escogidas las fuentes fue necesario aplicar criterios adicionales de selección para dar coherencia al corpus en función del objetivo perseguido. Así, se seleccionaron únicamente los prospectos autorizados, aunque de entre ellos se excluyó los sometidos a seguimiento adicional y los que acompañan a medicamentos de uso hospitalario y a vacunas. Asimismo, con el fin de garantizar que los prospectos que componían el corpus constaban de los mismos apartados, se decidió seleccionar únicamente los referidos a medicamentos cuya forma farmacéutica fueran los comprimidos, cuya administración es sencilla y no necesita explicaciones o aclaraciones adicionales.

Tras la aplicación de los criterios anteriores se decidió fijar un límite y establecer una cantidad de textos suficientemente representativa del estado de la lengua específicamente seleccionada, a la par que abarcable, teniendo en cuenta las limitaciones espacio-temporales de nuestra investigación. Tomando todo esto en consideración, además de las características y el tamaño de los corpus estudiados en otros trabajos anteriores de similares características, se estimó que la inclusión aleatoria (tras la preselección) de 150 textos, 75 originales (corpus AEMPS) y 75 traducciones (corpus EMA), era representativo y pertinente para alcanzar el objetivo investigador.

6. Metodología de análisis

Como ya se ha señalado anteriormente, en el presente artículo el foco de atención se sitúa en la legibilidad en relación con la capacidad divulgativa (de transmitir información de manera clara y comprensible para el lector lego) de los prospectos y con su traducción; de ahí que su análisis se aborde desde un punto de vista comunicativo. Concretamente el objetivo perseguido es determinar si el proceso de traducción puede influir en el grado de legibilidad en los textos traducidos frente a los originales. Para alcanzar dicho objetivo se analizó el corpus antes descrito (textos traducidos y originales por separado) mediante la aplicación de una fórmula matemática de legibilidad gramatical denominada Escala INFLESZ, que permite obtener datos cuantitativos comparables en un análisis cualitativo posterior, con el fin de establecer diferencias o similitudes en el grado de legibilidad traducciones y originales en español.

Tanto esta fórmula como otras, ya sea la Escala RES de Flesch, el SMOG, la *Flesch-Kincaid*, el *Gunning FOG test*o el Gráfico de Fry, basan su análisis en

el supuesto de que los textos con más palabras y frases cortas son más fáciles de leer y sirven y se emplean para establecer la correlación matemática entre el tamaño de las palabras y frases y su facilidad de lectura. Concretamente, la Escala RES de Flesch divide en 7 tramos una escala de 0 a 100 puntos. La dificultad media de un texto se sitúa entre 60 y 70; por debajo se considera difícil de leer y más fácil cuanto más alta sea la puntuación entre 70 y 100. En España, el pedagogo Fernández-Huerta la adaptó por primera vez en 1959 al español, rebautizándola como 'fórmula de lecturabilidad' y asociando cada tramo de la escala de interpretación a un nivel académico determinado.

LECTURABILIDAD	NIVEL	GRADO
90-100	MUY FÁCIL	APTO PARA EL 4º GRADO
80-90	FÁCIL	APTO PARA EL 5º GRADO
70-80	BASTANTE FÁCIL	APTO PARA EL 6º GRADO
60-70	NORMAL	APTO PARA EL 7º Y 8º GRADO
50-60	BASTANTE DIFÍCIL	PREUNIVERSITARIO
30-50	DIFÍCIL	CURSOS SELECTIVOS
0-30	MUY DIFÍCIL	UNIVERSITARIO (ESPECIALIZACIÓN)

Figura 1: Grados de dificultad de los textos en español según el índice Fernández-Huerta

En 1992, en su tesis doctoral, Szigriszt Pazos validó y adaptó la fórmula Flesch (*Flesch Reading Ease Formula*) para su aplicación a textos en español, dando como resultado el índice de legibilidad de Flesch-Szigriszt (IFSZ) o 'fórmula de perspicuidad'. Para ello modificó las constantes de la escala de interpretación de Flesch, a la que llamó 'escala de nivel de perspicuidad'. Según esta, un texto tiene una legibilidad normal cuando tiene puntuaciones entre 50 y 65 y se irá haciendo más difícil según se aproxime a los tramos cercanos a 0, donde se sitúa la literatura científica, técnica o filosófica.

Posteriormente, Barrio Cantalejo *et al*. (2008b) atribuyeron cierta falta de consistencia a la fórmula de perspicuidad, al considerar que la muestra de textos que utilizó Szigriszt Pazos no era representativa, ni se seleccionó aleatoriamente. Para solventarlo establecieron el índice INFLESZ, resultado de la combinación del índice Flesch-Szigriszt y la escala Inflesz, que establece cinco grados de dificultad para los textos en español, como muestra la siguiente figura:

PUNTOS	GRADO	TIPO DE PUBLICACIÓN
< 40	MUY DIFÍCIL	Universitario, científico
40-55	ALGO DIFÍCIL	Bachillerato, divulgación científica, prensa especializada
55-65	NORMAL	E.S.O. prensa general, prensa deportiva
65-80	BASTANTE FÁCIL	Educación primaria, prensa del corazón, novelas de éxito
> 80	MUY FÁCIL	Educación primaria, tebeos cómic

Figura 2: Grados de dificultad de los textos en español según la escala INFLESZ

El cálculo del índice INFLESZ se puede realizar de manera automática mediante la aplicación del *software* INFLESZ 1.0, de libre distribución. La posibilidad de analizar un corpus electrónico, el hecho de que el principal motivo de su concepción fuera el interés por contar con una herramienta fiable de análisis de la legibilidad de los textos dirigidos a pacientes y su validación posterior precisamente con prospectos, fueron determinantes para su elección como herramienta de análisis en la primera fase. A continuación, se detalla cada una de las variables que el *sofware* INFLESZ 1.0 permite evaluar en los textos escritos en español, a saber: palabras, sílabas, frases, promedio sílabas/palabra, promedio palabras/frase, Índice Flesch-Szigriszt (la fórmula aplicada es: 206,835 – (62,3 x S/P) – P/F, donde P es el número de palabras del texto activo, S el número de sílabas y F el número de frases); Grado en la Escala Inflesz (resultado de la combinación del índice Flesch-Szigriszt y la Escala Inflesz), correlación Word: resultado de la inclusión de la fórmula Flesch entre las utilidades de Microsoft Word, índice Fernández-Huerta (su fórmula es: 206,84-(60 x (S / P)) – (1,02 x (P / F), donde S es el número de sílabas, P el número de palabras y F el número de frases).

Gracias a la aplicación del *software* INFLESZ para el análisis de cada uno de los textos que componen nuestro corpus obtuvimos datos claramente cuantificables en relación a su grado de legibilidad. A continuación, se presentan y describen los más destacados en virtud del objetivo perseguido.

7. Resultados

7.1 Resultados cuantitativos de la aplicación de INFLESZ 1.0

La longitud de las frases es una de las variables empleadas para medir el grado de legibilidad de los textos. Tanto la Comisión Europea (2009) (en referencia a los prospectos) como Askehave y Zethsen (2006) (con respecto a la comunicación experto-lego, en general), recomiendan evitar el empleo de oraciones largas y complicadas (no solo por su longitud, sino también por el léxico y estructuras contenidas). Para facilitar la visualización de los datos extraídos con respecto a esta variable, se agruparon los resultados en 7 rangos con una diferencia de 50 frases, siendo el primero el de los textos con menos de 150 frases y el último el de los que superan las 400. Tal y como queda reflejado en el siguiente gráfico:

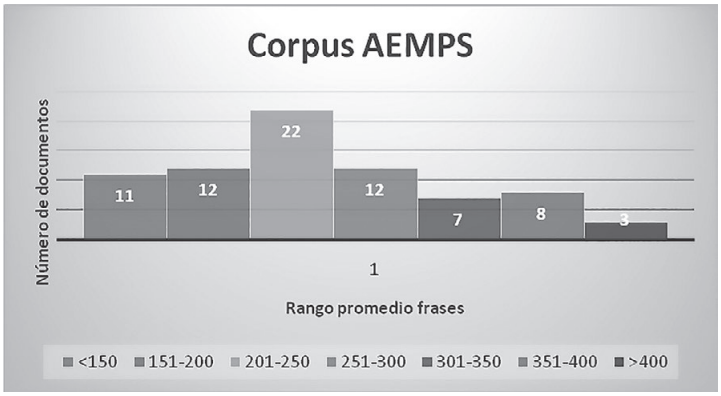

Figura 3: Promedio de frases (AEMPS)

En el corpus AEMPS los textos se reparten en los 7 rangos establecidos de manera bastante equitativa. Marcan especialmente la diferencia el grupo referido a los textos compuestos por entre 201 y 250 frases de media, con 22 documentos (29,33%) y el de los que tienen un promedio inferior a 150, con solo 2 textos. Le siguen otros dos rangos con 12 documentos cada uno, correspondientes a los que tienen un promedio de frases de 151-200 y 251-300 respectivamente y otro que incluye 11 documentos con menos de 150 frases de media; en el lado opuesto se sitúa un grupo de 8 documentos con 351-400 frases de media y otro de 7 documentos con un promedio de 301-350 frases. Solo 3 (4%) superan las 400 palabras.

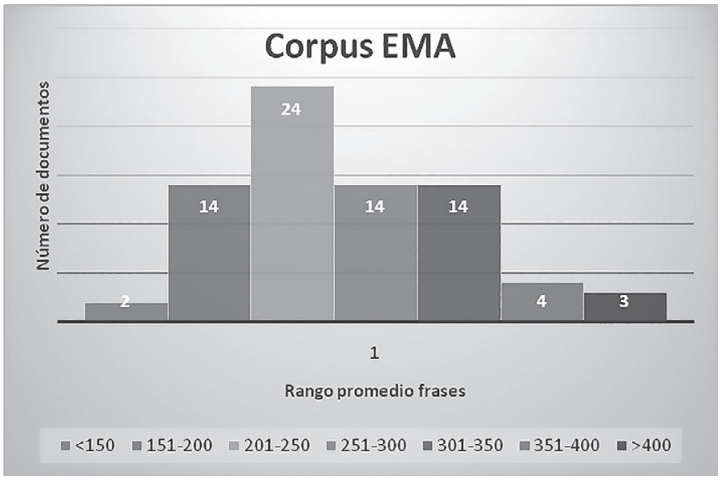

Figura 4: Promedio de frases (EMA)

Entre los prospectos aprobados a través de la EMA también destaca el grupo compuesto por 24 documentos (32%) que tienen entre 201 y 250 frases de media. Le siguen otros tres grupos, con 14 documentos cada uno, cuyos documentos contienen un promedio de 151-200, 251-300 y 301-350 frases respectivamente. Les siguen 4 documentos con un promedio de 351-400 frases y 3 con más de 400 frases de media. Solo 2 textos tienen menos de 150 frases de media.

El promedio de palabras por frase es también determinante en el establecimiento del grado de legibilidad de los textos. De hecho, una de las recomendaciones de la Comisión Europea (2009) es la disposición y organización de la información en párrafos y epígrafes cortos (efectos adversos, síntomas, etc.). Tradicionalmente, los textos originales en español (especialmente lego-lego y experto-lego) están compuestos por oraciones y párrafos largos repletos de oraciones subordinadas y aposiciones, frente al inglés, cuyas estructuras sintácticas suelen ser más sencillas y cortas en general. Aunque en menor medida, esta tendencia al uso de oraciones largas y sintácticamente complicadas suele mantenerse incluso en el ámbito de la ciencia y la tecnología, cuyas convenciones textuales establecen (sobre todo en los textos experto-experto) el uso de frases más cortas que garanticen la precisión y objetividad propia de la información que trasladan.

El análisis de los prospectos del corpus arroja unos datos con respecto al promedio palabras/frase que hemos agrupado en rangos diferenciados por 10 palabras. La siguiente figura muestra los resultados del corpus AEMPS:

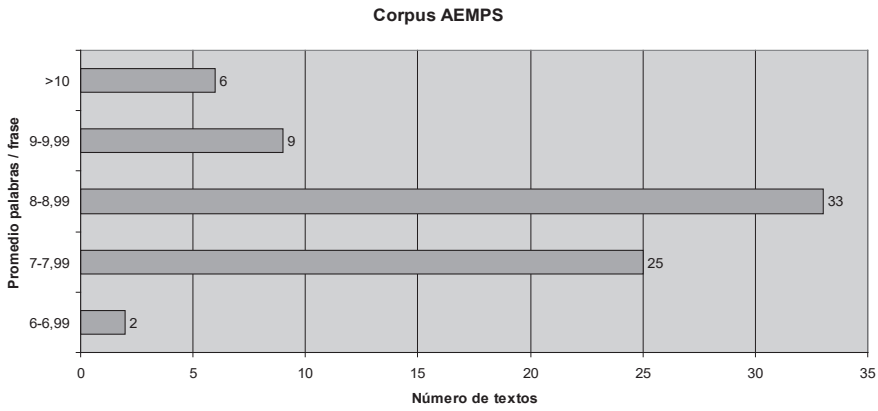

Figura 5: Promedio palabras/frase (AEMPS)

La mayor parte de los prospectos del corpus AEMPS tienen un promedio de entre 7 y 9 palabras por frase; concretamente 33 (44%) tienen entre 8 y 8,99 y 25 (33,33%) entre 7 y 7,99. A distancia le siguen los 9 (12%) documentos que tienen una media de 9 a 9,99 palabras por frase y los 6 que tienen entre 9 y 9,99. Únicamente 2 están compuestos por frases con promedio de 6 a 6,99 palabras/frase.

En el caso de los prospectos del corpus EMA destacan especialmente los 41 documentos (54,6%) cuyas frases tienen entre 8 y 8,99 palabras/frase de media, seguidos de lejos por los 17 (22,6%) cuyo promedio va de 7 a 7,99. También disminuye el grupo que tiene de 7 a 7,99 palabras/frase de media con 11 documentos (8,25%). Le sigue un grupo de 5 con un promedio superior a 10 palabras/frase y 1 solo con una media entre 6 y 6,99 en el lado opuesto, como muestra la figura a continuación:

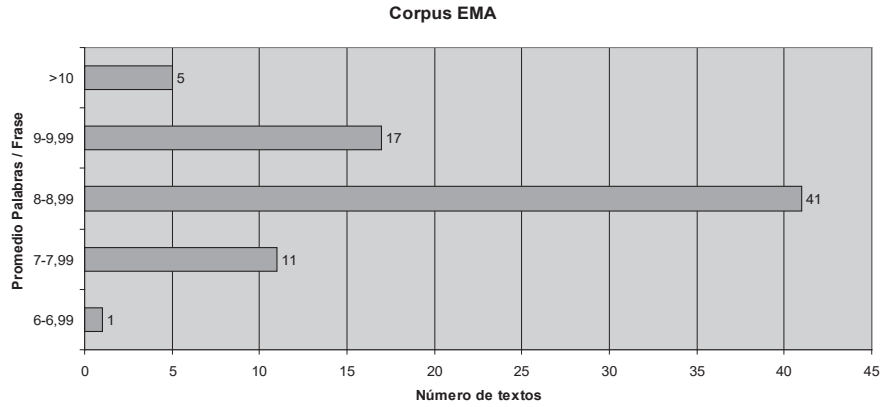

Figura 6: Promedio palabras/frase (EMA)

Recordemos que el grado Inflesz es el resultado de la combinación del índice Flesch-Szigriszt (cuya fórmula combina el número de palabras, sílabas y frases en el texto) y la escala Inflesz, que establece cinco grados de legibilidad para los textos en español. Los resultados del análisis de los prospectos de nuestro corpus mediante la aplicación de esta herramienta agrupan los textos de ambos subcorpus únicamente en dos grados en la Escala Inflesz, a saber: 'algo difícil', que corresponde a una puntuación entre 40-55 en el índice de Flesch-Szigriszt y 'normal', equivalente a 55-65 puntos en el mismo índice.

Ahora bien, los resultados del análisis de cada subcorpus son opuestos, ya que en el corpus EMA, el 70,6% de los prospectos obtuvo una puntuación en el índice Flesch-Inflesz de entre 55 y 65, que corresponde al grado Infleszde legibilidad 'normal' y el resto obtiene entre 40 y 55 puntos, que corresponden a un grado de legibilidad 'algo difícil', tal y como queda reflejado en la siguiente figura:

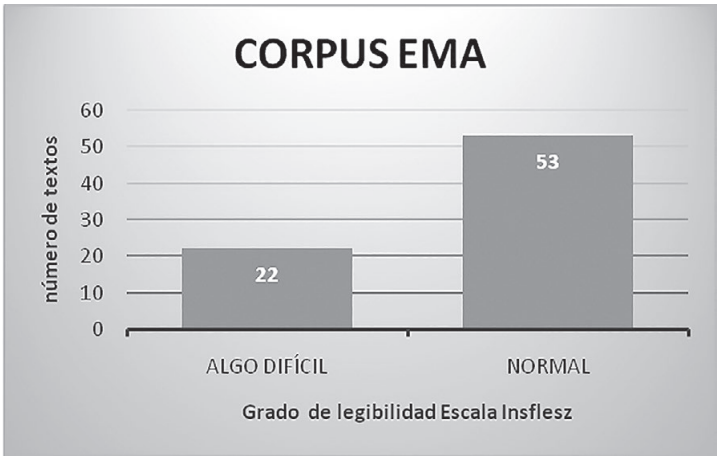

Figura 7: Grado Escala INFLESZ (EMA)

Por el contrario, 48 (el 64%) de los prospectos del corpus AEMPS obtienen entre 40 y 55 puntos, es decir, poseen un grado 'algo difícil' de legibilidad en la escala Inflesz, frente a los 27 (36%) cuyo grado de dificultad se considera 'normal' en la misma escala, como muestra la siguiente figura:

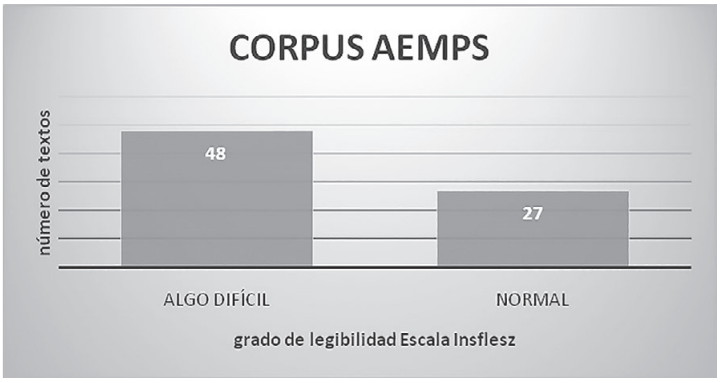

Figura 8: Grado Escala INFLESZ (AEMPS)

Los resultados obtenidos según el índice Fernández Huerta muestran casi plena coincidencia en el caso del corpus EMA, ya que 21 documentos se sitúan en el rango 'bastante difícil' (frente a 22 en la Escala Inflesz) y 54 en el 'normal' (frente a los 53 en la Escala Inflesz), tal y como muestra la figura:

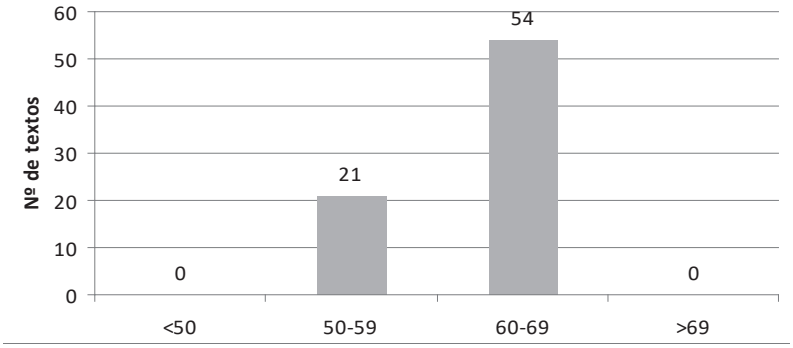

Figura 9: Índice Fernández-Huerta (EMA)

En el corpus AEMPS, 45 documentos obtienen un grado de legibilidad 'bastante difícil' y 27 'normal'. Además, 2 se consideran 'difíciles' y 1 'bastante fácil' en el índice Fernández Huerta.

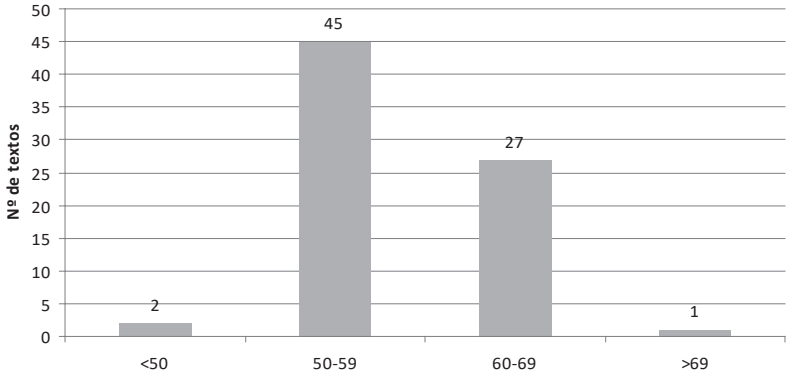

Figura 10: Índice Fernández-Huerta (AEMPS)

Una vez presentados los datos cuantitativos más destacados con respecto al análisis de la legibilidad de nuestro corpus, evaluaremos y comentaremos sus implicaciones desde una perspectiva cualitativa.

7.2 Análisis cualitativo de los datos cuantitativos

En relación con el promedio de frases que componen los documentos de cada subcorpus, se observa claramente que en ambos casos, originales (AEMPS) y traducciones (EMA) al español, predominan los textos compuestos por una media de 201-250 frases (casi un tercio del total en ambos casos). Ahora bien, el número total de documentos que superan las 250 frases de media es algo mayor en el caso del corpus EMA, con 35 documentos (46,66%), frente a los 30 (40%) del corpus AEMPS. No obstante, se aprecia una diferencia más significativa en el caso de los que tienen menos de 250 frases de media, ya que solo 2 prospectos de la EMA (2,66%) se incluyen en ese grupo frente a los 11 de la AEMPS (14,66%). En general la mayor parte de los textos del corpus EMA se concentra en los rangos centrales (66 documentos, 88%, con un promedio de 150 a 350 palabras). Sin embargo, en el caso de los del corpus AEMPS el reparto de documentos entre los 7 rangos es mucho más dispar y sin diferencias excesivamente significativas entre ellos. Esto indica que los documentos traducidos al español son más homogéneos en cuanto a la estructura y longitud de las frases empleadas, frente a los originales, que muestran más heterogeneidad y variedad en este aspecto.

El anterior dato contrasta con el que se refiere al promedio de palabras por frase, ya que este es más elevado entre los textos del corpus traducido (EMA), debido a que únicamente 12 documentos (16%) tienen una media igual o inferior a 7,99 palabras/frase y el resto se sitúa por encima de esa cantidad; frente a ello, 27 de los prospectos del corpus original (36%) están compuestos por frases cuya media de palabras se sitúa igual o por debajo de 7,99. En cuanto a los que superan esa cifra, 33 textos (44%) tienen un promedio de entre 8 y 8,99 palabras por frase en el caso de la AEMPS, mientras que en el de la EMA la cantidad asciende a 41 documentos (54,6%). Finalmente, destaca el hecho de que la cifra de textos que superan las 9 palabras/frase de media es superior en el caso del subcorpus EMA (17 textos, 22,66%, entre 9 y 9,99 y 5 textos, 6,66%, más de 10) que en el subcorpus AEMPS (9 textos, 12%, entre 9 y 9,99 y 6 textos, 8%, más de 10).

Así pues, resulta llamativo que los textos traducidos del inglés al español tengan, en general, un promedio de palabras/frase mayor que los originales, ya que los textos en español suelen contener frases más largas y sintácticamente complicadas que los textos originales en inglés, derivados de la identidad de la lengua y su propia sintaxis. Por tanto, lo lógico sería quelos textos traducidos desde el inglés al español estuvieran compuestos por frases no excesivamente largas y sin aparente complicación desde un punto de vista sintáctico, fruto de la transposición de estructuras del original. La búsqueda de una posible

respuesta a esta cuestión nos lleva a pensar que quizás se debe al hecho de que los traductores introducen más elementos aclaratorios (como aposiciones o explicaciones) y son más conscientes de las posibles necesidades del receptor meta, que no posee un conocimiento científico de la materia. No obstante, sería necesario un análisis más específico que permitiera obtener datos que confirmaran o negaran esta hipótesis.

Por último, si se comparan los resultados obtenidos en relación con el grado de legibilidad en la Escala Inflesz, se observa un resultado opuesto entre uno y otro subcorpus, ya que el 64% de los prospectos originales obtienen un grado de legibilidad 'algo difícil' y el resto 'normal'; mientras que el 70,6% de los traducidos se sitúan en un grado de legibilidad 'normal' y el resto 'algo difícil'. Llama la atención que los textos originales sean menos legibles que los traducidos. Cabe pensar que este resultado se deba a las variables que intervienen en el cálculo de ambos índices, Flesch-Szigriszt y Fernández-Huertas, a saber: número de sílabas, número de palabras y número de frases. Si se retoman los resultados anteriormente comentados con respecto al número de frases y el promedio de palabras por frase, podría concluirse que la justificación está en los números absolutos y no en los promedios, y que la dificultad radica más en las sílabas que componen las palabras que en la longitud de las frases que componen el texto. Este resultado, al igual que el anterior relacionado con el promedio de palabras/frase, nos lleva también a plantearnos la posible influencia de otras variables y elementos de naturaleza extratextual que podrían analizarse para la obtención de nuevos datos al respecto.

8. Conclusiones

Para concluir cabe señalar que los resultados cuantitativos obtenidos parecen demostrar que los prospectos originalmente redactados en español presentan más problemas de legibilidad que los traducidos. Este hecho podría deberse las convenciones propias del español en general y del lenguaje de las ciencias farmacéuticas en particular, plasmadas en el uso que de él hacen los redactores expertos en la materia. Estos cuentan con unos conocimientos conceptuales y metalingüísticos que les permiten garantizar la precisión y corrección de la información que transmiten, si bien sus competencias lingüísticas y comunicativas parecen estar más limitadas. Ahora bien, esto último es una hipótesis que habría de ser despejada en estudios posteriores que incluyan otras variables de análisis.

Asimismo, los resultados obtenidos parecen reflejar el impacto de la implementación y la aplicación de las medidas legislativas y recomendaciones puestas en marcha en los últimos años por las autoridades europeas y españolas. La

aplicación de una plantilla como texto base y la recomendación del uso de epígrafes para evitar oraciones largas y complicadas podría haber tenido una cierta influencia en la reducción de la longitud y el número de frases empleadas en los prospectos originales en español.

A pesar de ello, índices de legibilidad como el Flesch-Szigriszt (que tiene en cuenta también otras variables, como el número de palabras, sílabas y frases), arrojan todavía resultados negativos con respecto a los prospectos originales, ya que predominan los textos con un grado 'algo difícil' de legibilidad. Frente a ellos, el análisis de los prospectos del corpus traducido arroja resultados más positivos, con un predominio de textos situados en un grado de legibilidad 'normal'.

Por lo tanto, a la pregunta de si el proceso de traducción inglés-español es, en general, un factor determinante en la elaboración de prospectos legibles cabe señalar que, en términos generales, la traducción parece no tener un impacto negativo en la legibilidad de los prospectos; sí que parece tener un impacto limitado, pero debido no tanto al proceso traductor en sí (ya que los traductores parecen contar con los conocimientos lingüísticos necesarios), sino al marco legislativo y a la diversidad de recomendaciones y patrones traductológicos a los que está sometido el proceso traductor paradójicamente en aras de garantizar dicha legibilidad.

Estos resultados nos hacen plantearnos nuevas hipótesis para cuya respuesta en futuras investigaciones sería necesaria la integración de variables adicionales de naturaleza extratextual. Concretamente, se trataría de un estudio de casos orientado hacia la descripción del marco profesional en el que se llevan a cabo tanto la redacción de los originales como la traducción de los que no lo son y que aportara información sobre las limitaciones y condiciones de trabajo a las que están sometidos tanto redactores como traductores en el desempeño de su actividad profesional diaria (además de las limitaciones legales que hemos mencionado). Igualmente sería interesante el diseño de algún tipo de estudio de recepción por parte de los potenciales destinatarios, ya sea en forma de grupo focal, entrevista, cuestionario etc., ya que pueden aportar datos complementarios y un punto de vista interesante en combinación con otras metodologías como la del presente trabajo.

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LA TRADUCCIÓN Y COMUNICACIÓN DEL CONSENTIMIENTO INFORMADO COMO MEDIDA PARA GARANTIZAR SU COMPRENSIBILIDAD

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Resumen

En esta era de globalización y migración, el modelo sanitario paternalista se ve afectado por un nuevo rumbo donde el paciente también adquiere protagonismo y, por ende, un papel activo. La diversidad de pacientes que acuden cada día a los centros sanitarios españoles comporta distintos escenarios comunicativos para los que la figura del traductor e intérprete médico ocupa un papel fundamental. Uno de estos escenarios es la entrega de documentos dirigidos a pacientes en la consulta médica con pacientes extranjeros. El presente trabajo revisa las líneas de investigación del consentimiento informado desde la legibilidad y la comprensibilidad. Se presenta un estudio cualitativo y cuantitativo sobre la percepción de los odontólogos profesionales del papel del intérprete y las necesidades de una muestra de pacientes autóctonos y extranjeros como receptores.

Abstract

"Informed consent translation and communication as a tool to ensure its comprehensibility"

In the globalization and migration era, the paternalistic model in healthcare is affected by a new direction giving way to patient prominence and, therefore, activation. The diversity of patients in the Spanish medical consultations involves different communicative scenarios in which the medical interpreter and translator plays a crucial role as for example the delivery of documents addressed to the patient in the medical consultation with foreign patients. In this paper, we integrate research in informed consent from readability and comprehensibility. A qualitative and quantitative study

on how professional dentists perceive the interpreters' role is carried out. The needs of a sample of native and foreign patients as users are also covered.

Palabras clave: Consentimiento informado. Papel del intérprete. Comunicación médico-sanitaria. Empoderamiento del paciente. Comprensibilidad.

Keywords: Informed consent. Interpreters' role. Medical communication. Patient empowerment. Comprehensibility.

1. Un cambio de paradigma: del paternalismo sanitario al empoderamiento del paciente

En los últimos años hemos sido testigos del inicio de un cambio en el modelo de asistencia sanitaria de los países occidentales desarrollados a causa de la ampliación y el acceso de las vías del conocimiento y la tendencia a la instrucción del paciente (Epstein *et al*. 2005: 1520; Mayor Serrano 2005: 133; Muñoz Miquel 2014: 172). Este cambio en la relación entre el profesional sanitario y el paciente conlleva una necesaria creación de materiales adaptados o que incluyan al paciente. En este punto es donde los traductores, intérpretes, mediadores y redactores médicos pueden realizar aportaciones y tienen un amplio campo de actuación para adaptar los mencionados materiales en términos de bagaje cultural, situación, enfermedad y necesidades, entre otros. Para divulgar el conocimiento especializado, se han contemplado y estudiado distintas vertientes de la traducción como la traducción heterofuncional, consistente en la reformulación de la información para que el texto meta tenga una función distinta a la del texto origen (García Izquierdo & Montalt i Resurrecció 2013: 47).

En la mayoría de los documentos que se redactan no se tiene en cuenta a los distintos lectores a los que puede llegar este tipo de documentación; es decir, se dirigen a un paciente estándar. Por tanto, si cada vez más los profesionales sanitarios aúnan sus esfuerzos para personalizar la medicina (Sánchez Martos 2014: 96-104), ¿por qué no personalizar la comunicación a través de la información escrita y oral? ¿Quién debe iniciar dicho proceso?

2. Comunicación médico-sanitaria y géneros textuales

2.1. La importancia de la figura del traductor/redactor o intérprete médico

Ante el cambio de modelo de atención sanitaria, los pacientes quieren y necesitan un mayor acceso a la información escrita y oral para adoptar un papel más activo en su toma de decisiones. La problemática viene dada por el vacío en formación relativa a la comunicación de los profesionales que no disponen o no se les ha entrenado para divulgar el conocimiento especializado, como ya comentaron García Izquierdo & Montalt i Resurrecció (2013).

Dentro de la interpretación sanitaria, textos como los consentimientos informados exponen al intérprete a un desafío multidisciplinar para lograr una comunicación eficaz. No solamente se requiere del conocimiento de la terminología específica en áreas temáticas afines, sino que es fundamental su familiarización con los principios, el propósito y las distintas formas de presentación de dicho material, el trabajo en equipo con el profesional sanitario, etc.

Por ello, es de suma importancia tratar de esclarecer qué papel adopta el intérprete en el proceso del consentimiento informado. Recordemos que partimos de un documento escrito que requiere de interacción oral.

En la última década son muchos los estudios encaminados a esclarecer o categorizar el papel del intérprete en el ámbito sanitario. Destacarían modelos como el de abogacía e imparcialidad propuesto por Cambridge (2002) o el enfoque de Leanza (2005) sobre el papel del intérprete como facilitador de la comunicación o asimilador cultural y, en la última década, el modelo *patient navigators* propuesto por Crezee (2013). Este último modelo hace hincapié en las diferencias culturales que pueden darse en la consulta y es el intérprete el que interviene a modo de enlace cultural, como expresa la propia autora (Crezee 2013: 17):

> Even if the interpreter interprets such words appropriately, a culture-specific misunderstanding may arise and the interpreter may need to act as a cultural liaison and resolve the resulting communication breakdown.

2.2. Comunicación orientada hacia el usuario

En el contexto sanitario, una correcta comunicación es fundamental e indispensable, aunque en algunos contextos pueda verse infravalorada. En el contexto del consentimiento informado nunca puede o no debe infravalorarse, ya que el receptor obtiene información de vital importancia, como indicaciones, efectos secundarios, procedimientos, síntomas, tratamientos disponibles, riesgos, beneficios, etc. Comunicar es informar o, en palabras de Montalt i Resurrecció & García Izquierdo (2016: 82), "informar es un acto de comunicación".

Asegurar la comprensión en ambos modos (oral y escrito) también forma parte del acto comunicativo. No podemos continuar sin mencionar la tendencia de la que partimos: la traducción centrada en el usuario (*user-centered translation*, UTC) orientada hacia el contexto y los participantes (*context-oriented and participant-oriented research*) de acuerdo con la clasificación de Soujanen *et al.* (2015). Conviene matizar que hablamos de traducción del formulario del consentimiento informado por ser el objeto del presente estudio, pero extrapolamos dicha materia a la interpretación, ya que el procedimiento de comunicar el consentimiento informado se realiza de modo oral cuando el contexto es

multilingüe y no existe un formulario en la lengua origen del paciente, por lo que el intérprete tiene que intervenir.

Desde 1980, la tendencia en traducción e interpretación se ha orientado hacia la teoría funcional centrada en el propósito de la traducción. Sin embargo, Nord (2012: 32) mencionó el vacío existente en la aplicación de la teoría a la parte práctica por la dificultad que conlleva:

> Audience orientation has been a particularly sensitive aspect of functionalist theory and applications from the start. Critics have been asking how translators know what the audience expects of a translation. Indeed, it is easy to talk about the audience's expectations but much more difficult to obtain empirical proof of what audiences (for certain genres or in certain non-linguistic fields) really expect.

Dos de los aspectos fundamentales dentro de esta corriente aplicada a la interpretación médica y que nos sirven para poner de manifiesto la necesidad de conocer las expectativas de los usuarios en esta tendencia al paciente activo son la utilidad (*usability*) y la experiencia del usuario (*user experience*), siguiendo la descripción de los autores (Soujanen *et al.* 2015: 2):

> […] usability refers to the ease with which users can use a product to achieve their goals [...] according to their expectations and without obstacles or hindrances […] user experience is a holistic concept which includes all the user's emotions, beliefs, preferences, perceptions, physical and psychological responses, behaviours and accomplishments (Soujanen *et al*. 2015: 13).

Relacionado con la utilidad, un concepto emergente es el de la intuición (*intuition*), definido también en Soujanen *et al.* (2015: 16) como *"our familiarity with something in light of our earlier world of experience with it"*.

Resulta relevante mencionar la afirmación de los mismos autores por su pertenencia al contexto del objeto de studio: *"Translators are the user's representatives, and as members of design teams, translators can help to create a full user experience"* (Soujanen *et al*. 2015: 13).

2.3 Textos médicos dirigidos a pacientes: el consentimiento informado

El ámbito de la traducción y la redacción médica abarca distintos géneros textuales. No obstante, como ya hemos anunciado previamente, nos centraremos en el consentimiento informado enmarcado dentro del género de los textos médicos dirigidos a pacientes y familiares según la clasificación de Gil Alberdi (2009: 39).

Se trata de uno de los documentos más importantes en la investigación biosanitaria y, por consiguiente, en la traducción médica. Nos sumamos a la opinión de varios autores, que coinciden en que "el consentimiento informado

es un ejemplo claro de que no siempre los textos para pacientes son todo lo inteligibles que se desearía que fuesen" (Valentini *et al*. 2013; Prieto Velasco 2014). Destacan las palabras de Valentini *et al.* (2013: 1), también recogidas en Prieto Velasco (2014: 32):

> A large literature supports the notion that the language used is not comprehensible to most people. Subjects may not fully read [informed consent form] because it is too long, they do not understand it, and are confused by medical and legal terms.

Uno de los motivos, como indican Montalt i Resurrecció y González Davies (2007: 60), es que no se ha tenido en cuenta el bagaje previo del destinatario prototípico al que se dirige dicho género a la hora de redactar los textos. En esta línea, en palabras de Villamañán *et al*. (2016: 210) "obtener el consentimiento informado implica que previamente se ha proporcionado información adaptada a su nivel de comprensión". Sin embargo, ¿cómo se adapta la información a dicho nivel de comprensión?

De este modo, podríamos afirmar que se observan diferencias en el plano conceptual y en el lingüístico que nos conducen a preguntas de investigación como: ¿qué rol emplea el intérprete en este contexto?, ¿cómo se combina la modalidad oral con la escrita? o ¿qué impacto pueden crear las barreras del lenguaje en términos de comprensibilidad?

