Salience factors determining natural metonymic clippings illustrated through the medical lexicon

Antonio Barcelona Sánchez
Universidad Córdoba (España)
antonio.barcelona@uco.es

Abstract

After briefly reviewing the cognitive-linguistic notions of metonymy and constructional form adhered to by the author (A) and discussing the general grammatical notion of clipping and A's notion of "natural metonymic clipping", the paper presents the list of salience factors whose combination determines the overall relative salience of a word segment. Two well-known inventories of American English medical abbreviations are then analyzed with the goal of identifying natural metonymic clippings in this register, noting their scarcity. A sample of three word segments that have become conventional medical clippings (*tab-* for *tablet*, *-lytes* for *Electrolytes*, and *Chem panel* for *Chemistry panel*) and a segment of one of the original full forms that has not become a conventional clipping (*-blet* in *tablet*) is then selected with the purpose of testing A's salience factor grid on it. This grid is carefully described, including its numerical values, and systematically applied to the above-mentioned sample. The application of the grid to the sample seems to explain to a large extent the selection of the segments conventionalized as clippings in the sample, especially if compared to other "rival" segments. These results seem to confirm A's earlier work arguing for the validity of the salience factor grid as a tool to account for the overall relative salience of a word segment and its (non) conventionalization as a natural metonymic clipping.

Keywords: lexical morphology, metonymy, linguistic motivation, medical discourse, clipping.

Resumen

Factores de saliencia determinantes de las abreviaciones metonímicas naturales ejemplificadas mediante el léxico médico

Tras repasar brevemente las nociones cognitivistas de metonimia y forma construccional que propone el autor (A) y comentar la noción gramatical general de "clipping" (o "recorte" morfológico) y el concepto de "recorte metonímico natural" propuesto por A, el trabajo presenta la lista de factores de saliencia cuya combinación determina la saliencia relativa global de los segmentos de una palabra. A continuación se analizan dos conocidos inventarios de abreviaciones médicas en inglés americano con objeto de identificar recortes metonímicos naturales en ese registro, y se observa su escasez en el mismo. Se selecciona luego una muestra de tres segmentos léxicos que han pasado a ser recortes (clippings) convencionales en el leguaje medico (*tab-* por *tablet*, *-lytes* por *Electrolytes*, y *Chem panel* por *Chemistry panel*), y un segmento de una de las formas completas originales que no se ha convertido en un clipping convencional (-*blet* en *tablet*), con objeto de poner a prueba la plantilla de factores de saliencia propuesta por A. Se describe detalladamente dicha plantilla con sus valores numéricos, y se la aplica sistemáticamente a la muestra. La aplicación de la plantilla parece explicar en gran medida la selección de los segmentos de la muestra como clippings o recortes convencionales, sobre todo si se les compara con otros segmentos "rivales". Estos resultados parecen confirmar investigaciones anteriores de A que apoyan la validez de la citada plantilla de factores de saliencia como herramienta para explicar la saliencia relativa global de un segmento léxico y su (no) convencionalización como recorte (*clipping*) metonímico natural.

Palabras clave: morfología léxica, metonimia, motivación lingüística, discurso médico, recorte (clipping).

1. Introduction

This article has been written with the goal of presenting to the academic community, especially the researchers in scientific and technical language, a salience factor grid that I have been developing over the last few years to account for the selection of the lexical segments eventually becoming standard abbreviated English lexical forms, known as "clippings". Although this grid can be applied to explain in part all other types of lexical abbreviations and also syntactic abbreviations, I have so far only applied it to, and tested it with, what are called below "natural metonymic clippings" (Barcelona, 2016). In the present paper I continue testing the grid with a sample of conventional clippings drawn from the medical lexicon. The main contribution of this paper, as I see it, is thus not a systematic study of all types of medical abbreviations, most of which are not natural metonymic clippings (as will be explained below), but the evidence it provides of the

validity of that grid to account for all instances of natural metonymic clippings in all sorts of genres and registers.

In section 2, I will briefly clarify the cognitive-linguistic notion of metonymy I adhere to and will argue for the claim that metonymy does not only motivate meaning construction but also certain types of "constructional form". This latter term will also be explained in that section.

In section 3, the notion of "natural metonymic" clipping will be very briefly characterized. This will be followed by a brief, initial enumeration of the list of salience factors involved in the selection of the segments retained as clippings, with particular attention to the "naturalness" and "ability to evoke the full form" factors.

Section 4 will be devoted to discussing briefly the regularities observed in medical lexical abbreviations (one of them being the scarcity of natural metonymic abbreviations), and to presenting the small four-item sample of medical language clippings and the criteria followed in the selection.

Section 5 is the main section of the article. It includes a more detailed description of the salience factor grid and its application to the sample of medical clippings selected in section 4.

Section 6 includes the conclusions of the article.

2. Metonymy in cognitive linguistics and in constructional form

The notion of "metonymic clippings" implies the notions of "metonymy" and "clipping". The latter notion will be discussed in section 3. The present section is devoted to briefly discussing the notion of metonymy in cognitive linguistics (CL) and in constructional form.

All cognitive linguists share the basic cognitive notion of metonymy, at least in its core elements. Everyone in the field agrees that, like metaphor, metonymy is a "conceptual" phenomenon whereby one concept (normally called the source domain) is used to activate another closely related concept. However, cognitive linguists disagree on a number of specific basic issues, such as the distinction between metonymy and related phenomena like "zone activation" and "facetization" (Paradis, 2011), the exact nature of the source-target link, the defeasibility of metonymy (Panther & Thornburg, in

press), the reality of WHOLE FOR PART and PART FOR PART metonymies, its distinction from metaphor and other phenomena (Barnden, 2010), and other issues, such as metonymic prototypicality (Barcelona, 2003, 2011; Peirsman & Geeraerts, 2006). Barcelona (2011), Kövecses and Radden (1998), Lakoff and Turner (1989), Panther and Thornburg (2003, 2007, in press), Radden (in press), and Bierwiaczonek (2013), among others, have discussed all these issues in detail. The review of their respective positions would go beyond the bounds of this article. The following definition of metonymy (adapted from Barcelona, 2011 and included in Barcelona, 2015) is an attempt at providing a general, "schematic" definition of metonymy:

> Metonymy is an asymmetric mapping of a conceptual entity, the source, onto another conceptual entity, the target. Source and target are in the same frame and their roles are linked by a pragmatic function, so that the target is mentally activated.

