Searching for Live Metaphor Uses in Spoken Corpora:
A Prosodic Approach

Gilles Cloiseau[1]

Abstract

A corpus of twenty six scripted interviews, both in English and in French was labelled morphosyntactically and with *lsa* (latent semantic analysis) tags which assess semantic "distance" between words (grammatical words included) and the general topic of the discourse—music. The corpus was first hand-searched then searched by XSLT stylesheets for potentially live metaphors using the lsa tags.

Prosodic contours turned out to be the only safe indicator of live metaphors, or rather of metaphors intended to be live by their speakers. Consequently, it was then possible to produce a prosodic pattern for live metaphors, and to see how it differed from one dialect of English to another, and from one language to another.

The pattern may then be used as an indicator of the degree of liveliness intended by the speaker and seems to be a more accurate one than semantic/pragmatic patterns. The pattern is not live-metaphor specific, but used along with other factors such as semantic distance, it is a good enough indicator for both languages.
Amongst others, it can spot inventive and intended Route-Direction metaphor uses, amongst which some that weren't found manually.

In agreement with Olivier Piot's[2] model, an intended live metaphor corresponds to a specific **attitude** and **emotion** on the speaker's part, or a certain **Maturity** and **Tonus**. These contours are linked to the non-predictability of live metaphors and result in a specific organisation of frequency and intensity signals.

This feature may be added to the *pattern bundle* for metaphors which Lynne Cameron and Alice Deignan have coined *Metaphoreme*. Establishing what is metaphorically alive is a fruitful way of contrasting how cognitive models at play in metaphor are translated in oral discourse. Finally, samples from French, English and American radio stations, *France musique, Radio 3, and NPR* are tested with some success as to the efficiency of the prosodic template.

Introduction

This paper looks at new ways of analysing metaphors in a multilingual corpus. It concentrates on the use of prosody as a tool to search and analyse metaphorical uses and to measure metaphoricity (or metaphor liveliness).

A corpus of twenty six scripted interviews of music-related speakers, both in English and in French was labelled both morphosyntactically and with latent semantic analysis tags (lsa). The lsa tags, worked out thanks to the University of Colorado[3] website, give an

---

[1] C.O.R.A.L University of Orléans
   e-mail: gilles.cloiseau@cegetel.net
[2] Olivier PIOT, March 2002, *Vers une Théorie Unifiée de la Prosodie du Français et de l'Anglais: des Emotions à la Phonologie*. Directeur de thèse: Prof. Jacqueline VAISSIERE
[3] http://lsa.colorado.edu

indication as to the semantic "distance" between words (grammatical words included) and the general topic of the discourse—music. The corpus was first hand-searched, then by XSLT stylesheets for metaphors, amongst which potentially live ones. Observation of the script of the interviews in parallel with the sound made the usual trackers and markers of metaphors in corpora stand out—repetitions, pauses, discourse markers (*you know, a bit like*) but the main tool made available by an oral corpus is the raw data provided by the sound recording.

Prosodic contours obtained by the software Praat[4] (prosody analysis tool) turned out to be the only safe indicator of live metaphors, or rather of metaphors intended to be live by their speakers, which is what metaphor liveliness means in the context of oral discourse. Consequently, it was then possible to produce a prosodic pattern for live metaphors, and to see how it differed from one dialect of English to another, and from one language to another.

The pattern may then be used as an indicator of the degree of liveliness intended by the speaker, a more accurate one than semantic/pragmatic patterns. The pattern is not live-metaphor-specific, but used along with other factors such as semantic distance, and information structure, it is a good enough indicator for both languages. In this paper, as an illustration of a prototypical metaphor identification process, inventive and intended ROUTE DIRECTION metaphor uses are examined as a case study.

1. Prosody as an Unavoidable Element in Oral Discourse Translation

The corpus was formatted in Xml and tagged in an attempt to produce a metaphor-spotting tool. The specific corpus analysed here was of a size that allowed manual treatment, it introduces metaphor tracking methods which could be used for large digitized corpora. Beyond metaphor spotting, it investigates new ways of coping with the translation of metaphors. Lexicalised metaphors may be seen as a mutation in the semantic evolution of a word, or in the translation of deep semantic structure to surface morphosyntax. These mutations are the result of image schemata models, experiential and ontological models, and also culture dependent stereotypical models[5]. The life expectation of any mutation depends on the environment, in this case the linguistic and cultural environment. Lexicalised metaphors are difficult enough to translate, since they are culture dependent. Metaphors using FOOD and especially vegetables as the source concept for instance are often not translated in English in the same conceptual domain:

> Mêle toi de tes oignons (mind your own business)
> Ça mange pas de pain (it doesn't cost much)
> Ça met du beurre dans les épinards (to add a little extra income)
> Cornichon, patate, petit chou, aubergine (daft thing, silly thing, darling, traffic warden)