Tras nuestras indagaciones, entre los posibles autores de los formularios de consentimientos informados se encuentran los médicos o enfermeros, personal de administración de hospitales, empresas farmacéuticas, empresas de suministros médicos, organizaciones de salud, organismos gubernamentales y empresas aseguradoras. Dada la diversidad de autores, elementos como el tenor, el estilo, el vocabulario y los matices varían en cada documento. Se crean para un público generalista sin aplicar patrones sobre edad, sexo, nivel intelectual, etc. y este hecho conlleva dificultades de comprensión, dado que el público receptor suele presentar características muy diversas y necesidades muy particulares.

Como recoge Gallego Borghini (2015: 17), en 1999 Ordovás *et al*. ya llegaron a la conclusión de que "para entender bien el 97 % de los consentimientos informados es preciso contar con estudios medios o superiores", dato que nos refiere a la idea anterior de inteligibilidad y complejidad de comprensión del consentimiento informado.

El presente trabajo se adscribe a una línea de investigación relativa a la percepción que tienen los pacientes de la calidad de la comunicación. En este contexto destacan los estudios recientes de Longacre *et al.* (2015) y Mazzi *et*

al. (2016) también reseñados en Montalt i Resurrecció & García Izquierdo (2016: 82).

3. La comprensibilidad como factor indispensable

Algunos procedimientos, como es el caso del consentimiento informado, se emplean para transmitir información especializada. La explicación de esta información por parte del profesional sanitario se concibe como la vía para hacerla accesible a los destinatarios que compartan la lengua del emisor, pero que no posean el mismo nivel de conocimiento sobre el tema.

En este acto de transmisión y accesibilidad, uno de los aspectos que ha suscitado gran preocupación desde el punto de vista médico, ético y lingüístico es el problema de la comprensibilidad. En nuestro enfoque la abordamos a partir de la legibilidad textual (*readability*) y la percepción de los usuarios que acuden a las consultas médicas. La legibilidad textual, como bien desarrolla Prieto Velasco (2014: 31) en su definición, que casa con nuestro contexto de estudio, "debe entenderse como el conjunto de rasgos lingüísticos que facilitan la lectura del texto". Es necesario mencionar la legibilidad visual *(legibility)*, que también tiene cabida en el estudio relacionada con el grado de dificultad o facilidad conceptual que tienen los receptores para entender el texto (Wolfer 2015; Prieto Velasco 2014).

Distintos autores han realizado propuestas para mejorar la comprensibilidad como las que destacamos a continuación: Meyer & Mackintosh (2000) ahondan en la técnica de la desterminologización, entendida como el mecanismo para realizar cambios semánticos en los términos que pasan a emplearse en el lenguaje común; Mayor Serrano (2008) propone simplificar la estructura y realizar cambios a nivel microtextual y macrotextual; Muñoz Miquel (2012) recopiló los procedimientos de reformulación para mejorar la comprensión, como reestructurar el texto en su conjunto, seleccionar la información más relevante, incorporar elementos visuales, destacar las palabras clave, acotar las oraciones y simplificar estructuras sintácticas complejas, entre otros y Campos Andrés (2013), que analiza distintos recursos, como, por ejemplo, la definición, la sinonimia o la analogía para asegurar la eficacia comunicativa. Sin embargo, nuestra propuesta tiene un carácter novedoso debido a la introducción del intérprete como especialista en la gestión de la comunicación y experto en lengua y cultura para reformular y adaptar la información escrita de manera oral y en un formato entendible por el paciente. Dichas técnicas pueden ir desde la desterminologización, pasando por la empatía, hasta el uso de recursos audiovisuales.

4. Análisis empírico-analítico sobre comprensibilidad y comunicación

4.1 Materiales, métodos e informantes

El punto de partida de este proyecto nace a partir de la publicación del Decálogo del consentimiento informado elaborado por la Comisión Central de Deontología de la Organización Médica Colegial (COEM 2016). El documento es de especial relevancia por las cifras que indica; entre ellas destacamos que el 70 % de las reclamaciones sanitarias están relacionadas con las deficiencias en información y con el consentimiento informado.

El estudio realizado tiene como base material un corpus compilado *ad hoc* a partir de los resultados de distintas estrategias de búsqueda de repeticiones y concordancias con la herramienta *AntConc*. Finalmente, el corpus lo conforman seis consentimientos informados pertenecientes a la especialidad de odontología en español y sus traducciones al inglés; un total, por tanto, de 12 textos. Conviene matizar que se decidió que perteneciesen a la misma especialidad para que la muestra fuese homogénea y los resultados más exactos. Los informantes están divididos en tres grupos de acuerdo con la metodología y objetivos del estudio. Por un lado contamos con un primer grupo de odontólogos que llevan trabajando en la sanidad privada en España entre 12 y 15 años y tienen contacto con un volumen considerable de pacientes extranjeros. Por otro lado, formamos dos grupos de pacientes: uno de cinco pacientes españoles y otro de cinco pacientes británicos, todos ellos pertenecientes a la misma franja de edad (45-60 años) y formados cada uno por 3 mujeres y 2 varones por cuestiones de disponibilidad. La metodología empleada en nuestra investigación es doble: cualitativa, a través de varios grupos de discusión (*focus groups*), y cuantitativa a través de una encuesta para pacientes y otra para profesionales sanitarios. Los resultados de ambos métodos se complementan entre sí.

Se ha elaborado un total de tres grupos de discusión: odontólogos, pacientes españoles y pacientes británicos, de acuerdo con la división de los grupos de informantes. En la primera parte, centrada en los profesionales sanitarios, después del grupo de discusión han respondido individualmente a varias cuestiones semi-estructuradas extraídas del estudio de Valero Garcés (OFRIM 2011: 118-132) para comprobar su perspectiva de la calidad asistencial a pacientes extranjeros y el papel del intérprete. Así, en la segunda parte, centrada en los pacientes, se han realizado dos grupos de discusión (uno con pacientes británicos y otro con españoles) siguiendo el mismo esquema. A dichos grupos les ha seguido una fase de lectura de dos consentimientos informados que forman parte del corpus (uno sobre blanqueamiento dental y otro sobre implantología) y una encuesta para corroborar la percepción descrita en el grupo de discusión

sobre el grado de comprensibilidad a partir de preguntas reformulatorias o de reexpresión en otras palabras. Para la elaboración de la encuesta para pacientes se ha empleado una escala LIKERT de cinco puntuaciones donde 1 equivale a totalmente de acuerdo y 5 a totalmente en desacuerdo. Los materiales para los pacientes británicos han sido las traducciones al inglés de los dos consentimientos empleados y la misma encuesta, pero en inglés. El motivo de trabajar con cada grupo de informantes en su lengua materna va ligado a nuestro objetivo de descubrir el grado de comprensión, primero en su lengua materna, para después analizar cómo el intérprete ayuda a su comprensibilidad cuando no se dispone de textos en la lengua del destinatario por diferir con la oficial del país en el que se encuentran.

4.2 Análisis y resultados

En el estudio dirigido a los odontólogos profesionales, en el grupo de discusión se trataron distintos temas que conciernen a la interpretación y el consentimiento informado. Por ejemplo, en cuanto a las preguntas sobre sus conocimientos y expectativas de una consulta interpretada, indican que tienen nociones sobre el trabajo del intérprete gracias al contacto diario que establecen, pero no se les ha preparado para trabajar juntos. Los formularios de consentimientos informados con los que trabajan a diario son generalistas, es decir, plantillas de colegios profesionales que se adaptan en términos meramente formales, como el logo, el número de colegiado o algún riesgo asociado que precise mención y no se encuentre en la plantilla. Normalmente, en la transmisión de la información especializada que aparece en el consentimiento informado otorgan prioridad a la parte escrita, ya que es la que queda reflejada, y la parte oral se centra en un comentario aclarador para responder a las dudas que el paciente tenga. Es decir, en contextos multilingües, el profesional sanitario entrega el formulario del consentimiento informado (modo escrito) y es el intérprete el que realiza una traducción a vista (modo oral). En este punto afloró la realidad actual en la consulta, aunque no se puede generalizar, dado que la muestra no es lo suficientemente grande; es cierto que relataban ocasiones puntuales donde el intérprete se ha quedado solo con el paciente, lo que da pie a que, si surgen dudas, se tenga que buscar al profesional para que vuelva a entrar a la consulta y explique todas las dudas. Como inconvenientes a esta práctica observamos la consiguiente ralentización del proceso de comprensión del consentimiento por parte del receptor, ya que se interrumpe el proceso mientras el profesional vuelve a entrar a la consulta. Reiteramos que es en ocasiones puntuales, dado que siempre que disponen de intérprete se sienten más aliviados por su confianza en que es un experto en lengua y

cultura. Finalmente, por su percepción, los problemas de comprensión de los pacientes vienen dados por la dificultad que se les presenta, ya que no disponen de conocimientos amplios sobre esta materia en la mayoría de las ocasiones. Por otro lado, en la encuesta que respondieron los profesionales sanitarios, las cuestiones estaban relacionadas con su percepción sobre el papel del intérprete. Por ejemplo, un 100 % coincidió en que el intérprete sanitario debe explicar trasfondos y significados de la consulta extranjera, además de aclarar tecnicismos a los usuarios. En otras funciones hubo más disparidad de resultados; por ejemplo, en si el intérprete debe o no aclarar afirmaciones imprecisas preguntando directamente a los usuarios, donde un 80 % considera que sí debe hacerlo. Además, para tres de los encuestados, el intérprete debe omitir afirmaciones secundarias para evitar la pérdida de tiempo frente a dos que responden que no debe omitirlas. A tenor de los resultados se refleja que aún existe un vacío de conocimientos y unos límites difusos sobre el papel del intérprete en ciertos entornos, como es el sanitario.

El otro grupo de informantes es el de paciente. En el análisis de la legibilidad textual a través de una encuesta semi-estructurada, podemos mencionar el siguiente ejemplo extraído de la muestra estudiada con pacientes españoles:

1) Se preguntó a los pacientes participantes acerca de la comprensión de varios párrafos en su totalidad como: "raramente pueden producirse comunicaciones con los senos nasales o con las fosas nasales. Existe incluso la posibilidad de lesionar el seno maxilar y provocar una sinusitis". Los participantes respondieron estar en desacuerdo a excepción de uno de ellos, que marcó la opción de en total desacuerdo. Para corroborar el grado de dificultad, además de preguntas como la muestra anterior se confeccionó otro tipo de preguntas donde se dejaban unas líneas en blanco para que explicasen con sus propias palabras el significado del apartado anterior. Siguiendo el ejemplo anterior, tres de los participantes no aportaron ninguna idea con sus propias palabras ni intentaron reformular porque su comprensión del párrafo era muy baja, y dos intentaron aportar alguna idea, como "se relaciona con la nariz" o "algo que no se suele producir pero existe la posibilidad". Por tanto, con este tipo de respuestas se observa que el problema de la falta de comprensión lo ocasionan los términos especializados, como "comunicaciones" o "sinusitis".
2) Por otro lado, cuando se realiza el estudio con los pacientes británicos, también se corrobora que la idea general del párrafo se ha comprendido *grosso modo*. No obstante, el significado completo no se

> ha comprendido, dado que no son una audiencia experta. Por tanto, cuantas más facilidades se les ofrezcan, mayor será el grado de comprensión y reexpresión para tomar opiniones fundadas. Sin embargo, cabría matizar a qué parte corresponde el ofrecer facilidades, ya que por el momento no se contempla que sea el intérprete el que tenga dicha función, aunque en la actualidad ocurra en reiteradas ocasiones. Por ello, queda confirmado que el rol del intérprete sanitario en la consulta de odontología no queda delimitado. Tanto es así que la integración de la interpretación en el momento del consentimiento informado no se ha estudiado en profundidad, por lo que sus límites son difusos.

Para llegar a estas afirmaciones mostramos algunos datos relevantes, como el resultado sobre la comprensión del término *filling* en la encuesta para pacientes británicos. Todos los informantes han respondido *agree* a la comprensión del término, dado que no existe un sinónimo en un registro más elevado. Por tanto, al emplearse en el lenguaje general, la comprensión es total. Sin embargo, en la pregunta sobre el término *peroxides* en la frase "to prevent possible unwanted effects it is essential that you warn us of any allergy (particular to peroxides)", no es comprendido por los informantes, aunque, al disponer de contexto, 2 informantes se han decantado por *undecided*, 2 por *disagree* y 1 por *strongly disagree*. Es por ello que la balanza no se ha decantado hacia la incomprensión total, sino que, aunque no se comprende el término en sí, el contexto sirve de ayuda. A este análisis sobre la legibilidad textual podemos añadir otro ejemplo sobre la comprensión de "canine teeth whiten less than incisors". En esta ocasión, al disponer de contexto y no de un solo término aislado, la idea general sí es comprendida por todos los informantes, obteniendo como resultado 4 informantes *undecided* y 1 *agree*.

En cuanto al análisis y descubrimiento de las expectativas de los pacientes durante los grupos de discusión, estos indican que la figura que mejor puede realizar matices culturales en la consulta es el intérprete, por la preparación que se le presupone. Asimismo mencionan en el grupo de discusión que, si el profesional sanitario que les atiende es de otra nacionalidad o ha realizado estancias en el extranjero, puede que también sepa aclarar conflictos culturales. No obstante, en sus experiencias, siempre que un conflicto cultural ha surgido en sus consultas, el intérprete lo ha resuelto de manera satisfactoria y, cuando alguno de ellos se ha visto puntualmente envuelto en algún conflicto cultural menor y sin intérprete, ha encontrado dificultades para resolverlo aún sin ser un conflicto de gran transcendencia.

Como hemos mencionado anteriormente, la legibilidad visual también tenía cabida en el estudio. En este sentido, los pacientes fueron preguntados sobre si la inclusión de imágenes en los formularios de consentimientos informados les mejora la comprensibilidad total. En su opinión, para facilitar la comprensión sí es un recurso de utilidad como herramienta aclaradora, sobre todo para la parte del procedimiento. Además de las imágenes, los modelos y los recursos audiovisuales proporcionados durante la consulta les han sido de gran ayuda cuando han podido disponer de ellos, aunque haya sido en contadas ocasiones. Es necesario matizar que son de gran ayuda sobre todo para el colectivo de pacientes británicos, que juegan con la dificultad añadida del acceso ocasional a documentos en su lengua materna.

Otros temas tratados en los grupos de discusión fueron el hábito de lectura de los consentimientos, el momento de la firma y la resolución de dudas. En el caso de pacientes extranjeros, los problemas de comprensión también están presentes, incluso en su propia lengua, pero en mayor medida en sus visitas médicas, donde los consentimientos informados solo se les entregan en español. Cuando esta última situación ocurre, disminuye totalmente el intento de la comprensión y el interés por la lectura de dichos documentos a sabiendas de su implicación legal.

5. Conclusiones

El cambio de modelo de asistencia sanitaria y la tendencia a la educación del paciente traen consigo cambios para los que se necesitan estudios concernientes a las nuevas prácticas necesarias en el ámbito de la interpretación sanitaria. El presente trabajo se concibe como una contribución a dicha línea de investigación. Conviene matizar que, aunque se haya incorporado en el corpus la traducción al inglés de los consentimientos informados, en la actualidad, en las consultas en el territorio español no siempre se ofrece el consentimiento en dicha lengua. Es decir, se suele entregar el consentimiento informado en español y se recurre al intérprete para garantizar la comprensión, dado que los profesionales sanitarios no siempre están dispuestos a entregar un consentimiento que no han supervisado por sus conocimientos lingüísticos.

Si bien el documento del consentimiento informado ha supuesto grandes avances en cuanto a empoderamiento del paciente, también reviste aspectos negativos, como la falta de comprensibilidad total por parte de los pacientes en el dialogo que se establece entre las partes. Es decir, existe una brecha entre la exposición de la información y su debido procesamiento por parte del receptor. Para que la comunicación llegue a buen puerto, la divulgación del conocimiento especializado debe ser eficaz, así como la atención que debe recibir el

paciente como individuo y no como grupo o audiencia entendida como conjunto homogéneo. La clave en este contexto es la individualidad, el paciente como individuo con características y necesidades distintas de cualquier otro paciente, es decir, la necesidad, cada vez más imparable, de personalizar la comunicación. Es en este sentido donde se pone de manifiesto la necesidad de estudios y prácticas orientadas hacia la eficacia comunicativa que contemplen la gestión de la multimodalidad tratada anteriormente en el momento del traspaso de la información escrita de modo oral por parte del intérprete. Según nuestros resultados, como ventajas de dicha multimodalidad observamos que los pacientes extranjeros residentes en España están en posición de ventaja respecto a los pacientes autóctonos, dado que no tienen un intermediario como lo hace el intérprete con los pacientes extranjeros. En este sentido, es el intérprete el que suple las carencias de comprensión de los pacientes y pasa a formar parte de un proceso de mediación que debería propiciar el profesional sanitario tanto en contextos monolingües como bilingües.

Para categorizar el papel del intérprete en el contexto de la consulta médica, en la parte del consentimiento informado, afirmamos que está más en consonancia con el enfoque *Patient Navigators* (Crezee 2013), puesto que actúa como comunicador y resuelve conflictos culturales, pero sin tomar parte por el paciente, es decir, todos los enfoques de la abogacía han quedado atrás. La clave está en la comunicación; el intérprete ya no es un puente o conducto, como anteriores enfoques señalaban; el intérprete es un comunicador y, de los perfiles profesionales que participan en la consulta clínica, es el que mejor conoce las necesidades lingüísticas, culturales y comunicativas de los pacientes como receptores. Además, es el que conoce las claves para adaptarse al paciente y empoderar su grado de comprensibilidad. Sin embargo, el desconocimiento del perfil del intérprete por parte de los profesionales sanitarios desemboca en dificultades a la hora de trabajar en equipo. Es de suma importancia, pues, saber distinguir qué tareas son propias del intérprete y qué partes son trabajo extra, como puede ser el recabar el consentimiento de un paciente, aunque sí sea partícipe o colaborador del proceso.

No obstante, actividades como el grupo de discusión realizado contribuyen a la difusión y al paso del desconocimiento al conocimiento de sus funciones. En la práctica habitual, aspectos de la comunicación como la empatía, las emociones o la claridad se dan por sentado; así pues, actividades como seminarios, charlas o grupos de discusión hacen conscientes dichos aspectos, que quedan en un segundo plano para profesionales sanitarios y, por consiguiente, se invisibilizan, cuando no se pueden pasar por alto.

La intención es, pues, aportar datos para conseguir una comunicación más adecuada basada en una mediación (interpretación, traducción, revisión, adaptación de textos…) que arroje un poco de luz al camino hacia el empoderamiento y bienestar del paciente y de todas las partes implicadas.

Tras los resultados obtenidos y analizados observamos que, en la práctica, los consentimientos se firman en su mayoría a ciegas en este contexto y, por lo general, el paciente se siente obligado a firmarlo, aunque no comprenda la totalidad del documento para que la intervención o tratamiento propuestos se lleven a cabo. Es decir, ocurre lo que denominamos a partir de este trabajo como 'consentimientos velados'; entiéndase el consentimiento como un instrumento de decisión del paciente. De este modo, el paciente firma como si tuviese un velo que no le permite ver con claridad el contenido, lo que en inglés se ha categorizado como *blind consent* (Plaut & Bartlett 2012: 293-311). Esta situación no es aceptable en términos intralingüísticos e interlingüísticos, dado que no fomenta ni la comprensibilidad ni la adherencia a un tratamiento por parte de los receptores. Además, tampoco es aceptable en términos éticos.

El análisis de la percepción de pacientes ayuda a determinar el grado de satisfacción y a ofrecer datos concretos que se empleen con la intención de mejorar la comunicación entre profesionales sanitarios, pacientes e intérpretes. Para ello, todas las partes implicadas necesitan aunar sus esfuerzos hacia la educación del paciente y la mejora del trabajo en equipo. Pasar de informar a comunicar es un objetivo para cumplir a corto plazo. Por ello, algunos de los estudios que recientemente destacan en la línea de investigación a la que se adscribe el presente estudio y que persiguen la mejora de la documentación clínica, la atención al paciente y la accesibilidad a la información especializada son: Saiz Hontangas *et al.* (2016) y su estudio sobre las guías para pacientes o Toledo Chávarri *et al.* (2016), cuyo estudio se centra en los usos y necesidades de pacientes crónicos y el papel de la comunicación escrita. En suma, queda patente el aumento a un ritmo frenético de la necesidad de pasar del texto al contexto y la necesidad de una comunicación personalizada para garantizar la eficacia comunicativa.

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ETHICS IN THEORY AND PRACTICE IN SPANISH HEALTHCARE COMMUNITY INTERPRETING

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Abstract

Community interpreters carry out their daily work within different contextual situations and follow specific codes of ethics, whilst at the same time they are confronted with communicative conflicts in which ethical responsibilities may overlap with their professional duties. The aim of this article is to understand the significance of ethical issues in Spanish healthcare interpreting and to determine to what extent 'unethical' interpreting (according to codes of ethics) can become a barrier or a bridge to effective communication. The article explores the challenges, conflicts and dilemmas encountered by public service interpreters in healthcare in Madrid, and examines the beliefs held by these professionals regarding their knowledge of codes of ethics, as well as their implementation. The findings show that the participants' perceptions of their beliefs and knowledge of codes of ethics were not as impartial as they thought, as they assumed functions which codes of ethics do not consider appropriate.

Resumen

Los intérpretes de servicios públicos desarrollan su profesión en distintas situaciones contextuales, siguiendo códigos éticos específicos, al mismo tiempo que se enfrentan a conflictos y dilemas comunicativos en los que las responsabilidades éticas pueden superponerse a sus tareas profesionales. El objetivo de este artículo es comprender la importancia de las cuestiones éticas en la interpretación sanitaria española y determinar hasta qué punto la interpretación 'no ética' puede convertirse en una barrera o un puente para hacer la comunicación efectiva. Exploramos los desafíos, conflictos y dilemas de un grupo de traductores e intérpretes de servicios públicos en el ámbito sanitario en Madrid y examinamos las creencias de estos profesionales en cuanto a su conocimiento de los códigos de ética y su implementación, para mostrar que las

percepciones de los participantes sobre los códigos éticos no eran tan imparciales como creían, al asumir funciones que los códigos de ética no consideran apropiadas.

Keywords: Community interpreting. Public service interpreting. Healthcare. Ethics

Palabras clave: Traducción e interpretación en los servicios públicos. Sanitario. Códigos éticos.

1. Introduction

Interpreting is the task of facilitating communication as accurately as possible between two parties who do not share a common language; it is much more than merely transferring linguistic utterances from one language to another, and the fact of knowing two languages does not make a translator or interpreter any more than having two hands makes a pianist. Whilst it is "one of the oldest of human activities" (Gentile, Ozolins & Vasilakakos 1996: 5), it remains a profession which has been seeking recognition for decades. Northern European countries, together with Canada and Australia have acquired and managed to develop a certain degree of social awareness for the need of these professionals within community services; however, Mediterranean countries have still not attained this level of professionalism.

In Spain there are no official qualifications required to become a professional interpreter (i.e. there is no need to hold a specific degree in order to practise this profession), and although there are many university programmes which train future interpreters, it is incorrectly presumed by lay people that any bilingual individual can fulfil this role. This is regardless of the fact that a qualified professional should undertake the duties and tasks required of each specific context and setting (Pena *et al.* 2014). Recognition of the profession by the general public would demonstrate that these professionals not only need to be knowledgeable about proceedings, protocols, tasks and duties, but that they are also aware of the principles and rules which guide professional and ethical obligations, especially during sensitive interactions, where special attention should be given to issues of confidentiality. In healthcare contexts, users need to know that when interpreters engage in their interaction then they will comply with professional values and standards, and professionalisation and ethics play a major role in this regard.

After decades of steadily increasing numbers of incoming migrants to Spain, Spanish society has changed over the past two decades and there is now a coexistence between citizens and people from other countries, thus notions such as interculturalism, defined as a new expression within cultural pluralism (Giménez 2010), have taken on an important and crucial role. The

importance and need for research in this area is vital in the public service sector in order to study the management of this diversity and to enable appropriate intercultural communication.

Despite not receiving the institutional support they deserve, educational institutions are contributing towards professionalisation in all areas concerning interculturalism. A growing volume of training proposals such as Master's degrees, practical initiatives, and research projects have been incorporated into studies on language and cultural communication. Many efforts have been made to further enrich the growing literature in this area from different perspectives. Exhaustive articles encompassing past studies such as that published by Sales and Valero (2006) have appeared, thus providing a categorised tool that is very useful for both students and researchers. As a continuation of the study, Pena *et al*. (2014) also analysed the literature from 2005 until 2011, although they focused on the study of intercultural mediation in healthcare, a more generic term including translation and interpretation, to bring together some of the most important research studies on this topic. Other authors, such as Franco Aixelá (2010), have presented a quantitative analysis of compilations such as BITRA (Bibliography of Interpreting and Translation[1]), focusing on related medical translation and interpretation publications. Recent work by another research group, the CRIT (2014), has been dedicated to different issues, such as ethics and practice in healthcare interpreting. Studies have also been undertaken relating to specific regions, such as an article by Vargas-Urpi (2014) where the author described the professionalisation of public service interpreters in Catalonia.

The aim of this paper is to conduct a study based on a group of public service interpreters and translators (PSIT, the academic term used in Spain) in Spain in order to determine their theoretical views on different codes of ethics and to then establish whether this knowledge is put into practice in their everyday work in healthcare contexts. Participants were issued with a survey which contained questions concerning ethical issues and were later observed in their daily work. The ultimate goal of this research is to further study how theory and practice coexist in a specific intercultural setting and the role given to ethics in such a context.

1. Available at www.ua.es/dpto/trad.int/base/ index.html

2. Defining Community Interpreting in Spain

It is essential to define what is understood by community interpreting (CI), as its definition is key to understanding the different approaches to ethics. Many attempts have been made to define what is referred to as public service interpreting (PSI) or CI[2] in English speaking countries; however, in Spain the issue of differentiating between both terms remains a recurring one (Antonin 2010; García-Beyaert & Serrano-Pons 2009; Llevot 2005; Navaza, Estevez & Serrano 2009; Ponce Márquez 2011; Raga 2008; Navaza 2011). As stated by Antonin (2010: 132), "the main reason for this apparent difference is a widespread uncertainty affecting them, which (…) has led interpreters and mediators to cry for a long time for a conceptual and professional recognition that does not end there."

Interpreting in its wider definition is now considered a profession, although it is still only fully recognised in specific institutions, such as the Spanish Foreign Department (Ministerio de Asuntos Exteriores), the Diplomatic Service, etc. and it is not well defined. Spain is a country where interpreting *per se* is strictly seen as conference interpreting. Community Interpreting (CI) is less developed as a profession than many other forms of interpreting, and more work needs to be undertaken in this area. This could be due to the beginnings of CI, when Gentile in 1997 used an array of terms to demonstrate how difficult it is to arrive at a definitive description, and he argued that CI is simply interpreting. Years later, we are still trying to reach definite conclusions about the term. In very recent work, Ozolins (2014) argues that the different descriptions given to interpreting outside the conference room have bedevilled the field, from 'community interpreting' to 'dialogue interpreting', 'public service interpreting', 'ad hoc interpreting' and 'non-professional interpreting'. Some descriptions avoid the term 'interpreting' altogether, such as 'linguistic mediation', 'cultural mediation' etc. Significantly, self-ascription by practitioners themselves often does not match these imposed descriptions. However, each description carries with it, either implicitly or explicitly, a specific view of ethics, which is closely tied to the perceived roles of interpreters and yet, often encompasses assumptions about tasks, personal or professional characteristics, or status.

The use of the term 'intercultural mediator' in Spanish coincides and overlaps to a large extent with the English terms 'public service interpreter' and 'community interpreter'; however, the historical role of this professional

2. The term 'intercultural/interlinguistic mediator' is frequently used in Spanish (Sales 2006).

in Spain is quite different from that in Anglo-Saxon countries, and thus the interpreter's role varies. In recent work by Baixauli (2014), the English terms PSI and CI and their definitions are used to define the Spanish term which accommodates both: *mediación interlingüística e intercultural en el ámbito sanitario (MILICS)*, which he equates to the most frequently used term, *traducción e interpretación en los servicios públicos (TISP)*. We agree with Baixauli's argument, which goes back to the statements by Katan (2011) and Pöchhacker (2008), that all interpreters are (linguistic and cultural) mediators but not all mediators are interpreters. The term CI will be used throughout this paper.

In earlier work, Ozolins (2000) classified the different stages that countries undergo in the role of CI. Taking this into account, Spain can be classified somewhere in the mid stages, as it is still using *ad hoc* services and generic language solutions, and therefore remains in the professionalisation stage. However, from a positive perspective, it can be established that Spain may be close to reaching Ozolins' comprehensive stage, where training, accreditation and specialisation of interpreters, both regarding context and languages, is beginning to take place. In fact, the national agency for assessing quality in higher education in Spain, ANECA, referred to the 'linguistic and cultural mediator' as a professional, together with the general translator, reviewer, etc. when they published the Translation and Interpretation Studies White Book draft in 2004 (ANECA 2004). The fact that the profession is mentioned means that it is recognised as such by educational authorities, which is a significant step to raise awareness; although further work and awareness are of course still needed.

According to García Beyaert and Serrano Pons (2009: 57), the interpreters (legal, for example), who may work in public services, have a less interventionist role and their work is focused on enabling communication between parties by overcoming existing barriers via their linguistic and cultural knowledge. In contrast, the role of a CI is intended to both reduce differences between two remote parties for reasons of identity, culture, ethnicity, and to 'build bridges between immigrants and the institutions of the host society' (García Beyaert & Serrano Pons 2009: 56). In other words, interpretation can be considered an aspect of CI or intercultural mediation (Sales 2005, cited in Ponce Márquez 2011: 233).

The functions performed by CI are multifaceted within the Spanish public service health context. The facilitation of communication between healthcare personnel and immigrant and ethnic minority patients is the main task carried out by these professionals, although they are also asked to translate health information leaflets and other documents, thus the term 'public service

interpreter and translator' (PSIT) has been instigated. In addition, CI working in healthcare settings may be required to inform patients about procedures and the organisation of the Spanish health system, which implies that they should possess a thorough knowledge of hospital administration and health services in the host country, as well as in a patient's home country. However, institutions and associations involved in public health services have not yet assumed the broad knowledge required to carry out CI effectively. Navaza, Estévez & Serrano (2009) highlighted that it is still wrongly believed that translation/interpretation is only linked to words and not to the ideas behind them and therefore the absolutely essential cultural component is lacking. In particular, the above mentioned authors have shown their concern for the great importance that non-governmental organisations (NGOs), immigrant associations, and political and health institutions, attach to intercultural mediators' command of languages to the detriment of the knowledge these professionals should have regarding the specialised vocabulary and specific techniques required during translation and interpretation (2009: 152).

Given the situation described above, we believe that corrective actions should be taken in order to raise awareness of the complexity of the community interpreter's profile. Informative sessions could be held to explain to these associations and institutions that the effectiveness of communication in patient-doctor meeting requires a wide range of skills that go beyond a mere command of languages, and that ethical aspects are crucial in this type of interactions during which personal and sensitive information is shared. Navaza (2014), among others, in fact, describes this as one of the CI's main roles at present.

3. Ethics in Community Interpreting

As Trabing (2007: 1) states, CI require "much personal interaction with the client" and also "knowledge of the client's cultural background"; therefore, these professionals need to act as a cultural bridge between health providers and clients (patients). The CI is thus a professional who has to deal with his or her personal baggage (language, culture, ideology, etc.), their client's personal baggage, the health professional's personal baggage and the service provider's criteria. This section deals with the ethics involved in the interpersonal triadic relationship between interpreter, user and health practitioner in general, in order to explain the issues we consider to be fundamental.

Navaza (2014: 10) states that language and culture are intrinsically linked and it is necessary to make out the referential meanings of the verbal and non-verbal language of the participants in order to transfer messages to another

language. Having reviewed the various ethical codes available such as the IMIA (International Medical Interpreters Association) or the NCIHC (National Council on Interpreting in Health Care), among others, and taking into account that there is no specific healthcare interpreting code of ethics in Spain, much is left to an interpreter's 'common sense', which is quite a subjective concept. Thus, the Standards for the Practice of Medical Interpretation (IMIA) include the term 'cultural interface' referring to the need for the interpreter to share cultural information which may be considered relevant and could help mitigate misunderstandings and clarify communication. This leaves grounds for the interpreter to omit or add information as far as s/he considers necessary, which gives way to personal subjectivity.

Due to the interactional nature of CI, these professionals often find themselves confronted with ethical dilemmas *in situ* for which they need to refer to a specific code of ethics in order to guide and protect themselves in their everyday practice. As Dragoje & Ellam (2012) state, the good use of their ethical code will help interpreters to handle the many challenges and dilemmas that arise during an interpreting event. Accordingly, adherence to professional ethics should be classified as one of the main issues in each assignment that a practitioner undertakes. The issue of ethics is thus very important, especially due to the degree of trust that is placed on interpreters and their responsibility in delicate and intimate personal areas, such as health. This is the main reason for the importance of uniform ethical standards that guide and protect interpreters in their duties. The code of ethics is thus a management tool that establishes and articulates the responsibilities, values, obligations, rights and ethical ambitions of professionals, and also the way the system functions. As stated by Solow (1980: 39), "a code of ethics protects the interpreter and lessens the arbitrariness of his or her decisions by providing guidelines and standards to follow'. However, as will be seen through specific examples presented later in this paper, there are certain concepts that are difficult to maintain at an impartial level when dealing with interpersonal relations, and these become more and more complex as cultural and ideological differences arise. As stated by Gentile *et al.* (1996: 57):

> Liaison interpreting is a profession where, like medicine, teaching and the law, the client's welfare is usually affected directly. This is not only because most liaison interpreting takes place in the context of other professions such as medicine, teaching and the law, but also because interpreting has its own knowledge, skills and practices which require particular ethical situations.

Training in ethical issues should occupy a major role in courses dedicated to CI training. As can be seen from a report published by Routes into Language

(2012) on training provision for public service interpreting and translation in the UK, ethics is a key aspect which should be taught and assessed during training programmes. Not only in the UK but elsewhere, there has been increased interest in the ethical issues associated with public service interpreting and translation. Research in this area has been conducted by many authors, including Valero & Martin (2008), Corsellis (2005) and Rudvin (2007). However, it is an area which is difficult to integrate in a practical way during formal training. Ethical codes may be presented and even analysed in the classroom, but the wide range of situations where ethical problems may arise during everyday work cannot be covered in general CI training programmes. Students can carry out role plays and be given examples of different situations, however, there will be many contexts which have not been analysed in the classroom. Thus students are left with mostly theoretical guidelines which are sometimes very difficult to put into practice. Although a code of ethics provides guidance on how to handle conflicts and situations, it may pose dilemmas between different actions or pressures, and does not guarantee on its own the perfect selection between right and wrong choices, as it is only effective and useful "with committed dissemination, implementation, monitoring and embedding at all levels so that behaviour is influenced" (Dragoje & Ellam 2012: 1).

There is little that can be done as far as personal and interpersonal perceptions and understanding of ethical issues are concerned, but it was also found that codes of ethics, even when intended for CI, whilst they may present very useful parameters for general interpreters, do not cater for CIs specifically.

In theory, it is reasonable to expect that a code of conduct may be a functional tool which can be applied and consulted in a practical and realistic way in most settings. However, for CIs it is not reasonable to expect that this will be applicable in the same way, as they face more cultural and ideological nuances in more interventionist and less formal settings than for example conference interpreters, and thus many more different and unique situations may arise. It is quite frequent for CIs to be faced with situations where torture, asylum, violence and many other emotionally charged events are part of the interaction, making it difficult for formal, emotionally uninvolved linguistic transmission.

Ethical implications for different types of public service interpreting are not equivalent; professionals working in court interpreting regard accuracy and impartiality as their main priority, whereas the main ethical concern for interpreters in health contexts is their duty of care to the patients. This has been noted by Ozolins (2014), who highlighted the gaps which inevitably exist between codes and practice. Although the same concerns exist for those who do not speak the majority language in institutions in all settings, CIs

working in health contexts often need to advocate for patients and to clarify cultural concepts and issues, as minorities need to understand institutional practices and institutions need to understand the cultural needs and differences of minorities that may affect their healthcare, thus sometimes they have to act as cultural clarifiers. In everyday work, CIs in healthcare settings engage in patient advocacy, as noted by Angelelli (2004).

Consequently, ethics plays a core position in CI and should be a major concern during training. Future research in the Spanish context should be dedicated to establishing the main lines of action regarding methodology in this area. As Vargas-Urpi (2012: 67) states "training tries to prepare interpreters-to-be for real life work and, thus, is dependent on research that reflects real life – ethics, contexts, working conditions, history'.

Many authors, such as Hale (1997a, 1997b), Mikkelson (1996b, 1998) and Wadensjö (2011) have debated whether the CI should be neutral. Wadensjö (1998: 287) stated that this type of interpreter should be faithful to the people s/he interprets rather than to the text, depending on the situation and context and their needs, combining two different roles in order to guarantee communication between user and provider: "relaying others' talk" (transmitting the message) and "co-ordinating others' talk" (balancing participant intervention so that the exchange is relevant). Two different models can be said to exist and authors such as Mason (1999) and Cambridge (2003) have dealt with this issue. Cambridge (2003: 110-123) delimits both models, differentiating one which is patient biased and warns that in this case the interpreter should make sure s/he does not omit information or adds insignificant elements, lose impartiality or take on tasks which do not belong to the interpreter, from an 'impartial' model in which the interpreter transmits every single utterance and can only clarify aspects which s/he is asked to clarify (Cambridge 2002: 115).

Ongoing issues in translation and interpreting studies, such as interpreters' (in)visibility and their role, are central when discussing ethics and are of major importance for future CIs. Arguments range from the perspective of Cambridge (2002: 123) concerning the importance of a CI's impartial model, in which they should:

> (…) relay messages accurately, completely and in as closely as possible the same style as the original. They do not give personal advice or opinions; do not add or omit parts of the message; do make every effort to foster the full, accurate transfer of information; do maintain strict confidentiality. They will intervene only when they need clarification of part of a message; they cannot hear what is being said; they believe a cultural inference has been missed; they believe there is a misunderstanding.

to Pöllabauer (2004) who states that traditional codes of ethics may only be valid on paper, and Rudvin (2007) who proposes that interpreters should possess more competences to adapt to each institution's needs as opposed to holding one universal deontological code, as this may not foresee the great variety of interpretative situations caused by ideological and cultural factors. As Rudvin (2007: 52) states:

> Community interpreting as a profession is still very heterogeneous; the interpreter's role is often defined by how the institution uses him/her and what its needs are. Consequently, establishing a universal or near-universal code of professional ethics becomes highly problematic; it also impacts on crucial issues such as impartiality. The paper argues that the complex nature of professionalism and of cross-cultural differences in attitude towards professional role and social identity will have to be addressed by the professional community to improve quality and working conditions for clients, users and interpreters.