This definition is not very different from other well-known definitions within CL provided by some of the above-mentioned linguists (especially Kövecses & Radden, 1998, and Panther & Thornburg, 2007), and should be regarded as a synthesis of them all, with some additional ingredients. The "mapping" or "conceptual projection" (Lakoff & Turner, 1989: 103-104) in metonymy occurs between entities in the same conceptual domain, whereas metaphor is a mapping occurring across two different conceptual domains. Whereas in metaphor we find a symmetric and systematic correspondence and structural equivalence between elements of the conceptual structure of the source and those of the target (Lakoff, 1993), in metonymy we do not find any degree of structural similarity or equivalence between source and target, hence their mapping is "asymmetric". In the metaphor LIFE IS A JOURNEY, the beginning of the journey is mapped onto the beginning of life, the obstacles in the journey onto life's difficulties, etc. But in a PART FOR WHOLE metonymy like BODY PART FOR PERSON as in

(1) *The ship was lost with all hands*

the source body part does not map symmetrically onto the whole person: the fingers in the hand are not projected onto any specific aspect of the person, the palm is not projected either onto any specific aspect of the person, and so forth. Only the hand (and the associated knowledge about its use) is used to activate the notion of a (specific type of) person (a passenger or a manual worker, a sailor in this case).

The term "frame" is probably more adequate than the term "domain", used by Lakoff and Turner (1989: 103), to designate the conceptual structure *within* which metonymies operate. "Frame" designates a knowledge-rich model of a recurrent, well-delineated area of experience (Fillmore, 1985). Frames are equivalent to one of the types of Lakoff's (1987) "Idealized Cognitive Models" (ICMs), namely "propositional ICMs". The terms "domain", "ICM" and "frame" are often used interchangeably but "domain" should probably be distinguished from the other two (Radden & Dirven, 2007: 9-12), due to its ambiguity. It can be used both in a "taxonomic" sense, to designate the schematic classification and subclassification into taxonomies of broad areas of experience, such as PHYSICAL ENTITIES in general, and in a "functional" sense, to organize our detailed knowledge about specific areas of experience (the domains then are called "functional domains" by Barcelona 2002a, 2003, 2011); in this use "domain" is synonymous to "frame" and "(propositional) ICM". For further arguments for the claim that metonymy operate within frames, see Barcelona (2002a, 2011).

Frames assign a "role" to the mental entities populating them. In example (1), the relevant frame is the HUMAN BEING frame, which represents speakers' detailed encyclopedic knowledge about human beings (their bodies and body parts, physiology, emotions, interaction, life cycle, etc.).

The source and target roles must be linked by what Fauconnier (1997) calls a "pragmatic function" and Kövecses and Radden (1998) and Radden (in press) a "metonymic relationship". A "pragmatic function" is a privileged conceptual link in our long-term memory between the roles of metonymic source and target within the corresponding frame: BODY-PART FOR PERSON, CAUSE-EFFECT, PRODUCER-PRODUCT, AGENT-ACTION, CONDITION-RESULT, AGENT-INSTRUMENT, THING-REPRESENTATION, SALIENT PART OF CONSTRUCTIONAL FORM FOR WHOLE CONSTRUCTIONAL FORM etc. (see below on this last metonymy). This privileged link is an essential condition for the metonymic mental activation of the target by the source. The nose and mouth are distinct conceptual units included in the English-culture HUMAN PERSON frame, but their roles are not connected by a pragmatic function and therefore they cannot act as a metonymic source for the other (Kövecses & Radden, 1998: 48-49). However, the pragmatic function connecting the role SALIENT BODY PART assigned to mouth, nose, eyes and other body parts with the WHOLE role assigned to the PERSON or the

HUMAN BODY allows these body parts to act as metonymic sources for people, as in *He only earns four hundred pounds a month and, with five* mouths *to feed, he finds this very hard.*

There is wide agreement that metonymies are ubiquitous in language, thought and communication. As regards language, metonymy has been argued to operate in phonology, grammar and discourse (Barcelona 2002b, 2013, 2015; Radden 2005), and to constantly interact with other metonymies, metaphors and other conceptual structures (Barcelona, 2005; Ruiz de Mendoza, 2011).[1] Grammar in CL is a structured inventory of "grammatical constructions" (a key concept in CL), which are conventional pairings of form (including phonemic and prosodic form) and meaning (including all sorts of pragmatic meaning) at all levels, from morphemes through lexemes, phrases and several types of structures with an indeterminate hierarchical level like idioms and other relatively fixed expressions, to clauses and sentences (Goldberg, 2006; Langacker, 2008: 161-214). Metonymy operates in all sorts of grammatical constructions (see the various chapters in Panther, Thornburg, & Barcelona, 2009), mainly by directly or indirectly motivating their meaning but also by motivating their form and their form-meaning connection. The metonymic motivation of (initially non-canonical) "constructional form" did not receive enough attention by early metonymy researchers in CL (except for brief remarks on the topic by Kövecses & Radden, 1998: 45-46 and Radden & Kövecses, 1999: 28, 36). But, more recently, Barcelona (e.g. 2002b, 2005, 2013, 2009, 2016), Radden (2005: 17) and, especially Bierwiaczonek (2007, 2013: Ch. 2) have recently begun to explore this phenomenon. Constructional forms (including lexical forms) are "models" stored in speakers' minds, and as models, they, too, constitute conceptual units, irrespective of their actual phonetic realization. This allows us to view the set of basic forms[2] of a given construction (i.e. a lexeme) as constituting a conceptual frame, within which metonymy can operate. Constructional forms partially motivated by metonymy include certain lexical abbreviations, or "clippings" (like *prob* from *problem*), and certain types of ellipsis, as in "Did you buy the tickets" "Yes, [I bought the tickets] yesterday"; the metonymy at work is SALIENT PART OF CONSTRUCTIONAL FORM FOR WHOLE FORM.

3. Clippings and "natural metonymic clippings"

The grammatical notion of "clipping" is, in principle, quite simple: in Morphology, it designates an abbreviated lexical form, that is, a shortened form of a lexeme resulting from the retention of just one part of its full form. Typical examples include *prof* for *professor* (where only the initial part is retained), *fridge* for *refrigerator* (where only a middle part is retained), or *bus* for the now near obsolete form *omnibus* (where only the final part is retained). Of course, this calls for the need to determine when the abbreviation affects a lexeme or a phrasal construction. For example, one may wonder whether such a sequence as the standard construction in medical English *Chemistry panel*, "A comprehensive screening blood test that indicates the status of the liver, kidneys, and electrolytes" is a (compound) lexeme or a phrase. In terms of the standard definition of compounding, it should be regarded as a compound rather than a multiply variable noun phrase, given its relative fixedness and its highly specific meaning. Therefore, the standard abbreviation *Chem panel* of this compound in medical English should count as a clipping affecting one of the lexical morphemes (*Chemistry*) constituting the compound.[3] Most of the medical clippings in the sample analyzed are, however, forms of mono-morphemic lexemes.

The term "natural metonymic clipping" will be reserved for the abbreviated lexical forms that retain a real, i.e. "natural", segment of the full lexical form and can best evoke the full form. In my view, it is these clippings that can be regarded as most clearly metonymic clippings as far as their form is concerned, so that an abbreviation like *hanky* for *handkerchief* is less natural a clipping as *doc* for *doctor* (see below on the "naturalness" salience factor).

The selection of the segment of the full form of a lexeme retained as a conventional metonymic clipped form of that lexeme is motivated by the relative salience of that segment within the full form. In turn, that salience is determined, so we claim, by the number of *salience factors* exhibited by the segment in question and the degree to which they operate in it. On the basis of the analysis and observation of over two hundred English clippings representing a wide variety of types, I identified the following salience factors (Barcelona, in preparation; Barcelona, 2016):

A. *Higher-weighted factors*: Initial position, Being relatively easy to recognize and remember, Being relatively easy to pronounce, Ability to evoke the full form, Ability to evoke the meaning of the full constructional form,

"Naturalness" of the segment, Length (the shorter, the more salient), "Energetic" effect, Formal distinctiveness

B. *Lower-weighted factors*: Prosody: Primary stress, "Audibility", Similarity to existing full or shortened forms of other constructions, Final position, Medial position.

C. *Other factors*: Aesthetic preference, Entrenchment. Others may have to be added in special cases.

These factors will be briefly discussed and illustrated with medical clippings in section 5. They are treated in greater detail in Barcelona (2016) and Barcelona (in preparation). But, in order to round off the notion of "natural metonymic clippings", we need to anticipate the discussion of the higher-weighted factors "'naturalness' of the segment" and "ability to evoke the full form".

A metonymic abbreviated form should in principle constitute a "natural" segment of the full form. By "natural" I mean the degree to which the graphemes and phonemes of the segment selected as a clipped form mirror the same "continuous" sequence in one of the segments of the full form. The scores (see section 5) reached by each segment on this factor are inversely proportional to the number of phonemes/graphemes or prosodic features (especially stress) included by the segment which do not occur in exactly the same environment in the full form. Hence the abbreviated form *gas* constitutes a natural segment of *gasoline*, since its phonemes/graphemes mirror the same continuous sequence as in the segment *gas-* of the full form. But the nonexistent abbreviated forms **gs* or **gsln* would not be natural in our sense, since, although they do pick out some phonemic/graphemic parts of the full form, their graphemic/phonemic sequences do not mirror any continuous sequence in the full form. An intended abbreviated form of *gasoline* like *gassy*, though perfectly mirroring the continuity of the segment *gas-* (in speech, not in writing, where an additional <s> has been inserted), would be less "natural" in our sense because it adds one phoneme/grapheme which is not present in any continuous sequence of the full form (on the other hand, *gassy* is the full form of another lexeme with the meanings "abounding in gas; of the nature of gas"; see 1989 OED edition, revised 2009 for CD-ROM version). A similar reasoning applies to the low naturalness of *hanky* for *handkerchief*.

The similarity of the clipped form to the full form is also determined by the total number of phonemes/graphemes and/or syllables shared by the

clipped form with the full form, whether or not they occur in the same continuous sequence. This is the type of similarity contemplated in the factor "ability to evoke the full form", which is the other factor that determines the metonymicity of a clipping. The minimum degree of similarity required for the eligibility of a segment as the source form in the SALIENT PART OF FORM FOR WHOLE FORM metonymy is the sharing of one syllable with the target full form. The established clipping *prof* for *professor* matches this minimum requirement and so does the nonexistent clipping **essor* for *professor* (although the overall salience of *prof* in terms of all the other salience factors is much higher than that of **essor*). The difference between the factors "ability to evoke the full form" and "naturalness" can be seen by examining the hypocoristic clipping *Bob* (<*Robert*), which scores relatively high in terms of "naturalness", since it shares with the full form the continuous sequence *-ob-* (although the replacement of initial *r* with *b* prevents it from reaching top score on this factor). But it reaches a low score on "ability to evoke the full form", since *Bob* only shares with the full form *Robert* two phonemes/graphemes, but no syllable (the syllable *bob-* does not occur in the full form). This pet name, thus, should not be claimed to be a natural metonymic clipping. Compare with the hypocoristic *Rob*, a natural metonymic clipping for the same full name; it reaches top scores on both factors.