Again, this relates to the type of work and contexts which these professionals may encounter. For example, a conference interpreter or a CI working in a legal setting has a less interventionist role and their work is focused on enabling communication between the parties by breaking down existing linguistic barriers, whereas a CI in healthcare also has to take into account elements such as identity, culture, and ethnicity, and cannot limit their practice to simply linguistic and cultural differences, but must also consider intervening in ethnic and ideological issues, which are concrete and specific to each individual and his or her background and personal experience.

As Tate & Turner (2001: 53) state, "what no code can do is anticipate all possible situations". The concepts which tend to appear in all codes of ethics are confidentiality, professional conduct, interpreter rights, solidarity among professionals, and impartiality. The last point implies some degree of subjective interpretation, which the individual interpreter must deal with for each particular context. In particular, when we come to cultural bridging, how far can a CI go in order to establish whether an explanation is necessary for an accurate understanding by all the different parties involved? If the words of a healthcare professional are interpreted in isolation, without reference to their use in the context in which they are said, then in many cases a patient will not be able to fully understand the message and thus communication will not be established.

4. Study Structure and Methodology

The main aim of this study was to research ethical issues through a group of interpreters, in order to obtain a better understanding of the realistic or

unrealistic expectations placed on them. The first stage of the study consisted of questionnaires, relating to issues that concerned ethics and the respondents' general knowledge about codes of ethics. The questionnaires were used to extract data pertaining to knowledge related to interpreters' codes of ethics. In the second stage of the study, participants who had answered the questionnaire were contacted and observations of 13 of these interpreters for two 20 minute sessions in healthcare centres in Madrid were undertaken.

4.1. Participants

A questionnaire was designed and used as the instrument to measure the results for this study. Participants included professionals working in Madrid as interpreters, both in-house and freelance, as well as postgraduate students who had professional experience. Questionnaires were sent out via email on a general scale to translation and interpreting professional associations without taking social factors or age into account in order to receive as much feedback as possible. A general introduction briefly outlining the research rationale and a participant acceptance consent form were sent with the questionnaire (Appendix 1) to 40 participants during the initial stage and this was extended through social networks to widen the sample during the second stage.

4.2. Stage 1: Questionnaire

The questionnaire consisted of ten questions, with the first six devoted to personal information, such as gender, professional status, working languages, and type and length of work. The final four questions were specifically designed to acquire information concerning ethical issues, such as whether they followed a particular code or if they had received specific training with regards to ethics, as well as whether they considered ethics to be important in their profession. The purpose of including such a limited number of questions was to guarantee that the questionnaires were completed and returned.

The response rate was smaller than expected during the first stage, with a response rate of 22.5% (40 questionnaires were sent and only 9 returned); however, by extending the distribution through social networks, 22 additional questionnaires were collected, therefore obtaining a total of 31 completed questionnaires.

Aside from postgraduate students who had worked as interpreters but not in public services and thus could not be included in the sample, feedback was obtained from 31 experienced CIs. The main reason for such a small sample is probably due to the fact that the Madrid regional government, under the pretext

of the global economic crisis, has reduced this social service and the only available option practitioners now have is a telephone service that can be used when they consider that there is no effective communication with patients.

4.3. Stage 2: Observation

Out of the 31 qualifying participants, 27 agreed to participate in the second stage of the study. These participants were all CIs with more than two years of experience in healthcare settings. Two 20 minute sessions, during which both the practitioner and patient gave permission for us to be present at the interaction, were observed. We were not permitted to record or take notes so as not to damage patient privacy. All observations took place at healthcare centres in Madrid, with 19 interpretations between Chinese and Spanish, and eight between English and Spanish.

5. Results and discussion

Earlier in this paper it was suggested that interpreters have to analyse the meaning of a message in order to then translate it as accurately as possible by choosing the right words, with the objective of a clear interaction whereby participants understand and communicate effectively with each other. CIs carry out their work in situations which are usually emotionally charged and sensitive (healthcare, courts, etc.) and, thus, include in their interactions much more than words; verbal and non verbal language comes into play, as well as ethical and ideological issues, which may be fundamental in order to achieve effective and complete communication. In this study the objective was to determine whether the CIs understood the importance of ethics and which ethical issues they faced in their daily work.

5.1. Analysis of the results of the questionnaire

As we can see in Table 1, the responses suggested that the majority (81%) of the participants were knowledgeable concerning codes of ethics and actually used a specific code, that of the Spanish Professional Association of Translators and Interpreters (ASETI, Asociación Profesional Española de Traductores e Intérpretes) and also the National Council on Interpreting in Health Care. There is no specific code for Spanish healthcare CIs.

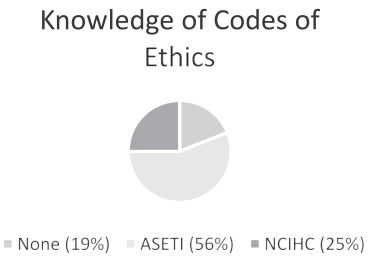

Table 1: Knowledge of Codes of Ethics

However, as we can see in Table 2, 47% stated that their code of ethics related to common sense and did not mention any specific code. One interpreter actually mistook ethics with work protocols. Aside from this one interpreter, the remaining interpreters all mentioned confidentiality, impartiality and non-discrimination, which are the main elements included in codes of ethics.

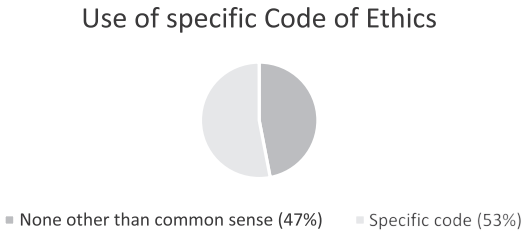

Table 2: Use of a specific Code of Ethics

The type of ethical issues that they raised included the difficulty of becoming involved in interpretations not related to health, for example when users ask interpreters to help them with interpretations outside their work place; not agreeing with a practitioner or patient's comments; deciding whether to adhere to interpretation as such or to mediate; what to do when asked to lie or condone; what to do when a client asks for information which is not strictly given but the interpreter may have access to; and when asked not to interpret part of the discourse.

In all cases, when posed with dilemmas such as those mentioned above, the respondents stated that they followed the guidelines of a code of ethics, establishing and articulating the values, obligations, responsibilities and ethical issues of the health centre where they were. They also stated that they had all received specific training on ethical issues in their past studies and considered

this to be an essential part of their training, as well as for their daily professional activities.

A recurring comment was that they would find it very helpful to attend a presentation or be issued with initial protocols where basic neutrality, confidentiality and faithfulness principles and guidelines were outlined, as well as basic instructions for the exchange that would be occurring. This information would help interpreters if ethical conflicts were to arise, as well as for communication purposes.

To summarise, most interpreters (81%) were knowledgeable of specific codes of ethics based on confidentiality, impartiality and non-discrimination. In particular, they tend to follow the code of ethics of the Spanish Professional Association of Translators and Interpreters ASETI (Asociación Profesional Española de Traductores e Intérpretes), the code of ethics imposed by the commission (if given), or the National Council on Interpreting in Health Care's code. This reveals that interpreters use local and specific guidelines rather than general, international ones, which proves the need to create a specific Code of Ethics for heath CIs in Spain.

5.2. Analysis of the observation process

Having analysed the questionnaires, we then wanted to see these professionals in their everyday work and to assess whether the information they had supplied corresponded to their practice.With reference to their questionnaire answers, we were particularly interested in their answers to the last two questions: whether they had received specific training related to ethics and whether they considered it to be a highly important part of their training. The observer paid special attention to situations which could entail ethical problems for the interpreters with reference to Question 7: "Do you have to face ethical decisions on a daily basis as an interlinguistic and intercultural mediator?" and Question 8: "As part of your job, do you follow any specific ethic code?".

All participants answered that they encountered daily ethical dilemmas in their work and this was proved during the observations. Ethical issues that could be classified as difficult included some of those noted in the questionnaire responses. During the observations the interpreter had to facilitate additional information concerning different issues, including the Spanish vaccination schedule, how to make further appointments, where to find information about health services, why the practitioner was requesting blood tests and why this was necessary, and why the doctor was prescribing a certain medicine. In all cases, the different interpreters involved did not hesitate to facilitate this information. In two cases, the interpreters were asked by the patients to lie about a

previous appointment, with the patient asking the interpreter to say that he had been there at the appointment time. One of the interpreters omitted this from her interpretation, whereas the other interpreter transmitted this information. All the respondents stated that when they were posed with an ethical dilemma they followed the guidelines of a code of ethics; however, the issue of facilitating further information is not recommended and there are no protocols for omitting information whilst interpreting. This reveals that CIs do not always follow ethical guidelines, as much as they believe they do.

The non-Spanish speaking community requesting the services of the interpreters were mostly Chinese, followed by Africans, mostly of Nigerian origin. Most people who come to Spain do not have enough information about the Spanish health system or diseases that may occur and how to treat them or how to avoid getting them, especially in the case of sexually transmitted diseases. These problems are added to the fear of going to the doctor when in an irregular situation, due to the lack of a health card or fear of being arrested by the police and deported. In addition to these factors, the immigrants' own culture and traditional practices also affect the way in which they perceive and use medicine. Traditional medicine and the practice of all kinds of rituals with charms still exist, although perhaps not to the same extent as in their country of origin but they may, and very often do, interfere with Western medical approaches.

An example of the type of dilemmas the interpreters faced, which took place during our observations, is the concept of blood. While Spanish doctors consider blood tests to be a key element in diagnosing potential diseases, many foreign sub-Saharan nationals consider taking blood to be a rare witchcraft practice, and thus refuse to undergo blood tests. In all cases the interpreters had stated in their questionnaire responses that they found it essential for them to explain the reasons why these tests had to be carried out and also the difference in conceptualisation. They also stated that practitioners were not aware either, so communication could not take place unless the concepts were further explained to all parties involved and we observed that this was their daily practice.

Another frequent example was the way in which Chinese people show respect by not looking conversation participants straight in the eye. In the questionnaire responses, participants expressed that most practitioners who used CIs were not aware of this and had stated at different times during informal conversations that they thought these patients were rude and impolite because they did not look directly at them. During the observations it was evident that one practitioner was becoming annoyed with the patient and actually asked her

to look her in the eye. The interpreter then had to explain to the practitioner that for Chinese people this was respectful behaviour.

As commented on in the questionnaire responses, interpreters thought it was important to raise awareness on cultural and ideological differences not only to users but also to health professionals in order to facilitate communication, as they believed that health professionals tend to give scant attention to cultural differences, as opposed to linguistic differences which they are much more aware of. Consequently, this may actually be the source of misunderstandings and miscommunication, as it poses a risk for patients who do not understand instructions and may be misdiagnosed. The interpreters participating in this study did in fact take on this role and acted as information facilitators for both patients and practitioners.

The interpreters believed they were being impartial in all cases according to the questionnaire responses, and their perception was that they strictly followed codes of ethics; however, after analysing their work, they were seen not being as impartial as they believed they were. Aside from the examples given, they assumed functions such as coordinating conversations, omitting 'irrelevant' information, and adding cultural and further explanations.

By observing interpreters in their daily practice, we can reflect on specific contexts which tend to re-occur and which need specific solutions and should therefore be included in future guidelines.

6. Conclusions

CIs must communicate messages containing language and culture which makes him/her a bridge between the interlocutors and thus a visible part of the exchange. The interpreter normally finds him/herself explaining and clarifying cultural differences, traditions, ideological concepts, etc. in order to get the message across. Thus a specific code of ethics for CIs could describe the type of clarifications and contexts where information could be added.

As has been seen in our limited sample, interpreters are aware of the need to use a code of ethics; however, this is not a magic wand that will solve their daily conflicts. It is obvious that codes of ethics cannot provide answers for each particular dilemma. In theory, the more systemised standards and procedures are, the more standardised and error-free contexts will become. However, in everyday work each practitioner and user will provide interpreters with new conflicts and decision making processes. Older professionals may have an important role in helping younger interpreters by sharing anecdotes which deal with different ethical issues in a non-judgemental environment, so that

new interpreters can think about the different situations they may encounter, and thus have realistic expectations.

This study has shown that further work needs to be carried out in establishing a code of ethics for Spanish healthcare CIs taking into account the specific tasks and contexts in which they work. These contexts and situations force them to act as facilitators, providing explanations and further information to both health professionals and patients. With practical and coherent norms an interpreter would have more certainty regarding their behaviour and would be able to discern facilitation (for example adding general information, such as information about the health system and explaining the vaccination schedule or that in the Western culture it is generally accepted that blood tests are carried out by doctors) from interference (adding information that the interpreter is not a specialist in, such as why a certain drug has been prescribed). When emotional and sensitive issues come into play, a standardised practical model can help to stay rational and professional.

All interpreters were knowledgeable of codes of ethics and used a specific code that they were familiar with. When posed with ethical dilemmas, the respondents partially followed the guidelines of a code of ethics. Although they established and articulated values, obligations, responsibilities, and ethical issues of their workplace, their supposed impartiality was sometimes biased in favour of one of the parties (in this study it was always the patient), providing more information beyond what was explicitly mentioned by health practitioners, and adding cultural explanations in order to enable patients to understand why a practitioner was either asking for specific tests or prescribing a medicine. From the observations, we can see that ethical guidelines do come into play when interpreters find themselves under emotional pressure or when they have sensitive issues which involve critical decision making.

Another key issue which arose when analysing the questionnaire responses was the fact that all the interpreters belonged to the host culture and were thus guided by it, and in consequence the interpreter's own, understanding of ethics. It would be extremely interesting to study this parameter in settings where interpreters belong to the original culture or a third culture.

Interpreters are often faced with a dilemma: whether to simplify or to add extra information to their interpreting, and it is difficult to trace the line of partiality risks. Perhaps some useful advice would be for the interpreter to ask a Spanish practitioner to adjust their language register to a level that a non-Spanish speaker may understand, i.e. if communication problems were to arise, then an interpreter should bring this fact to the attention of all the parties.

Impartiality gives way to equality, yet when one participant in a conversation cannot fully understand the meaning of the other participant, a power loss takes place and communication is broken. CIs definitely bridge this imbalance and can help to reduce the risk of arbitrariness in healthcare encounters, which are one of the most sensitive contexts in which interpersonal relationships can occur.

Given the situation described above, we believe that corrective actions should be taken to increase the awareness of the complexity of the CI's profile. Informative sessions would be beneficial in order to explain to associations and institutions that the effectiveness of communication in patient-doctor meetings requires a wide range of skills that go beyond simply a command of languages.

In order to reduce the emotional impact and guarantee professionalism and a good service, CIs should follow a code of ethics. Ethical guidelines will help them reach rational decisions and not be influenced by emotions which may disturb their work. Brief guidelines such as confidentiality (respect others' right to privacy), impartiality (not be biased by any of the parties), faithfulness (make sure the message is faithful to the meta discourse and appropriate in the target language and culture) and integrity (be honest with yourself and your capacity to accept new work) should be given. These guidelines can serve as a first step in order to create a more specific Code of Ethics for CIs in Spain. As we have seen, ethical guidelines help interpreters in their daily practice and add effectiveness to bridging communication, however, more specific ones could improve their work.

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EL CORPUS DE PROSPECTOS FARMACÉUTICOS COMO RECURSO DIDÁCTICO EN EL AULA DE TRADUCCIÓN ESPECIALIZADA FRANCÉS-ESPAÑOL

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Resumen

El presente trabajo tiene por objetivo la presentación de un corpus de prospectos de medicamentos para el uso humano como recurso didáctico versátil en el aula de traducción especializada para la combinación lingüística francés-español. En primer lugar, se realiza una aproximación a la situación actual del Grado en Traducción e Interpretación en España para contextualizar las competencias requeridas por el EEES. A continuación, se muestran los aspectos metodológicos de la compilación de un corpus bilingüe de prospectos farmacéuticos francés-español y su uso potencial en el aula de traducción especializada.

Abstract

"Package Leaflet Corpus as a Learning Resource for Teaching French-Spanish Specialized Translation"

The aim of this paper is to evaluate the compilation of a corpus of package leaflets of medicines for human use as a versatile teaching resource for the French-Spanish specialized translation classroom. Firstly, we establish the curricular context of the Degree in Translation and Interpreting in Spain to contextualize the competences required by the EHEA. Then, we show the methodology followed to compile a bilingual corpus of French and Spanish package leaflets and its potential application in specialized translation training.

Palabras clave: Traducción biosanitaria. Didáctica. Corpus. Prospecto. Francés.

Keywords: Biomedical translation. Teaching. Corpus. Package leaflet. French.

1. Introducción

El ámbito biosanitario es un campo en continua expansión debido, en gran medida, a la financiación que reciben las investigaciones y empresas de biomedicina y demás ciencias, así como por la aplicación práctica de los resultados de dichas investigaciones y su consiguiente beneficio e impacto económico y social, con un gasto global estimado de 8,7 billones de dólares en 2020 (Deloitte 2017). El gasto en salud por parte de los países europeos creció a una media de 3,1 % entre 2005 y 2009 y, debido a la crisis económica de 2008, siguió creciendo a un ritmo menor, 0,7 %, entre 2009 y 2015, un crecimiento anual mayor per cápita que el crecimiento del PIB per cápita (OECD 2016), lo que parece indicar que es un campo que, pese a las restricciones económicas coyunturales, no deja de percibir ingresos e inversión por parte de las instituciones internacionales y los gobiernos nacionales a nivel mundial.

Se puede observar, pues, el importante nicho de mercado que el ámbito biosanitario ofrece a los traductores e intérpretes profesionales, con una gran demanda por parte de la sociedad y un gran volumen de trabajo para los profesionales de la lengua (CNET 2010; Rico Pérez & García Aragón 2016).

Por ello, a pesar de que la investigación en traducción biosanitaria en general se ha incrementado en los últimos años (Crespo Hidalgo 2010; Martínez López 2008 y 2010b; Astorga Zambrana 2011; Contreras Blanco 2011), la investigación sobre diferentes aspectos de la traducción biosanitaria en la combinación lingüística francés-español sigue siendo insuficiente en comparación con las publicaciones que contemplan el inglés como lengua de trabajo, una *lingua franca* de la comunicación científica internacional (Navarro 2001; Bordons 2004; Haße, Peters & Fey 2011), lo que supone a su vez un aumento de calcos ortográficos y sintácticos en diferentes lenguas (Álvarez Blanco 2001; Navarro 2001), así como una ausencia de recursos en las combinaciones lingüísticas que no contemplan el inglés (Contreras Blanco 2011; Névéol *et al*. 2014).

Es por ello que consideramos oportuno hacer una aproximación didáctica a la traducción biosanitaria francés-español desde la perspectiva profesional descrita en los párrafos anteriores. Así, el corpus se presenta como una herramienta

de análisis terminológico y fraseológico en contextos de uso reales que puede ayudar al estudiante de traducción a realizar un acercamiento al ámbito especializado y a aprender a gestionar y crear recursos documentales y terminológicos propios ante la carencia de recursos disponibles para la combinación lingüística que nos ocupa en el presente artículo.

2. Marco curricular

Para presentar las funcionalidades de los corpus en el aula de traducción especializada es conveniente, en primer lugar, contextualizar el ámbito académico en el que se desarrolla la enseñanza de la traducción. Los estudios conducentes a la obtención del título de Traducción e Interpretación en España están regulados por el *Libro Blanco: Título de Grado en Traducción e Interpretación*, publicado por la ANECA en 2004, en el que se recoge un exhaustivo análisis de las necesidades formativas del estudiante de Traducción e Interpretación de acuerdo con los datos recogidos de un estudio con diferentes agentes implicados en el ámbito profesional de la traducción y la interpretación. A partir de los diferentes perfiles profesionales para los que, según los resultados del estudio, debe preparar el grado en Traducción e Interpretación (1. Traductor profesional «generalista»; 2. Mediador lingüístico y cultural; 3. Intérprete de enlace; 4. Lector editorial, redactor, corrector y revisor; 5. Lexicógrafo, terminólogo y gestor de proyectos lingüísticos; 6. Docente de lenguas), se establecen una serie de competencias transversales genéricas, específicas y profesionales que los alumnos deben adquirir, así como la estructura del grado y los contenidos propuestos para tal fin.

El *Libro Blanco* contempla la práctica de la traducción B-A (con introducción a la traducción especializada) y la práctica de la traducción C-A (generalista), sin especificar la carga de cada una dentro del plan de estudios. En el caso de la Universidad de Málaga, la traducción biosanitaria no cuenta con una asignatura específica, sino que forma parte de las tres asignaturas de «Traducción científico-técnica "BA-AB"» (primera lengua extranjera, francés o inglés en el caso que nos ocupa), impartidas en tercer y cuarto curso, y de las dos asignaturas de «Traducción especializada "CA-AC"» (segunda lengua extranjera), impartidas en cuarto curso:

(1) Asignaturas impartidas en tercero

Traducción científico-técnica "BA-AB" Francés-Español/Español-Francés (I)

(2) Asignaturas impartidas en cuarto

Traducción científico-técnica "BA-AB" Francés-Español/Español-Francés (II)
Traducción científico-técnica "BA-AB" Francés-Español/Español-Francés (III)
Traducción especializada "CA-AC" Francés-Español/Español-Francés (I)
Traducción especializada "CA-AC" Francés-Español/Español-Francés (II)

Como vemos, la primera toma de contacto con la traducción especializada en el ámbito científico-técnico se realiza en tercer curso y se amplía notoriamente en cuarto curso como un posible itinerario de especialización dentro del grado en la Universidad de Málaga. La carga lectiva de cada una es de 6 créditos ECTS, repartida estas asignaturas entre el primer cuatrimestre de tercer curso (1) y el primer y segundo cuatrimestre de cuarto curso (2). La traducción de textos biosanitarios forma parte del plan de estudios de estas asignaturas junto a otros textos de temática especializada con el fin de abarcar una gran variedad de ámbitos, subámbitos y formatos textuales (Barceló Martínez & Varela Salinas 2011).

2.1. Competencia traductora

Para conseguir que el alumno adquiera unas habilidades que le permitan enfrentarse a encargos reales de traducción, previamente se han de identificar cuáles son las competencias necesarias para ello y, más tarde, aplicarlas en el aula. Son muchos los autores que han estudiado la competencia traductora (Zabalbescoa 1999; Neubert 2000; Hurtado Albir 2001; Kelly 2002); no obstante, para este trabajo nos hemos basado en la propuesta ofrecida por Kelly (2002: 14-15), que la define, tras analizar las propuestas y definiciones previas, de la siguiente manera:

> La competencia traductora es la macrocompetencia que constituye el conjunto de capacidades, destrezas, conocimientos e incluso actitudes que reúnen los traductores profesionales y que intervienen en la traducción como actividad experta y que se desglosa en las subcompetencias […] comunicativa y textual […], cultural […], temática […], instrumental profesional […], psicofisiológica […], interpersonal […] y estratégica.

Así pues, la denominada competencia traductora se concibe como una serie de habilidades aptitudinales y actitudinales que repercuten directamente en el correcto desempeño de la traducción profesional, la cual ha tenido una gran relevancia en la elaboración de los nuevos planes de estudios acordes al Espacio Europeo de Educación Superior (EEES) (Calvo Encinas 2010), ya que, como afirma Kelly (2002), este modelo de competencia traductora pretendía servir de base para la planificación de contenidos y metodología para

la formación de traductores en el contexto universitario. Observamos, pues, que la autora (Kelly 2002) propone una única competencia para el uso de la lengua (subcompetencia comunicativa y textual), mientras que separa por un lado los conocimientos culturales (subcompetencia cultural, donde diferencia los conocimientos enciclopédicos de diferentes aspectos culturales de la lengua de trabajo y sus representaciones textuales) y los conocimientos temáticos (subcompetencia temática). Asimismo, la autora incide en el uso y gestión de la documentación que han de realizar los traductores (subcompetencia instrumental profesional) como parte de su profesión, a la vez que introduce aspectos cognitivos y físicos como la memoria, la atención o la ergonomía (subcompetencia psicofisiológica). Por último, se proponen subcompetencias relacionadas con aspectos transversales con la práctica profesional de la traducción como puede ser la comunicación con los clientes o la capacidad de trabajar en equipo (subcompetencia interpersonal) y la propia organización del trabajo o la capacidad de autoevaluación y planificación (subcompetencia estratégica).

3. Traducción biosanitaria

Como hemos observado en la introducción, el subámbito de las ciencias biosanitarias es un campo rentable y altamente especializado dentro de un ámbito especializado *per se*; por todo ello, genera una documentación específica que se asemeja a, y a la vez difiere del, ámbito biosanitario general (Mayor Serrano *et al*. 2004).

Cabré Castellví (2004a: 11) define así la comunicación especializada, en la que entran en juego tres elementos, a saber, especificidad del tema, participantes especialistas y terminología específica:

> La comunicación especializada se caracteriza, entre otros, por tres elementos: el primero, la especificidad del tema y su perspectiva cognitiva (el tema de que se trata es especializado y el texto vehicula un conocimiento especializado sobre la realidad); el segundo, los interlocutores (sus usuarios son especialistas de una materia específica, y por lo tanto, poseen unos conocimientos sobre la materia en cuestión que han aprendido al ritmo de aprendizaje de la especialidad); y el tercero, la terminología, ya que el conocimiento especializado se materializa lingüísticamente sobre todo en los términos, y por ello, los textos especializados tienen una densidad terminológica progresivamente creciente a medida que aumenta su nivel de especialidad.

No obstante, diversos autores difieren de esta postura y especifican que los lenguajes especializados no son un instrumento para la comunicación entre especialistas, sino un instrumento para comunicar conocimiento especializado

(Mayoral Asensio 2004). El hecho de contar con especialistas en el acto de comunicación especializada genera unas características estructurales, pragmáticas, lingüísticas y estilísticas propias de estos textos que tendrán un peso determinado en función de la tipología textual y el ámbito temático.

Sin embargo, la presencia o no de especialistas en el acto comunicativo no es el único factor que caracteriza esta modalidad de traducción. De acuerdo con diversas investigaciones (Navarro & Hernández 1997; Sánchez Trigo 2002; Ortega Arjonilla 2003; Askehave & Zethsen 2006; Martínez López 2009 y 2010a; Muñoz-Miquel 2009 y 2014), la traducción biosanitaria tiene unas características que podríamos llamar 'generales' desde un punto de vista lingüístico y estilístico. Así, los traductores biosanitarios traducen textos generados por las ciencias biomédicas, por lo que el contenido de estos textos suele tener carácter empírico y es verificable, debido en mayor medida a que la comunicación científica tiene como fin principal la difusión del conocimiento científico. De esta característica se deriva también el hecho de que estos textos presentan un estilo objetivo, donde se presupone que no hay subjetividad debido al carácter expositivo e informativo de los artículos de investigación, informes, prospectos farmacéuticos y demás textos biosanitarios. Estos textos, pues, tienen que poseer además gran coherencia para que sus usuarios puedan localizar los nodos de información clave rápidamente. Además, presentan una gran densidad terminológica, específica de cada subcampo temático, que puede llegar incluso a estar regulada por organismos internacionales a nivel tanto lingüístico como estilístico (CIE 10, DSM V, QRD, normas bibliográficas Vancouver, etc.). No obstante, este normativismo puede verse afectado por la presencia del inglés como *lingua franca* de la comunicación científica, lo que puede provocar que varios términos coexistan en la literatura científica y divulgativa especializada.

Estas características no son, obviamente, universales a todos los textos biosanitarios, ya que este campo temático es muy amplio y se divide, a su vez, en numerosos subámbitos temáticos o especialidades (como farmacología, terapia ocupacional, neurología, psiquiatría o ingeniería genética entre muchos otros) con características y problemas de traducción propios. Así, cada acto de comunicación posee unos componentes únicos que verificarán o graduarán la relevancia o pertinencia de estas características.

El estado de la cuestión de la traducción científico-técnica también demuestra que la traducción biosanitaria es ampliamente tratada en la literatura científica (Navarro & Hernández 1997; Orf 2004; Bueno García 2007; Martínez López 2008; Crespo Hidalgo 2010) aunque, como se menciona en numerosos estudios, la mayoría de estas investigaciones cuentan con el inglés como lengua

de trabajo debido a su condición de *lingua franca* de la comunicación científica (Martínez López 2010a; Sánchez Trigo & Munoa 2013; Sánchez Trigo & Varela Vila 2015), con los consiguientes problemas que esto conlleva, como una mayor presencia de préstamos y calcos tanto léxicos como ortográficos y sintácticos (Álvarez Blanco 2001; Navarro 2001). Esto convierte la traducción biosanitaria del francés al español en un campo poco tratado aún.

En la literatura científica existente suelen tratarse problemas de traducción biosanitaria de manera general, o bien problemas concretos partiendo del inglés como lengua de origen. Si bien es cierto que, como dicen los estudios citados anteriormente, el inglés es una lengua internacionalmente reconocida como 'lengua vehicular de la ciencia', no deja de tener unas especificidades lingüísticas y estilísticas que, a la hora de traducir, generan escollos diferentes para el traductor que aquellos presentes en los textos redactados en otros idiomas.

Esta diferenciación de la lengua de origen del texto supone unos problemas de traducción característicos derivados de estas diferentes combinaciones lingüísticas. Estos problemas de traducción propios de la combinación lingüística se dan en todos los campos temáticos, modalidades de traducción y niveles de especialización (Rodríguez Martínez en prensa b).

4. Lingüística de corpus

Gracias a la lingüística de corpus ha sido posible confirmar empíricamente la existencia de una parte más estable en las lenguas, restricciones combinatorias y preferencias de selección léxica recurrentes en las producciones lingüísticas de hablantes nativos (Corpas Pastor 2008), lo que no se corresponde con el principio de idiomaticidad que proclamaba Sinclair (1987). Así pues, la lingüística de corpus ha experimentado un desarrollo exponencial en los últimos años que se ha originado, en gran medida, debido al desarrollo de nuevas tecnologías aplicadas a la traducción (Varela Vila y Sánchez Trigo 2012), lo que ha repercutido a su vez en una mayor presencia de los corpus en la investigación sobre traducción.

Estos patrones recurrentes son de extrema utilidad para el traductor, ya que no solo permiten el establecimiento de equivalentes, sino que además sirven como herramientas para múltiples actividades traslativas e investigadoras (Corpas Pastor 2008). Ahora bien, para que la explotación del corpus genere resultados óptimos, este ha de estar diseñado mediante una férrea disciplina que permita al traductor compilar un corpus representativo, preciso y de calidad. Si bien es cierto que existen numerosas investigaciones acerca del diseño y compilación de un corpus (cfr. Corpas Pastor 2001; Corpas Pastor 2004; Sinclair 2004a; Lareo Martín 2006; Seghiri Domínguez 2011; Buendía

Castro & Ureña Gómez-Moreno 2010), no existen unos estándares fijos para la compilación de un corpus representativo, ya que se suelen compilar para ayudar a los investigadores y traductores, no solo a resolver dudas puntuales terminológicas, sino también cuestiones estilísticas (Vila Barbosa 2013) de ámbitos muy diversos.

El término corpus ha sido empleado ampliamente en numerosos estudios desde hace muchos años. Así, el *Diccionario de Lingüística Moderna* (Alcaraz Varó & Martínez Linares 1997: 151) define el corpus como un conjunto de datos utilizado en un trabajo de investigación, compuesto por formas lingüísticas (oraciones o palabras) y por categorías (sílabas, vocales, etc.). No obstante, el concepto de corpus que se maneja en la actualidad se ha visto influenciado por los inconmensurables avances tanto en informática y ciencias como en el ámbito de la investigación traductológica. Por consiguiente, un corpus en la actualidad implica más que la recopilación de textos electrónicos para el análisis de datos textuales o terminológicos; los corpus han de atender a una serie de criterios previos protocolizados para su compilación, unos requisitos mínimos de formato para su análisis posterior por las herramientas de interrogación de corpus por ordenador, y un diseño acorde a las funciones que originaron la necesidad de la compilación del corpus (Leech 1991; McEnery y Wilson 1996; Pearson 1998).

En la actualidad, la acepción más extendida es la propuesta por el grupo EAGLES (*Expert Advisory Group on Language Engineering Standards*) (1996: 4):

> A corpus is a collection of pieces of language that are selected and ordered according to explicit linguistic criteria in order to be used as a sample of the language.

De esta definición se desprenden las funciones básicas que han de tenerse en cuenta para un uso correcto del corpus tanto en tareas de investigación lingüística y traductológica como en la práctica profesional de la traducción. En primer lugar, esta definición propuesta por EAGLES (1996) menciona que los textos compilados para crear el corpus han de ser "a collection of pieces of language", es decir, una muestra representativa de una lengua o lenguaje especializado que permita generalizar los resultados de los análisis llevados a cabo en esta muestra. Además, la definición nos remite al cumplimiento de unos criterios de compilación previamente establecidos, ya que la selección de textos no puede ser arbitraria y ha de dar lugar a un corpus útil y pertinente, a la vez que representativo y ordenado.

Esta definición, sin embargo, no contempla uno de los rasgos más característicos de los corpus en la actualidad y que ha provocado un aumento exponencial como herramienta de análisis e investigación en el seno de la

traductología y de la lingüística aplicada: los avances informáticos (Buendía Castro & Ureña Gómez-Moreno 2010). Para adaptarse a esta nueva coyuntura, Sinclair (2004b) propone una nueva definición que incluye el formato electrónico a las características fundamentales de un corpus:

> A corpus is a selection of pieces of language text in electronic form, selected according to external criteria to represent, as far as possible, a language or language variety as source of data for linguistic research.

Estas definiciones del grupo EAGLES (1996) y de Sinclair (2004b) aportan, además, algo novedoso a los intentos definitorios de corpus previos: el concepto *piece of language* (fragmentos de lenguaje), con lo que elimina de la definición el término comúnmente usado, *texts* [textos]. Esto se debe a que, como el grupo EAGLES (1996) recoge, no todos los componentes del corpus serán textos completos, sino que algunos podrían ser fragmentos de textos.

Bowker y Pearson (2002: 9) complementan esta definición aportando lo que según su criterio son las cuatro características principales que diferencian un corpus de cualquier otra compilación textual: "[…] authentic, electronic, large and specific criteria".

En primer lugar, esta definición nos remite a la idea de la originalidad de los textos (*authentic*). Esto es, en palabras de Sinclair (1991: 171), un texto "[…] naturally occurring and has not been created for the express purpose of being included in order to demonstrate a particular point of gramar, etc.", lo que remitiría al concepto de uso real de la lengua.

En segundo lugar, las autoras especifican que el formato de los textos incluidos en el corpus ha de ser electrónico con el fin de poder ser compilados, procesados y analizados mediante un ordenador, así como poder consultar la información obtenida de manera electrónica.

En tercer lugar, Bowker y Pearson (2002) hablan del tamaño extenso que habría de tener el corpus. Sin embargo, las autoras consideran que "[…] *large* means a greater number of texts than you would be able to easily collect and read in printed form" (Bowker & Pearson 2002: 10). Esta afirmación es congruente con el concepto de representatividad en lingüística de corpus, en la que ha sido siempre un tema muy controvertido debido a la naturaleza abstracta de dicho concepto, llegando a contemplarse la representatividad del corpus como un "act of faith" (Leech 1991). Biber (1993) definía la representatividad como "the extent to which a simple includes the full range of variability in a population", mientras que Leech (2002) proponía tres requisitos para alcanzar un mayor grado de representatividad:

- Diversidad: incluir una gama amplia de muestras de las diferentes variantes de la lengua;
- Equilibrio: los diferentes subcorpus no deben estar descompensados en tamaño;
- Tamaño: el tamaño será el adecuado siempre y cuando el corpus sea diverso y equilibrado (un corpus no es inherentemente mejor cuanto más grande sea).

No obstante, en la actualidad existen aproximaciones conceptuales sobre la representatividad de los corpus (Corpas Pastor & Seghiri Domínguez 2007; Corpas Pastor & Seghiri Domínguez 2010; Seghiri Domínguez 2014), así como programas específicos que miden la representatividad de los corpus como ReCor,[1] creado por Gloria Corpas Pastor, Miriam Seghiri Domínguez y Romano Maggi.

Como se desprende también de las observaciones anteriores, una característica fundamental de los corpus es la selección textual y los criterios establecidos previamente por el investigador para la compilación del corpus en cuestión (Ahmad & Rogers 2001; Pearson 1998; EAGLES 1996). Estos serán diferentes de acuerdo a la finalidad u objetivos que conlleven la creación del corpus, y permitirán discernir la pertinencia o no de los tipos de textos para crear así un corpus representativo, útil y adecuado para nuestros fines.

Tras desarrollar el marco teórico de la comunicación especializada en el ámbito biosanitario, así como el de la lingüística de corpus, procedemos a realizar una aproximación didáctica al corpus de prospectos de medicamentos para uso humano como recurso en el aula de traducción especializada.

5. Corpus de prospectos farmacéuticos: aplicaciones didácticas

Como se ha constatado anteriormente, el lenguaje especializado del ámbito biosanitario se caracteriza por tener una gran diversidad temática sin llegar a presentar un patrón discursivo unitario (Martínez López 2009). Por otro lado, y a pesar de la evidente tendencia de las ciencias biosanitarias al normativismo y a la estandarización terminológica (Rodríguez Martínez en prensa a), los textos que emanan de este sector presentan divergencias en cuanto al uso de terminología y otros aspectos lingüísticos —colocaciones, coligaciones, preferencia semántica (cfr. Sinclair 2004a)— que convierten a los corpus en grandes herramientas dado que los diccionarios especializados, generalmente, no proporcionan contextos de uso y presentan una mayor rigidez estilística (Barceló Martínez & Delgado Pugés 2015).

1. Disponible en <http://www.lexytrad.es/es/recursos/recor-2/>.

Por ello, los diccionarios especializados parecen quedar relegados a un papel de apoyo conceptual (Laursen & Arinas-Pellón 2012), mientras que, según Gallego-Hernández (2015), los corpus especializados se perciben como una herramienta que ha calado en el sector profesional de la traducción debido a la capacidad de localizar terminología en contexto, lo que facilitaría a su vez al traductor la adquisición de información conceptual, estilística y pragmática que del contexto pudiera derivarse (Vila Barbosa 2013; Gallego-Hernández 2015).