Compared to the "ability to evoke the full form" factor, the "naturalness" factor rules out *discontinuous* shortenings such as initialisms, including acronyms and similar phenomena, illustrated by *NATO* (<*North Atlantic Treaty Organization*), *BTW* (< *by the way*), *sitcom* (<*situation comedy*), *TV* (<*television*), **gsln* (<*gasoline*) etc., from a "global" account in terms of metonymy (*contra* Kövecses & Radden, 1998; Bierwiaczonek, 2013). These discontinuous abbreviations seem to be understood globally on the basis of "analogy", since when speakers interpret them they seem to capture their abstract, schematic similarity to the abstract structure of the full form.[4] This analogical connection is similar to the "structural correlation" (Lakoff, 1987) between source and target in conceptual metaphor, a correlation that is extracted with the help of metonymy (Barcelona, 2000). Metonymy is instrumental in the choice and interpretation of the phonemes/graphemes included in these discontinuous shortenings (Bierwiaczonek, 2013: 66-70; Barcelona, 2016; Barcelona, in preparation): The abstract analogy of these shortened forms to the full form is doubtless facilitated by the local metonymic connections of each initial to the corresponding component

word or word-segment (*N* activates *North*, *A* activates *Atlantic* and so forth; *T* activates *tele-* and *V* activates *-vision*). These local metonymies pick out the salient phonemes/graphemes from the initial, medial and final parts of the full form to jointly yield its "skeleton".

In sum, these discontinuous abbreviations should not be treated, "as a whole", as exclusively metonymic, but as metonymy-based analogical abbreviations.

4. Regularities observed in standard medical abbreviations. The sample selected for analysis

I examined two standard online lists of conventional medical abbreviations in American English, the *Alphabetical Listing of Common Medical Abbreviations* (ALMA henceforth),[5] and the *List of Common Medical Abbreviations and Acronyms* (LOCMA henceforth).[6] There are two regularities in the abbreviations included in those two lists that stand out from my perspective:

(a) The prevalence of initialisms, especially acronyms.

(b) The scarcity of clippings, especially of "natural" metonymic clippings.

Most of the medical abbreviations registered in the above-mentioned sources consist in the selection of the initial letter or phoneme of each of the words included in a phrasal, conventional construction in medical discourse. This phenomenon is known as initialism. These constructions, depending on a variety of factors (as suggested in section 3), could also be regarded as compounds; if so, they could be regarded as lexical abbreviations, but by no means as clippings. Let alone natural metonymic clippings, as suggested in Section 3. Examples include *RDS* (= *respiratory distress syndrome*) [LOCMA], or *AAA* (*abdominal aortic aneurysm*) [ALMA]. There are also some instances of discontinuous lexical abbreviations, affecting one mono-morphemic lexeme, like *TB* for *tuberculosis*, but again these examples can hardly be regarded as clippings, let alone natural metonymic clippings. Finally, the two lists of abbreviations include a few initials, such as *L* < *left* (ALMA), *P* < *pulse* (LOCMA), or *T* < *temperature* (LOCMA), but, even if conventional initialisms can be correctly argued to be motivated by the metonymy SALIENT PART OF CONSTRUCTIONAL FORM FOR WHOLE CONSTRUCTIONAL FORM, the single-letter initial segments retained in these lexical

abbreviations score minimally in terms of both the "naturalness" and the "ability to evoke the full form" factors, hence they are not "natural" metonymic abbreviations (on the other hand, initialisms are hardly ever regarded as clippings).

The only natural (or approximately natural) metonymic clippings (in writing, in speech or in both) that I have found in the two medical abbreviation lists are displayed in Table 1, where they are classified primarily in terms of their syllabic structure, and secondarily in terms of their position (initial, medial or final) and prosodic stress as segments of the full form. Some of the clippings included in the table appear in both medical abbreviation lists, but I have only registered the source where I found each clipping first (I examined ALMA before LOCMA).

Clipping	Syllabic structure of segment[7]	Stress and position[8]	Source
ABD < abdomen	(?) / Mono	StI	ALMA
amb < ambulate	Mono	StI	ALMA
cap < capsule	Mono	StI	LOCMA
tab < tablet	Mono	StI	LOCMA
lytes < electrolytes	Mono	UstF	LOCMA
OB < obstetric	(?) / Mono	Unstl	ALMA
IMP < impression	(?) / Mono	Unstl	LOCMA
CA < cancer	(?) / Mono	StI	ALMA
Ca < calcium	(?) / Mono	StI	ALMA
tw < twice a week	N.S.? / Mono	StI	ALMA
bilat < bilateral	Dis	St2	ALMA
Chem panel < chemistry panel	Poly	StI	LOCMA

Table 1. Natural metonymic medical clippings identified in two lists of medical abbreviations.

Chem panel is properly speaking not a natural metonymic clipping, since this form does not mirror a continuous sequence of the full form of the compound *Chemistry panel*; only its first element, *chem*, constitutes a natural metonymic clipping of the first element (*chemistry*) of the full form of the compound. The naturalness of this internal clipping is one of the reasons why *Chem panel* has been included in Table 1. The other reason is its representativeness in terms of syllabic structure and stress placement (see below). The use of capital and low-case letters reflects the use in both lists, which contain abbreviations spelled completely with block letters (AAA), with a capital letter followed by low-case letters (*Lytes*), or with low-case letters only (*tid*, *tab*). Normally, when an abbreviation is spelled as a sequence of capital letters, it is pronounced as a sequence of initial letters (i.e. *TA* "therapeutic activity" is pronounced as "t-a"), but not always (i.e. THA "total hip arthroplasty" is apparently pronounced /ˈtɑː/; see

https://quizlet.com/87606334/usa-medical-abbreviation-t-w-flashcards/).
Of the twelve natural metonymic clippings in Table 1, four of them seem
to be monosyllabic both in the spoken and in the written medium, and six
of them are clearly monosyllabic in the written medium (e.g. *ABD, OB, IMP,
CA, Ca, tw*) but I have not been able yet to ascertain whether their actual
pronunciation is monosyllabic, too (this is indicated by the question mark in
the relevant column); therefore, these are less natural monosyllabic
clippings overall than the four clearly monosyllabic clippings in speech,[9] and
will not be discussed any further. Of the ten monosyllabic clippings (in
speech, in writing or in both) seven correspond to the initial stressed
segments in the full form and two correspond to the initial unstressed
segments of that form.

There is, additionally, one disyllabic clipping, consisting of the first two
syllables of a four-syllable form with primary stress on the second syllable
(*bilat < bilateral*). And one trisyllabic clipping obtained from a five-syllable
compound, whose primary stress falls on the first syllable (*Chem panel <
Chemistry panel*).

In the general English lexicon, medial clippings, where the medial part is
retained (as in *flu* for *influenza*), are fairly rare. Given the infrequency of
clipping in medical abbreviations, it is not surprising to find that there are no
instances of medial clipping in this register. The other two main types of
clippings are also represented in this register in approximately the same
proportion as in the general lexicon: Initial clippings (where the initial part
of the lexical form is retained, as in *exam* for *examination*) are fairly frequent,
whereas final clippings (where the final part is retained, as in *phone* for
telephone) are much less common but not rare (see Jamet, 2009, and Jespersen,
1909-1949, vol. VI: 534-551).

In section 5, the set of salience factors listed in section 3 is applied to the
following representative subset of the clippings in Table 1: *tab* (originating
in the initial stressed segment of a disyllabic full form), *lytes* (originally a
final unstressed segment of a four-syllable full form), and *Chem panel*
(which retains the initial stressed syllable of the full form of a five-syllable
compound lexeme and the rest of the full form; the relative length of the
clipping is the main reason why it has been selected for analysis, since
clippings tend to be brief). The salience factor grid is also applied to a non-
conventional potential clipping of one of the original full forms involved
(-*blet* in *tablet*).

5. Description of the salience factor grid. Its application to the sample of medical clippings

In section 3 we have listed the various salience factors that we have argued to be involved in the selection of a word-segment as the source of the metonymy SALIENT PART OF CONSTRUCTIONAL FORM FOR WHOLE CONSTRUCTIONAL FORM. It is now time to describe this salience grid in some more detail and apply it to the sample of clippings selected in section 4. Given space limits, we will not be able to discuss and apply all the factors with the same degree of detail. In Barcelona (2016; in preparation), the grid has been described and thoroughly applied to a representative set of fifteen clippings occurring in the general lexicon, such as *gas* for *gasoline*, *bus* (from *omnibus*), *prof* for *professor*, *flu* for *influenza*, or *phone* for *telephone*.

First of all, the notion of salience in this context should be clarified in the following terms:

- Salience is "relative", that is, a word-segment is salient in comparison with other segments of the same lexical form because it is more prominent than them on more factors or dimensions, but not necessarily in all possible dimensions. So *gas-* in *gasoline* is more prominent than, say, *-line* on "initial position", "primary stress", or "ability to evoke the meaning of the full form", and "energetic effect" (Barcelona, 2016).

- Salience is "multifactorial". The relatively salience of a segment depends not on one single dimension, but on a bundle of them.

- Salience is "scalar". The salience of a segment furthermore depends on the "degree" to which it is prominent on each dimension, since all dimensions are scalar in nature.

- Salience factors/dimensions are not equally relevant, i.e. they have different "weights". As stated in section 3, some of them are more relevant than the others for the salience of a segment. For example, "primary stress" seems to be less relevant than "initial position" (Jespersen, 1909-1949, VI: 551) for the emergence of clippings. The last two properties are reflected in the degree scales and the numerical scores applied in the salience grid. The grid includes a scale indicating the degree to which salience factors/dimensions are operative in the

selection of a segment. The scale includes four basic degrees, each with a numerical score:

T =   Highest (i.e. top) score (8 score points for higher-weighted factors and 4 for lower-weighted factors).

H =   (Relatively) high score (6 score points for higher-weighted factors and 3 for lower-weighted factors).

M =   Approximately mean score (4 score points for higher-weighted factors and 2 for lower-weighted factors).

L =   Low score (2 score points for higher-weighted factors and 1 for lower-weighted factors).

LL = Lowest score (0 score points for higher-weighted factors and 0 for lower-weighted factors).

The above numerical scores are not presented as exact measurements at all. They are only used to represent the scalarity and differential weighting of the various factors and have been set up to avoid vague statements like "X is very/a little/not prominent on factor Y" or "X is more/less prominent than Y on factor Z", which make it difficult to determine relative salience with a minimum of precision.

5.1. Higher-weighted factors

These factors are applied below to each medical clipping in the sample and to a potentially eligible segment of one of the full forms, namely -*blet* from *tablet*.

Initial position

Jespersen (1909-1949, VI: 534ff) claimed that the choice of the initial part is the natural way of shortening words. Scores for each segment in the sample:

tab-: T

-*blet*: LL

-*lytes*: LL

Chem- panel: M. This scoring is due to the fact that the segment selected as clipping includes as sub-segments the first syllable of the compound and its last two-syllables.

Being relatively easy to recognize and remember

This factor measures the memorability of the segment as a part of the full form. It depends in part on the combination of some of the factors that will be discussed below, namely, length, ability to evoke the full form, audibility, energetic effect, naturalness, similarity to or formal distinctiveness from existing full or clipped forms of other constructions. However, this multi-factorial factor should be regarded in itself as a separate factor in segment salience. To calculate the scores on this factor I have applied the above numerical scale to the other factors determining the factor "being easy to recognize and remember". Two of these are lower-weighted (audibility and similarity to existing full or clipped forms of other constructions) and the other five (length, etc.) are higher-weighted factors. The sum of the scores on these seven factors yields 48 points if a segment reaches T score on the seven factors, 36 points if it reaches an H score on the seven factors, 24 points if it reaches an M score on the seven factors, 12 points if it reaches an L score on the seven factors, and 0 points if it reaches an LL score on the seven factors. The actual scores reached by each one of the segments under analysis are registered in Table 2 (see section 5.3), which reflects the discussion of each salience factor in the rest of the present section 5.2.

tab-: M, since the combined scores on the seven factors, as registered in Table 2, yield 35 points (however, the score is very close to being H).

-blet: M, since the combined scores on the seven factors, as registered in Table 2, yield 32 points (however, the score is close to being H).

-lytes: H, since the combined scores on the seven factors, as registered in Table 2, yield 37 points.

Chem- panel: M, since the combined scores on the seven factors, as registered in Table 2, yield 24 points.

Being relatively easy to pronounce

Jespersen (1909, VI: 540-541, 549) suggests that numerous shortenings are due to the relative difficulty to pronounce the full form, especially to small children. Therefore, the simpler the syllabic structure and the lower its articulatory difficulty, the more salient a segment will be on this dimension. For example, stand-alone consonant clusters would score very low on this factor (imagine the noun *table* abbreviated as just the cluster /bl/). The scores:

tab-: T.