El prospecto farmacéutico se presenta como un género textual estudiado en profundidad desde una perspectiva traductológica (Mercado López 2003; Ruiz Garrido *et al*. 2008; Vázquez y del Árbol 2013). Su macroestructura esta regulada por convenciones internacionales como la plantilla propuesta por el grupo QRD[2], con unos epígrafes ya preestablecidos y un contenido mínimo obligatorio, así como unas características sintácticas y léxicas condicionadas también por normativas e instituciones internacionales —como el MedDRA[3] (*Medical Dictionary for Regulatory Activities*) o los Standard Terms de EDQM (*European Directorate for the Quality of Medicines*)[4]— que hacen de este género textual un potencial candidato para controlar la labor de documentación del alumnado y el uso correcto de la terminología normativa de un ámbito tan regulado como las ciencias farmacéuticas.

Como se mencionaba anteriormente, la mayoría de recursos disponibles cuentan con la presencia del inglés entre sus lenguas de trabajo. También se constata la escasez de recursos documentales y terminológicos en este ámbito del francés al español, por lo que reforzaría la importancia de localizar fuentes fiables de documentación en el aula. Para ello, la compilación de un corpus compuesto por prospectos oficiales en francés procedentes de la *Agence nationale de sécurité du médicament et des produits de santé* (ANSM), y en español procedentes de la Agencia Española de Medicamentos y Productos Sanitarios (AEMPS), resulta una buena aproximación a la traducción biosanitaria, ya que, como hemos comprobado, posee los mismos rasgos prototípicos en los que coinciden la mayoría de estudios teóricos sobre esta especialización temática. Además, al tratarse de un género textual breve, conciso y con una variación sintáctica y léxica muy baja, la representatividad del corpus se puede alcanzar con un número reducido de textos:

2. Versión 10, última revisión a fecha 04/2016. Disponible en <http://www.ema.europa.eu/ema/index.jsp?curl=pages/regulation/document_listing/document_listing_000134.jsp&mid=WC0b01ac0580022c59>.
3. Disponible en <http://www.meddra.org/>.
4. Disponible en <https://standardterms.edqm.eu/>.

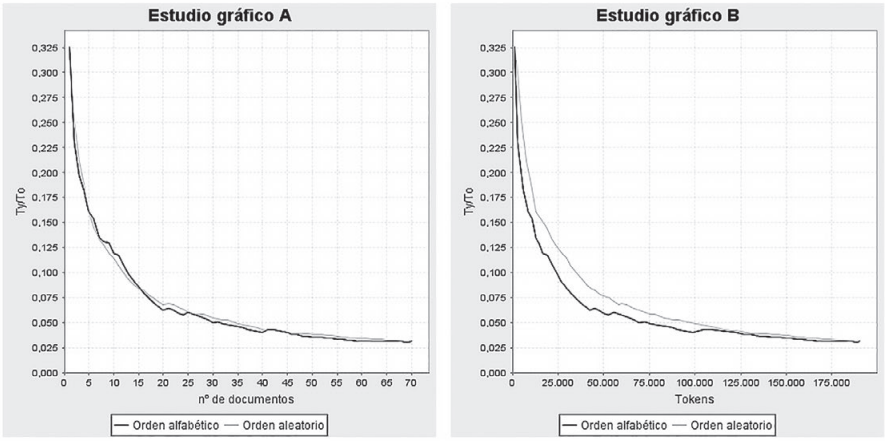

Ilustración 1. Representatividad de un corpus de prospectos a través de ReCor.

Como se puede observar, la representatividad del corpus, analizada por el programa ReCor,[5] muestra que, a partir de 60 documentos, la muestra no incorpora una cantidad de palabras nuevas relevante, por lo que podría considerarse representativa. Así, observamos que un corpus de prospectos oficiales es fácil de compilar, sería representativo del género textual, y una fuente de información fiable con la que trabajar diferentes aspectos traductológicos.

El uso que puede hacerse de este corpus en el aula de traducción especializada es variado y dependerá de los objetivos que se pretendan conseguir, así como de las tareas planteadas para el alumnado. A continuación, se exponen diversas aplicaciones didácticas fundamentadas en los objetivos y competencias que se desean alcanzar con el planteamiento de las diferentes tareas.

5.1. Tareas propuestas

De acuerdo con lo mencionado anteriormente, estas asignaturas son de carácter semestral y de temática variada, ya que la traducción biosanitaria no se imparte de manera independiente. Por ello, estas actividades no pretenden ser una concatenación de actividades ordenadas por dificultad progresiva, sino propuestas de actividades aisladas que pudiesen plantearse en el aula de traducción especializada para conseguir los objetivos que en ellas se definen.

5. Programa creado por Gloria Corpas Pastor, Miriam Seghiri Domínguez y Romano Maggi, Universidad de Málaga. Disponible en <http://www.lexytrad.es/es/recursos/recor-2/>.

(1) Debate sobre traducción de nombres de fármacos

Objetivos: dar a conocer la realidad empresarial de la industria farmacéutica en Francia y en España, así como sus diversas presentaciones (nombres de fantasía, principios activos, vías de administración, formas de presentación) mediante el análisis de técnicas de traducción de dichos fármacos.

Actividad: Debate guiado por el profesor, que fomentará el análisis de problemas de traducción generados por la aparición de fármacos en la traducción biosanitaria. Los puntos que deben tratarse en el debate son las diferentes nomenclaturas de fármacos, distintos laboratorios en los países del TO y del TM, diferentes normativas para la redacción y difusión del prospecto farmacéutico, etc.

Competencias: Con esta actividad se persigue desarrollar y fomentar las competencias específicas del grado en Traducción e Interpretación centradas en la comunicación oral y en la adquisición y utilización de conocimientos teóricos y metodológicos de traducción e interpretación, que los alumnos deberán aplicar en sus intervenciones durante el debate. Entra en juego también la competencia profesional, ya que para una correcta traducción de los nombres de estos fármacos deberán ser conscientes de los requerimientos del mercado laboral en el ámbito biosanitario.

Criterios de evaluación: Participación activa en el debate; calidad de las intervenciones; argumentación de las intervenciones.

(2) Compilación de corpus de prospectos

Objetivos: diseñar y crear un corpus *ad hoc* especializado de prospectos de medicamentos para uso humano con el fin de afianzar las bases teóricas y prácticas del diseño y compilación de corpus para la práctica profesional de la traducción especializada. Aprender a discernir entre géneros textuales similares y fomentar la selección de fuentes de información de calidad.

Actividad: Aproximación teórica al diseño de corpus (género textual, idiomas, autoría, etiquetado, etc.) para la elaboración autónoma de un corpus *ad hoc* representativo y de calidad. Desarrollo de una breve memoria de compilación del corpus en el que se verifiquen los pasos seguidos en el proceso. Búsquedas preliminares para la familiarización del alumnado con la interfaz y las funciones de los programas de análisis y gestión de corpus.

Competencias: Esta actividad promueve directamente la competencia instrumental, por la cual el traductor debería ser capaz de gestionar la información y el conocimiento de su ámbito mediante herramientas TIC y herramientas de apoyo al traductor (análisis de corpus).

Criterios de evaluación: Adecuación de los criterios de diseño y compilación de corpus a los requisitos exigidos; codificación correcta; redacción y adecuación de la memoria de compilación del corpus.

(3) Extracción terminológica del prospecto

Objetivos: extracción de la terminología propia de un género textual mediante el análisis de un corpus representativo. Aproximación a la densidad terminológica del prospecto.

Actividad: Realizar y gestionar *stoplists* para la eliminación del ruido terminológico del corpus compilado. Realizar una extracción de la terminología prototípica del género textual basándose en la frecuencia de aparición. Realizar búsqueda de *clusters* para concienciar al alumnado de la presencia de unidades terminológicas poliléxicas. Redactar una breve memoria con la metodología empleada para la creación de la *stoplist* y la extracción terminológica en el que se especifiquen los pasos seguidos hasta llegar a la lista final de términos propuestos.

Competencias: A través de esta actividad se pretende fomentar la adquisición de conocimientos analíticos y operativos de los nuevos sistemas tecnológicos aplicados a la práctica profesional de la traducción, así como la identificación de problemas de traducción en el ámbito especializado derivados de la terminología de un género textual concreto. Se pretende también que el alumnado adquiera una mayor competencia en la identificación y gestión de terminología especializada mientras se fomenta a su vez la competencia instrumental, necesaria para el manejo de las herramientas de análisis de corpus.

Criterios de evaluación: Pertinencia y adecuación de las palabras incluidas en la *stoplist*; codificación correcta; redacción y adecuación de la memoria del ejercicio de extracción terminológica.

(4) Creación de glosario bilingüe

Objetivos: creación de recursos terminológicos propios mediante la gestión y explotación de corpus bilingües especializados.

Actividad: Crear un glosario bilingüe especializado en formato .xls a partir de la terminología extraída mediante el análisis de un corpus de prospectos por listas de palabras ordenadas por frecuencias. Identificar la terminología especializada y gestionar la terminología propia de un ámbito especializado mediante la creación de recursos terminológicos propios. Identificación de necesidades terminológicas y aplicación a los recursos propios (contextos de uso, fuente,

etc.). Convertir el glosario en formato .xls en un formato compatible con la herramienta de traducción asistida por ordenador (TAO) (.xdt y .xml).

Competencias: Gracias a esta tarea se pretende fomentar en el alumnado el uso de herramientas TAO, así como a aprovechar al máximo sus funcionalidades, como es la de gestión terminológica integrada en las herramientas más demandadas por las agencias de traducción, lo que serviría para desarrollar la competencia profesional e instrumental. Por otro lado, la aproximación a la terminología propia de un género textual fomentaría la adquisición de la competencia temática, proporcionándoles a su vez una estrategia fiable y asequible para adquirir conocimientos temáticos especializados de la misma manera en otros ámbitos temáticos.

Criterios de evaluación: Pertinencia de los términos propuestos para la elaboración del glosario; adecuación del formato exigido (.xls, .xdt y .xml); pertinencia de los campos propuestos en la elaboración del glosario; corrección terminológica.

(5) Traducción de un prospecto farmacéutico con ayuda de corpus

Objetivos: realización de un encargo de traducción especializado del francés al español con ayuda de corpus.

Actividad: Recepción de un encargo de traducción del francés hacia el español de un prospecto farmacéutico para uso humano. Traducción del texto con ayuda de un corpus bilingüe de prospectos de medicamentos para uso humano. Edición del documento de acuerdo a la regulación vigente.

Competencias: La traducción del prospecto se propone con el fin de promover una documentación más allá de la búsqueda terminológica, por lo que se pretende que el alumno encuentre documentación legislativa en la que pueda localizar las normas de presentación del prospecto. Esto fomenta la competencia tanto instrumental como temática, ya que el conocimiento de un género textual no se limita a sus características lingüísticas, sino también pragmáticas y culturales. Además, se fomenta la competencia profesional, gracias a la cual el alumnado deberá ser capaz de afrontar un encargo de traducción antes del plazo propuesto y generar un texto meta de calidad.

Criterios de evaluación: Entrega de acuerdo al formato exigido y a la fecha máxima estipulada; evaluación por parte del profesor de la calidad de la traducción según el baremo de errores de traducción propio.

6. Conclusiones

En la actualidad, los Estudios de Traducción basados en Corpus han sufrido un crecimiento exponencial, así como sus aplicaciones prácticas e investigadoras, que han sabido aprovechar este auge y su versatilidad. Esto hace que el corpus sea, en la actualidad, una de las herramientas más apreciadas por los traductores profesionales (Fantinuoli 2016).

La versatilidad de las funcionalidades de los corpus, así como de los textos que pueden utilizarse para su compilación, hacen que esta herramienta sea una opción digna de tener en consideración en la enseñanza de la traducción especializada, ya que la información que de ella se puede extraer no se limita a la información terminológica, sino también conceptual, pragmática, sintáctica y textual (Bowker & Pearson 2002; Colominas Ventura 2003).

Como afirma Corpas Pastor (2008: 83), la didáctica de la traducción ya ha aprovechado la utilidad de los corpus como un recurso para la enseñanza de la traducción especializada:

> La enseñanza de la traducción e interpretación no ha permanecido, pues, ajena a esta tendencia generalizada. De hecho, se ha venido aplicando la metodología de corpus no solo en el establecimiento de equivalentes en traducción, […], sino también para todo tipo de actividades traslativas e interpretativas: documentación, toma de decisiones, identificación de los patrones combinatorios, revisión, evaluación, etc.

La aplicación de estos estudios a la didáctica de la traducción permite al alumnado realizar una aproximación eficaz a herramientas útiles para la práctica profesional y a la gestión de la información y documentación de manera eficiente. Por otra parte, la compilación de un corpus en el aula facilitaría un acercamiento controlado a la terminología especializada de un ámbito con una terminología muy estandarizada y rígida, así como a fomentar la toma de decisiones basada en frecuencias de uso.

Uno de los factores que se suele esgrimir contra los corpus compilados *ad hoc* es el tiempo que se ha de invertir en la compilación del corpus (Fantinuoli 2016). No obstante, los resultados de las búsquedas terminológicas —términos, equivalentes y conceptos— se basan en textos de mayor fiabilidad y son mucho más precisos, aunque todo ello dependerá de si son representativos del ámbito en cuestión y de si están correctamente compilados (Varela Vila 2009).

La compilación de un corpus en el aula de traducción especializada posee grandes ventajas, ya que es un recurso rápido, fácil y barato; ocupa poco espacio físico, lo que implica una mayor facilidad para su almacenamiento y gestión; es reutilizable, ampliable y modular; y es polivalente, lo que convierte al corpus en un recurso que podría ser utilizado para diversos fines (Corpas

Pastor 2001). La supervisión del profesor a la hora de compilar el corpus afianzaría los protocolos de diseño y compilación, lo que haría que los alumnos se familiarizasen con ellos y les permitiera trabajar con corpus en el futuro, no solo con encargos de traducción biosanitaria, sino con cualquier encargo para el que consideren pertinente la utilización de esta herramienta y de sus numerosas y diversas funcionalidades.

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Bionota / BIONOTE

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USING AUDIOVISUAL MATERIAL IN TEACHING MEDICAL TRANSLATION TO NON-MEDICAL STUDENTS

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Abstract

This paper aims at exploring new methodologies to make the practice of medical translation more interesting and stimulating for language students. It is based on two third year courses held at the University of Parma (Italy), for undergraduates reading modern languages. The courses made great use of audio-visual materials, which translate intersemiotically and often, intralinguistically, the language used in specialized domains. The original and dubbed versions of some of the most popular television series whose focus is, precisely, the language of medicine (namely *House M.D.* and *Scrubs*) were the basis for a series of activities aimed at helping students approach the study of medical translation for the first time.

Sinossi

L'articolo mira a esplorare nuove metodologie atte a rendere l'approccio allo studio della traduzione medica stimolante e originale ed è basato su due corsi di terzo anno tenuti all'Università di Parma (Italia), per studenti del Corso in Lingue e Civiltà Straniere Moderne. Durante i corsi si è fatto largo uso di materiali audiovisivi che traducono intersemioticamente e, spesso, intralinguisticamente, il linguaggio medico utilizzato in ambito specialistico. Le versioni originali e doppiate di alcune serie televisive incentrate sul linguaggio medico (nello specifico *Dr. House M.D.* e *Scrubs*), hanno dunque costituito la base per una serie di attività mirate a facilitare l'avvicinamento degli studenti allo studio della traduzione medica.

Keywords: English for Medical Purposes. Medical translation. Intersemiotic translation. Audiovisual translation. Didactic aspects of medical translation.

Parole chiave: Inglese medico. Traduzione medica. Traduzione intersemiotica. Traduzione audiovisiva. Aspetti didattici della traduzione medica.

1. Introduction: a "humanistic" approach to specialized translation

In our globalized world, where societies are shaped by important migratory flows, issues of translation have become more and more pivotal. In particular, the field of specialized translation has increasingly acquired greater importance. On the one hand, in fact, English is often considered the main *lingua franca* of specialized communication (particularly in the medical field, since most of medical books and journals are written in English). On the other, in our societies migrants need, on a regular basis, translation services for both legal and medical purposes among others. Indeed, although specialized languages were born as the expression of particular groups of professionals in specific areas of study, and their translation was therefore mainly directed to other specialists, in our contemporary world speakers often come across and need specialized languages in their daily lives too.

As a consequence, very often, the practice of specialized translation posits itself at an intersection where two different areas of translation theory overlap. On the one hand, translators are in fact required to translate interlinguistically (Jakobson 1959) the language of medicine, with all its peculiar lexical and morphosyntactic features; on the other, they often have to translate intralinguistically (Jakobson 1959) that same language, in order to make it more comprehensible for all the people involved in communicative exchanges. And this holds true both when the translations required involve written texts, and when they rely on spoken language, that is to say when simultaneous and/or sequential interpretations become necessary, for example in hospitals, counselling centres and so on.

As discussed in detail elsewhere (Canepari 2013; 2017 & forthcoming), this aspect is in actual fact at the very core of the process of popularization that has become increasingly important in our contemporary world, and it is indubitable that the new media have contributed enormously to this practice. Indeed, the intralinguistic translations provided by popular programs of various kinds (from television series to documentaries) – together with other products available on the internet – lay emphasis on various aspects. On the one hand, these programs and products can make the public aware of some of

the linguistic features that specialized languages take in their various national forms, since most of these products are translated audio-visually in order to be exported to various countries. As a result, within the field of medicine, viewers are often confronted with acronyms, compounds, words of classical origin etc., typical of medical language. On the other hand, these products implicitly address the various social, cultural and philosophical issues which are closely connected to the notion of a wider sharing of information and the implementation of more democratic forms of knowledge which, in turn, could help subjects achieve greater control over their lives, both within and, in the case of migrants, outside their national borders.

The interest in Language for Specific Purposes and their translation cannot therefore be conceived simply as a stimulating academic field of analysis, but also – and more importantly – as an increasing necessity which has many practical repercussions. In this sense, the teaching of specialized translation is acquiring greater importance and should be aimed at the formation of professional figures able to rise to the challenges of contemporary society, and at the education of citizens of a world which is both progressively specialized and increasingly intercultural. Thus, also within specialized domains, the notion of cultural mediation becomes paramount and should integrate the different levels of culture originally identified by Hall (1959) and later re-elaborated by Brake *et al.* (1995) among others: from the specialist and technical to the invisible ones.

This is the reason why, in recent years, even the focus of medical education *per se* has shifted considerably, leading to the birth of the inter- and multidisciplinary field we refer to as Medical Humanities, where the arts, the social sciences and the humanities proper intersect. The main aim of this field is notably to offer all the subjects involved in the medical process the necessary tools to understand both disease and health, placing these conditions in a social and cultural context. In the attempt to favour a greater empathic understanding of the Subject him/herself, of the Other and of the therapeutic process, Medical Humanities therefore encourages professionals to explore cultural notions of health and illness; the physical, psychological and emotional impact illness can have on both the patients and the people around them; the metaphors which different cultures exploit to describe the illness and the therapy it involves, etc.

The kind of translator Medical Humanities calls for, therefore corresponds to a new figure, one that might bring together the specialization required by the field with the willingness to approach the patients, their families and their loved ones, not only as patients but as whole human beings. Indeed, in order to counteract the objectification and otherization of patients enacted by medicine

during the course of centuries through the "medical gaze" of doctors and their language (Foucault 1961 & 1963), Medical Humanities attempts to turn the patient, once again, into a Subject (see for instance: Bleakley 2015). Naturally, since an accurate and effective communication is essential and, within the field of medicine, absolutely necessary to safeguard the patients' safety (Hull 2015), language proficiency and precision for both professionals and translators/interpreters is inevitable. However, as Sanchéz-Reyes maintains, there is a need for an "ongoing revision of methodological approaches in the ESP context" (2011: 231). This, naturally, in order to form better medical staff but also, as it is my contention here, to form all those professionals who are not directly involved in a medical profession, but whose aid is often essential in medical contexts, namely specialized translators.

Indeed, it is true that the features of monorefentiality and absence of ambiguity typical of specialized languages (see Gotti 2005) often enable translators to opt for an adequate lexical equivalent. Yet, according to the situational context and to the participants in the communicative act, other strategies might become necessary, in order for translators to act as cultural mediators whose work is informed not only by technical knowledge but also by cultural awareness. After all, as Newmark (1988: 151) maintains,

> technical translation is primarily distinguished from other forms of translation by terminology, although terminology usually only makes up about 5-10% of a text.

In actual fact, within the field of specialized languages in general, the focus on terminology has long since been recognized as only one of the many skills translators and interpreters need to possess. And this appears particularly true in a field such as medicine, where issues of life and death, pain and suffering are often at the centre of many communicative exchanges between doctors and patients. The idea that the translator should always be ready to put him/herself in the place of the Other, together with the many social, cultural and ethical issues raised by the television series under study (the homeless, alcoholism, drug addiction, single parenting, euthanasia and so on) thus help students reflect on some of these aspects, which often appear paramount in our societies too. In actual fact, the research conducted by Mureşean *et el.* equally suggested that introducing controversial topics in the EMP class is highly beneficial, in that it gives students the possibility to develop their medical English language skills, their oral and written communication abilities, and their critical thinking skills (Mureşan *et al.* 2016: 172), while encouraging their reflection on the way different cultures may approach some of these notions, on the implications they might have for the patients and the people around them.

By doing so, students are encouraged to develop their Higher Order Thinking Skills (Bloom 1956), essential in the formation of every individual. Indeed, whereas the students who remember and simply understand information might be said to practice the Lower Order Thinking Skills, students who make an effort to understand the reasons why certain things are the way they are, the consequences this entails, the way certain things work, etc., are encouraged not only to learn new information, but also to evaluate and assess it, connect it to previously acquired knowledge, and learn to use it in future situations.

This is the reason why through the kind of approach outlined here, it becomes possible to stimulate the growth of students not only from a purely linguistic perspective but from a more holistic one, pointing to a change in the way we consider specialized translation. Naturally, the formation of such a professional figure should be conceived as a long term goal of translation degrees and cannot be compressed in the 36-hour courses on which this paper is based. This perspective, however, should inform the syllabus of individual teaching modules and the course catalogue of Courses in Foreign Languages. Indeed, even during short translation courses such as those described in this article, translation teachers can offer some input in this direction and, especially if the course represents the first approach to medical translation on the students' part, build the basic knowledge and competence which learners will be able to improve throughout their following professional career and their lifelong learning experience, which, as well known, is encouraged by the European Union since 2000 (see for instance the Lisbon European Council and its Strategy mandates: Commission of the European Communities 2000; the Lisbon Strategy mandates 2010, renewed as "Education and Training 2020") and UNESCO itself (UNESCO 2014) (see also Aspin 2007, among the many).

From this perspective, the use that teachers can make of television products to arouse students' initial interest in medical domains and rise their awareness both from an interlinguistic and an intercultural perspective appears very stimulating.

2. Aims, methodology and material

This paper thus aims at presenting some of the activities carried out during two introductory courses to demonstrate how television series such as *House M.D.*, and situation comedies such as *Scrubs* can be analysed by students both in the original and dubbed versions and exploited in order to approach medical translation during a course aimed at non-specialists. The students attending the courses were not, in fact, medical students, but undergraduates reading modern

foreign languages, who initially had a C1 level of English. The courses were held during the second semester of 2015-2016 and 2016-2017, and extended from February till May for a total of 36 hours of lessons *in presentia*. The attending students were, in both academic years, approximately 100, and during the courses they were required to add 114 hours of individual study.

Since students were attending their third year, it was taken for granted that they would be able to use CAT tools, consult other sources of information such as reference, specialized corpora and parallel corpora, and know how to carry out frequency lists and concordances.

Having demonstrated the usefulness of popular products in teaching specialized languages elsewhere (see Canepari 2016; 2017 & forthcoming), this paper investigates the possibility of exploiting these products strictly from a translation point of view, in order to outline a path of research useful in the creation of a medical translation syllabus capable of accounting for the complexity of both specialized translation and the world in which the students, as translators, will be required to perform.

The decision to use audio-visual materials was based on the acknowledgment of the fact that "video aids learners' comprehension of English" (Stempleski 1987) and the idea that this modality could thus be fruitfully adapted to a new context, namely specialized translation. Indeed, the notion of videos as facilitators of the mental process has gained large consensus among language teachers and trainers (see for instance: Stempleski & Arcario 1992). As Tomalin recognizes, videos can in fact become highly motivational (1991) and, as Stoller maintains, can be used as "effective springboards for other classroom activities" (1993: 3), providing the background information and additional stimuli for subsequent activities.

As this paper suggests, despite its conciseness, the activities were very diversified and involved using various aids (videos, illustrations, charts etc.) in an attempt to motivate students and help them focus on different aspects of the translation process. Thus, on the basis of the videos they were required to watch, students were asked to fill in tables, create diagrams, solve puzzles, perform role-play, find extra-materials etc.

Various neuroscience studies have actually demonstrated that "significant increases in learning can be accomplished through the informed use of visual and verbal multimodal learning" (Fadel 2008: 12). In point of fact, presenting elements in more than one sensory mode (visual, audio, written), and designing activities that involved different skills on the students' part (reading, listening, written/spoken production, translation, corpora consultation etc.) improved their attention, made complex information such as specialized

language and interaction easier to comprehend and helped them consolidate their knowledge.

In addition, because it can relate to "the specific perceptual and cognitive strengths of different individuals" (Pashler *et al*. 2008: 109), the multimodal and multimedia (Mayer 2009) approach described here resulted in a very positive learning performance.

Indeed, the responses obtained by the students attending the courses on which the article is based suggest that, if effectively adapted by specialized translation teachers, these products can become useful tools in a learning context. This, as discussed below, is confirmed in spite of the fact that Italian dubbed versions often present a less specialized approach and tend to amplify, substitute and relexicalize some of the specialized terminology used in the original filmic texts in order to originate more popularized goods.

As the paper illustrates, the teacher's creativity in adapting the material at his/her disposal and envisaging possible activities that would be useful in the teaching (and learning) of medical translation becomes essential, and can result in stimulating course work.

3. The popularization of medical language and its benefits in a learning environment

Television products which involve intersemiotic (Jakobson 1959) translation and adequate use of the specialized language(s) of medicine, have always had a strong presence in the organization of television schedules and their number has recently increased notably. Indeed, since the 1950s, television has released new medical series on a regular basis (see for instance *City Hospital*, 1951; *The Doctor*, 1952; *Dr. Kildare*, 1961; *General Hospital*, 1963; *M*A*S*H*, 1972; *St. Elsewhere*, 1982, to name a few), and from the 1990s onwards the number of medical dramas aired on television has increased at an impressive rate. To give just a few examples among the many, we can mention: *Chicago Hope*, 1994; *E.R.*, 1994-2009; *L.A. Doctors*, 1998; *Crossing Jordan*, 2001; *Scrubs*, 2001; *House M.D.*, 2004; *Grey's Anatomy*, 2005; *Private Practice*, 2007; and so on, up to the more recent *Chicago Med*, 2015 and *The Good Doctor*, 2017.

As discussed in detail elsewhere (Canepari 2013), in this context, the notion of intersemiotic translation has to be understood in rather broad terms, in so far as, contrary to what happens for instance in the field of literature, where novels are often translated (more or less faithfully) and adapted to films or television series, in the field of specialized languages it is very difficult, if not impossible, to find particular books translated into specific audio-visual goods. In this sense, we could identify the source text which is adapted in

audio-visual products with a form of language that, with all due caution, might be compared to the *archi-writing* of Derridean memory (Derrida 1967: 60), namely that form of generalized writing from which, according to Derrida, all the other forms of language (including spoken language) derive. Clearly, this is not the place nor the time to discuss the notion Derrida discussed in his seminal work *De la Grammatologie* in order to deconstruct the metaphysics of presence he saw inherent in Saussure's distinction between signified and signifier and the privileged status granted to 'speech' (that is logocentrism). This notion, however, might become useful to conceptualize the idea of 'specialized language' as understood here, namely as a language which does not coincide with the particular language used in a specific text, but with a more, almost 'atavic', essence of (specialized) language and text, intertextually composed of different extracts which originally belonged to different works. It is precisely this *specialized archi-language*, which is referred to, exploited and inserted in written, audio and audio-visual materials and which is translated constantly in order to be adapted to the new media in which it is used.

Hence, from this perspective, the materials and textual types which appear to translate specialized languages – and which can be exploited in a learning environment – are innumerable. Furthermore these (audio-visual) texts are easily retrievable, and often coincide with products which are 'popular' not only in terms of the less specialized use of language they make, but also because they are frequently highly rated by the students themselves, who know and appreciate them outside their academic environment. As a consequence, the inclusion of these products in a syllabus can clearly help the learning process, turning it into a more motivating experience, rendering specialized languages less abstract and, as a consequence, facilitating the comprehension (and subsequent acquisition) of specific notions, structures and terminologies. Indeed, since second language learning is often hindered by affective filters (Dulay & Burt 1974; see also: Krashen 1981; Arnold 2001), the lowering of these filters by resorting to these series might result in more effective courses. Naturally, the teaching (and learning) of ESP cannot be considered equivalent *in toto* to the teaching (and learning) of English as a second language. However, by adapting to specialized language in general Tiersma's statement, according to which "[specialized] language and ordinary English are, in a sense, two different languages […]" (online), and by considering the fact that the activities presented here were directed to Italian students of English, it is indeed possible to identify features that are shared by both domains.

The exploitation of audio-visual materials actually renders the learning environment more natural and more engaging, also from an emotive point of

view, for both students and teachers. The relevance and importance of these aspects has been repeatedly emphasized since the early studies of Krashen & Terrel in the late 1970s, and also in recent approaches to second language teaching and learning (see for instance Muñoz 2006, and Balboni 2013 among others). Clearly, this setting is not 'interactive', in that the receiver can only remain outside the filmic narrative as an extra-textual interlocutor who does not share the same context and cannot interact with the other characters that appear on screen. In spite of this, by using this methodology, the students are confronted with the spoken language of the filmic text rather than being simply presented with a printed text and they can observe actual people using specialized language in a "natural" (albeit fictional) environment, and through various types of activities can engage with those languages and project themselves in similar settings. In a way, then, this kind of approach manages to simulate a natural situation, creating a sort of 'authentic (albeit fictional) environment' within the classroom. By reproducing some of the dynamic and transient nature of the spoken word, in fact, this language can be seen as a closer imitation of actual orality, and while losing, since it is used in fictional situations, the reliance on clues other than the linguistic ones in order to decipher the message (Chafe 1982; McCarthy 1998), it can be considered as helpful in the creation of 'close to life' situations, with which students might empathize. As Shrosbree (2008) maintains, in fact, videos provide that environment which is usually absent in a traditional classroom, and can therefore improve the learning process. Clearly, teachers should remember that for students, spoken language is, even in non-fictional situations, often more complex to grasp due to its grammatical intricacy (Halliday 1985; Crystal 1996), its structure (often characterized by false starts, sudden changes in topic and morphosyntactic structures etc.) and, generally speaking, the ephemeral nature of the spoken language itself (in that the spoken language of television does not allow receivers to stop, go back, start again etc., all actions which are on the contrary possible when faced with a written text). However, by encouraging students to rely on the new technologies – which clearly contains these difficulties, further blurring the boundaries between one textual type and the other – these problems can at least partially be overcome: by using DVDs, episodes available on the internet, or videos which teachers can create by extracting scenes from audio-visual products, students can in fact stop and go back to listen again.

Obviously, because of the very nature of these products, many of the features that determine the special (and specialized) status of the various languages which compose the macro-category of *English for Specific Purposes*, undergo various transformations during the process of intersemiotic translation through

which they are adapted to the new medium. In these forms of edutainment, in fact, specialized languages are regularly subjected to processes of intralinguistic translation too, since this process of adaptation is based on the assumption of a less specialized interlocutor. As a result, the language viewers are confronted with when watching this kind of television show, often appears much closer to everyday speech and writing than actual, specialized language. Although this aspect must be discussed with students in order to make them aware of the transformations that the specialized language of medicine might undergo when the purpose of the translation product is to entertain. As suggested below, it could be turned into a learning opportunity by becoming the basis of future activities. Furthermore, it actually can represent a positive boost from a psychological perspective as it presents materials students are likely to know already, and that they can therefore perceive as familiar, which limits the overwhelming sense of frustration non-specialist students might feel when faced with specialized language and translation for the first time,

For reasons of space, this article cannot address all the issues that this type of analysis raises, but some of the more relevant aspects in terms of the topic and the aim of this paper will be taken into consideration.

For instance, when approaching television series such as *House M.D.*, it appears evident that some of the specialized terminology and some of the main characteristics of medical language are represented in audio-visual products too. This is why rather recent products were chosen, since the series produced in the twentieth century (even those released during the final decades, such as *E.R.* or *Chicago Hope*), were characterized by a more naïve use of language and they seldom distinguished themselves for their linguistic accuracy. On the contrary, partly because of the demands for a more democratic sharing of knowledge the audience put forward at different levels,[1] recent series (including situation comedies), distinguish themselves for their level of precision.

This evolution is also evident in the field of legal pathology and forensics – specific branches of the macro-category we broadly refer to as medicine, and which are regularly included in the medical curriculum (Jentzen 2009: 75). However, contrary to other sub-genres such as infectiology, oncology, pediatrics and so on (which often constitute the focus of individual episodes of the same series), the languages of pathology and forensics are often at the centre of different series altogether. Since their language is a particular sub-genre and

1. Let us think, for instance, of such phenomena as Plain English Campaigns or fansubbing, which originate precisely from the desire of the general public to be more in control of their lives.

belongs to the category of English for Medical Purposes, it should therefore be addressed, albeit succinctly, in a syllabus devoted to the study of this language and its translation. In this case too, then, the didactic approach outlined here can be adapted to this need, by referring to at least one of the many television series which focus on this specific area of study (for instance *Crossing Jordan*, 2001-2007; *CSI*, 2000-in production; or *Bones*, 2005-in production).

The varying degrees of specialization (or popularization) that can be observed in the products mentioned above, might help bring to the fore and discuss two areas of study. The first point of discussion would be the way in which fictional representations of Medical Language have evolved, becoming increasingly precise and specialized and thereby suggesting important considerations on social and sociological aspects of contemporary society. Secondly, it would be useful to discuss the way in which specialized languages have evolved and are developing, from a chronological perspective. Indeed, it is important that students should be aware of the different approaches to specialized languages in order to understand how the Target Situation Analysis (Munby 1981) and the Learning Centred Approach (Hutchinson, Waters 1987) have come into being. Furthermore, it would be useful for them to see how the approach set out by the inter- and multidisciplinary field of the Medical Humanities can impact the way specialized languages are used, represented, learned and translated.

4. A brief account of the coursework

Clearly, in more recent products too, many of the features which characterize the specialized language(s) of medicine are often either condensed or amplified in order to be more easily understood by the mass audience. In spite of this, as mentioned above, current television series actually present, on screen, many of the characteristics which according to various scholars determine specialized languages (see for instance: Gotti 2005). As such, episodes from *House M.D.*, for example, can be effectively exploited to demonstrate how, through affixation and compounding, words are formed in the language of medicine, simultaneously offering good exemplifications of notions such as "transparency", "conciseness", "monoreferentiality", and so on.

At the same time, they can suggest interesting points of discussion in terms of the exceptions which medical language regularly exhibits in relation to these general features. Any episode can thus become the focus of particular teaching units, in order to demonstrate not only the large use of acronyms made in the language of medicine, but also how, in contradiction for example with general features such as monoreferentiality, precision and lack of ambiguity, the same

acronyms, within the same specialized field of medicine, can mean different things according to the context in which they are used. Similarly, any episode can become a good exemplification of the way the language of medicine creates neologisms, how it relies on words and affixes of Latin and Greek origin, how it uses numbers, abbreviations, impersonal constructions and so on. In addition, because each episode focuses on particular pathologies, symptoms and cures, working with this kind of material enables teachers to introduce different types of medical lexis.

Obviously, during the initial phase of students' education, when they need to appreciate the way medical terminology works, in order to use and translate it, some of the activities, while based on single episodes, might refer to general medical terms, leaving the investigation of more specific sub-genres to a later phase. Thus, after introducing the notion of 'plain English' and the intralinguistic translation strategies it implies, during the courses discussed here, students were initially required to watch some selected scenes and identify the features that contributed to the 'specialization' of the language used on screen.

For instance, they were initially required to analyse a series of extracts such as the following:

> FOREMAN: Let's keep him on the broad-spectrum antibiotics. And since he's displaying septic physiology, draw blood for adrenal and thyroid function.
>
> HOUSE: What about the paralysis?
>
> FOREMAN: We're sticking to the pneumonia.
>
> HOUSE: Well, you certainly are, boss, like a wet tongue sticks to dry ice.
>
> FOREMAN: The paralysis has already been diagnosed by Dr. Hamilton. It's A.L.S.
>
> HOUSE: Lou Gehrig's disease. It's a lovely diagnosis. They make movies about it. No tests, no treatment – It's a disease of exclusion.
>
> FOREMAN: Because Hamilton has excluded everything else.
>
> HOUSE: I haven't.
>
> FOREMAN: What else could it be?
>
> CHASE: Guillain-Barré, which would be reversible.
>
> HOUSE: Excellent.
>
> FOREMAN: No. The progression of the paralysis would be symmetric. His wasn't.
>
> CAMERON: Transverse myelitis.
>
> FOREMAN: Hamilton tested for it. Negative. And he was negative for masses and A.V.M…

> CHASE: Antibodies could be attacking the nerves. Multifocal motor neuropathy.
>
> HOUSE: Uncommon, but it fits. It's also treatable. Did Hamilton try putting the guy on I.V. I.G.?
>
> FOREMAN: No, because the M.R.I. showed no…
>
> HOUSE: Well, let's do an M.R.I. of our own.
>
> FOREMAN: Guys, it's my case. A.L.S. fits. It even predicts the pneumonia. The paralysis is progressive.
>
> HOUSE: It's a death sentence.
>
> FOREMAN: That doesn't make it wrong (*House M.D.*, Season 1, Episode 9, "D.N.R.").

Most of the students were able to signal the presence of compound words (antibiotics, neuropathy), words of classical origin (physiology), dense noun groups (multifocal motor neuropathy), acronyms (A.S.L, M.R.I.), eponyms (Lou Gehrig's disease), whereas they were unable to detect and understand other abbreviated forms such as I.V. or I.G. This exercise, however, was a very useful starting point, which enabled students to identify some of the main features of Medical English while positing the basis for other activities. In fact, they were subsequently required to find the meaning of the various specialized terms and acronyms in English and translate them first intralinguistically (thereby giving an explanation in ordinary language), and then interlinguistically, providing a translation into Italian, using both paper/online dictionaries and corpora. After discussing and, when necessary, filling in the data provided by students, the students were asked to complete a table with the various characteristics of the English words and expressions they had noticed beforehand, the features of Medical English that accounted for them, the definition and, when possible, the translation into ordinary English of those words/expressions and, finally, their translation into Italian:

Word/ Expression	**Feature(s) of Medical English**	**Meaning/ Definition**	**Translation into Ordinary English**	**Translation into Italian**
Polypectomy	Compounding; classical origin	Excision of a polyp	The removal, through surgery, of growths of tissue	Polipectomia

Table 1

With each assignment, students were asked to add to the same table, in order to create a well-documented chart. Indeed, once the first phase of the work on the first extract was concluded, students were asked to analyse extracts from the situation comedy *Scrubs* such as the following, adopting the same kind of perspective (thus providing a translation first into plain English and then in Italian of some of the most technical terms), also noticing however the linguistic elements that differentiate the two series, assigning the latter to the sub-genre of comedy:

> NURSE: Patient's complaining of anosmia.
>
> J.D.: Anosmia? I always thought it was very funny that losing your sense of smell was called anosmia.
>
> Anosmia, you know, like Schnozmia. Don't you find that very funny?
>
> NURSE: He doesn't. […]
>
> J.D.: Anosmia isn't a side-effect of IV imipenem.
>
> Plus, Mr. Blair had nasal polypectomies and septoplasty and his loss of smell is caused by manipulation of his sinuses and the infection, so I didn't make a mistake (*Scrubs*, Season 2, Episode 5).

Students immediately noticed for instance that the specialized term "anosmia" was translated intralinguistically within the episode itself by having the main character stating "I always thought it was very funny that losing your sense of smell was called anosmia", and immediately recognized the pun the young doctor makes ("Schnozmia"), the term "imipenem" (which upon research they were able to identify as an antibiotic). Thanks to their previous analysis, the acronym "IV", for which this time they were immediately able to give the extended version "intravenous", was then recognized as a marker of specialized language due to its affixation and its Latin origin.

Following a discussion of the role played by acronyms in medical language, as witnessed in the previous extracts, one particular episode of *Scrubs* became truly valuable. In the thirteenth episode of the first season, in fact, Dr. Cox instructs his interns on the meaning of some of the most common acronyms used in medical charts and among doctors:

> COX: Now, ladies and germs, I guarantee you that if you get this shorthand down, it has a way of making your day go just a little bit quicker. "C.T.D." of course being "circling down the drain" – your patient is on the way out. "S.O.B." – "Shortness of breath"; and "W.N.L." – "within normal limits". Elvis, you go ahead and feel free to write this down anytime you want before you leave the building, sweetheart. (*Scrubs*, Season 1, Episode 13, "My Balancing Act").

Using extracts such as the above as a starting point, students were then asked to rely on the new technologies and corpora in order to find other acronyms which are frequently used in the language of medicine, providing their extended expressions, giving their explanation in plain English and finding an equivalent in Italian. However, in order to monitor how much they had retained from the courses they attended in the previous years of their University, and understand what they might find more useful and easier to use, they were asked to indicate all the sources they had consulted and the level of difficulty the various entries they found had entailed.

At the same time, their attention was directed to the strategies of intralinguistic translation such as explicitation typical of popular products and some of the strategies of re-lexicalization, which Tannen (1989) and McCarthy & Carter (1994) described as typical of spoken language. Naturally, teachers have to make sure that the fictionality of these series is emphasized through and through, in so far as what viewers and students are confronted with is not actually spoken, natural language, but a language which was written in order to be recited. However, the spoken mode on which audio-visual products rely is certainly much closer to orality than, for instance, the dialogues in a medical novel such as *Oxygen* by Cassella (2008) or *The Second Opinion* by Palmer (2009), to name just the most recent and popular ones, can be. This aspect determines not only the importance of all those elements that characterize spoken communication (namely, body language, gaze behaviour, intonation, pitch, stress, pace etc.), but also, as the analysis of any episode of *House M.D.* makes patent, the fact that the language used, when compared to the written language of articles and books, is typically characterized by a lower lexical density, by re-lexicalization as introduced above and by a structure which is generally organized on the basis of the turn-taking system which determines the way actual conversations are organized. These aspects clearly appear consistent with the idea of popularization at the very basis of products such as the two television series on which this article focuses, and have a major impact on the register adopted in the conversations recreated on screen too.

For example, metaphors – which notably play an important role in the language of medicine actually used by professionals – are often exploited in the television series too. In actual fact, one of the stimulating aspects of *House M.D.*, which is typical of the situation comedy *Scrubs* too, is the fact that, within the intradiegetic (Genette 1972) microcosm that the filmic narrative creates, various degrees of specialization are represented. Indeed, we can find situations when specialists from the same field communicate; occasions when one specialist speaks with a specialist from another area (generally House, who

specializes in infectiology, and Wilson, who is an oncologist); learning environments in which a doctor interacts with his/her trainees, and circumstances when doctors have to confront 'laymen' (generally the patients themselves or their relatives) and therefore have to translate intralinguistically many of the medical notions they refer to.

As a consequence, television shows such as these might be very stimulating for students, precisely because they present situations they can more easily relate to. Although it is true that the courses under consideration are directed to non-specialists, who will never act as trainees in hospitals, the very fact that the characters are often represented as studying, preparing exams, being tested during the rounds and relating to their professors/doctors, clearly creates a form of sympathy and empathy with their situations as represented on screen and can be perceived as an environment they at least partially know. Furthermore, the presence of a didactic environment entails the enactment of strategies on screen that can prove very useful for extradiegetic receivers too, in so far as they can take advantage of the explanations that, within the intradiegetic world of the television show, are directed to the intradiegetic receivers. At the same time, they help students realize that, were they to act as simultaneous interpreters in hospitals, they would have to take into consideration the strategies of 'popularization' they would have to adopt, together with the necessary interlinguistic strategies, in order to facilitate the communication exchanges between doctors and patients.

In this sense, it was very interesting to analyse some of the metaphors created by Dr. House and his colleagues. During this phase of the course, students were thus required to identify the various semantic fields exploited and compare them to the semantic fields characteristic of actual medical language, on the basis of the studies conducted for example by Hudgkin (1985), Gotti (2005) and Fuks (2009). Thus, in the following example, students were able to identify the military metaphor Dr. House resorts to and which plays a fundamental role in actual medical language (among the many, see: Hodgkin 1985; Fuks 2009; Reisfield & Wilson 2004; Mansfield 2012):

> HOUSE: The tumour is Afghanistan, the clot is Buffalo. Does that need more explanation? OK, the tumour is Al Quaeda. We went in and wiped it out, but it has already sent out a splinter cell – a small team of low level terrorists quietly living in some suburb of Buffalo, waiting to kill us all […] It was an excellent metaphor. Angio her brain for this clot before it straps on an explosive vest. (*House M.D.*, Season 2, Episode 2, "Autopsy").

Naturally, other issues became the focus of analysis too. First of all, from a linguistic point of view, the word 'angio' was discussed, as an exemplification

of the tendency to abbreviate words in the attempt to be more concise and the changes of grammatical class to which words are often subjected in English Medical Language in order to originate neologisms, as in this case 'angio' is used as a verb with the meaning of 'to perform an angiography'. Naturally, when students were asked to translate this term, they experienced some difficulties, in so far as in the Italian language of medicine, changes of this kind are more difficult and rare. This led them to suggest a diffused translation such as *fare una angio* [literally, 'do an angio', where the compound *angiografia*, direct equivalent of *angiography*, is abbreviated in Italian too]. In addition, cultural and intercultural issues were discussed, in order to assess the acceptability of the references activated by the metaphor used by House and the highly connotative terms he uses on the basis of the context of situation, the participants in the communicative exchange etc.

In a similar way, students were asked to analyse extracts which exhibited, among others, sports metaphors:

> CAMERON: Idiopathic T-call deficiency?
>
> HOUSE: Idiopathic, from the Latin meaning we're idiots 'cause we can't figure out what's causing it. Give him a whole body scan.
>
> CAMERON: You hate whole body scans.
>
> HOUSE: 'Cause they're useless. Could probably scan every one of us and find five different doodads that look like cancer. But, when you're four down, 100 to go, in the snow, you don't call a running play up the middle. Unless you're the Jets. (*House M.D.*, Season 1, Episode 17, "Role Model").

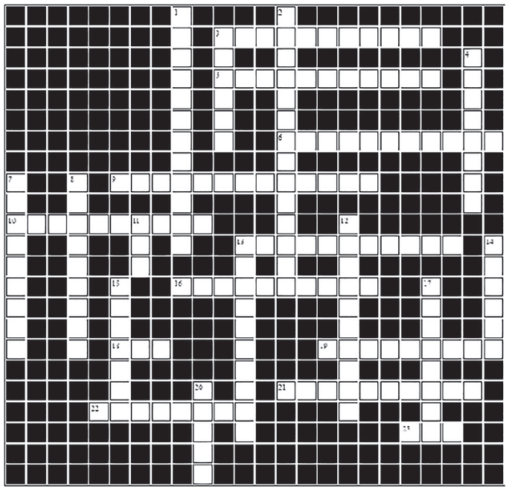
In this case too, the expression "Idiopathic T-call deficiency" was commented upon from a purely linguistic perspective and translated, in order to add the data to the table created at the beginning of the course. A further cultural issue was also discussed, in so far as the reference to the game of baseball might result obscure (and therefore useless) to an Italian receiver. This both in terms of audio-visual translation and in an imaginary scenario in which students were working as translators in an American hospital where Italian patients were treated.

At a later stage, students were asked to find other documents (either spoken or written) which could testify the importance of these metaphors in the language of medicine. Naturally, as before, this type of assignment represented a good testing ground for the students' research and technological abilities, and touched on both English and Italian medical language. The aim was for students to identify the most common metaphors in one language and the other and see whether some semantic fields were absent or present in one

language but not the other. From the results of the students' investigation, they were able to confirm that quite often the metaphors found in English work in Italian as well simply through equivalence. Thus, in Italian, the military metaphor is equally productive and, in a similar way as English Medical Language refers to 'magic bullets' against cancer, in the target language we find *pallottole magiche* as a privileged metaphor to indicate the chemotherapic drugs (Montagne 1988: 418; Bellani 1991: 285). However, whereas in the discourse about cancer in English we generally talk about 'rogue cells' (Sontag 1989: 17), thereby expressing a treacherous entity, in Italian we tend to talk about *cellule impazzite* ('mad cells', Cipolla 2004: 107), thereby shifting the emphasis and the connotative value of the term.

Following this activity, students were asked to translate intralinguistically parts of the text. On this occasion, however, they were required to render in medical English some of the less specialized and semi-technical terminology ordinary people often use into medical English, either on the basis of the episodes from the television series used during the course (where for instance the expression 'banana bag' often substitutes the more technical 'intravenous drip' – see for instance *House M.D.*, Season 1, Episode 10, "Histories"), or by referring to other episodes/series or their own experience. The results were rather interesting for students who for instance identified 'humerus' as a valid equivalent for the ordinary 'upper arm bone'; 'ulna', as the more specialized synonym for 'forearm bone'. Thus, when asked to translate these expressions, they admitted that, on this occasion, Italian has equivalent strategies, contemplating a more ordinary expression for *omero* [literal rendition of 'humerus'], that translates into *braccio* (literal translation of 'arm', which is however not qualified as in English in 'upper'), and for *ulna*, which in ordinary language takes a compound form, resulting in *avambraccio*.

In order to consolidate students' knowledge, this first phase of the course concluded with some additional activities such as the crossword below. Thanks to such activities, students were able to revise the terms on which the previous lessons focused and consolidate their lexical skills. By being required to find, on the basis of a definition in plain English, the corresponding specialized term which then they had to translate into Italian, this activity also served as a moment of self-assessment which proved, most of the time, highly motivating for students:



Across

3. Responsible for nerve conduction to and from the brain and the body
5. X-ray imaging
6. Surgical repair of a nerve
9. Drug that prevents clotting of the blood
10. paralysis from the waist down
13. Excision of part of the skull to approach the brain
16. Condition of difficult articulation
18. Brain and spinal cord
19. pain along the course of a nerve
21. Inflammation of the meninges
22. Largest part of the brain
23. Recording of various aspects of sleep

Down

1. Inflammation of the brain
2. Agents that prevents or lessens convulsion
3. Damage to brain caused by cerebrovascular disease
4. Agent that has a calming affect
7. Agent that induces sleep
8. agent that relieves pain
11. Record of the minute electrical impulses of the brain
12. paralysis on one side of the body
13. Incision into the skull to approach the brain
14. Paralysis
15. Fainting
17. Inflammation of the spinal cord
20. Portion of the CNS contained within the cranium

Figure 1. A crossword puzzle (ArmoredPenguin.com)

5. Audio-visual translation and contrastive analysis

Having worked on linguistic, intralinguistic, interlinguistic, situational, and cultural issues, taking as a starting point the language presented in the audio-visual products introduced above, the students were then engaged more directly with issues related to the audio-visual translation of the same filmic texts. Obviously, one of the main career options for students attending courses of English Linguistics and Translation is to work as translators. However, while attending their third year usually students have not yet made a clear decision as to the type of translation they want to specialize in (specialized, audio-visual, editorial etc.). As a consequence, the second part of the course aimed at showing how a different kind of translation (in this case audio-visual) might work.

For this reason, students were asked to work on the same extracts they had examined previously, performing however a contrastive analysis of the original texts and their dubbed versions. Thus, after watching how the same scenes were rendered in Italian, students were required first to investigate whether features such as intonation, turn-taking, hedges etc. were subjected to any change during the translation process.

They were then required to work on the scripts themselves, creating another table in order to report the way the source text was dubbed, the strategy adopted on those situations and, if the translation was different from the one they had suggested during the previous phase, their own option.

Source Text	Dubbed version	Translation Strategy	Students' option
Lou Gehrig's disease	Sclerosi laterale amiotrofica	Substitution	Morbo di Lou Gehrig

Table 2

For instance, students immediately noticed that from the very first scene analysed there were some omissions in the dubbed version. Thus, the target option for the expression "broad-spectrum antibiotics" – namely "*antibiotici a largo spettro*" – corresponded to the option suggested by the students themselves, who either on the basis of their life experience or through the searches they carried out during the first phase of the course (in particular concordance searching), could confirm that this was the equivalent in the Italian language of medicine. Yet, the remaining sentence ("And since he's displaying septic physiology, draw blood for adrenal and thyroid function") appeared lacking various elements which, in the source text, added to the 'scientific information' presented within the show. Indeed, no reference to "septic physiology", or "adrenal function" is made, whereas the expression "to draw blood" (which indicates a specific diagnostic test) is rendered with a much vaguer "*fare un controllo*" (meaning 'to check'). Since most students had translated all the elements of the sentence, they were encouraged to consider the reasons that might have led translators to render the sentence in such a way, and the consequences this choice could have on the target text and its receivers. Naturally, the possibility that the choice of translation procedures such as omission and reduction was determined by the technical constraints that audio-visual translation imposes was taken into consideration. However, the word count of this first turn demonstrated that the Italian text was actually shorter than the English. During a short role-play, students actually timed themselves when

delivering this first part of the dialogue, and proved that, even without relying on the new advances in technology, which enable to either reduce or increase the speed of the utterance and modify facial and lip movements of actors to synchronize their speed in the target language, a much more complete and faithful translation such as the one they had produced would have been possible. This was further confirmed by the translation found later on in the same extract, when "Guillain-Barré", which in the English version does not collocate with any other word, in the dubbed text is rendered as "*Sindrome di Guillain-Barré*" (literally Guillain-Barré's disease), thus adding ten characters to the original. Clearly, students agreed on the fact that the omissions noted above, while not hindering the general meaning of the source text and enabling Italian receivers to enjoy the television show, diluted the specialization of the text itself, thereby changing the thematic and figurative isotopies (Greimas 1966) of the original. From a psychological and emotive perspective, then, this was a very important moment for students, not only because they felt quite pleased with themselves, but also because they realized that the level of precision required by specialized translation might well be called for in other types (and much more popular) translations too.

Another aspect that students noticed was the fact that the acronym A.L.S., which in the English version is translated intralinguistically immediately after its first appearance as "Lou Gehrig's disease", in the Italian version is rendered first with the Italian acronym "*S.L.A.*" and, immediately afterwards, as "*Sclerosi Laterale Amiotrofica*", equivalent and literal translation of "Amyotrophic Lateral Sclerosis".

At this stage, students were already aware of the fact that eponyms are often used in the language of medicine to indicate a specific condition. During the previous part of the course, in fact, this extract was used as the starting point to illustrate how the language of medicine is actually characterized by many exceptions to the very notion of 'lack of ambiguity' which is often cited as typical of specialized languages. In particular, since students had, in their reading list, extracts from Strasser's "Tour de Babel" (1980), and Gotti (2005), they were aware of the fact that the same pathology can be identified by many different terms in English. They were also able to note two important features: first that sometimes not only the same medical condition can be identified by its scientific name and the name of the person who discovered either the disease or the cure, but also that, since various researches from different countries sometimes claim to be the discoverers of the same scientific discovery, the latter is subsequently indicated by different eponyms according to the nation in which it is referred to (see Gotti 2005: 36-37). In this specific case, through

the search they had carried out earlier in the course, students knew that this medical condition is known, in Italy too, as *il morbo di Lou Gehrig* (literally 'Lou Gehrig's disease'), after the famous baseball player from the New York Yankees who was diagnosed with this neurological disease in 1939. Thus, when asked which might be the consequences of this translation choice, the students recognized that by simply using the extended version of the acronym, the Italian text seemed to obscure an important characteristic of medical language in both its English and its Italian varieties (see for example Gelmetti 2015).

A similar approach to the translation of acronyms was noticed in the following lines too, where the original 'A.V.M.', rather than being translated into the corresponding Italian acronym (*M.A.V.*), is immediately rendered explicit in the translation through recourse to the extended formula which, in English, reads 'Arterio-Venous Malformation' and which in Italian becomes *Malformazioni arterovenose*. Likewise, the two acronyms 'I.V. I.G.' (which by now students had learned stand for 'Intravenous immunoglobulin'), are translated by adopting the same procedures into *Immunoglobulina in vena*. Finally, the acronym 'M.R.I.' ('Magnetic resonance imaging') was discussed. Indeed, most of the students had previously translated it with the Italian equivalent *R.M.I.* – namely *risonanza magnetica per immagini*. Rather than opting for the Italian acronym, however, the dubbed version presents an explicit translation, abbreviating the Italian definition as *risonanza* (literally, 'resonance'). As a matter of fact, this specific radiology examination is often indicated in Italian by the shorter acronym *R.M.* and is often referred to simply as *risonanza magnetica*. In consideration of the intradiegetic situational context and the interlocutors engaged in the communicative act, as well as the popularization typical of the product in which the term is inserted, the latter was actually the option selected by most of the students, who, on the basis of the searches they had carried out, deemed the Italian dubbing too imprecise, as the same word assumes a different meaning in medicine, physics, chemistry etc.

This phase dedicated to the contrastive analysis of the source and target texts, then, resulted very useful at more than one level, in so far as, while giving the students a great deal of self-confidence, confirmed once more that the initial phases of the translation process, devoted to the analysis of the source text and the necessary searches, are actually essential.

On the basis of the various strategies students had identified in the rendition of the dialogues of the television shows, the following stage of the course focused on the specific element of titles and the way they were rendered into Italian.

After making available to students a chart with various episode titles and their respective translations, they were asked to indicate whether they considered the target titles acceptable or unacceptable and why, encouraging them to find alternative solutions if needed.

For example, the title of the third episode of the first season, which in the original reads "Occam's Razor", was translated into Italian as "*Una sfida per House*" ("A challenge for House"). Although students acknowledged the fact that the choice of this substitution does not actually affect the general meaning of the episode, they also recognized that the omission of this reference impinges on the register of the episode itself, omitting the introduction of a scientific notion into the title which clearly works as a cohesive device within the filmic narrative in its entirety. Yet, the principle to which "Occam's Razor" refers – namely the idea that among competing hypotheses that predict equally well, the one with the fewest assumptions should be selected because, even though more complicated solutions may ultimately prove to provide more accurate diagnoses, the fewer assumptions are made, the better – is very well known all over the world. In particular, since the phrase has appeared as the title of songs (see for instance: "Occam's Razor", Porcupine Tree 2009) and in other products of mass production (comics, sitcoms etc.), the students were quite familiar with it, and for the most part knew that in Italian the standard translation is, literally, *Il rasoio di Occam*, the alternative which they proposed as a more acceptable translation.

Clearly, the substitution procedure performed in the translation of the title of the third episode of the first season – which in the original reads "Humpty Dumpty" and is rendered in Italian as *Sensi di colpa* ('Guilt') – was deemed by students slightly more justified from a cultural point of view. In point of fact, the original title refers to the character of a very famous English nursery rhyme, which however might not be so well known in Italy, in spite of the fact that it was the protagonist of the animated film *Puss in Boots* (2011). For this reason, some of the students opted for the reinstatement of the original title, justifying their choice also by referring to the fact that very often when first names are present in a title, the name is left unchanged and the zero-translation strategy is selected.

Similarly, the translation of the title of the episode commented upon above (*House M.D.*, Season 1, Episode 9), namely "D.N.R.", which was rendered as *Rianimazione vietata* ("It is forbidden to reanimate"), raised more than one issue. Indeed, on this occasion, the acronym, which in English means 'Do Not Resuscitate/Reanimate', is in fact explicitated and translated intralinguistically, so that the Italian title does not present a short acronym but a much

longer expression, an aspect which, as the students themselves recognized, loses in effectiveness and halves the impact of the original title. In addition, the expression that was selected among the various possible, does not actually correspond to the one normally used in Italian medical language. As students acknowledged, the exact same acronym does in fact exist in Italy too, where it stands for *Da non rianimare* (*D.N.R.*). As a consequence, by adopting this formula, the Italian text would not even have needed the application of the usual procedure of re-ordering which, as the work on these extracts has proven, is regularly adopted. More importantly, it would have maintained the same level of specialization of the source text, referring from the very beginning to actual medical language. Consequently, the way this title was translated appeared rather inaccurate to students, precisely because it seemed to ignore the genre of the original to which the translated text should equally belong.

A rather analogous, albeit perhaps even more relevant example, corresponds to the title of the whole series itself, which the students had not actually considered before. Indeed, the way the acronym 'M.D.' present in the title of the series, is rendered in the Italian version of the television show, represents another example of how translation often disregards the implications of the specialized language used in the original text. In point of fact, the original 'M.D.' means *Medicinae Doctor* in Latin, thereby pointing to the influence that Latin (and classical languages in general), have on the language of medicine. However, in Italian, the acronym remains unchanged but is subjected to a change of meaning, finally indicating *Medical Division*. The English expression Italian viewers are confronted with, however, can refer to any ward of a hospital, thus giving no indication of the ward in which House and his team work, namely infectiology.

Certainly, the rendition of acronyms poses various kinds of problems to translators. For instance, as far as the extract from *Scrubs* analysed above is concerned, it is worth noting that the first acronym mentioned by Dr. Cox – namely 'C.T.D.' ('Circling the drain', which is occasionally substituted, in English, by the acronym 'F.T.D.', meaning 'Fixing to die') (see: Segen 2011), is not actually translated but substituted by the acronym D.N.R. which, as students had learned above, means *Da non rianimare*. Thus, the original acronym, which represents an expression typical of the informal and colloquial register doctors might adopt, for reasons of conciseness, when compiling the medical records of the patients or communicating intraspecialistically with other doctors or nurses, is translated by resorting to an acronym which expresses not only a different level of register, but also an altogether different meaning. As students immediately recognized, in fact, whereas in the first case the patient is dying

despite the efforts made by the medical staff, in the second either the patient or his/her family has expressed the wish to avoid what is usually referred to as futile medical care. Despite this difference, the students approved the strategy of compensation adopted here, in so far as it introduced a more scientific language in the Italian version of the show.

Different is the case with 'S.O.B.' ('Shortness of Breath'), the acronym that students initially translated as *B.P.C.O*. The latter stands for the condition known in Italian as *Broncopneumopatia Cronica Ostruttiva*, which indicates one of the causes for the shortness of breath indicated by the English acronym, thereby remaining within the same semantic field. In spite of this, within the show, the English acronym is translated according to a procedure of substitution. In the Italian filmic text, it is in fact replaced with *G.D.S*., meaning *Gastro-duodenoscopia*, a term normally abbreviated in *gastroscopia*, which refers, literally to a 'gastroscopy'. On this occasion too, then, the students were rather surprised to see how the dubbed version, while maintaining the formal recourse to an acronym (an aspect which certainly helps assigning this product to the medical field, and allows to recognize the language utilized within the episode as belonging to the macro-category of English for Medical Purposes), introduces completely different elements: whereas in the original text Dr. Cox refers to a symptom, in Italian he talks about a specific diagnostic test. Not only this, but the two versions refer to completely different parts of the human body, which students were easily able to confirm by retrieving different types of informative material, from written texts (UK NHS website), to videos (YouTube) and illustrations (online).

On the contrary, the acronym 'W.N.L.' ('Within normal limits', is rendered in Italian with the corresponding *N.L.N*., meaning *Nei limiti della norma*. On other occasions too, as noted by students, the interlinguistic translation is respectful of the expressions and the terminology typical of the Italian language of medicine, so that, for instance, 'Whipple's triad' is rendered, through a faithful translation, as *La triade di Whipple*. Likewise, 'jaw claudication', which offered a good opportunity to tackle once more the importance of etymology and the history of language, was rendered faithfully in the target language. As students appreciated by consulting the *Online Etymology Dictionary*, the second term derives from the Middle French (13th century) *claudication* or directly from the Latin form *claudicationem*, the accusative form of the feminine noun which actually appears in the Italian dubbing in the nominative form *claudicatio*. From this, the Italian *claudicatio della mandibola* we find in the target text. Naturally, the term testifies to the classical origin of both English and Italian medical language, an aspect confirmed by many other words and expressions

retrievable in the series, where the same procedures of reordering and diffusion are applied (see for instance 'Temporal arteritis', which is translated literally as *arterite temporale*. However, students were able to identify that, in the translation of 'ataxia dysarthria' for instance, the approach was much more literal and word-for-word, thus resulting in *atassia disartria*.

Access to the *Online Etymology Dictionary*, stimulated students, who were then encouraged to investigate the origins of some of the specialized terms encountered so far, and analyse their various component parts. Thus, 'biopsy' was identified as a compound form from the Greek *bi-*, combining a form of *bios*, that is to say 'life', and *opsis*, meaning 'sight', which justified the fact that it was rendered with the direct equivalent which, being equally of Greek origin, results in *biopsia*. This approach became particularly useful in the interpretation and rendition of a brief monologue Elliot has in front of the new interns who have recently arrived at the hospital of the Sacred Heart where the series is set, during which she describes the mnemonic trick she has invented for herself in order to remember the bones in the hand.

Source Text	Target Text
ELLIOT: Scaphoid, lunate, triquetrum, pisiform, trapezium, trapezoid, capitate, hamate. [S.L.T.P.T.T.C.H.] Some Lovers Try Positions That They Can't Handle.	ELLIOT: Scafoide, cuneiforme, pisiforme, semilunare, trapezio, capitato, uncinato. [C.P.S.T.C.U.] Sostenere Certe Posizioni Sessuali Traumatizza Certi Uomini.

Table 3

At first sight, students expressed a positive assessment of the translation offered by the television show, which seemed quite accurate in terms of register, genre and the specialization of the language used. They noted that some of the translations of the proximal (*semi-lunare* for 'lunate') and distal raw (*cuneiforme* for 'triquetrum') appeared quite distant from the original, but after consulting the Italian etymological dictionary (online), they realized that, if this is so, it is because of the addition of a prefix in the first case and a different etymology in the second. Nevertheless, further research confirmed that both terms belong to the Italian language of medicine, and therefore represent effective equivalent in terms of translation. Yet, the translation of 'triquetrum' with *cuneiforme* (literally 'cuneiform'), raised some issues as students themselves discovered that in Italian the term identifies three bones of the foot and therefore seemed

out of context both verbally (in that all the other bones mentioned by Eliot refer to the hand) and visually (since the character indicates one by one the location of these bones in her hand as she names them).

During this part of the course the image below was presented to students in order to help them visualize the bones Elliot is referring to in the scene described *supra*. Indeed, the importance of making referents concrete, in order to help students relate to them more easily has since long been recognized (among others: Mannan 2005). Furthermore, the essential role that images can have in a learning environment has been largely discussed (among others: Clark, Lyons 2004). Indeed, as Mayer suggests, illustrations – especially when they visualize and further explain what is initially presented in a different modality – can heighten students' curiosity and their interest, helping them build useful mental models (Mayer 1989), and focussing their attention on the relevant information. Because of this, during the course a brief activity on the basis of figure 2, which presented the same information communicated in the scene reported above was devised. Students were in fact required to complete the image by integrating the Italian translation of the various terms not according to the translations provided in the situation comedy but relying on their own research work:

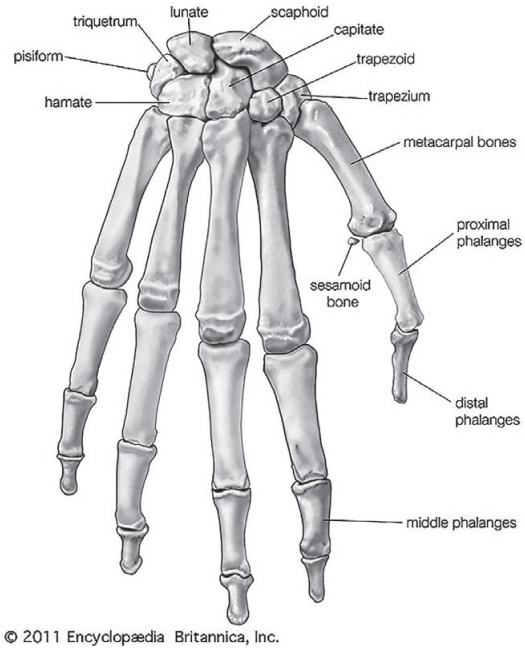


Figure 2. Hand anatomy (Encyclopaedia Britannica 2011)

This actually proved very useful, since it further encouraged them to acquire materials and do research autonomously – both important aspects from the perspective of critical thinking (Fisher & Scriven 1997) and, naturally, essential in the formation of translators. Not only this. In fact, it was precisely this work of research that enabled the non-specialist students of the courses to identify, in the Italian audio-visual translation, the presence of a term belonging to the wrong semantic field (the bones of the foot rather than the bones of the hand).

It therefore appears evident that an amusing scene too such as the above can represent a good starting point to introduce some basic vocabulary. Moreover, if supported by activities such as those based on figure 2, it could render the impact of specialized translation less intimidating and more motivating, thereby resulting in better language acquisition. Indeed, if students feel at ease, they experience lower anxiety and therefore learn and perform better (see for example Peirce 1995; Arnold 2001). In addition, mistakes could also be usefully exploited and through activities such as 'Can you find the mistake?' or 'Find the odd one out', might represent a challenge for students, who can be thus further stimulated.

This is particularly true when dealing with products such as *Scrubs*, where the humoristic tones of the filmic text turn it into a very valuable tool, through which students can practice their translation skills at more than one level.

As illustrated above, in fact, many scenes of the show can be used to focus not only on particular lexical items (their formation, their etymology, their equivalents etc.), but also on interlinguistic translation and the type of register and intralinguistic strategies that could be adopted when acting in different situational contexts, defined by participants who differ from the point of view of status, education, age etc. For instance, the dialogues between doctors and patients we see represented on screen might well be studied from this particular perspective, in order to see whether the tenor (Halliday 1978) that the television series assigns to these communicative exchanges, actually reproduces the tenor real life doctors adopt with their patients, as studied for example by Wodak (1997), Roberts (2000), Adegbite & Odebunmi (2006), Li, H.Z. *et al.* (2007), Belder *et al.* (2013), among others. During the courses this article is based on, this issue became very relevant in the discussion of *House M.D.*, where the protagonist often appears extremely abrasive when relating to both his colleagues and his patients. In *Scrubs*, on the contrary, the humour to which the characters resort in the intradiegetic world of the television series – is actually very sharp and sometimes rather offensive, especially between colleagues – creates a different kind of relationship between doctors and patients. Even though the patients do not always find the doctors' jokes

funny (see for instance J.D.'s pun 'Schnozmia' above), the efforts made by the young doctor to put the patient at ease will probably be perceived as amusing by the extradiegetic receivers, who therefore are bound to be more prone to absorb some of the aspects presented in the show.

Furthermore, these topics were useful to encourage students reflect upon the different approaches typical of the various 'typologies' of doctors represented on screen, noticing differences in register, intonation patterns, gaze behaviours, body language, and so on.

5. Conclusions

As suggested above, the multimodal and multimedia approach outlined here therefore appears consistent with the different approach to medicine propounded by Medical Humanities, in so far as it focuses on both formal issues connected to the specialization of the language of medicine and issues more closely related to the interaction between the senders and the receivers of the message.

Indeed, as David Crystal (2012) suggested, albeit referring to legal language, specialized language should be 'translated' in order to suit the receivers' needs.

The attention to the receiver of the translated text and the recourse to strategies able to obtain not only formal accuracy but actual communication, thus identify a different kind of professional figure within the field of specialized translation.

Naturally, the discussion developed in this paper is, for reasons of space, limited. However, the path outlined here represents an ongoing project which should result not only in further research but a fruitful topic for seminars, masterclasses and translation schools. I thus hope this work has suggested at least some of the activities that proved particularly useful in fostering language awareness and critical reflection.

As suggested above, students' feedback to the general organization of the courses and the activities proposed were actually very positive and resulted in various projects they developed either for their end of course examination or for their final dissertations. In addition, quite a few students became very interested in medical translation and enrolled in specific courses during the postgraduate phase of their academic career.

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INTRALINGUAL TRANSLATION IN HEALTHCARE SETTINGS: STRATEGIES AND PROPOSALS FOR MEDICAL TRANSLATOR TRAINING[1]

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Abstract

Recent studies have shown that medical translators are increasingly called upon to write patient information materials by reformulating specialised texts, either inter- or intralingually (Muñoz-Miquel 2014, 2016a). This activity requires applying a series of intralingual translation skills, which, however, are rarely addressed in medical translator training programmes. This paper aims to contribute to filling this gap by putting forward a proposal designed to help translators acquire these skills. For this purpose, we take as a starting point an empirical study carried out by the GENTT Research Group (Universitat Jaume I, Spain) in which a series of intralingual strategies were used to make real fact sheets for cancer patients more comprehensible and effective for

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these readers. After describing the strategies, which were validated by the patients, we offer a training proposal aimed at fostering medical translators' skills for dealing with this type of intralingual translation.

Resumen

Según estudios recientes, a los traductores médicos se les requiere redactar textos dirigidos a pacientes a partir de la reformulación, ya sea inter o intralingüística, de textos especializados (Muñoz-Miquel 2014, 2016a). Para ello, es necesario aplicar una serie de estrategias de traducción intralingüística, que, sin embargo, apenas se trabajan en los programas de formación traductores médicos. Este artículo pretende contribuir a llenar este vacío mediante una propuesta orientada a su adquisición. Para ello nos basamos en los resultados de un estudio empírico llevado a cabo por el grupo GENTT (Universitat Jaume I) en el que se mejoró la comprensibilidad de una serie de folletos para pacientes oncológicos mediante el uso de estrategias de traducción intralingüística. Tras describir dichas estrategias, que fueron validadas por los pacientes, proponemos una serie de actividades didácticas con el objetivo de fomentar la habilidad de los traductores para enfrentarse a este tipo de traducciones.

Keywords: Intralingual translation. Comprehensibility. Medical translator training. Fact sheets for patients. Textual genre.

Palabras clave: Traducción intralingüística. Comprensibilidad. Formación de traductores médicos. Guías para pacientes. Género textual.

1. Introduction

The democratisation of access to information (Muñoz-Miquel 2012: 187) and the development of new technologies (Campos 2013: 48) have made a large quantity of medical information resources available to patients, and this has stimulated their interest in playing a more active part in their own healthcare. Consequently, the doctor-patient relationship has changed from being eminently asymmetrical and paternalistic to involving greater engagement of patients in decision-making on the management of their health (Arrighi, Jovell & Navarro 2010: 370).

The advent of what is known as patient-centred care has thus increased the need to have medical information written in a form that is comprehensible to a wide, heterogeneous, non-specialist audience and also "takes account of their specific situation, needs, values and expectations" (Navarro 2014: 86). We are dealing, therefore, with information that aims to bridge the gap between two different knowledge and discourse communities (Montalt & Shuttleworth 2012: 15; García-Izquierdo & Montalt 2013: 40), namely medical specialists and lay readers.

An increasing number of publications written for specialists are currently being intralingually recontextualised — entailing a "move to a target context with different participants, purposes, expectations, values, etc." (Montalt & Shuttleworth 2012: 16) — and reformulated — involving "a textual operation of rearranging and reexpressing the content in a different target text" (Montalt & Shuttleworth 2012: 16) — to meet the needs of a non-specialist audience. We can find examples in the consumer version provided online by the prestigious *Merck Manual*, where content related to diseases, diagnostic procedures, health news, etc. is explained so that the general public can understand it. Another example is the fact sheets for patients (FSPs) published by the European Society for Medical Oncology (ESMO). These are derived from clinical practice guidelines, a genre aimed at medical professionals based on a systematic review of clinical evidence to support decision-making processes in patient care. *Annals of Internal Medicine*'s summaries for patients, which are brief, non-technical summaries of studies and clinical guidelines published

in that journal, are another initiative to "help patients better understand the complicated and often mystifying language of modern medicine" (see http://annals.org/aim/pages/patient-information).

To the best of our knowledge, recontextualisations and reformulations of this kind, or expert-to-lay intralingual adaptations, tend to be done mostly by medical professionals. Indeed, those who appear as authors of the ESMO's FSPs or of the articles published in the *Merck Manual* consumer version, for example, are medical practitioners or doctors of medicine. However, this often causes considerable problems for medical professionals, who usually find it difficult to write about their field in layman terms (Zethsen 2009: 809). Albin made this clear in 1998 (1998: 117):

> Health-care providers, in an effort to save time and assist patients, produce instructional medical texts in-house, sometimes without any real written communication skills. When non-writers write instructional texts, essential background information and procedural steps may be omitted because they seem obvious to the author; data may be reduced to such an extent that the information is rendered incomprehensible to the lay person; technical terms may be left undefined or, in an effort to reach patients who are not highly literate, substituted with jargon or imprecise lay terms. As a result, countless hours are wasted every year at both ends of the writing/reading communication continuum producing documents which fail to convey information.