-blet: L (it contains an initial consonant cluster and schwa as vocalic nucleus).

-lytes: M (it includes one final consonant cluster).

Chem- panel: L (its syllabic structure is complex: it is a polysyllabic segment).

Ability to evoke the full form

An L (low) score is reached by segments sharing only one or more phonemes/graphemes with the full form, but not reproducing a syllable of that full form. An M score is assigned to segments sharing at least one syllable with the full form. High (H) scores are assigned to segments with two syllables in common with the full form, and T scores to segments sharing more than two syllables with the full form. These are the scores:

tab-: M.

-blet: M.

-lytes: M (but the score would be H in the written form of the segment).

Chem- panel: T.

Ability to evoke the meaning of the full constructional form

This reflects the ability of the segment to evoke the meaning, i.e. the "profile" in Langacker's (1987; 2008: 66-70) terms of the construction as a whole, or at least some of the conceptual elements or domains presupposed by that meaning, i.e. those in Langacker's "base" (1987; 2008: 66-70). In the latter case, the more "central" (Langacker 1987: Chapter 4) the conceptual element/domain suggested, the higher a segment will score on this factor. Here are the scores for the segments in the sample:

tab-: H (it indirectly evokes the meaning of the original full form thanks to the similarity of this segment to the first syllable of the full form).

-blet: L (this segment is not even indirectly capable of evoking the meaning of the full form).

-lytes: LL (compared to *Electro-*, this segment is not even indirectly capable of evoking the meaning of the full form).

Chem- panel: T (the first syllable easily evokes "chemistry", one of the central base domains in the meaning of *Chemistry panel* and the second component is identical to the second component of the full form).

Naturalness

tab-: T.

-blet: T.

-lytes: T.

Chem- panel: LL.

The phonemes and/or graphemes of the first three segments mirror the same "continuous phonological and/or graphemic sequence" as in one of the segments of the corresponding full form. The reason for the LL score reached by *Chem- panel* is that the segment under analysis matches one discontinuous segment of the full form *Chemistry panel*. But the score would be T if only the internal clipping *chem* (<*chemistry*) were considered.

Length (*brevity*)

Jespersen (1909-1949, VI: 551) noted that most clippings are very short, most of them monosyllabic. The shorter a segment in relation to the total length of the full form (measured in terms of its number of syllables and in terms of syllable length), the more salient it is on this dimension. Scores in the sample:

tab-: T.

-blet: T.

-lytes: H (monosyllabic, but with a longer vocalic nucleus – a diphthong).

Chem- panel: LL (polysyllabic).

"Energetic" effect

Jespersen (1909-1949, VI: 551) claims this to be a "general property" of lexical shortenings, connected to "progress in linguistic efficiency: the short, crisp, energetic forms are easier to handle than the original long and cumbersome ones, in which much was really superfluous for the purpose of being understood by others". Therefore, length ("short") is normally allied to energeticness, but these should be regarded as distinct dimensions. The main component of energeticness seems to be a special application of energy, often manifested in the use of monosyllables with a short vowel closed by a consonant (especially a stop consonant or a voiceless consonant). This factor only concerns the spoken use of the clippings under study. Here are the scores:

tab-: T.

-blet: H (the initial bilabial + liquid consonant cluster is less energetic than an initial plosive like the /t/ in *tab*).

-lytes: M (the initial liquid and the slightly longer vocalic nucleus and the final consonant cluster somehow diminish the crispness of the segment).

Chem- panel: LL (its length runs against its energetic effect).

Formal distinctiveness

This is often a decisive factor, which gauges salience in terms of the lack of similarity of a segment to the forms of other lexemes: The less similar a part of a constructional form is in phonological and/or graphological terms to the full form of another construction or to a shortened form of another construction, the more salient that part will be.

For example, at the time when the telephone was invented, the form *tele* was already a shortened form of the form *telegraph*. Therefore, the initial stressed segment *tele-* of *telephone* was less salient on this dimension than the segment *-phone*. Jespersen (1909-1949, VI: 549-550) points out this fact as the main reason why, running against the preference for initial segments, the final segment was selected in this case. Although Jespersen did not use himself the term "formal distinctiveness" (nor did he propose an elaborate grid of salience factors), this factor is implicit in his explanation of the choice of *-phone* over *tele-* as an abbreviation for *telephone*. These are the scores for the sample under analysis:

tab-: LL.

There are nine lexemes with the same form in the *OED* and with the same pronunciation, some of them slang ("strap", "old woman") and most of them in specialized register (military, academic, theatrical slang, and in typewriting and computing, i.e. "tabulator key"), and one related verb. In *The Free Dictionary*, *tab* is also presented as an abbreviation of *table*.

-blet: M.

There are no equivalent spoken different words or word forms in *OED*, or anywhere else, as far as I know, since the pronunciation of this segment within the full form would have a schwa as the vocalic nucleus. So, in speech it would reach T score, but not in writing, since there are at least two lexemes with the same form: the noun *blet* ("a state of decay of fruit, due to being

over-ripe") and the related verb *blet* ("to become blet"). Furthermore, *The Free Dictionary* registers these two acronyms: BLET-1 (*Brotherhood of Locomotive Engineers and Trainmen*), and BLET-2 (*Basic Law Enforcement Training*).

-lytes: LL.

There are no other "written" lexical forms in the *OED*, but *The Free Dictionary* registers one very similar form *lite* as an informal simplified spelling of the adjective *light* ("low in calories"). There are quite a few "spoken" matches of this form, especially the noun *light* (illumination sense) with its many polysemous senses and the many compounds where it enters, which can be used in plural (e.g. *rear-light(s)*); note also the verb *light* (in its "illuminate", "brighten up" senses), when used in 3rd person singular. *The Free Dictionary* (http://www.thefreedictionary.com) records the noun *lights* (connected to the adjective *light* "light in weight") with the meaning of "lungs of an animal slaughtered for food".

Chem- panel: LL.