The study conducted by Jensen and Zethsen (2012) produced similar results, in that it shows that doctors and pharmacists who translate patient information leaflets for medicines from English to Danish have more difficulties than trained translators in adapting to the reader's register and prior knowledge. They introduce more elements that impede readability into their target texts (Askehave & Zethsen 2000, 2002), such as nominalisations and terms of Greek or Latin origin, even when a more comprehensible alternative exists in Danish. Even though their study, as we can see, focuses not on producing expert-to-lay intralingual adaptations but on "traditional" interlingual translations, it makes it clear that doctors' and pharmacists' extensive medical knowledge represents a problem when it comes to adapting to the reader's needs, as they have to "struggle to distinguish between their own knowledge and that of the receiver" (Jensen & Zethsen 2012: 45).

Although, as we have already said, those who take on the task of producing expert-to-lay intralingual adaptations are mostly medical professionals, recent studies show that this trend is beginning to change. An empirical study (Muñoz-Miquel 2014, 2016a) in which 187 English-to-Spanish medical translators were surveyed showed that 17% of them carry out such intralingual adaptations as part of their professional activity, such as turning scientific

articles or summaries of product characteristics (SPCs) into FSPs. Although this is not a very high percentage, it shows that the range of tasks that can be performed by trained translators is beginning to expand. However, do medical translators know how to write texts that prove useful in adapting to patients' and lay readers' needs? Do they receive specific training to enable them to carry out these expert-to-lay intralingual adaptations successfully?

In our view, producing these adaptations requires adopting a series of strategies that are used not in what is traditionally referred to as "translation proper" (Jakobson 1959/2000: 114), that is, equifunctional translation between different languages, but in intralingual translation (Zethsen 2007, 2009; Muñoz-Miquel 2012), also known as heterofunctional translation (Nord 2009), intergeneric translation (Askehave & Zethsen 2001; García-Izquierdo & Montalt 2013), rewording (Jakobson 1959/2000) or genre shift (Montalt & González 2007; Ezpeleta-Piorno 2012). Although there are still some scholars that do not feel comfortable with a broad, inclusive definition of translation (Zethsen 2009: 798; Zethsen & Hill-Madsen 2016), it is increasingly agreed within the academic community that the translators' responsibilities go well beyond the very notion of interlingual translation. We agree with authors such as Schäffner (1999), Zethsen (2009) and Zethsen and Hill-Madsen (2016), who argue for the inclusion of intralingual translation on the map of Translation Studies.

The skills used to carry out these intralingual translations in the medical field have scarcely been addressed, except in a few studies such as those of Askehave and Zethsen (2001), Montalt and González (2007), Ezpeleta-Piorno (2012), Muñoz-Miquel (2012) or Hill-Madsen (2014). Most of these focus on describing the strategies used in a corpus of popularising genres "intergenerically derived" (Askehave & Kastberg 2001: 491) from others of a more specialised nature. As we can see, in addition to the fact that the literature on the subject is not plentiful, there is a predominance of descriptive studies, but not of research that validates the strategies applied to particular texts, using lay readers or real patients to test their effectiveness and incorporate the perspective of those who will be the end users of the texts (Saiz-Hontangas 2015).

Nor are we aware of any initiatives that carry these strategies over to the field of training medical translators. Indeed, in Spain, at least, they receive hardly any preparation for tackling intralingual translation jobs in response to increasingly varied communication needs. This is clear from an empirical study (Muñoz-Miquel 2016b) which analyses the competences taught in master's degree courses on medical translation in Spain: only two of the 15 courses available include tasks that deal with these strategies.

In the light of all the points noted so far, this study is based on the following premises:

- Expert-to-lay adaptations are intralingual translations.
- Advances in research (should) feed into advances in education and in training programmes.
- Translation programmes have to adapt to the rapidly changing market.
- The tasks that a medical translator will face are diversifying.
- Medical translators can improve their professional performance if they receive specific training in intralingual translation skills.

Therefore, in view of the lack of training provision for acquiring the competences needed to carry out intralingual translations that make specialised knowledge accessible to patients and the general public, this paper aims to contribute to filling this gap by putting forward a teaching proposal designed to help translators acquire intralingual translation skills. As we shall see in detail in the following sections, one of the most interesting aspects of our proposal is that it is based on the results of a case study which used patients to validate a series of intralingual translation strategies applied to real texts. In this regard, in line with the arguments stated by Kim (2012), we believe that research on (intralingual) translation in real professional contexts can benefit the design and planning of training for specialised translators.

This article is structured as follows: section 2 describes the case study which tested a series of intralingual translation strategies with real patients; section 3 presents the teaching proposal, with examples of specific activities that could be performed; and finally, section 4 summarises the main conclusions of the study, as well as various applications and future lines of research.

2. Materials and methods

In this section we explain the case study which we have used as a basis for formulating the teaching proposal to be described in detail in section 3.

2.1. The MedGentt project[2]

The purpose of the MedGentt project, developed by the GENTT research group at the Universitat Jaume I, was to contribute to improving the written information provided to cancer patients in hospitals. For this purpose, we enlisted

2. "Needs analysis and proposal of written information resources for oncology patients", research project supported by the Spanish Ministry of Economy and Competitiveness.

the participation of healthcare professionals (doctors, nurses and psycho-oncologists) and breast cancer patients at two public hospitals in the Valencian Community (Spain), as well as communication experts (linguists and translators). In this project a mixed research methodology (Patton 1987; Denzin 1989) was employed, in which the data obtained were triangulated using both qualitative and quantitative methods, including readability formulas, questionnaires, interviews and focus groups.

The research study was conducted in four phases. First, through interviews and focus groups we identified the patients' needs for written information in the form of FSPs, as well as their preferences with respect to what information they needed to be provided with and how they wished to receive it. Second, using questionnaires and readability formulas we analysed the quality and comprehensibility of the FSPs provided in the participating hospitals. Third, an improved version of these FSPs was formulated by applying intralingual translation strategies, and tested on a sample of patients by means of questionnaires and focus groups. Finally, on the basis of these results, we produced a final version of the FSPs in Spanish, which was subsequently translated into other languages required in the hospitals: Catalan, French and Romanian.[3]

From the results obtained in the various phases of the project we drew the following conclusions:

- The hospital FSPs were written by nurses, who were trying, on a voluntary basis, to make up for the lack of written materials to supplement the oral information patients receive from the healthcare professionals. The nurses did so by consulting and reformulating texts aimed at specialists, in an intuitive and unsystematic way. Since most of the FSPs explained the side effects of chemotherapy treatments, the texts they reformulated were most often SPCs.
- By using intralingual translation skills the team of translators and linguists was able to correct certain faults in the original FSPs and helped to increase their comprehensibility, defined as a "function of the interaction of the reader with the text" (Garner, Ning & Francis 2012: 283), which includes both the concept of readibility and that of legibility (García-Izquierdo & Montalt forthcoming).

3. For further information on the communicative needs of the sample of cancer patients we refer the reader to the article by García-Izquierdo and Muñoz-Miquel (2015). García-Izquierdo and Montalt (forthcoming), in turn, give more details on the methodology used in the comprehensibility analysis of the corpus of FSPs, and Martí (2016) provides a detailed explanation of the process followed to select and validate a readability index.

– The patients' verdict was that the improved FSPs were more "patient-centred", in that they took their prior knowledge, feelings and information needs into consideration. So having the patients' perspective made it possible to increase the communicative effectiveness of the FSPs, since, according to Garner, Ning and Francis (2012: 293):

> The reader constructs the meaning, and the outcome of the communication is his or her behavioural, cognitive and/or affective response. Effectiveness can [be] ascertained on the basis of a comparison of the writer's intended outcome with the actual response.

2.2. Validated strategies

As we noted in section 1, there are several studies that focus specifically on addressing intralingual translation strategies in the medical field, from various points of view. Since these can be consulted in articles such as those of Ezpeleta-Piorno (2012) and Muñoz-Miquel (2012) or the thesis by Hill-Madsen (2014), among other publications, we shall concentrate here on commenting specifically on those strategies that were validated by the patients taking part in the study aiming at improving the comprehensibility and communicative effectiveness of the FSPs. To be more exact, given that legibility, which concerns the format or visual appearance of texts, such as their length, layout, font size, typeface and other visual elements (DuBay 2004: 3; Clerehan, Buchbinder & Moodie 2005: 337; Mayor 2008: 11), is less relevant for training, we shall describe the strategies that we applied to improve the linguistic readability and content of the FSPs.

We have grouped these strategies into three categories, according to the rhetorical purposes pursued: those dealing with expert knowledge, those dealing with empathy and those dealing with important or unnecessary information.

2.2.1. Dealing with expert knowledge

The FSPs we improved (let us recall that they were produced from reformulations of SPCs) had certain features related to the way information is conveyed in texts aimed at specialists. For example, there was copious use of specialised terminology, nominalisations or complex sentences.

Medical terminology is one of the main barriers to communication between healthcare professionals and patients, and we therefore made considerable use of determinologisation (Askehave & Zethsen 2000; Montalt & González 2007;

Ezpeleta-Piorno 2012; Muñoz-Miquel 2012; Campos 2013; Hill-Madsen 2015; Saiz-Hontangas 2015) of the FSPs, defined as:

> […] a process of recontextualisation and reformulation of specialized terms aiming at making the concepts they designate relevant to and understandable by a lay audience. This process is motivated by specific cognitive, social and communicative needs, and takes place as part of a broader process of recontextualisation and reformulation of discourse. (Montalt forthcoming, *apud* Montalt & Shuttleworth 2012: 16)

Determinologisation involves a large number of potential strategies that are covered under this hypernym, such as synonymy, explanation, definition, exemplification, illustration, analogy, comparison, or replacement by a more popular term, among others.

To decrease the technicality (Hill-Madsen 2014, 2015) of the content of the FSP we made particular use of determinologisation by including more popularly-used synonyms but keeping the technical term, putting it in parentheses after the popular equivalent; e.g.: *pins and needles (paraesthesia)*. As well as using synonymy, we defined certain terms with a hypernym (Campos 2013; Hill-Madsen 2015). For example: *The* medicine *you are going to be given as part of your chemotherapy treatment is called Taxol® (placitaxel)*.

Although omitting the technical terms was considered, some of the patients in the focus groups mentioned that they wanted to be able to identify them, and we therefore decided not to omit any of them. Another strategy that was assessed but finally rejected as unnecessary, given the short length of the FSP, was to include a glossary with definitions or reformulations of the main terms.

Apart from the use of specialised terminology, another issue that proved to be a barrier to understanding the original FSPs was the great predominance of complex grammatical and syntactic forms. To simplify the phrasing, we used the strategy of denominalisation — in other words, converting noun phrases into verbal phrases (Askehave & Zethsen 2000: 71–73; Montalt & González 2007) — and made the sentences shorter. Thus, we gave preference to the use of verbal constructions (e.g., *inflammation of the mucous membranes of the mouth may occur* was reformulated as *the mucous membranes of the mouth may become inflamed*) and to simple sentences connected by full stops, trying to ensure that each contained a single idea. Moreover, in the improvement process we detected a misuse of punctuation in the original FSPs, which was corrected in the new version.

2.2.2. Dealing with empathy

When the patients compared the two versions of the FSP they commented that the phrasing of the original FSP was rather impersonal and sometimes a bit distant. However, according to the patients, "the improved versions overall sounded more reassuring and comforting, and also more empathic" (García-Izquierdo & Montalt forthcoming). This was achieved by using a series of strategies, among which the patients particularly appreciated tenor adjustment and personalisation of the information.

For this purpose, we made use of personal pronouns and made the subject of actions explicit, increasing the number of sentences written in the active voice, especially when an action is required of the patient (Askehave & Zethsen 2000: 71–72; Mayor 2008: 19; Muñoz-Miquel 2014: 199). For example, *paracetamol is recommended* was replaced by *you can take paracetamol* and *it will be solved by stopping administration* by *the healthcare staff will stop administering it*.

In the light of the patients' views, another strategy we employed to make the text more empathic was to avoid certain words or expressions that might be "hurtful and offensive", as one of them put it (García-Izquierdo & Montalt forthcoming). A notable example was replacing the lexical items *solvent* and *toxicity* with others that sounded less alarming.

Other solutions we implemented were adding sentences in which the patient was urged to speak to the healthcare staff if necessary (by including expressions such as *Let staff know if...*) and creating a section for them to make a note of questions they wanted to ask on their next visit.

2.2.3. Dealing with important or unnecessary information

The information we wanted to convey in the text and the way it was conveyed were handled according to how important that information was to the patient, in the light of the questionnaire and focus group results. So, on the one hand we restructured, expanded and added the information we considered important, and on the other we summarised or omitted unnecessary information (Montalt & González 2007).

In the case of the textual genre we are dealing with and the subject in question, we observed that the parameters that were important to the patients were the timing, frequency and consequences or severity of side effects, which we arranged in that order. This strategy at the macrotextual level was also followed at the microtextual level.

We also found that anticipating certain effects and their possible solutions made patients feel more secure and more in control of the situation, by avoiding

premature anxiety and enabling them to be more involved in making informed decisions. So, the definition or explanation of each side effect followed the sequence problem → solution: first we explained what the patient might experience and then the causes and the courses of action they could adopt. These could include seeking medical attention and/or recommendations for avoiding or following certain types of behaviour, always accompanied by the relevant medical justification.

By expanding the important information, we mean introducing clarifications that would not be included in a text aimed at specialists, because they would be obvious or unnecessary (Muñoz-Miquel 2014: 202). For example, the patients very much appreciated the drafting of an introduction indicating the purpose of the text and who it was addressed to, so that readers could decide whether the information it contained was of interest to them (Mayor 2008: 13, 15). We also justified the recommendations in a way that avoided mere instruction and included examples to make certain complex or abstract concepts easier to understand. This arose in the case of certain side effects, for which we added explanations of their effect on carrying out everyday activities, so as to encourage readers to take extra care.

Finally, when synthesising the information, we omitted material that we considered unimportant according to our anticipation of patients' needs and interests, particularly certain very complex technical information that had been extracted directly from an SPC without being reformulated, such as information on certain side effects.

3. Training approach and teaching proposal

On the basis of our initial premises, set out in the introduction, and the data obtained from validating the intralingual translation strategies we used to improve the linguistic comprehensibility and content of an FSP with a sample of real patients, we designed a teaching proposal aimed at medical translators. For this purpose, we considered three complementary and integrated training approaches:

- Competence-based training (Kelly 2005; Hurtado 2007, 2008).
- A task-based approach (Hurtado 1999, 2007; González 2004).
- The simulation of real professional assignments (Nord 1991; Gouadec 2003).

Translation competence is a complex, multifaceted concept that embraces a number of different facets and has presented a challenge for translator training.

In the last few decades it has steadily gained acceptance, to the point that it has now become one of the most widely accepted approaches in translator education. Competence is a sophisticated expansion of the notions of ability and qualification, resulting from rapid changes in the organisation of work and planning activities (Grootings 1994) and an increasingly demanding market. Professional action competence is thus the sum of the competences that are essential to carrying out a professional task satisfactorily (Echeverría 2002). Within this general framework, numerous scholars have devoted their attention to translation competence, including Kiraly (2000), Schäffner and Adab (2000), Kelly (2002, 2005, 2007), PACTE (2003, 2009), Pym (2003), Göpferich (2009), among others. Pursuing this line, Lasnier (2001) has identified a series of interrelated principles inherent in competence-based training (CBT); the most relevant for the purposes of our study are the following:

- It is an integrated model which reconciles different approaches and brings together knowledge, skills and values (Hurtado 2007; Kelly 2007).
- It allows for teaching methods such as problem-based, task-oriented and project-oriented learning (Hurtado 2007; Galán-Mañas & Hurtado 2015).
- It takes professional practice into account and allows for operationalising competences according to areas of specialisation and/or professional profiles (Calvo 2010; Galán-Mañas & Hurtado 2015).

The GENTT group, concerned with specialised translation, has explored the relationship between textual genres from specialised fields and the acquisition of translation competence (Montalt, Ezpeleta-Piorno & García-Izquierdo 2008); more specifically, Muñoz-Miquel (2014, 2016a) has focused on the particularities of medical translator competence. Through an empirical study carried out with professional translators working in the Spanish-English language combination, this author has defined and validated five competence clusters specific to medical translators and essential to their training: the textual and communicative cluster, the documentary cluster, the thematic and terminological cluster, the socio-professional and interpersonal cluster and the cultural cluster.

As already noted, translation tasks are one of the possible tools that can be used to operationalise competences within the framework of CBT. Numerous studies have proposed task-based learning as one of the most suitable means of achieving effective CBT (Mulcahy 2000; González 2004; Parsons, Caylor

& Simmons 2005; Kelly 2007). In our proposal, we distinguish between pre-translation tasks, understood as "concrete and brief exercises that help to practice specific points […] leading along the same path towards the same end, or [as] a chain of activities with the same global aim and a final product" (González 2004: 22–23), and final tasks, which "are comprised of integration tasks, which activate the components of a competence" (Hurtado 2007: 180). Along the same lines as our proposal, Nord (1991, 1997, 2009), who is concerned with issues of pedagogical progression, argues that simpler analytical and declarative tasks should precede more complex procedural projects.

Following the recommendations of Kiraly (2000), Galán-Mañas and Hurtado (2015), and more specifically Gouadec (2007), Kelly (2007) and Ramos and Meseguer (2015), among others, the skills developed in the pre-translation tasks proposed, as shown in section 3.1, have been integrated and packaged into a final task that simulates a real professional assignment. We are training not just individuals capable of integrating theoretical knowledge, values and attitudes, but also competent professionals in their fields of expertise. However, the competences directly related to professional practice are scarcely addressed through specific tasks (Gil *et al*. 2007 *apud* Ramos & Meseguer 2015). Recreating the professional environment in pedagogical settings helps narrow the gap between higher education and the professional world, allows teachers to monitor (control and guide) the acquisition of the students' first professional experiences and fosters students' self-learning, motivation and interest.

3.1. Teaching proposal

As already indicated, our teaching proposal is based primarily on the empirical study we carried out, but it also arises from reflections stimulated by our experience as teachers for the Master's Degree in Medical and Healthcare Translation at the Universitat Jaume I. The tasks we present are open units of work, representative of translation practice, that could be used as examples for constructing teaching units and for curriculum design of postgraduate courses and master's degrees in medical translation.

The general methodological objective is dealing with specialised knowledge, that is, for would-be medical translators to acquire the ability to reformulate specialised knowledge to meet patients' expectations and needs. To achieve this, we propose a series of tasks as an example and a possible model, that work on various aspects of the interventions performed on texts aimed at specialists

(health professionals) to turn them into texts aimed at non-experts (patients, support persons, etc.).

The specific competences to be worked on belong mainly to the thematic/terminological and textual/communicative competence clusters proposed by Muñoz-Miquel (2014) for medical translators. The thematic and terminological cluster covers acquiring basic medical knowledge (of anatomy, general medicine, physiology, pharmacology, etc.) and fostering the ability to acquire it *ad hoc* according to the thematic problems that arise in translations. This serves to stimulate students' terminological competence and their acquisition of the phraseology and writing style characteristic of specialists, as well as to improve their understanding of the original texts.

The textual and communicative cluster includes communicative and textual competences of fundamental importance in the professional context, such as capacity for comprehension, textual analysis, writing in the target language, adapting to specific conventions and purposes, etc. These skills can be acquired by training in the textual genres, of both a popularising and a specialist nature, that are most often found in medical and healthcare environments.

Another activity that is also part of this competence cluster is carrying out genre shifts or intralingual translations, both intra- and interlingually. As we have already pointed out in section 1, intralingual translation assignments are not as common as those for equifunctional translation, but given the paradigm shift in the doctor-patient relationship and the growing demand from patients for verified and reliable but accessible information, we presume that there will be an increasing demand for this type of task. The results obtained in the study by Muñoz-Miquel (2014, 2016a), with respect to trends in professional development and the emergence of new professional profiles in the field of medical translation, point in this direction.

It should be pointed out that, although our empirical study (described in section 2) was carried out in a Spanish-speaking context, our intralingual translation strategies coincide with those identified in the literature for medical texts written in English (see sections 1 and 2.2). Nevertheless, it should be emphasised that this proposal is designed to work specifically on the strategies that were validated in the case study, and that were considered most useful for proper reception of specialised medical information. These strategies, which will be practised in the successive pre-translation tasks and combined in a final task, will lead to the ultimate learning outcome: being capable of using the appropriate skills to carry out an intralingual translation of a specialised original text into a target text for patients. In this sense, as González (2004:

207) proposes, "both procedural (know *how*) and declarative (know *what*) knowledge are practised and explored".

3.1.1. Pre-translation tasks

The pre-translation tasks are organised in three blocks and pursue a range of specific learning objectives:

I. Dealing with expert knowledge

Task 1. Becoming familiarised with determinologisation strategies
Task 2. Dealing with terminological doublets
Task 3. Identifying and defining key terms and/or concepts

II. Dealing with empathy: personalising communication strategies and tenor adjustment

Task 4. Personalising specialised discourse

III. Dealing with different textual genres

Task 5. Comparing different textual genres

3.1.1.1. Dealing with expert knowledge

When the focus of communication of medical knowledge shifts from specialists to the general public, terminology, which is a quick, clear and precise way of transmitting information for the specialist, may hinder comprehension for the lay reader. Thus, determinologisation strategies, such as identifying and using specialised terms or lay terms properly, or choosing the appropriate words depending on register, are a requirement for medical translators (Ezpeleta-Piorno 2012: 180).

Task 1

1. Read the following articles on determinologisation strategies:
   - Askehave, Inger & Karen K. Zethsen. (2000) "Medical texts made simple –dream or reality?" *Hermes, Journal of Linguistics* 25, pp. 63–74.
   - Campos Andrés, Olga. (2013) "Procedimientos de desterminologización, traducción y redacción de guías para pacientes." *Panace@: Revista de Medicina, Lenguaje y Traducción* 14:37, pp. 48–52.
   - Hill-Madsen, Aage. (2015) "Lexical Strategies in Intralingual Translation between Registers." *Hermes*, 54, pp. 85–105.
2. Describe the strategies applied in the following excerpts:

Text excerpts	Strategies used to determinologise the text
1. […] in patients with signs of cerebral or cardiac ischemia (impaired blood circulation in the brain or heart vessels)	
2. Numbness or weakness in limbs (peripheral neuropathy)	
3. Diphenylhydantoin (a drug used to treat epilepsy)	
4. Cytotoxics (also called chemotherapy)	
5. People commonly use nonsteroidal anti-inflammatory drugs (NSAIDs) to relieve pain. Examples of NSAIDs include aspirin and ibuprofen (Advil or Motrin)	

Table 1. Task 1: Becoming familiarised with determinologisation strategies

In task 1, students first read some articles on the topic to become familiarised with determinologisation strategies described by scholars and then identify which strategies are applied in a series of examples extracted from real texts: patient information leaflets (PILs) and FSPs. As we can see, all the proposed examples retain the specialised medical term, reflecting the preferences of the patients who took part in the case study.

Through this activity, students familiarise themselves with a range of determinologisation strategies, such as using a definition, a popular term, a hypernym, a synonym, an example, an explanation, etc. Moreover, they also become familiarised with medical terminology and concepts, so the activity also promotes acquisition of competences related to the thematic and terminological competence cluster.

Task 2

Look for the specialised term or the popular term, as appropriate:

Specialised term	Popular term
	Bleeding
Thrombophlebitis	
	Nettle rash
Glucose	
Hypersensitive	
	Severe headache
Endocrine disorder	

Table 2. Task 2: Dealing with terminological doublets

In task 2, students familiarise themselves with specialised terms and the corresponding popular terms. This activity is especially important when working with non-Romance languages such as English and can be very useful for preparing students to deal with intralingual translations. Since the students themselves have to look for the equivalents in each case, they also work on competences related to the documentary cluster, which involves knowing the main sources of medical documentation and their uses and developing advanced search strategies.

Task 3

1. Read the following excerpt from an SPC (summary of product characteristics) and select the terms, expressions and concepts you think a patient will not understand.
2. Create a glossary with definitions for a lay reader.

> Significant hypersensitivity reactions, as characterised by dyspnoea and hypotension requiring treatment, angioedema, and generalised urticaria have occurred in <1% of patients receiving paclitaxel after adequate premedication. These reactions are probably histamine-mediated. In the case of severe hypersensitivity reactions, paclitaxel infusion should be discontinued immediately, symptomatic therapy should be initiated and the patient should not be rechallenged with paclitaxel.

Table 3. Task 3: Identifying and defining key terms and/or concepts

In task 3, students familiarise themselves with the vocabulary characteristics of specialised texts such as the SPC from which the proposed extract is taken. In addition, they make a cognitive effort in identifying the terms, expressions

and concepts that present special difficulties. In this task, as well as working with the thematic/ terminological and textual/ communicative competence clusters, students also practice the documentary cluster, as they will have to perform advanced search tasks and be capable of efficiently generating reference resources such as glossaries.

3.1.1.2. Dealing with empathy: personalising communication strategies and tenor adjustment

As we saw in the case study, a series of strategies is necessary to make texts more approachable and empathic for the target reader. To achieve this, the tenor needs to be adjusted to achieve more personalised communication.

Task 4

Personalise the following sentences:

Impersonal	Personal
Paclitaxel can reduce the number of blood transfusions needed.	
The usual dose is one tablet of Paclitaxel to be taken once a day.	
The tablet can be taken with or without food and should be swallowed whole with a glass of water or another liquid.	

Table 4. Task 4: Personalising specialised discourse

In task 4, students familiarise themselves with the syntax characteristics of specialised texts. The intention is that they should reflect on the differences of register required in texts aimed at lay readers compared with those of a specialised nature. So, they are asked to try to make the text accessible to lay readers and decrease the degree of formality in various fragments of an SPC by making use of strategies such as introducing personal pronouns, using active instead of passive constructions, etc.

3.1.1.3. Dealing with different textual genres

As Ezpeleta-Piorno (2012: 139) has stated, acquiring competence in textual genres can be considered an effective means of acquiring the abilities needed by medical translators, as it facilitates their socialisation as communicative agents in medical professional sectors.

Task 5
Analyse and compare the SPC and PIL for Paclitaxel: 1. What is the purpose of each text? • Who are the senders and receivers of each text? What are their needs? 2. Identify the information in the SPC that appears in the PIL and reflect on: • The reasons for selecting those pieces of information • The strategies used to reformulate information Reading proposed: Ezpeleta-Piorno, Pilar. (2012) "An example of genre shift in the medicinal product information genre system." *Linguistica Antverpiensia, New Series – Themes in Translation Studies* 11, pp. 167–187.

Table 5. Task 5: Comparing different textual genres

In task 5, students are asked to compare two interrelated genres: the SPC, a document which contains the essential information for healthcare professionals on how to use a medicinal product safely and effectively, and the PIL, which is the leaflet, addressed to patients, included in the pack with the medicine. We have chosen these genres because we find them particularly interesting for our teaching purposes. PILs are composed from SPCs in an intralingual translation process in which changes in rhetorical purpose and audience inevitably affect the texture and manner of re-presentation of the target text, the PIL.

In this task students familiarise themselves with the macro- and micro-characteristics of both genres, recognise various strategies they have practised in previous tasks and learn other strategies that are important in intergeneric translation, such as selection, omission and/or reorganisation of information.

Students also have to make the effort to try to understand that intralingual translation is used to bridge the gap between the patient's right to know and the patient's ability to understand, and can serve to ensure continuity of communication between communities with different levels of expertise.

3.1.2. Final task: a real professional assignment

The learning objective of the final task is for students to combine all the skills developed in the pre-translation tasks and put them into practice comprehensively, by carrying out a piece of work corresponding to what a real professional intralingual translation assignment would be like. The competences brought into play are mainly those belonging to the textual/communicative and thematic/terminological clusters, although those in the documentary cluster are also involved. Given that this task simulates a real professional assignment, the students also practise strategic skills related to the socio-professional competence cluster proposed by Muñoz-Miquel (2014).

Final task
A private hospital in the UK wants to write a FSP on adverse effects of the drug paclitaxel and gives you its SPC (written in English) as reference material: 1. Write a FSP (about 700–900 words) in English based on the SPC provided. 2. Briefly justify your translation decisions (using up to 500 words).

Table 6. Final task: Intralingual translation

Through this task the students familiarise themselves with two working genres, the SPC and the FSP, in their textual and communicative aspects. They also explore the operations that take place between the specialised genre and the lay-friendly one.

Although the two genres deal with the same topic, they fulfil different functions and cover specific reader needs, and students therefore need to reflect on how they are interrelated in referential and functional terms. The target text is dependent on the original text as far as communication is concerned, but will have to be written according to different processes of rhetorical composition, with a decreasing degree of specialisation and formality. In order to put these changes into effect, the strategies practised to deal with expert knowledge and terminology, empathy and different registers, as well as different genres will have to be implemented. If the development of interlingual translation skills is also pursued, students can be asked to translate the SPC in English into a FSP in their target language.

4. Conclusions and future lines of research

In this article we have presented a teaching proposal designed to promote the acquisition of intralingual translation skills by medical translators-in-training. The novel feature of this proposal is that it focuses on practising strategies that are not usually included in translator training programmes and reflect the preferences of target readers with respect to how they want to receive the information, and whose effectiveness has been validated in a research project conducted with a group of real patients. It is therefore a proposal that goes beyond the purely descriptive studies that characterise the still incipient field of intralingual translation research, as it is based on the results of a case study in a real context.

Given the dearth of proposals for preparing future medical translators to respond to the growing need for intralingual translations that facilitate the transmission of medical knowledge to patients and the general public, we

consider that this article contributes to filling a gap in the training of versatile medical translators, capable of taking on this emerging professional activity. In addition, the proposal serves to foster not only the acquisition of skills related to intralingual translation, but also other competences traditionally linked to "translation proper", such as thematic, documentary and terminological competences.

At this point, we should acknowledge the limitations of the study. Firstly, the strategies in which we propose that translators should be trained have been applied to a single genre, the FSP, and validated in a context and with a sample of patients of a very specific nature and limited size. To obtain more conclusive results on the effectiveness of the strategies used, they should also be applied to other texts aimed at patients and tested with a larger and more varied sample of potential users. Secondly, this is a proposal for specific tasks that represents only a basis on which to formulate teaching units within specific curricular proposals. We need to take other issues into account, such as the profile and prior knowledge of the students, the intended mode of assessment, the educational context in which it is to be implemented, etc. (Kelly 2005), issues that have not been taken into account in this article. Finally, we should add that the tasks sketched out here are designed for translators whose working languages are English and Spanish (the language in which we validated the strategies with the patients). In order to be able to apply it to other languages one would first have to take account of their socio-linguistic specificities.

In our future work, as well as completing the teaching proposal and applying it to a specific training context, we would like to analyse the usefulness of intralingual translation activities for training medical professionals in communication skills. Given the present lack of training of students of medicine and related sciences in techniques for communicating with patients (Bellés-Fortuño & Molés-Cases 2017), the GENTT group is currently conducting two research projects (see footnote 1) designed to produce materials that will contribute to meeting this need. These projects are therefore the ideal framework for testing intralingual translation as a training tool to achieve more effective doctor-patient communication, and hence to raise the profile of Translation Studies as a discipline capable of making a significant contribution in other fields of study in which communication needs to be improved.

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"DON'T FIX BAD TRANSLATIONS": A NETNOGRAPHIC STUDY OF TRANSLATORS' UNDERSTANDINGS OF BACK TRANSLATION IN THE MEDICAL DOMAIN

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Abstract

Back translation (BT) means taking a translation and translating it back into the original language to check the accuracy of the translation. In the Health Sciences, BT is widely used and considered the gold standard for quality assurance. However, BT has received very limited attention within Translation Studies, and at the same time, there seems to be a lack of consensus in guidelines on BT within the medical field on the appropriate approach to BT. This begs the question of whether translators know what BT is and how they understand and approach BT. Using a netnographic approach, we explored translators' utterances related to BT in two online translator forums. The analysis showed some confusion as to the appropriate approach to BT which underlines the importance of providing translators with a brief. This, however, requires that clients are aware of the purpose and limitations of BT.

Zusammenfassung

Bei der Rückübersetzung wird eine Übersetzung zurück in die Ausgangssprache übersetzt um die Genauigkeit der Übersetzung zu prüfen. In den Gesundheitswissenschaften hat die Rückübersetzung sich als Standard durchgesetzt und zwar als Teil der Qualitätssicherung bei der Übersetzung von Forschungsinstrumenten. Der Methode der Rückübersetzung wird aber in der Translationswissenschaft wenig Aufmerksamkeit

geschenkt. Gleichzeitig scheint es einen mangelnden Konsens über den passenden Ansatz zur Rückübersetzung zu geben. Damit drängt es sich die Frage auf, ob Übersetzer wissen, was Rückübersetzung ist, wie sie Rückübersetzung verstehen und wie sie an Rückübersetzung herangehen. Mithilfe von der Methode der Netnographie haben wir die Äußerungen von Übersetzern über Rückübersetzung in zwei Online-Foren für Übersetzer analysiert. Die Analyse hat eine gewisse Verwirrung hinsichtlich des passenden Ansatzes zur Rückübersetzung gezeigt. Dies unterstreicht die Wichtigkeit, dass Übersetzern ein Übersetzungsauftrag zur Verfügung gestellt wird. Dies sieht aber voraus, dass die Kunden sich dem Zweck und den Beschränkungen der Rückübersetzung bewusst sind.

Keywords: Back translation. Medical translation. Netnography. Translation strategy.

Schlagwörter: Rückübersetzung. Medizinische Übersetzung. Netnographie. Übersetzungsstrategie.

1. Introduction

Back translation (BT) means taking a translated document and translating it back into the source language (Paegelow 2008; Klein & Van Til 2014). BT is one of the most widely used quality assurance tools for cross-cultural adaptation of research instruments within the medical field (Douglas & Craig 2007, Ozolins 2009). In 2009, Ozolins stated that "[b]ack translation is a practice little studied in translation literature yet surprisingly prevalent in many areas of technical, particularly medical translation" (2009: 1). Now, eight years later, limited attention is still given to BT in the Translation Studies (TS) literature. Searches on "back translation" (or "back-translation") in "All fields" within Translation Studies Bibliography and BITRA yield 37 and 68 results, respectively; however, many of these are not related to the medical domain, and the 12 that are related are publications from medical journals and dissertations from the medical field, with only four published in TS journals. By contrast, a search on "back translation" or "back-translation" in "All fields" in the biomedical database PubMed yields 1,330 results. Even though we acknowledge that PubMed is a much larger database, judging from these preliminary searches, it appears that BT within the medical domain has been given limited attention in TS. Considering the widespread use of and importance assigned to BT within the medical domain, the method of BT demands attention within TS.

BT has been applied within TS, but has mainly been used as a tool to ensure accuracy in the translation of religious (Beekman 1967; Blight 1980; Al-Khawalda 2004) and literary texts (Giaccio 2012; Gaskill 2013), to evaluate Machine Translation output (Somers 2005; Aiken & Park 2010), as a method within translation training (Titford 1983; González Davies & Scott-Tennent 2005), and to study TS-related phenomena such as explicitation (Klaudy 1996; Makkos & Robin 2014) or implicitation (Makkos & Robin 2014).

The four TS publications found in the databases that related to BT in the medical domain were Ozolins (2009), Tyupa (2011), Bolaños-Medina & González-Ruiz (2012) and Karwacka (2014). Bolaños-Medina & González-Ruiz (2012) document the BT process for psychological tests and discuss BT from a TS perspective, and Karwacka (2014) describes BT as one of the main

quality control methods for medical translation. Ozolins (2009) presents a case study of the BT process for a medical diagnostic tool, and Tyupa (2011) argues for embedding BT in the theoretical linguistic framework of Cognitive Grammar.

The purpose of this article is to shed more light on how BT is used in practice and more specifically, how professional translators approach BT assignments. To do so, in the following, we first present BT as a method within the medical domain and discuss the necessary approach to BT, which leads us to our research question (Section 2): *How do professional translators understand and approach back translation?* We then outline the method we applied to answer the research question (Section 3). Next, we present the results of our analysis (Section 4). Finally, we discuss the results and outline conclusions, including further perspectives (Section 5).

2. Back translation as a method in the medical domain

Despite the limited focus on BT within TS, BT is actually considered to be the gold standard for quality assurance in the medical field (Ozolins 2009). Translation is a very important part of cross-cultural adaptation of tests and research instruments as the majority of these are devised in English. Instead of producing a new test or instrument from scratch in the new language, the English version is usually translated. There are two reasons for this. First, it is faster and less expensive to adapt an existing instrument than to create a new one to measure the same construct in another culture. Second, it enables the implementation of cross-national studies (Hambleton 1993; Bolaños-Medina & González-Ruiz 2012). In relation to cross-national studies, the importance of quality translations is linked to "ensuring that the results obtained in cross-cultural research are not due to errors in translation, but rather are due to real differences or similarities between cultures in the phenomena being measured" (Maneesriwongul & Dixon 2004). Thus, when used in the medical domain, BT has a very specific application and meaning, and it plays a specific role in a larger process of cross-cultural adaptation. This process usually consists of the following steps (Tyupa 2011: 36):

forward translation → back translation → back translation review and discussion → finalization

Typically, an English-language ST is translated into another language by one translator (forward translation). This forward translation is then back translated into English by another translator (back translation). Subsequently, the

BT and the original ST are compared with the aim of identifying and solving discrepancies (back translation review and discussion). Lastly, the final TT is made (finalization). For BT to fulfil its purpose, it is generally agreed that the forward and back translations must be carried out by different translators (Brislin 1970, 1986; Several Authors 2017a; Several Authors 2017b), and that the back translator should not be provided with the original ST (Several Authors 2014). Even though BT has been the subject of criticism (e.g. McKenna and Doward 2005), a large number of translators perform BT as part of their professional services (Ozolins 2009).

2.1. Approach to back translation

Since the aim of BT is to identify discrepancies between the original ST and the BT, and thus between the original ST and the forward translation, the appropriate approach to BT would seem to be a literal strategy. This is also supported by some sources in which it is claimed that for BT to fulfil its purpose, back translators need to use a "literal" or "faithful" translation strategy (Grunwald & Goldfarb 2006; Klein & Van Til 2014; MHCS 2014; Several Authors 2017a). Even though these sources do not discuss BT from a translation-theoretical perspective, their utterances resonate well with a functionalist approach to translation as advocated by, for example, Reiß & Vermeer (1984) and Nord (1997). This is supported by Bolaños-Medina & González-Ruiz who state that "the functionalist theories are especially well equipped to provide a thorough understanding of the process of test adaptation" (2012: 729). The reason why functionalist approaches seem to be a particularly suitable paradigm for regarding the overall translation process is that the forward and back translations have clearly different functions (or skopoi). While the skopos of the forward translation is to produce "a fully functional version of a test in a different language and culture" (Bolaños-Medina & González-Ruiz 2012: 715), i.e. a publishable text in its own right, the BT needs to document the forward translation. Thus, Nord's distinction between documentary and instrumental translation seems useful when exploring the concept of BT as part of a cross-cultural adaptation process (Nord 1997). While the forward translation should be an instrument, BT requires a documentary approach or strategy in the sense that the back translator documents the source text, in this case the forward translation. Similarly, Klein and Van Til (2014: 13) argue that the translation strategies required for forward and back translation, respectively, are placed on different ends of a continuum:

> Unlike the forward translator, who will usually follow a more communicative approach and translate with the target audience in mind, the back translator

> must refrain from embellishing the translation in any manner to make it sound "natural" in the target language. Instead, the back translator must try to translate as literally as the rules of the target language permit. Such a literal approach will likely result in some unnatural, sometimes even awkward-sounding, sentences, but that is acceptable and even necessary in back translation.

Thus, the skopos of the BT is quite unique, as it allows for unnatural and awkward-sounding language. Such a skopos is not the most often used within specialised translation where an instrumental strategy is typically required (Nord 2006: 40). This underlines the importance of a translation brief. Several Authors (2014) supports this by stating that the translators "should be made aware that they are making a back-translation" (6), indicating that translators are not always provided with translation instructions. Therefore, while the importance of a translation brief is generally stressed within functionalist approaches to translation, it might, in the context of BT, be especially important, not least because the text type would usually prompt the translator to opt for an instrumental strategy. A lack of brief could have undesirable consequences, as witnessed from personal experience by one of the authors working as a translator, who was asked to translate a patient questionnaire back into English (from Danish), and that was all the information given. If the translator had had no previous experience or knowledge of BT, she would have ignored source text errors such as "whether the information was credibility", and just translated into the correct target language phrase. This would have defeated the purpose of BT, as it would not have been possible to know that there was an error in the Danish version, which was actually the version to be used in practice.

Even though the above shows the importance of a literal or documentary strategy in BT, interestingly, Wild et al. (2005), in their review of 12 major guidelines for translation and cultural adaptation, found that there was little agreement regarding how BT should be carried out. This suggests a lack of awareness that different strategies might be applied in translation, and that forward and back translation require different strategies. A widely used guideline, the WHO guideline for the translation and adaptation of instruments, does in fact provide instructions on the strategy: "As in the initial translation, emphasis in the back-translation should be on conceptual and cultural equivalence and not linguistic equivalence" (WHO 2017). However, this stands in contrast to the above argument that different strategies are needed for the forward and back translation, respectively. Also, they seem to argue for an instrumental strategy, in Nord's terminology, for BT, which as we argued above, seems to defeat the purpose of BT. This lack of consensus on the appropriate approach to BT and the fact that BT is not widely used and known in TS beg

the question of whether translators know what BT is and how to approach it. To explore this further, we formulated the following research question: *How do professional translators understand and approach back translation?*

3. Method

To answer our research question, we used the methodology of netnography (Kozinets 2002; 2010), also sometimes referred to as cyberethnography or online ethnography (Jiménez-Crespo 2017). Netnography is a "qualitative research methodology that adapts ethnographic research techniques to the study of the cultures and communities that are emerging through computer-mediated communications" (Kozinets 2002: 62). Originally developed for online marketing research, netnography is now used within a multitude of fields. However, within TS, netnography is a new method. Searches for "netnography" and "netnographic" in Translation Studies Bibliography and BITRA yielded only two results; Dombek (2014), who studied translation crowdsourcing, and Li (2015), who studied fansubbing.

As a marketing research technique, netnography "uses the information publicly available in online forums to identify and understand the needs and decision influences of relevant online consumer groups" (Kozinets 2002: 62-63). Here, we use it for a slightly different purpose, i.e. we use the information publicly available in online forums to identify and understand translators' understandings of and approaches to BT. Netnography, compared to traditional ethnography, is entirely unobtrusive (Kozinets 2002: 63), and compared to interview and focus group studies, it employs naturalistic data. This combination of naturalistic data collected without obtrusion makes netnographic studies unique. One of the main limitations is that only the utterances of groups or individuals who have participated actively online are studied.

We find online communities to be a relevant research setting for our purposes. Online communities play an increasingly important role in the way in which the translation profession is practiced, and for many translators, especially freelancers, online networks are a way of interacting with other translators and securing new contracts (McDonough 2007). Inspired by Kozinets, we went through the following steps: (1) Entré: formulation of research questions and identification of appropriate online fora for study, (2) Data collection: direct copy from the computer-mediated communications of online community members, (3) Analysis and interpretation: classification, coding analysis and contextualization of communicative acts, and 4) Research ethics.

In relation to step 1, based on our research question, we identified Proz (proz.com) and Translators Café (translatorscafe.com) as the best-known

online translation communities (Garcia 2015) with Proz advertising itself as the "largest network of translation professionals" (McDonough Dolmaya 2011: 48) and self-reporting over 600,000 members on its website, and Translators Café, self-reporting just under 200,000 (Garcia 2015). Biel (2008) has described Proz as "a global translator community, which offers its members a possibility to advertise their services, quote on translation jobs (marketplace), verify clients' payment practices, as well as to ask terminological questions and search previous questions and members' glossaries" (32). The same functionalities are available in the Translators Café community.

In step 2, data collection, we used the advanced search function to search in the discussion forums on Proz for English posts with "back translation" in the title and asked to see results as topics. This means that somewhere within the whole thread, at least one contributor posted a comment with "back translation" in the title. A similar search was conducted in the discussion forums on Translators Café for threads where "back translation" was in the subject. As a result of this, 39 and 4 threads were retrieved from Proz and Translators Café, respectively. All the results were copied and filed.

In step 3, analysis and interpretation, all threads were closely read by both authors in order to determine their relevance. In this process, we excluded threads in which the concept of BT was only mentioned, but was not further described as well as threads in which it was unclear whether the included posts were referring to BT in the medical domain. For example, threads related to BT used within other domains, such as marketing, were excluded from the data set. We determined posts to be related to the medical domain when the thread initiator had addressed BT in a medical context, or when the posters explicitly referred to BT in the context of the translation of research instruments such as medical questionnaires, surveys and tests, i.e. in the medical or pharmaceutical field. Furthermore, we included posts added by posters who had said elsewhere in the thread or in another thread included in the data set that he or she had experience with BT in the context of translation of such research instruments. This led to the exclusion of 23 and 2 threads from Proz and Translators Café, respectively. The final data set thus included 16 threads from Proz and 2 from Translators Café. Of the included threads, the earliest were started in 2003 and the last posts were added in 2016. Thus, the analysis included posts added by translators over a time span of 14 years. The data were analysed using an inductive approach and, following Saldanha & O'Brien, we used our research question "as a prism through which to view the information and choose relevant items" (2013: 189). All data were analysed with both authors sitting together – all codes and subsequent themes were discussed and negotiated.

For step 4, research ethics, Kozinets suggests several points including full disclosure of presence, affiliations, and intentions to online community members and contacting community members to obtain their permission (informed consent) to use any specific postings that are to be directly quoted in the research. We chose, in line with Convery & Cox (2012), a research-specific ethical approach, which means taking into consideration the particular features of the investigated online community, the selected methodology and the research questions. The data used were publicly available, and we judged that a minimal risk was associated with reporting on utterances published in an open-access forum. Therefore, we did not disclose our presence and we did not obtain informed consent from the contributors.

4. Results

The included discussion forum threads carried titles such as "Back Translation", "Approach to backtranslation – dispute with an agency", "the ethics of translation tests", "back translation – what is it?" and "Poll: Have you ever been asked to do back translation?". The latter thread contained comments in response to a poll created on 11 March 2015, for which 1,301 translators had provided their answer. Although the poll was general, and not domain-specific, it was interesting to note that 50% of the translators had answered *yes* to this question, particularly in the light of the limited attention given to BT in TS literature, as mentioned above.

During our analysis, we identified three overall themes: 1) purpose of back translation, 2) translation strategy, and 3) attitudes towards back translation. These are described and illustrated using quotes in the following section.

4.1. Purpose of back translation

When explaining the purpose of BT, contributors describe it as a "common method of quality control", and it is performed "to be very sure there's no loss of meaning". They also describe BT as different from regular translation as "back translation is used for quality assurance, not to be published". Some contributors addressed the purpose of BT very briefly, using expressions such as "accuracy", and other contributors explained its purpose in a very elaborate way, also demonstrating knowledge of the larger context in which BT is applied. For instance, one contributor stated:

> It increases the scientific validity of tests too: It's a method used to verify the accuracy and to capture the nuances of connotations in translated text […] This accuracy enhances the similarity of test validity that might need to be

> done when the translated test is used as a research instrument in the target language. If an instrument is translated accurately (an intelligence test, for instance) then the researchers in the target language can collect data from their participants with the knowledge that each question is as similar to the original […]

Thus, the contributor is well aware of the role of BT in the broader process of cross-cultural adaptation of research instruments, enabling comparison of research results across different countries. Along the same lines, another contributor stressed that within the medical domain, BT is often required by ethics committees or institutional review boards.

Apart from stating that the overall purpose of BT is to ensure accuracy, some contributors gave more detailed descriptions of the purpose of the BT process such as "back translation is meant to point to any inconsistencies/ambiguities" and that it is "often the only way to catch the wrong choice of register for a word/or ambiguity". Another contributor stated that:

> Most of the back translations I do are surveys and medical questionnaires, where it is important to distinguish between frequency and severity of symptoms, for instance, or different types and patterns of symptoms. Here it is important that sometimes intimate subjects are appropriately and correctly described, and that the scales from mild to severe etc. are correctly understood, as they can skew results and invalidate the survey if the translation does not reflect the researchers' intentions. You can never be 100% sure, but this is one way of looking for errors.

Thus, this contributor seems to have extensive experience of BT and demonstrates thorough awareness of important aspects to consider in BT, such as precision when explaining symptoms as well as using comparable scales.

As seen above, the data suggested a good grasp of the purpose of BT; however, we also saw contributors who did not know what BT is and what it entails, and had come to the forum to ask fellow translators for help, e.g. after receiving a BT assignment. This led to experienced contributors describing the process as well as some of the essential factors that should be taken into account.

4.1.1. Brief

Contributors mentioned that translators need to be informed that the assignment is a BT. For example, one contributor stated that "you have to know it is a back translation". Another said that he is always informed that he is to perform a BT and how to do it:

> And I've always been informed of the nature of the work before beginning it. It's to ensure the quality of a translation, by translating it back to the original/source language, and then comparing the back-translation to the original text. I'm also often asked to comment on the differences after completion of the back translation.

However, we also saw contributors stating that they are not always told, and one example where the translator had even asked the client whether it was a BT:

> I have had a few assignments that I strongly suspected were back-translations, but inquiries to the agency resulted in the instruction, "the client says, no, it's all there is, just translate it as well as you can." In the absence of instructions to the contrary, I follow, as X said above, the usual policy of creating a top quality text. If it was indeed a back-translation, and the client thought to get an unbiased evaluation by not revealing that fact, then the exercise was a failure.

The problem is not only that the translator is not informed that s/he is supposed to do a BT, but also that the client did not want the translator to know for some reason. This translator as well as other contributors argued that BT becomes pointless if translators are not told that they are performing a BT. In that case, the client will instead receive a text which has not been translated literally, and which cannot be used in the larger translation process where it is to be compared with the forward translation. If the translator is not informed, s/he cannot even educate the client and argue why the exercise is problematic.

> Translators need briefs with information on the purpose, but clients also need to know the purpose of BT and what it entails. The fact that some clients do not want translators to know, resulting in pointless BTs, indicates that they need to be more knowledgeable about BT. In the following, quotes related to clients' knowledge of BT are presented.

4.1.2. Clients

We saw contributors arguing that some clients are ignorant in relation to the workings of BT as witnessed by the following quote:

> Through all these projects, the client constantly complains that our back translations do NOT use "... exactly the same wording as the original text." I repeatedly tell them that we back translate the EXACT meaning and nuance we find in the translation. If there are differences between our back translation & the forward translation, then the first part of the back translation process has been successful: Identify areas of potential translation misunderstandings/meaning differences to the original. At first they asked us to simply change the back translation to reflect the original. Of course I refused, pointing out that this was futile and would not improve the forward translation (which we believe is one goal of a back translation).

This illustrates a situation in which a client does not seem to understand the purpose of BT judging by their failure to understand why the BT does not match the original ST and by the fact that they ask the translator to change the BT. The same situation was experienced by another translator:

> Having said that, a few weeks ago I had a situation where the end client instructed the agency that my back-translation had to be tweaked so that it used exactly the same terms as the original. I refused to do so, as it would no longer have been a translation of the text provided, but instead provided comments on why my translation was justified. […] At the end of that little experience, I was left wondering whether it was the client who didn't know what back-translations are for, or me!

In conclusion, contributors generally seemed to agree that everyone involved in the BT process, including client and back translator, need to understand the purpose of BT, as well as its strengths and limitations. For instance, the client must understand that minor variations in wording do not indicate a problem, but that changes in meaning often do.

4.2. Translation strategy

As seen in section 2, the guidelines for BT seem to differ in their description of the appropriate translation strategy. However, the analysis showed that many of the contributors said that a back translator should follow a literal translation strategy:

> Backtranslation is always literal and even word-for-word, no literature or style required here.

Thus, in functionalist terms, it seems that the contributors see BT as requiring a documentary strategy in the sense that the back translator documents the source text. Along the same lines, some contributors made it very clear that the back translator should not "fix" problems in the forward translation. One contributor posted a comment with the title "Extremely important: don't fix bad translations" and added that it would be a disservice to the forward translator to fix bad parts of his or her translation in the BT. Another contributor even stated that the "temptation" to make improvements has to be resisted.

However, one contributor, although suggesting that he would use a literal strategy when producing a BT, also indicated that he would make the BT more comprehensible than the forward translation:

> In any case, since my priority is normally to produce top quality work, I find myself being able to produce something comprehensible out of something that is not very comprehensible in the source text. Yet to truly reflect the quality of that source text (the translation I am returning to the original language),

> I would have to produce something that looks horrible. In such cases all I can really do is leave a note to the effect that "yes, this English version I have produced looks fairly good, but the Spanish version I worked from would not be very comprehensible to a reader.

The contributor's comment suggests that conflicting strategies are at play in the sense that s/he seems to translate in a documentary manner (reflecting the quality of the forward translation and producing something that "looks horrible") and at the same time produces something that is more comprehensible than the forward translation which suggests a more instrumental strategy. This led another poster to reply that "if something is incomprehensible or ambiguous in the original translation, it is your duty to render it in the same way in the back translation", also arguing for a documentary strategy. In relation to comments that suggest this strategy, a number of contributors stated that back translators should feel free to add explanatory notes and comments "indicating ambiguities or connotations that may be undesired".

As stated in section 4.1., contributors describe BT as being different from regular translation. One contributor also stated that the strategy to be applied in BT stands in contrast with the strategy that should be applied in forward translation, suggesting that the forward translation should be fluent (or instrumental), and that the BT should be a faithful (or documentary) translation:

> I find backtranslation quite interesting as there is a different priority order compared to a forward translation (the old fluency vs fidelity dilemma).

Interestingly, referring to the forward translation process that precedes BT, one contributor stated that:

> I've noticed that some of my colleagues, when they know their translation is going to be backtranslated, do not think in rendering a good translation, they prefer to do a literal translation (that sometimes means nothing or it does not sound fluent in the translated language) instead.

This suggests that the forward translator might change his or her translation strategy into a more literal or documentary one if he or she knows that the translation is going to be back-translated, thus potentially increasing the degree of overlap between the original source text and the BT. Another contributor followed up by stating that if he knew his forward translation was supposed to be back-translated, he might translate it in a way that facilitates better BT. He added that:

> [this] isn't always a bad thing, but it's not always good either, because it dilutes the effectiveness of the back translation, since most problems that may be identified by a back translation would have already been eliminated by the forward translator.

This not only dilutes the effectiveness of the BT as pointed out by the contributor, it can also lead to a low-quality forward translation, and thus to an inadequate instrument. This point has also been problematized in the literature, for example by Bolaños-Medina & González-Ruiz (2012) and Epstein et al. (2015).

4.3. Attitudes towards back translation

When exploring the translators' understandings of and approaches to BT, we found conflicting attitudes. Many contributors were quite critical of BT, with attitudes ranging from scepticism to pure hate:

> don't think it works very well at all. But then it's easy money so […]
>
> Back translations - I HATE THEM!!!

Some contributors stated that BT is a very "blunt instrument", which can only catch some basic errors like missing sentences. It is compared to "gauging a translation by running the spelling checker on it" as it will say "very little about the text's fitness for purpose".

On the other hand, some contributors seemed surprised about such sceptical attitudes, as they had positive experience with BT:

> For many translators it is an article of almost religious faith that "back-translations are useless." But the fact is, when done properly for a client who is used to working with back-translations and knows their limitations, they are tremendously useful.

Other contributors expressed positive attitudes towards BT, for example stating that "there are very good reasons for back-translation in certain fields, medical being one of them", and that "back translation can be a valuable exercise for ensuring that everything is correct".

We also saw sceptical attitudes that did not seem to be related to BT itself, but to the ignorance of some of the parties involved. A poster who reported that 50% of his workload is BT work stated that:

> Unfortunately it's hardly a perfect process, and it's designed to serve clients who have no working knowledge of a language, and as such it is rife with problems, especially when managed by project managers who have no clue what they're doing (I can't tell you how many PMs I've actually had to educate on the process, despite the fact THEY were asking ME to perform the task (and asking me to do so in an erroneous manner)).

This underlines the issue described above, i.e. that all parties need to have a thorough understanding of BT, an issue that was also mentioned by other contributors:

> The fact that most agencies and translators seem to have limited insight into the process doesn't make it a bad one. The process itself, when executed properly - which by definition must mean without reference to the original source - is in fact very useful.

One of the main reasons given for the scepticism was that some translators think that a thorough review of the forward translation would yield the same or better results, as witnessed by the following quote:

> I cannot see how back-translation can ever be as good as having a couple of native translators check the original translation in the normal manner. It's a flawed process.

One contributor even argued that it would be both easier and cheaper to assess the forward translation than to conduct BT. Comparing BT to review, another translator stated sarcastically that a translator could "switch off thinking for a while, turn on the back translation machine, and somehow the errors will magically become obvious". However, according to another translator's experience, BT may lead to the identification of problematic issues that are not identified in a review: "I have also found that a back translation highlights possible issues which are not always apparent when simply evaluating the original translation." Another translator's comment supported this view: "I've worked on many projects where the back-translation process picked up errors in the original source text that had gotten past everyone, or errors or problems in the translation that no one had noticed using the more traditional approaches to quality control." So, even though there were many critical voices, it also became clear that many found BT to be a valuable method.

5. Discussion and conclusions

In light of the profound importance assigned to BT as a method within the medical domain, in our search for TS literature on BT, we were quite surprised by the apparent lack of attention given to the method. Our analysis showed that some translators had extensive practical experience with and knowledge of BT. Other translators did not know what BT is and what it entails. This is problematic as BT has a specific skopos and requires a documentary translation strategy, as discussed in section 2. This is in line with the argument put forward in functionalist approaches, i.e. that a translated text is not exclusively determined by the ST and that its own purpose or skopos must be borne in mind. Thus, a BT assignment cannot be given to translators without instructions since their standard procedure for the text type, research instruments, would be to fix bad translations and produce a well-written, fluent text.

Based on our review of the existing literature and guidelines on BT, we found a lack of guidance or even conflicting attitudes concerning the appropriate strategy for BT, even though it is clear that a documentary strategy is needed. In our analysis, we found several translators arguing for a documentary approach, and a translator suggesting that one should make an instrumental translation. The attitudes towards BT varied, but it is a topic that can make translators exasperated. The main frustrations were linked to the lack of a brief, clients' lack of knowledge or mismatched expectations. Thus, the analysis underlines the importance of giving a brief with information on the purpose of BT and the needed approach. This brief has to be provided by the client. However, this can be problematic, as the results showed that some clients seemed to be ignorant of the purpose of BT which was evident when they, for example, suggested that the translator should change the BT to match the original ST or refused to inform that s/he was doing a BT.

In conclusion, if all parties to the BT process know the purpose of BT and its limitations, then it seems to be a valuable tool. We therefore recommend that the widely used BT guidelines (such as WHO and EORTC) include an explicit statement that translators should be given instructions on the purpose of BT and the needed strategy.

5.1. Limitations

One limitation of our study is that our data draw on only two translator forums, and that only the utterances of translators who have actively participated in the forums can be included in the data set. This means that translators who are not members of or who do not contribute actively to these forums could have other approaches to and understandings of BT to which we do not have access. Also, although the threads included in the analysis covered a time span of 14 years, many of the quotes included above stem from two extensive threads from 2007 and 2015; however, from the posts of many individual translators. Thus, they represent viewpoints of many different translators. Furthermore, Proz and Translators Café are advertised as networks for *professional* translators. However, for example, translation students might participate in the networks as well. Moreover, there might be many people performing BT who are not professional translators. According to Hambleton, this has often been the case in the past at least, where back translators were hired just because they "happened to be available – a friend, a wife of a colleague, someone who could be hired cheaply, and so on" (2005: 10). The input of such non-professional translators would have been valuable as well.

5.2. Further perspectives

We believe that BT requires further attention in TS. For example, inspired by the results of the above analysis, it would be interesting to explore whether BT is, in fact, a more effective means of quality control than a thorough review of the forward translation. This could, for instance, be explored in product- and process-oriented studies (Saldanha & O'Brien 2013) of the translation of tests and instruments from the medical domain. Also, it would be highly interesting to explore who BT translators are, as Hambleton (2005) states that non-professionals were often used in the past. We hope that other scholars will take an interest in the method of BT, which is widely used, but given little academic attention at least in TS.

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CONCEPTUALISATION INDICES IN HEALTH AND LIFE SCIENCES TRANSLATION: AN EXPERIENTIALIST APPROACH

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Abstract

Conceptual metaphors, as theorized by George Lakoff, are essential to scientific and biomedical thought. They express themselves in speech through metaphorical expressions. Understanding conceptual metaphors is critical for translators. Several years ago we proposed the concept of conceptualization index, which is the linguistic element by which metaphor operates. This article begins with a description of the experiential framework used for a number of studies realized in biomedicine and life sciences. Then, the predicative, quasi-predictive, and non-predictive conceptualization indices are distinguished. Finally, the general principles deduced from the set of data are presented.

Résumé

Les métaphores conceptuelles, telles que les a théorisées George Lakoff, sont fondamentales pour la pensée scientifique. Elles s'expriment en discours par l'intermédiaire d'expressions métaphoriques. Comprendre les métaphores conceptuelles est donc essentiel pour les traducteurs. Nous avons proposé, il y a plusieurs années, le concept d'indice de conceptualisation, qui est l'élément linguistique par lequel opère la métaphore. Le présent article commence par préciser le cadre expérientialiste dans lequel se situent les travaux présentés. Puis, les indices de conceptualisation prédicatifs, quasi-prédicatifs et non prédicatifs sont distingués. Enfin, les principes tirés de l'ensemble des données recueillies sont présentés.

Keywords: Conceptualisation index. Conceptual metaphor and metonymy. Fictive and factive representations. Predicative and non-predicative units. Quasi-predicative unit.

Second Keywords: Indice de conceptualization. Métaphore et métonymie conceptuelles. Unités prédicatives ou non-prédicatives. Unités quasi-prédicatives.

1. Introduction

Despite the rise of computer-assisted translation, mastering highly specialized translation still remains a challenge, particularly in the rapidly evolving domains such as biomedicine and life sciences. On the one hand, translators will have to work more and more with computer-generated pre-translations and then provide their clients with post-edited texts which, hopefully, will be free of any error. Hence, translators will have to deal with what appears to be the most difficult part of the translation process: evaluating the validity of the machine's output, correcting any errors, and handling the most difficult, unresolved problems. On the other hand, a large number of documents deal with new subjects or are very complex. In these cases, the efficiency of computer-assisted translation, which relies on huge corpora, drops dramatically. Therefore, it may be anticipated that, more than ever, a keen knowledge of what underlies biomedical and life sciences texts will be necessary if a translator is to be successful: terms and concepts, idiomaticity and phraseology, grammatical rules as well as specific practices but, above all, various conceptualizations found in modern science and biomedicine.

What I intend here by "conceptualizations" is clearly explained by Geeraerts and Cuyckens in the framework of cognitive linguistics:

> Linguistic structures are thought to express conceptualizations, that is, conceptualization is central for linguistic structure—and conceptualization goes further than mere reference. It involves imagery in the broadest sense of the word: ways of making sense, of imposing meaning (Geeraerts & Cuyckens 2012/2010: online).

Since Lakoff and Johnson (1980/2003), metaphorical conceptualization is fundamental in exploring the relationships between thought and language. For translators, the understanding of conceptual metaphors and their linguistic counterparts in the discourse is paramount: Lakoff and co-workers have emphasized the pervasive nature of conceptual metaphorization on our everyday lives (Lakoff & Johnson 1980/2003), but there is no reason to believe that any human experiential and knowledge domain would be an exception.

Indeed, it has now been well established that life sciences and biomedical discourse is often metaphorical, which applies to both specialized and popularized discourse in various languages (see Vandaele 2000, and other subsequent articles e.g. Vandaele 2003a, 2003b, 2004, 2009, 2013; van Rijn-van Tongeren 1997; Fox-Keller 1999 Temmerman 2000; 2002; Collombat 2003; Oliveira 2009). This is also true of other disciplines, such as economics and finance (e.g. Boers & Demecheleer 1997; Rojo Lopez 2011), business (Koller 2004), politics (Lakoff 2008), education (Cameron 2003), physics (Mirowski 1989/2001), etc., not the least being translatology/translation studies (D'hulst 1992). In science, the heuristic and conceptualizing value of metaphors has been clearly demonstrated. While some still lament the presence of metaphors in science, I believe that those individuals may not have grasped the fact that metaphors are impossible to avoid because there is no other viable alternative that would be as efficient and economical. Those individuals might also tend to envision metaphors as "deviant"; however, the rise of cognitive semantics, more specifically experientialism, has shown that metaphors are deeply rooted in our minds.

However, metaphors still represent a true challenge for the translator: should he/she transfer the same metaphor into the target culture and language? Find another one and, if so, which one? Or should he/she, if possible, neutralize it? In this work, I intend to provide a synthesis of a study[1] on conceptual metaphor in health and life sciences, a project that started in 2000, and the results of which have been published mostly in French. I will nonetheless provide the reader with new insights, notably concerning the particular case of quasi-predicates as metaphorical conceptualization indices. In the end, I hope that the reader will have in hand a comprehensive approach to scientific metaphor, an approach that will be useful for the translation field, be it teaching, research or actual practice.

The first question is: what is a metaphor? Much has been written on this subject; however, I feel that I should still clarify my postulates. As noticed by Samaniego Fernández (2011), metaphor has been under the scrutiny of a

1. The research presented here has involved students who participated as research assistants (*) or in the context of their Master's thesis (✦): Marie-Claude Béland* (en-fr), Eve-Marie Gendron-Pontbriand✦ (en-fr; 2013) Mariane Gingras-Harvey✦ (en-fr-de; 2014), Mélanie Labelle✦ (en-fr; 2009); Leslie Lubin*✦ (en-fr; 2005), Paula F. Malaszkiewics✦ (fr-pt [Brasil]; 2015), Julie Mondoux* (en-fr), Mariana Raffo*✦ (en-fr-es; 2014), Bruna Steffen✦ (fr-pt [Brasil]; 2016. The corpora that were used in the different studies were: specialized textbooks and monographs, scientific articles and, in certain cases, some popularization journals such as Scientific American. The references are extensively described in the articles cited in the reference section.

number of translation researchers, leading to "three basic positions […]: (1) metaphors are untranslatable […]; (2) metaphors are fully translatable, just like any other translation issue […] and (3) metaphors are translatable but pose a considerable degree of inequivalence […]." (Samaniego Fernández 2011: 263-264) However, most of the time, metaphor is understood as a matter of a deviant use of a word, either as a literary stylistic device, or as a rhetorical instrument. However, if, as a biologist, I say "the cells intend to commit suicide", fellow biologists will not take it as fancy daydreaming, rather they will instantly understand that I am referring to the concept of apoptosis[2], which has been described in the specialized literature as the process of "cell suicide". It is not a deviant usage of the word, nor a rhetorical device: researchers need to rely on what is accessible to them to describe what they observe in their laboratory or in the field. It means that the cell seems "to make the decision" to die according to a "program" as opposed to passively dying due to an injury (cell necrosis). It is very difficult to express this phenomenon in non-metaphorical words (see Almeisen 2003 for this particular example, cited in Vandaele 2009). In fact, to say that the cell "makes a decision", "commits suicide" or "functions according to a program" is very common in the scientific literature and is not the hallmark of popularized discourse[3]. The question here is not to decide whether a particular metaphorical linguistic expression is translatable or not, it is rather to grasp the whole conceptualization that lies behind it (not only in the source text, but also in a particular scientific domain); to determine the extent of this conceptualization in the scientific frame of thought; and, finally to be able to select the most appropriate linguistic tools (the words) in the target language to render this conceptualization.

What theoretical tools are useful to understand and describe scientific metaphors? In my previous line of work in biomedical research, I experienced strong influences which determined the theoretical framework which I later decided to follow in my translation and terminology research (see Vandaele

2. "One of the mechanisms by which CELL DEATH occurs (compare with NECROSIS and AUTOPHAGOCYTOSIS). Apoptosis is the mechanism responsible for the physiological deletion of cells and appears to be intrinsically programmed. It is characterized by distinctive morphologic changes in the nucleus and cytoplasm, chromatin cleavage at regularly spaced sites, and the endonucleolytic cleavage of genomic DNA; (DNA FRAGMENTATION); at internucleosomal sites. This mode of cell death serves as a balance to mitosis in regulating the size of animal tissues and in mediating pathologic processes associated with tumor growth." Medical Subject Headings, NCBI. (https://www.ncbi.nlm.nih.gov/mesh/68017209)
3. As explained by Wright (2011) and Raffo (2016), popularized texts and highly specialised texts are on a continuum. No clear-cut categorisation can be made.

2007 for more details). My epistemological references are rooted in neuroscience, more precisely in the idea that consciousness emerges from neuronal functioning. Over the last 30 years or so, a number of neurobiologists, such as Gerald Edelman in the United States (e.g. Edelman 1987, 1992, 2006) or Jean-Pierre Changeux[4] in France (Changeux 1983/2012), have been strong proponents of a neuronal theory of thought, postulating that innate potentialities are modulated by retroactions induced through the acquisition processes during development. These approaches underline the importance of epigenetic factors (i.e. the influence of the environment on a living being) to try to explain how consciousness emerges from the biological organization of the brain and the body. This means that objectivist and essentialist theories are immediately rejected. Edelman claims that his theory of consciousness "takes as its canonical reference our own experience as humans and our ability to report that experience by language" (Edelman 1992: 225). At the same time, he advocates for the existence of a real world independent from human conceptualizations. Consequently, he refers to Lakoff's experientalist theory as the linguistic theory that parallels his own.

The main statement of experientialism is that experience is the source of knowledge. As Geeraerts and Cuyckens explained,

> Also, the conceptualizations that are expressed in the language have an experiential basis, that is, they link up with the way in which human beings experience reality, both culturally and physiologically. In this sense, Cognitive Linguistics embodies a fully contextualized conception of meaning (Geeraerts & Cuyckens 2010: online).

According to Lakoff and coworkers, experientialism is a "myth"[5] that transcends the fundamental opposition between the objectivist and subjectivist "myths":

> The fact that the myths of subjectivism and objectivism have stood for so long in Western cultures indicates that each serves some important function. […]
>
> The fundamental concern of the myth of objectivism is the world external to the individual. The myth rightly emphasizes the fact that there are real

4. For recent and fascinating comments by Changeux about his book and modern neuroscience, see his conference "L'homme neuronal, trente ans après" (Colloque interdisciplinaire de la République des Savoirs, 17 octobre 2014, <https://www.youtube.com/watch?v=vY3DY2xA53w>).
5. Lakoff and Johnson use the word "myth" to designate a pervasive way of thinking, such as objectivism or subjectivism: "Incidentally, we are not using the term 'myth' in any derogatory way. Myths provide ways of comprehending experience; they give orders to our lives" (Lakoff & Johnson 1980/2003: 185). It could very well be replaced by "theoretical foundation".

> things, existing independently of us, which constrain both how we interact with them and how we comprehend them. […]
>
> What legitimately motivates subjectivism is the awareness that meaning is always meaning *to* a person. What's meaningful to me is a matter of what has significance for me. And what is significant for me will not depend on my rational knowledge alone, but on my past experiences, values, feelings, and intuitive thoughts (Lakoff & Johnson 1980/2003: 226-227).

The authors continue, explaining that the experientalist "myth" reconciles the two lines of thought: postulating that the source of knowledge starts with the experiences of our body in its environment, "scientific knowledge is still possible" (Lakoff & Johnson 1980/2003: 227) and, at the same time,

> […] it gives an account of how understanding uses the primary resources of the imagination through metaphor and how it is possible to give experience new meaning and to create new realities.
>
> Where experientialism diverges from subjectivism is in its rejection of the Romantic idea that imaginative understanding is completely unconstrained.
>
> In summary we see the experientialist myth as capable of satisfying the real and reasonable concerns that have motivated the myths of both subjectivism and objectivism but without either the objectivist obsession with absolute truth and the subjectivist insistence that imagination is totally unrestricted (Lakoff & Johnson 1980/2003 : 228).

These premises are not new, but I feel that it is necessary to come back to them. First, because of the primacy of reality, it places the experientalist approach on a different line of thought than the subjectivist approach, in particular extreme constructivism. Second, it is a prerequisite for the shared intersubjectivity that is necessary to allow for the existence of language, communication among humans. Finally, translation is a problem for objectivists. For different reasons, subjectivism and objectivism do not provide any integrative framework in which it is possible to envision the various dimensions of translation. Objectivism hardly takes into account the wide variety of cultures and languages, tending to model language on the basis of a computer metaphor (see the criticisms of generative linguistics in Notari 2010). As Leddy states (1995: 206), "[o]bjectivists believe in absolute truths and universally valid knowledge. Objectivism is associated with a wide range of philosophers, linguists, psychologists, and cognitive scientists (e.g. Frege, Husserl, Chomsky, Russell, Searle & Davidson)". In such views, metaphors in science are a real problem because, for these authors, imagination *should not* take place in the process of describing and understanding the world; this task should be perfectly literal and objective: "Objectivists see metaphorical truth as a fiction" (Leddy 1995: 207). In the case of subjectivism, heirs of Romanticism (and in translation

studies, of Schleiermacher, such as Berman) do not even consider scientific and technical texts as… texts (see, for a detailed criticism, Vandaele 2015). The extreme consequence of subjectivism is that it becomes impossible to communicate and, thus, to translate.

However, we do translate, *e pur si muove*.[6] I agree with Lakoff and coworkers that a "middle path" is strongly needed to avoid the pitfalls of both objectivism and subjectivism. Experientialism seems to pave the way for it; more specifically, in translation, it allows us to explore on the same ground and with equal consideration what the human mind can produce, from literature to scientific texts. Also, a middle path between objectivism and subjectivism makes translation possible (although difficult), because if we recognize features shared among language-cultures, we must also confront those that remain specific, i.e. that which forms the bulk of translation problems. Delving further into controversies is not the scope of this work, and for the present purpose, I will concentrate on conceptual metaphor. I will also try to propose a useful framework for understanding, studying and translating them.

2. From experientialism to conceptual metaphor and conceptualization indices

The hallmark of Lakoff's work, which comes from his experientialist premises, is the idea of conceptual metaphor. He and Johnson made a breakthrough when they published *Metaphors We Live By* (Lakoff & Johnson 1980/2003; see also Lakoff 1993 for an update). This book has been translated into numerous languages[7], is widely cited and has provided a theoretical frame for a wide range of studies. According to Leddy, "[…] experientialists have developed the most important implications of metaphor studies for philosophy so far" (Leddy 1995: 207). The fundamental idea is that we metaphorically conceptualize a large part of our world – including time – primarily on the basis of our bodily experience in the surrounding environment. Furthermore, metaphorical conceptualizations, as well as categorizations of entities and situations, are strongly culture-dependent (see *Women, Fire and Dangerous Things* [Lakoff 1987] for a fascinating analysis of the Dyirbal language and culture in Australia). This accounts for a number of shared conceptualizations among humans, as well as cultural specificities based on time and space. Therefore, I believe that

6. "Albeit it does move" (And yet it moves), attributed to Galileo (1564-1642).

7. 1st editions in French and Spanish: 1986; followed by other reprints or editions. Do note that the original 2nd edition in English, published in 2003, contains an important afterword (pp. 243-274) that does not always appear in the translations.

this approach is fertile ground for translatology, and specifically for scientific translation.

Lakoff convincingly shows that a conceptual metaphor shows up in a number of metaphorical linguistic expressions. His examples are very well known (see e.g. ARGUMENT IS WAR or TIME IS MONEY metaphors, Lakoff & Johnson 1980/2003: 5), therefore I will provide the reader with examples found in biomedical and life sciences texts. According to Lakoff's rules, conceptual metaphors are provided in small capitals (CELLS ARE PERSONS), while the metaphorical expressions are written in italics (*The suicide of cells is called apoptosis*). The lexical item that carries the metaphor is *suicide* (See Vandaele 2009 for a discussion about the circulation of conceptual metaphors in society).

The identification of a conceptual metaphor starts with collecting coherent metaphorical expressions. The metaphorical expression itself is identified thanks to a *cognitive dissonance*[8] experienced by the subject and generated by the coexistence of a *factive representation* ("more" veridical) and a *fictive representation* ("less" veridical) (Talmy 2000: 101; 135-137).