No *OED* matches for the compound (in its full or abbreviated form). None for *Chem* in that dictionary, but several elsewhere, since it is a frequent colloquial abbreviation for *chemistry*, *chemist*, *chemical*. The *OED* includes two matches for the noun *panel* ("piece of cloth" and connected uses) and the related verb *panel*. The form *panel* also enters many compounds like *panel patient*, etc.

5.2. Lower-weighted factors

Primary stress

Jespersen (1909-1949, VI: 540-551) gives this factor a minor role, since there are a large number of English clippings that consist in the initial, final, even medial unstressed segments of the full form, like *frat<fraternity*, *prof<professor*, *lab<laboratory*, *bus<omnibus*, *phone<telephone*, *van<caravan*, *flu<influenza*. These are the scores for the sample:

tab-: T.

-blet: LL.

-lytes: LL.

Chem- panel: T. The main stress of the full form of the compound is retained by *Chem-*.

Audibility

This factor assigns higher salience to the more audible segments. Audibility is measured on the basis of a number of criteria:

- Syllabic segments are more salient than non-syllabic segments.
- The closer a vowel is to a primary cardinal vowel (Jones, 1969: 26-41), the more audible it will be. The cardinal vowels are represented in the International Phonetic Alphabet by these symbols: i, e, ɛ, a, ɑ, ɔ, o, u.
- Voiced consonants are more audible than voiceless ones.
- Stressed syllables are more audible than unstressed ones.
- Syllables ending in a vowel are more audible than those closed by a consonant; of the latter those closed by non-plosive stop consonants are less audible than those closed by other consonants (plosive stops, fricatives, laterals, nasals).

This factor is connected to, and somehow overlaps with, "easy to recognize and remember", "energetic effect" and "prosody: primary stress". Here are the scores for the sample under study:

tab-: H, since in this monosyllabic segment the vowel is close to a cardinal vowel (see Jones, 1969: Ch. 14) and its syllable is closed by a voiced non-plosive stop consonant.

-blet: LL, since in this unstressed monosyllabic segment the schwa vocalic nucleus is far removed from cardinal vowels, it starts with a consonant cluster that devoices its first component (the /b/ sound) and it ends in a voiceless stop consonant.

-lytes: H, since in this unstressed monosyllabic segment the vowel nucleus includes a diphthong made up of two vowels close to cardinal vowels, it starts with a voiced consonant and ends with a consonant cluster whose initial voiceless stop is compensated in terms of audibility by the final voiceless hissing fricative (the /s/).

Chem-panel: T, since it is trisyllabic, with a main and a secondary stress, two of its vowels are close to cardinal vowels and although two syllables are initiated by a stop consonant, one of them (*chem-*) is closed by a voiced nasal consonant and the other one ends in a vowel (*pa-*), whereas the last syllable (*-nel*) starts with a voiced nasal and ends with a voiced lateral (if the

syllabication *Chem-pa-nel* pattern is applied, instead of *Chem-pan-el*, which would not modify the score).

"Similarity to existing full or shortened forms of other constructions" is the mirror image of the higher-weighted factor "formal distinctiveness". This similarity factor (in conjunction with weightier factors such as first position, etc.) may facilitate, for playful, humorous, or mnemonic purposes, the salience of a segment as a metonymic source for the full form. For example, the pet name *Mike* may have increased the already high salience (in terms of stress, brevity, ability to evoke full form, naturalness, etc.) of *mike* in its selection as a metonymic clipping for *microphone*.[10] These are the scores for the segments under consideration, exactly the opposite of those for "formal distinctiveness":

tab-: T, for the same reasons that this segment scores LL in terms of formal distinctiveness.

-blet: M, for the same reasons that it scores M on formal distinctiveness.

-lytes: T, for the same reasons that it scores LL on formal distinctiveness.

Chem- panel: T, for the same reasons that it scores LL on formal distinctiveness.

The selection of a segment in final position of the full form is less frequent than the selection of initial segments, according to Jespersen (1909-1949, vol. VI: 548) and Jamet (2009), which suggests that "final position" is a less powerful salience factor than initial position. These are the scores for the segments under analysis in this paper:

tab: LL, since this monosyllabic segment takes initial position in the full form, provided the spoken and/or written syllabic structure of *tablet* is analyzed as CVC (*tab-*) + CVC (*-let*), where C = Consonant and V = Vowel.

-blet: T; this monosyllabic segment takes final position in the full form, provided the spoken and/or written syllabic structure of *tablet* is analyzed as CV (*ta-*) + CCVC (*-blet*), where C = Consonant, V = Vowel and CC = consonant cluster (*-bl-*).[11]

-lytes: T; the segment takes final position in the spoken full form (it corresponds to its final spoken syllable) and in the written form (it corresponds to the last and the penultimate syllable of that written form, but this is simply due to the orthographic representation of the final spoken syllable of the full form).

Chem- panel: L. The discontinuous segment selected takes one initial spoken and written monosyllabic segment of the full form, one final spoken and written near final, i.e. middle, syllable (*pa-* or *pan-*, depending on the syllabic analysis chosen), and the final spoken and written syllable (*-nel* or *-el*) of the full form (*chemistry panel*). That is, of the three syllables of the clipped form, only one is final.

The last factor to consider is "middle position". Jespersen (1909-1949, vol. VI: 547) claims that clipped forms retaining a middle segment of the full form are very infrequent. Therefore, "middle position" is a very weak salience factor, and, like the other weak factors discussed in this sub-section, it is normally allied to a combination of more powerful factors determining the selection of a segment as a clipped form, as in *flu* for *influenza*, *fridge* for *refrigerator*, *jam* for *pajamas*, *Liz* for *Elizabeth* (brevity, ability to evoke the full form, ease of pronunciation, etc.). Here are the scores for the segments selected for this study:

tab-: LL, since the syllable making up the segment is initial in the full form.

-blet: LL, since the syllable making up the segment is final in the full form.

-lytes: LL, since the syllable making up the segment is final in the full form.

Chem- panel: L, since only one of the three syllables making up the segment, namely *pa-* (or *pan-*) is middle in the full form.

5.3. Overall relative salience of the segments in the sample

The scores on each factor assigned to the segments selected for this study, together with the overall salience scores resulting from the addition of the partial scores on each factor are presented in Table 2.