Although Lakoff very clearly explains that, in his views, metaphors reside at the thought level (this is why it is called conceptual metaphor) and are linguistically expressed in metaphorical expressions, some confusion may still be observed in a number of texts dealing with metaphor. In particular, conceptual metaphors are not rhetorical devices (although metaphorical expressions can be used intentionally with rhetorical purposes), nor a stylistic feature (although original metaphorical expressions in literature reveal a conceptualization of the world that is specific to an author). Therefore, since conceptual metaphor is of primary importance in understanding and describing scientific concepts and objects, it is very important to exclude any metalinguistic items that could refer to rhetoric or style, such as tropes or figurative language. It is fundamental to separate a metaphor's nature and its role in a particular discourse. I therefore looked for a linguistically-based characterization of metaphorical expressions that would free up their study along other axis.

When analyzing metaphorical expressions, it is clear that, in each case, a specific lexical unit is the "carrier" of the conceptual metaphor[9]. Lubin and

8. I use the term cognitive dissonance without any reference to social psychology. I simply want to underline that the subject experiences a lack of coherence at the cognitive level. This experience varies in intensity: it may require an effort, notably for conceptual metaphors that are pervasive in a particular context. However, it may be that our concept shares some similarity with that of social psychology.
9. This is what Black (1962) calls focus (see Vandaele 2009 for a review of other terminology such as topic, vehicle, tenor, and in French, theme and phore).

I called the linguistic elements that generate the cognitive dissonance: *metaphorical conceptualization indices* (*indices de conceptualization métaphorique*; Vandaele & Lubin 2005). Semantically, *metaphorical conceptualization indices* found in metaphorical expressions as described by Lakoff are predicative lexical units[10]. It can be a verb (*the artery runs along the bone)*, a descriptive (qualifying or classifying) adjective (*a guilty virus)* or a deverbal noun[11] (*receptor)*, but very rarely an adverb.

Let's examine some examples:

> *The external carotid artery begins opposite the upper border of the thyroid cartilage, and, taking a slightly curved course, passes upward and forward […]. […] From its origin under the anterior border of the Sternocleidomastoideus it runs upward and forward for a short distance in the carotid triangle [...].* (Gray 1918: 3a. 2.)

Conceptualisation indices are, in the English example, *begins, course, passes, runs*, and in French, *monte*, *traverse*, *pénètre*. Similar indices referring to a seemingly *fictive motion* can be observed for nerves and veins (see Lubin 2005 for a detailed study of verbs in anatomy). We do know that neither the nerves, the arteries nor the veins are moving: we *know* that they are motionless and this corresponds to the *factive representation*. But at the same time we accept the fictive motion, so as to represent the fact that they are elongated structures located along, or in, other anatomical structures. Talmy (2000/2003) explains that, in his opinion, this kind of representation comes from the fact that the gaze follows the shape of the conceptualized entity (a fence, in his article), which creates an illusion of motion.

Like Lakoff, I believe that the use of conceptual metaphor is generally not consciously driven in everyday life. However, it can also be deliberately used to fulfill various goals: rhetorical, pragmatic, heuristic, etc. Over time, coherent metaphorical expressions build *correspondences* (rather than *projection*; see Lakoff & Johnson 1980/2003, postface) between a *source domain of experience to a target domain*, which are subsumed under a conceptual metaphor and, inversely, salient conceptual metaphors build and structure our view of the world. They are likely to generate metaphorical expressions as needed:

10. The definition of predicative lexical units and actants comes from Mel'čuk (see e.g. Mel'čuk 2004a; 2004b): 1) A predicative lexical unit is a unit whose meaning contains slots that are filled up in the discourse. The prototypes are verbs. 2) Actants correspond to the slots in a predicative meaning and can be compulsory or facultative.
11. Deverbal nouns are particularly problematic, because their description in the specialized dictionaries do not take into account their actants in a proper manner. See Vandaele and Raffo 2008a.

there are constant comings and goings between the acquisition of conceptual metaphors when being learnt, their reuse and the production of new ones. It is a highly dynamic process that never ends and that can bring, at the social level, change or, to the contrary, resistance to change (see Almeisen 2003 for his comment on the difficulty cell biologists have accepting the concept of "cell suicide" as a normal physiological process). We could hypothesize that a kind of "Darwinian" cognitive selection process constantly operates from the personal to the social level, leaving "alive" the most frequent metaphors – but not necessarily the most obvious ones. Contrary to Ricœur[12] (1975/1997) who qualifies shared, lexicalized, metaphorical expressions as "dead", the most "alive" metaphorical conceptualizations are those that are so deeply intertwined with the culture that they are not easily perceived anymore. On the other hand, any metaphorical hapax – called "métaphore vive" by Ricœur[13] –, whether literary or not, risks death at birth if the utterance remains unheard, unread or hidden, like a lost book in an obscure library. This is why translating old texts, whether literary or scientific, is so difficult; we cannot easily access the metaphorical conceptualizations that prevailed at that time (see Vandaele & Béland 2012 for an account of lost hypotheses on hereditary units at the end of the 19th century, hypotheses that appeared later to be wrong).

Finally, it does seem possible to translate the name of a conceptual metaphor, but in fact it is totally meaningless if it is not supported by evidence of corresponding metaphorical expressions in the target language. Indeed, as for the examples presented in Table 1, the same conceptual metaphor is supported by congruent sets of metaphorical expressions in French and Spanish.

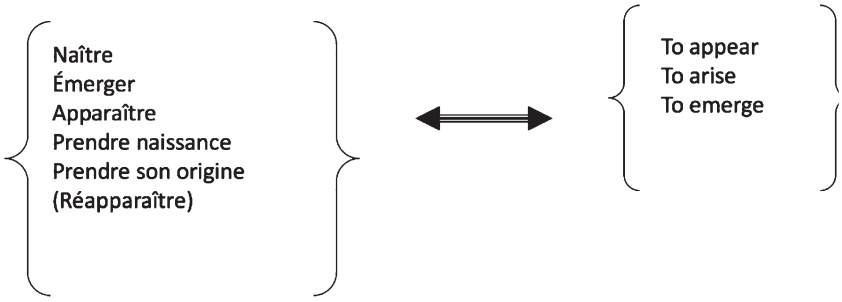
One of the most interesting results that emerged from our research is that the richness of IC sets varies among languages. For example, in anatomy, to render the subcategory of fictive appearance for arteries, veins, nerves and muscles, we have 6 ICs in French, and 3 ICs in English (Table 2; Vandaele and Lubin 2009; Lubin 2005). While the verb *to run* is prevalent in English to express a general fictive motion, there are many more possibilities in French. Hence the translator should consider equivalent sets of ICs expressing the same conceptualization rather than translating word for word.

12. Incidentally, Ricœur is one of the philosophers who strongly disagreed with Changeux. See Changeux & Ricoeur (1998/2000).
13. The English translation of the book's title is (sadly): *The rule of metaphor*.

Table 1 – A Conceptual Metaphor Shared in French, English and Spanish[14,15]

Metaphorical expressions	*[agent pathogène] incriminé, coupable, responsable, accusé, suspecté etc.*	*suspected, guilty, accused, responsible [pathogen agent] etc.*	*culpable, inocente, sospechoso, responsable [patógeno] etc.*
Correspondences	La cause est le coupable Le processus pathologique est l'énigme Le patient est la victime Le chercheur ou le médecin est le détective	The cause is the culprit The pathological process is the enigma The patient is the victim The researcher or doctor is the detective	La causa es el culpable El proceso de la enfermedad es el enigma El paciente es la víctima El investigador o el médico es el detective
CONCEPTUAL METAPHOR	LA RECHERCHE DE LA CAUSE D'UNE INFECTION EST UNE ENQUÊTE CRIMINELLE	THE SEARCH FOR THE CAUSE OF A DISEASE IS A CRIMINAL INVESTIGATION	LA BÚSQUEDA DE LA CAUSA DE UNA ENFERMEDAD ES UNA INVESTIGACIÓN CRIMINAL

Table 2 – Conceptualisation Indices for Nerves, Arteries, Veins and Muscle (fictive appearance) (adapted from Lubin 2005)



The metaphorical nature of idiomatic expressions explains that it is one the most important problems that translators and writers, and above all students, encounter. While denominations can be, most of the time, managed on the basis of the equivalence of the corresponding definitions in the source and

14. See Vandaele 2000: 398 for English and French.
15. For the sake of clarity and due to the lack of space, ICs attesting the other correspondences indicated in the table have not been included. See the articles for more details.

target languages (i.e. equivalence of the genus and of the semantic traits), the choice of phraseologisms in the target language requires that we take into account the underlying metaphorical conceptualization. Since this involves more or less extended lexical networks (see Vandaele et al. 2006), confidence in the translation solutions is difficult to reach and grows slowly with experience. In this regard, using computerized tools is a pedagogical challenge, as it favors bypassing the processes of reading, understanding and thinking which are the basis for acquiring strong translation cognitive competences (for a discussion on some pitfalls of the use of Internet and computerized tools in the classroom, see Vandaele 2017).

3. Conceptualisation indices and actantial analysis

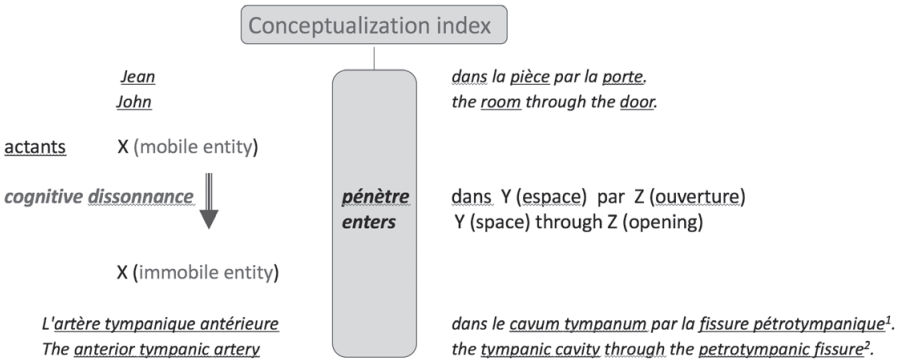
Although terminologists like Oliveira (2009) or Temmerman (2000; 2002) have focused mainly on metaphorical nouns/names (terms[16]), "Lakovian"[17] metaphorical expressions often fall into the phraseologism category, which could be analyzed as collocates (Vandaele 2003b, 2004, 2005; Vandaele et al. 2006[18]; Barque & Jousse 2006). However, complex names comprising a deverbal noun and/or a complex complement (*dopamine receptor*; *récepteur à sept passages transmembranaires*) also contain conceptualization indices (*receptor; récepteur; passage*). In fact, the key to understanding the underlying mechanism is that metaphorical conceptualization indices in "Lakovian" metaphorical expressions are predicative lexical units. This provides the clue to set up a systematic method of analysis in mono- and bilingual corpora (Vandaele & Lubin 2005).

Indeed, even before we coined the term *conceptualization index*, and relying on the powerful actancial analysis proposed by the Meaning-Text Theory (MTT) of Mel'čuk and coworkers (Mel'čuk 2004a; 2004b; 2012), I proposed that the metaphorical conceptualization operates through the projection of the actantial structure (in part or in full) of a source lexical unit onto a target

16. Although a number of theoretical approaches inspired by lexicology prefer to speak of "specialized lexical units" and would consider verbs and adjectives as terms, I prefer to refer to a more traditional definition of terminology as the "science of denominations", hence "terms" as "denominations". See below for further explanations. No approach is entirely satisfactory anyway.
17. Borrowed from Andor 2010: 157.
18. Although very attractive on a theoretical level, I have abandoned the use of MTT's lexical functions. They work best with meanings that can be easily generalized, as shown by the Magn function, which is quite rare in science.

lexical unit (Vandaele 2003b; Vandaele 2004; 2005; see *pénétrer* in Figure 1)[19]. The two lexical units (source: *X [mobile entity]* ***pénètre*** *dans Y par Z*; target : *X [artery – immobile]* ***pénètre*** *dans Y par Z*) belong to the same vocable, PÉNÉTRER. From a lexicological point of view, the use of a lexical unit as a conceptualization index creates a new meaning and, as exploited by Barque & Jousse (2006), this provides a way to characterize the metaphorical links between a vocable's lexical units.

Figure 1 – Conceptualization Index and Actantial Structure



1. Dictionnaire médical de l'Académie de médecine.
2. Gray 1918 : Section 3a. 2. 8 (http://www.bartleby.com/107/144.html).

A predicate denotes a fact, a situation, a process and is generally[20] characterized by a "binding meaning" (*sens liant*; Mel'čuk 2012: 195), "which is incomplete without other meanings that should be inserted into slots and thus 'bound together'" (Mel'čuk 2012: 195). The other lexical units to be "inserted into the slots" of a predicate are called *arguments*, or *actants*. Non-predicative units that designate entities without arguments are called *semantic names* (e.g., *protein*, *cell*; *molécule*). Finally, *quasi-predicates* designate entities, but have at least one open slot (e.g. *leg of a table*, *roof of the 4th ventricle* in the brain; *piliers du cœur*; see below; Mel'čuk & Polguère 2008).

19. The same hypothesis has been used later by Vidal and Cabré (2006) as well as Barque and Jousse (2006).
20. Mel'čuk insists on the fact that some predicates are semantically saturated and do not have open slots, as in *it rains*. These lexical units should not be confounded with semantic names.

At the semantic level, the actantial structure of a predicative lexical unit is invariable and does not depend on the syntax in discourse, i.e., for verbs, the use of the active or passive voice. Even deverbal nouns have the same predicative structure as the verbs from which they derive.

It is necessary to examine several contexts to fully determine the actantial structure of a lexical unit (especially verbs and deverbal nouns) because some actants may be optional, i.e. not expressed in the text. Finally, optional actants must not be confused with circumstantials: actants fill meaning slots of predicates, while circumstantials do not. Consider the following: *I eat an apple every morning*. The verb *to eat* has two actants, expressed in this clause by *I* (expressing the first semantic actant) and *apple* (expressing the second semantic actant); *every morning* is a *circumstantial* because its presence or its absence does not change the meaning of the verb (not to be confounded with the meaning of the sentence).

The MTT is extremely powerful for describing the meaning of lexical units in terms of their relations with other lexical units, their derivation and their collocates, finding a great application in lexicographic dictionaries, particularly for learners (Mel'čuk & Polguère 2007).

Interestingly, we discovered in 2006 that Eco had proposed, 18 years earlier, to use case–based semantics to study metaphors:

> Cependant la métaphore ne met pas en jeu que des similarités, mais aussi des oppositions. […] Pour rendre compte de ces phénomènes, une représentation encyclopédique doit adopter le format d'une sémantique casuelle qui prenne en considération le Sujet Agent, l'Objet sur lequel l'agent exerce son action, […] etc. Une telle sémantique a été élaborée par plusieurs auteurs (on peut penser aux « actants » de Tesnières et Greimas, aux « cas » grammaticaux de Fillmore, à la sémantique de Bierwisch). (Eco 1988/2006: 172-173)

Indeed Fillmore's Frames Semantics (see Andor 2010 for an interview with Fillmore, who reflects on his own theory) could have been the "natural" linguistic environment to analyze "Lakovian" metaphorical expressions (see Rojo Lopez 2011). However, the great advantage of the modelizing that the MTT offers over Frames semantics is that this latter does not clearly distinguish a lexical unit's true actants among the participants in a situation (called *frame elements*; see Alonso Ramos 2009 for a convincing comparison of the two theories[21]). The fundamental problem is that working with corpora involves the

21. Setting apart actants and circumstantials is sometimes difficult, but Mel'čuk's principle is very clear: determining actants is critical in identifying the different lexical units that belong to a vocable, i.e. to account for polysemy.

use of a semasiological strategy, i.e. to start from a text, which is constrained by the linguistic properties of words, to deduce conceptual knowledge.

Moreover, as Fillmore himself points out, Lakoff is using the concept of frames differently:

> I distinguished *cognitive frames* from *linguistic frames*, the idea being that cognitive frames are those background understandings needed for making sense of things that happen around us, and linguistic frames are those that are specifically coded in — or "evoked by" — lexical units or other features of linguistic form. […] George Lakoff emphasizes the frames that humans have by possessing human bodies, frames that are available for metaphoring, as well as the frames that humans acquire by living in a culture, frames that have different weightings or salience in their individual framicons [sic], allowing two people to have different interpretations of their experiences — or perhaps it would be more faithful to George's point of view to say that they have different experiences because of tendencies to frame experiences in different ways. (Fillmore, in Andor 2010: 158)

From my point of view, it is crucial, in the context of translation, to separate actants from circumstantials: if we admit that the basis for establishing linguistic equivalences between two predicative lexical units belonging to different languages is the identity of meaning, this can be done if, and only if, according to Mel'čuk's framework[22], these units have a similar actantial structure, but not necessarily according to Fillmore's theory. However, comparing *cognitive* frames is also helpful in understanding the differences in the two languages-cultures in question, as it operates at a conceptual, encyclopedic level rather than at a lexical level. Zethsen rightly recalls that "equivalence is now regarded by most translation scholars as a flexible concept with many faces […] and most scholars would not gainsay the fact that a professional translator must take the skopos of the translation into account and adjust the nature of the equivalence required accordingly" (Zethsen 2014 : 126)

However, also for this reason, I do not follow all the premises of the MTT, which focuses exclusively on semantic relationships between lexical units. Indeed we have to take into account the denominations (terms) formed by multilexical units in the actantial slots, for which the compositionality principle is not sufficient: we are more interested in the conceptualizations of, and the difference between, *jugular artery* and *femoral artery*, rather than by the compositional meaning of *artery* with either *jugular* or *femoral*; in other words, by the concepts or the referents rather than the meaning of lexical units. For this

22. For example, *I eat* and *I eat an apple* correspond to two lexical units (*X eats* and *X eats Y*) or the vocable to eat. Then, *X eats* could not be translated by *X mange Y*.

reason, Raffo and I (Vandaele & Raffo 2008a) have distinguished the "lexical meaning" of lexical units from the "notional/conceptual meaning" of terms[23]. As a consequence, actantial slots of predicative lexical units can be filled by any monolexical or polylexical unit which refers to a concept (i.e. a *term* in the classical, non-lexicological, terminological approaches): in the sentence "*the basilic vein joins the brachial vein*", the conceptualization index is *joins*, and the first and the second actants are expressed, respectively, by *basilic vein* and *brachial vein,* rather than by *vein*.

Finally, to take advantage of the finely tuned analysis of predicative units, according to the MTT, and to allow the actantial slots to be filled by a syntagm referring to a concept, we follow, again, a "middle path" which combines, hopefully for the best and not for the worst, both lexical and terminological concepts. This is due to the fact that the analysis shown here is driven by corpora, and it must take into account the discourse as well as its referential aspect, and is intended to be useful in a translation context, while lexicology and terminology focus, respectively, on lexical units or terms with a lexicographical or terminolographical goal.

4. Non-predicative conceptualization indices

A number of conceptualization indices are non-predicative. This is the case, for example, for the noun *cell* in cell biology (see Table 3 for other examples).

The semantic mechanism involves a specific trait from the source concept that is attributed to the target one. For example, *cell* is a term that goes back to the 17th century, when Robert Hooke, inspired by the shape of monastery "cells", named what he thought to be the basic unit of living organisms (the concept was right, but the structure he observed in his microscope was in fact small holes in cork bark, which were wrongly interpreted as vestiges of living cells; cited in Vandaele 2007). The trait projected from the monks' cells onto the cells of living organisms is the idea of a small, closed, delimited space. Traditionally, since Quintilien, it has been understood only as an extension of the meaning of a word (i.e. a catachresis: to use the noun *cell* to designate something other than the monk's small room that is not named yet), without referring to the motivation for this extension of meaning, i.e. the similar trait found in the two objects. It is often considered *deviant*, thus leading to confusion, by those who are hesitant about treating metaphors as a cognitive mechanism. Contrary to the predicative conceptualization indices, the origin

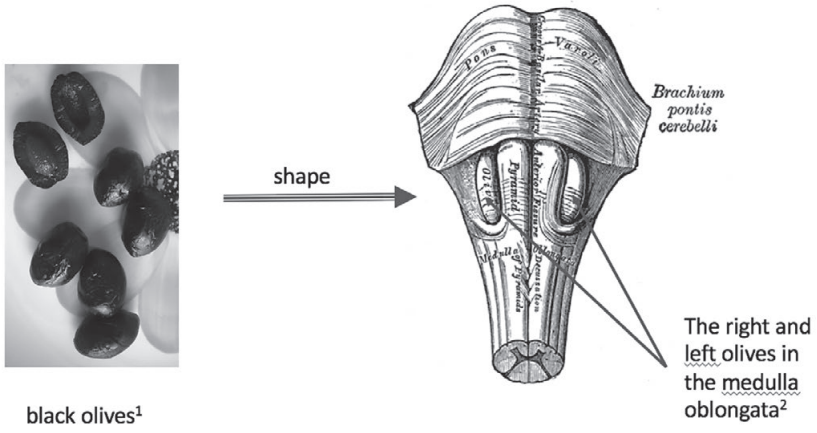
23. See also note 16. Two terms are said to be conotional when they refer to the same concept ("notion" in French). Synonymy is kept for lexical units having the same meaning.

of the projection may be lost over time: it is very unlikely that the modern day biology reader keeps in his/her mind the origin of Hooke's act of denomination from four centuries ago. At best he/she will seize upon similar traits that are synchronically valid (the cell of the prisoner may now be more salient than a monk's cell), but the correspondence is likely to be lost, although not always (see the case of the *olive* in Figure 2). Typically, these units are discovered through an etymological analysis. In the medical field, a high number of specialised terms are formed using Greek or Latin roots (see below *pons*, *fossa*), carrying a metaphorical component, which are difficult to recognize without knowledge of these languages and a careful etymological analysis.

Table 3 – Examples of Non-predicative Conceptualization Indices

Trait	English		French	
shape		Cell	cellule	
shape/ function		Pons	pont	
shape	turcica ~	Sella	selle	~ turcique
shape		Trunk	tronc	
shape	accessory ~, inferior ~, superior ~, cerebellar ~,	Olive	olive	~ accessoire, ~ inférieure, ~ supérieure, ~cérébelleuse,
shape	~ ovalis	Fossa	fosse	~ ovale

Figure 2 – Non-predicative Conceptualization Indices



5. Quasi-predicative Conceptualization Indices

A lot of multi-lexical terms in anatomy contain quasi-predicates (Labelle 2009; Gingras-Harvey 2014; Vandaele et Gingras-Harvey 2014). Like semantic nouns, quasi-predicates denote entities, but like predicates, they cannot be described without actants (Mel'čuk & Polguère 2008). The English term *roof of the 4th ventricle* and the equivalent French term *toit du 4e ventricule* (a brain structure) are examples: *roof* or *toit* are quasi-predicative, *4th ventricle* or *4e ventricule* are the actants, respectively. As for *cell* above, the trait projected from *roof*[24] as a non-predicative unit onto *roof* [*of the 4th ventricle*] is a specific characteristic, here a function (to cover a building or a vehicle), more or less associated to a shape (something flat). But, in addition, it is associated with an actant, *4th ventricle*.

Labelle (2009) and Gingras-Harvey (2014), in their Master's theses, have shown that anatomical and neuro-anatomical quasi-predicatives units are sourced from several fields of knowledge. Table 4 presents some examples of quasi-predicative ICs that are relevant to building parts, artefacts, plant parts or landscape metaphors. It should be noted that the actancial slot can be filled with a relational adjective which stands for a name (*pelvic, plantaire*). Also, the slot is not necessarily filled by a true actant (e.g. *gouttière osseuse,* as *osseuse* is at the same time a qualificative [or descriptive] and a relative [or classifying] adjective), leading to the idea that the predicative nature of lexical units is not so clear-cut and that predicative to non-predicative units form a continuum (Figure 3).

24. Roof: "The structure forming the upper covering of a building or vehicle. (New Oxford American Dictionary; electronic version for Macintosh; no publication date)

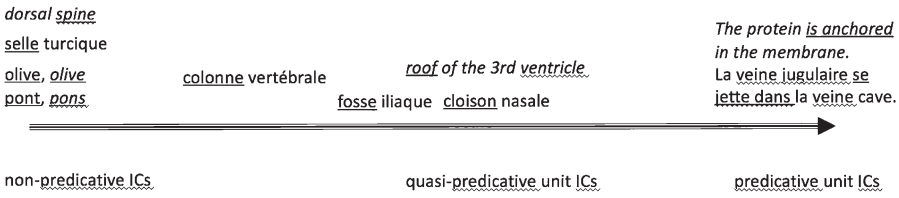
Table 4 – Some quasi-predicative Conceptualization Indices in Anatomy[25]

	English		**French**	
Building parts	mandibular ~, pelvic ~, vertebral ~, glossopalatine ~…	$arch_1$	arc	~ mandibulaire, ~ pelvien, ~ vertébral, ~ glossopalatin…
	foot ~	$arch_2$	voûte	~ plantaire
	pleural ~	Dome	dôme	~ pleural
	~ of the diaphragm	Cupola	coupole	~ diaphragmatique
	vertebral ~	column	colonne	~ vertébrale
	~ of the nose, ~ of the mouth, ~ of the 4th ventricle, pelvic ~…	Floor	plancher	~ nasal, ~ buccal, ~ du 4e ventricule, ~ pelvien
	~ of the cranium, ~ of the 3rd ventricle, ~ of the mooth, ~ of the nose…	Roof	toit	~ crânien/du crâne, ~ du 3e ventricule, ~ buccal/de la bouche, ~ nasal…
	neural ~, chiasmatic ~, lacrimal ~…	Groove	gouttière	~ neurale, ~ chiasmatique, ~ lacrymale…
Artefacts	~ of the obliquus superior, patellar ~…	Pulley	poulie	~ de l'oblique supérieur, ~ rotulienne/ patellaire…
	turcica ~	Sella	selle	~ turcique

25. I collected these examples from standard anatomy textbooks and atlases (e.g. from Gray's, Netter's, Feneis' or Rouvière's books). See Labelle 2009 and Gingras-Harvey 2014 for other examples on veins, arteries, nerves, muscles and brain structures in English, French and German.

Plant parts	~ of vessels	Trunk	tronc	~ vasculaire
	brain ~, ~ of the left coronary artery	Stem	tronc	~ cérébral, ~ de l'artère coronaire gauche
	~ of arteries, ~ of veins, ~ of nerves,	Branch	rameau	~ artériel, ~ veineux, ~ nerveux
	ovarian ~, hair ~	follicle	follicule	~ pileux, ~ ovarien
	cerebellar ~	peduncle	pédoncule	~ cérébelleux
	olfactive ~	Bulb	bulbe	~ olfactif
	bronchial ~, vascular ~	Tree	arbre	~ bronchique, ~ vasculaire
	~ of the ilium…	Spine	épine	~ iliaque…
	nerve ~, ~ of the tooth…	Root	racine	~ nerveuse, ~ dentaire…
Landscape	abdominal ~, iliac ~…	Region	région	~ abdominale, ~ iliaque…
	~ of sacrum	promontory	promonroire	~ du sacrum/sacré
	pubic ~	Mons	mont	~ du pubis
	inguinal canal	Canal	sillon	~ inguinal
	nasal ~, iliac ~	Fossa	fosse	~ nasale, ~ iliaque…

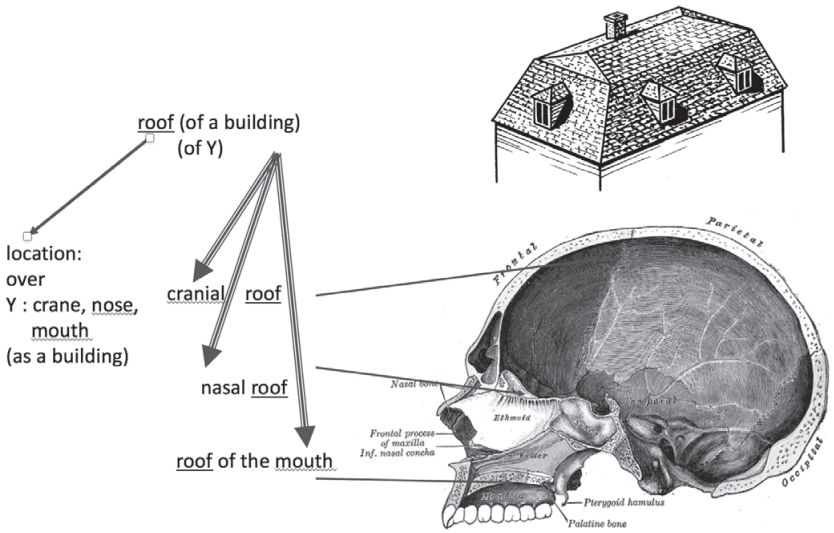
Figure 3 – From Predicative to Non-predicative Conceptualization Indices: a Continuum



However, conceptualization is part of the naming process: hence quasi-predicative CIs may remain "local" or they may form a thematically linked lexical network, but this network does not have the same "productivity" as the predicative network described above, or at least it does not operate at the same level. When the names of body parts come from the names of architectural entities,

such as *floor*, *pyramid*, *roof, column…* it provides a general conceptualization of the brain or the body as a building. The major difference between predicative CIs and quasi-predicative CIs is the following: in the former, the metaphor operates indirectly: the source domain projects onto the target domain through the predicative IC; in the latter, the metaphor operates directly: the source domain projects onto the target domain through the denomination itself. A "quasi" actant is necessary to avoid an incorrect referential inference: *the roof [of the 4th ventricle] is not* really *a roof* (Figure 4).

Figure 4 – Quasi-predicative conceptualization indices



It should be emphasized that, in the case of non-predicative and quasi-predicative ICs, no lexical network reinforces the conceptualization of any specific entity: the metaphorical name informs the speaker about a property (the location, for example: *mesencephalum roof, toit du mésencéphale*). On the contrary, the accumulation of metaphorical expressions in which the conceptualized entity is expressed as an actant of various congruent predicative ICs reinforces a particular metaphorical conceptualization which then becomes productive: other ICs from the lexical network that underlies the metaphorical conceptualization can be used and this provides a powerful tool for popularizing scientific knowledge (see Vandaele & Raffo 2008b). The strength of a metaphor conceptualizing an entity thus depends on the richness of the predicative IC set

associated with the name of this entity, and it also depends on the frequency (number of occurrences) found in the texts.

6. Properties of Metaphorical Conceptualization Indices and Translation: Conclusion

After an extensive analysis of metaphorical conceptualization indices in various biomedical domains[26] (clinical medicine, cellular biology, anatomy, neuroanatomy, history of genetics and theory of evolution – see note 2) and various languages (French, English, Spanish, Portuguese, German), a number of general statements can be made:

1) Conceptualization indices involved in a particular metaphorical concept form a stable lexical network (*réseau lexical*; see Vandaele *et al*. 2006[27]; but see below). For example, conceptual metaphors used to describe the position of organs in anatomy are so stable that they are expressed in ancient texts, even written in Latin, e.g. by Vesalius in the 16th century (Vesalius 1543, translated by Jacqueline Vons).
2) A conceptualization index can belong to several lexical networks (Vandaele et al. 2006).
3) Conceptualization indices may be grouped according to fictive representations (Talmy 2000; see Lubin 2006, Labelle 2009, Gingras-Harvey 2014 for examples).
4) Idiomaticity is closely linked to the use of conceptualization indices shared by a community of locutors. This is related to the extent of translation readership.
5) However, these lexical networks are *open sets*. This means that creativity is a fundamental feature of metaphorical conceptualization, and that translators have at their hands various options, given the purposes of the source and target texts (cf. Christiane Nord and the functionalist school of translation). If a conceptual metaphor is culture-specific, it is possible to import the conceptualization into the target culture, or to use another conceptualization, either already existing or even

26. Comparable texts were used as much as possible. Some studies included parallel texts (reference books of anatomy or cell biology widely used in their translated version) or were specifically aimed at studying the translation of metaphorical expressions (hereditary units conceptualization, Vandaele and Béland 2012).
27. The idea of a lexical network is far from being new. It had notably expanded by the end of the seventies and is presently widely used by researchers using 3D-network representations of sets of lexical units.

new. New insights and hypotheses in science represent an opportunity for neology and the creation of new conceptualization indices or even new conceptual metaphors (see Vandaele & Béland 2012 for an analysis of the conceptual metaphors used to propose various models of hereditary units at the end of the 19th century). However, we must keep in mind that a high number of metaphorical terms or expressions are strictly shaped by meaning and usage. Consequently, creativity is limited by usage and idiomaticity.

6) Some conceptualization are metaphtonymic (Goossens 1990). This can be demonstrated for *la veine X se jette dans la veine Y* (*the vein X throws itself into the vein Y*) (Vandaele & Lubin 2005). This means that a smaller vein (X) is attached to a larger one (Y). We have to remember that the blood goes from the smaller vein into the larger one. Therefore, what is evoked here is, at the same time, a fictive motion, the conceptualization of the vein as a stream or a river (metaphor), and the blood which actually "jumps" from one vessel to the next (metonymy).
7) In Spanish and in Portuguese, the verbs expressing the corresponding conceptual metaphor are homographs: *desembocar* (Malaszkiewics 2013; Malaszkiewics et al. 2015). The vein is still conceptualized as a river, but not as a "jumping" entity. It is a case where the translator must be careful not to transfer an inappropriate metaphor, for the sake of idiomaticity.
8) When a conceptual metaphor is shared among cultures-languages, the number of conceptualization indices expressing a certain meaning may be variable in each one, especially for predicative conceptualisation indices. Therefore, this opens up – or closes down – the translator's lexical choices.
9) In a given field of knowledge, an entity (either concrete or abstract) may be conceptualized through different conceptual metaphors. For example, in cell biology, cells are simultaneously conceptualized as *animate entities*, more specifically as *persons*, and as *inanimate entities*, e.g. as *factories*; molecules are simultaneously conceptualized as *persons* and as *objects* (see Vandaele 2000; Vandaele *et al*., 2006). Hence the coherence of the representations of the scientific objects is achieved through *conceptual blending* (Fauconnier & Turner 1998).
10) Popularization discourse is often characterized by a higher density of conceptualization indices (see Vandaele & Raffo 2008b). Some are

borrowed from more specialized discourses, others are dynamically expressed so as to help the reader grasp specialized concepts.

11) Popularization discourse may also be a place for creativity, albeit carefully: if the conceptual blending fails, the result may be even more difficult to grasp than the specialized text (Vandaele & Raffo 2008a[28]). More studies are needed to better understand how to popularize adequately.

A strategy to be used by translators might be the following. First, it is necessary to become sensitive to the cognitive dissonance that is the landmark of conceptualisation indices: something is not *really* what it seems to be. The nerve is said to *run*, yet it does not move; the molecule seems to *act* as a person, yet it is inanimate; the mesencephalon has a *roof*, yet it is not the roof of a house. Second, the search for counterparts of non-predicative ICs and quasi-predicative ICs in the target language is not different from any terminological search. Third, the search for true predicative ICs in the target language should take into account the whole conceptual metaphor identified in the source text: is it expressed in the target culture-language? If not, is it possible to import the conceptual metaphor or is it preferable to find another one? If yes, what is the extent and the richness of the lexical network in the target culture-language? Finally, what is the role of the metaphorical expression: is it used strictly to conceptualize in a theoretical framework, does it have a rhetorical function, is it used for some popularization purpose? Taking into account all these parameters, it then becomes possible to make the best choice possible.

As a final word, I do hope that this overview will be helpful for anyone who is willing to introduce conceptual science metaphors in the classroom, to dig deeper into research or, as a practitioner, to use them. I believe that we are at an interesting point where a number of puzzling difficulties that perplexed us at the beginning have now been solved. At least, a certain level of coherence has been reached.

28. In Vandaele and Raffo (2008b), we cite the following example: the sentence "les décodeurs assemblent un collier d'acides aminés. À la fin de la phrase, le collier est complet : c'est une protéine" is almost impossible to understand because of the lack of the links that would allow the blend of the metaphors (decoding devices, necklace, sentence). If "translated" in a correct scientific French, this would give: "Une protéine est une chaîne (= collier/necklace) d'acides aminés assemblés par les ribosomes (= décodeurs/decoding device) qui lisent la suite de nucléotides (= phrase/sentence) des ARN messagers".

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Figure 2
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Figure 4
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BIONOTE

SYLVIE VANDAELE has trained and has had a career in both life sciences (PhD in molecular pharmacology) and translation. She is presently a full professor at the Université de Montréal (Canada) where she has been teaching biomedical translation since 2000. As a certified translator and terminologist (Ordre des traducteurs, terminologues et interprètes agréés du Québec), she defends with conviction the importance of exchanges between academia and the professional world. She combines her research on metaphor and in history of life sciences (supported by the SSHRC, Canada) with a great interest for the pedagogy of translation as well as for teaching, for which she won an award for teaching excellence in 2004. From 2008 to 2014, she was the director of *Meta*. She has published extensively on different dimensions of biomedical discourse and terminology from synchronic and diachronic perspectives, including metaphorical conceptualization (see <vandaele.biomettico.org>). Her current projects focus on the relationship between translation and the history of science. The <www.biomettico.org> website provides fellow translators and researchers with the results of her work.

Armée d'une double formation universitaire dans les sciences de la vie (doctorat en pharmacologie moléculaire) et en traduction, et ayant œuvré successivement dans ces deux domaines, SYLVIE VANDAELE est professeure titulaire à l'Université de Montréal (Canada), où elle enseigne la traduction biomédicale depuis 2000. Par ailleurs traductrice et terminologie agréée auprès de l'OTTIAQ (Ordre des traducteurs, terminologues et interprètes agréés du Québec), elle défend avec conviction l'importance des échanges entre le monde universitaire et le milieu professionnel. Elle conjugue avec passion ses recherches sur la métaphore et en histoire des sciences de la vie (appuyées par le CRSH, Canada) et l'enseignement, pour lequel elle a obtenu un prix d'excellence en 2004. Elle a dirigé la revue Meta de 2008 à 2014 et a à son actif de nombreuses publications portant sur différentes dimensions du discours et de la terminologie en biomédecine en synchronie et en diachronie, notamment sur la conceptualisation métaphorique (voir <vandaele.biomettico.org>). Ses projets actuels concernent les relations entre la traduction et l'histoire des sciences. Le site <www.biomettico.org> met à la disposition de la communauté des traducteurs et des chercheurs le fruit de ses travaux.

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