As can be seen, the most salient segment within the original full form is *tab-*, followed by *chem- panel*, which is in turn closely followed by *blet-* and *-lytes*. The much higher score reached by *tab-* than by its "rival" segment *-blet* seems to explain why the former got selected as the conventional clipped form of *tablet*.

Eligible segment	Factors with a higher weight									Factors with a lower weight					Overall score
	Initial position	Relatively easy to recognize and remember	Relatively easy to pronounce	Ability to evoke the full form	Ability to evoke the meaning of the full form	"Naturalness"	Length	"Energetic" effect	Formal distinctiveness	Primary stress	Audibility	Similarity to forms of other constructions	Final position	Middle position	
tab	T	M	T	M	H	T	T	T	LL	T	H	T	LL	LL	65
blet	LL	M	L	M	LL	T	T	H	M	LL	LL	M	T	LL	38
lytes	LL	H	M	M	LL	H	T	M	LL	LL	H	T	T	LL	35
Chem panel	M	M	L	T	T	LL	LL	LL	LL	T	T	T	L	L	40

Table 2. Salience scores of the segments corresponding to the clippings in the study and of one rival segment.

6. Conclusions and discussion

In Barcelona (2016) and in Barcelona (in preparation), I have argued that the application of the salience grid seems to explain the selection as conventional clippings of such segments as *prof-* for *professor* (over *-essor*), *gas* for *gasoline* (over *-line* or *-soline*), *-flu-* for *influenza* (over *in-*, *fluen-*, *-enza*, or *-za*), *-phone* for *telephone* (over *tele-*) and of other segments (such *Rob* for *Robert*, *mike* for *microphone*, *lab* for *laboratory*, or *bro* for *brother*) over other eligible segments of the full form. The analysis reported in the present paper seems to confirm the adequacy of the salience factor grid as a way of accounting for the selection of certain segments as natural metonymic clippings. This is the main conclusion to be drawn from this paper.

The salience factor grid is still an imperfect, tentative proposal, which will have to be further refined. But even in its present form, it seems to explain quite precisely the multifactorial salience "motivating" the selection of certain segments of full lexical forms as clipped forms linked to the full forms via the motivational metonymy SALIENT PART OF FORM FOR WHOLE FORM. Motivation, however, is not the same thing as necessity, let alone prediction, since high relative salience cannot be taken as an absolute predictor of future linguistic behavior; like any motivational factor of linguistic structure, it only has limited predictive power (Panther & Radden, 2004).

The scarcity of natural metonymic clippings in medical discourse is somehow striking as compared to their much higher frequency in the general lexicon. It is not clear what the reason may be for this fact. A possible explanation is that in the medical register the concepts expressed by its technical lexicon are very complex and they must be expressed by means of highly precise expressions to avoid confusion. They cannot normally be expressed by means of just a simple monomorphemic lexeme, which could then be easily abbreviated as a clipping in rapid communication. This requirement of precision seems to explain why most medical abbreviations are initialisms and acronyms rather than clippings: each of the evoked parts of the technical expression is evoked quite precisely by means of the corresponding initial.

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Antonio Barcelona is a Full Professor at the University of Córdoba, he has lectured extensively as an invited speaker on metaphor, metonymy and cognitive linguistics at several universities and conferences in Spain and abroad, most recently at Düsseldorf (2015) and Zagreb, Croatia (2016). Author of over a hundred articles, and author or editor of several books on these topics.

NOTES

[1] A group of researchers from several universities have been building a detailed metonymy database, under my direction, as part of projects FFI2008-04585 and FFI2012-36523, funded by the Spanish government. It is an ongoing repository of conceptual metonymies that systematically gathers data on their multilevel operation in language and on their hierarchical structure, and that may become a guide for researchers in metonymy. See the chapters by Barcelona, Blanco-Carrión and Hernández-Gomáriz in

Blanco-Carrión, Barcelona and Pannain (eds.), in press, for a description of its design and examples of its entries.

[2] That is, the uninflected full (i.e., non-abbreviated) form of lexemes and the full (i.e., non-elliptical or non-defective) form of syntactic constructions.

[3] On this expression and its abbreviation, see *List of Common Medical Abbreviations and Acronyms*. URL: http://www.medicinenet.com/common_medical_abbreviations_and_terms/article.htm [20/06/2017]

[4] But this connection becomes obscured over time. Some of them, especially acronyms like *NATO*, are eventually treated as a new lexeme and develop their own spoken form. The American English pronunciation of *NATO* is /ˈneitoʊ/. Some acronyms are not even recognized any longer as acronyms by many speakers. This is the case of radar (<*Radio Detecting and Ranging*).

[5] http://www.spinalcord.org/resource-center/askus/index.php?pg=kb.page&id=1413. [20/06/2017]

[6] See note 3 for the URL of this resource.

[7] N.S = Non-syllabic; Mono = Monosyllabic; Dis= Disyllabic.

[8] StI: Stressed initial segment / UstI: Unstressed initial segment / UstF: Unstressed final segment / St2: Stressed second syllable (for disyllabic segments) / Poly = Polysyllabic (more than two syllables).

[9] Chemical symbols like *Ca* for *Calcium* are normally pronounced like the corresponding full form. If OB is pronounced as in the abbreviation *ob-gyn* /ˈoʊ.bi.dʒi.waɪˌen/, then it is probably pronounced /ˈoʊˈbi/. As for *tw*, it is very difficult to pronounce it as a one-syllable lexical form; therefore, its pronunciation either simply repeats the one for the full form *twice a day*, or utters the /t/ and the /w/ separately, as an initialism.

[10] In this respect, this comment in the *New York Times* is quite illustrative: "(…) the abbreviation arose as a kind of nickname, playfully anthropomorphizing the microphone as Mike." URL: http://www.nytimes.com/2010/08/01/magazine/01-onlanguage-t.html?_r=0 [30/08/2015]

[11] As can be seen, the syllabic structure of one and the same lexeme can be analyzed by speakers in alternative ways, provided the resulting syllabic patterns are allowed by the phonotactic possibilities of a given language. See Gimson, 1970: 51-53, 239-255.