However, lexicalised metaphors, by definition, may be found in dictionaries, and may be translated with some degree of efficiency (though even lexicalised metaphors have a breath of life remaining in them, and translating without a metaphor is not satisfactory).
This is not the case for innovative metaphors, since by definition they are absent from dictionaries or unregistered. Live metaphors in oral discourse are either real innovations, or dead metaphors which are reborn by the speaker with a will to superimpose both concepts, a source concept which is partially (only some characteristics of the source domain are concerned) projected onto a target concept. Looking at the difference between their

---

[4] http://www.fon.hum.uva.nl/praat/
[5] Lakoff and Johnson, 1980, Metaphors we live by, the University of Chicago Press

expressions in both languages provides an insight into the very nature of the process which leads from a conceptual mapping to a metaphor utterance inserted in discourse. Live metaphors are, in informational terms, a subclass of focus. They introduce novel information, and they do so in two ways—new information about the external world, and also a novel association of lexicon and concept. This is clearly illustrated in the prosodic data that was systematically drawn from metaphor heads in the corpora. Metaphors are a sub class of narrow focus, and also an emphasis. Translations will depend on this status of liveliness, since if the metaphor corresponds to a culture dependent-mapping, it will have to be transposed to another mapping. Whereas lexicalised metaphors may sometimes be translated by a non metaphorical term in another language because in those cases the superimposition involved in metaphorising is less of an issue, live metaphors cannot be. Not many of these mappings are culture-dependent since, as Lakoff[6] points out they are to a large extent of ontological and experiential origins. These are common to most cultures ([UP IS GOOD]). However there are some notable exceptions:

> This time, the subject was a language in South America called Aymara. In Aymara, the future is *behind* you while the past is *in front of* you, whereas in English we speak of the future as being *in front of* us and the past as being *behind* us[7]

Cognitively speaking, for a given concept there is a set of other concepts which are likely to be used as metaphors for this concept, and it is that likelihood which varies from culture to culture. Most metaphors are semantically transposable between French and English (British or American), two languages which are the expression of two very close western cultures. However they may vary, not so much in terms of conceptual mapping according to the target concept, but in surface morphosyntactic realization, since the constraints are different in both languages at that level. The conceptual mappings linked to prepositions (in, on, at, through) are a great source of metaphor innovation in English, and are not as easy to use in French (to be in love, to be on an errand, at a loss, through with someone). The conceptual mapping chosen for this study is [MUSIC AS A PATH].

Table 1: The musical mapping experiment

concept	Number of Map with Music		
Path	3	Wind	6
Word	7	Earth	7
Weapon	1	Machine	3
Car	0	Branch	1
Vehicle	1	Fly	5
Water	4	Into	6
Wine	1	Surface	0
Fire	5	Living at	1
Container	0	Going to	5
box	3	A place	4

This experiment was conducted with 20 participants who were asked to tick three concepts which they thought were most closely linked to music in their minds. The assembly was made up of French, British English and American English speakers, all French residents.

---

[6] Ibid

[7] http://www.sil.org/~olsonk/news/KO0610.pdf

An experiment (see table1) of concept mapping was conducted to illustrate the findings of the corpus study. It would have to be developed to have scientific value but nevertheless illustrates that MUSIC is not conceptualised by any participant in the experiment as being close to SURFACE, CAR or CONTAINER. Those are all related to the metaphors found in the corpus, and especially to live metaphors. However, CAR is not a basic-level concept but a subordinate one, and basic level concepts are those which are most easily mapped. VEHICLE is a basic-level concept, and yet only one participant saw it as linked with music. This is paradoxically the most highly-developed metaphorical mapping in both French and English corpora.

Table 2: Distribution of metaphor heads according to mapped concepts:

Source Concept	Occurrences in French	Occurrences in English
osmosis	34	23
language	47	37
food	11	11
liquid	9	20
Therapy/ Power over the body	28	10
Source of power/violence/ living being	66	43
Protuberance/ contact	12	40
Penetration in and out of the body	63	35
Vehicle/projectile	68	12
Path / journey	105	80
Container/construction in layers	85	106
sexuality	1	6

Some of the conceptual mappings such as TRAJECTOR[8] (car, vehicle) and CONTAINER are not conscious but used commonly. Others in contrast, WORD, EARTH WIND and FIRE, INTO, and GOING TO are. The discrepancy accounts for the liveliness of metaphors used in these mappings. The hypothesis is that one of the underlying functions of the prosody of metaphors is to point out to the listener and decoder of the message their less obvious decoding, in other words that they are not a literal usage of the term, but also that they are not the expression of a conscious conceptual association—mappings. These function in the same way, or are organized in the same way whether they be sets of simple concepts (music, language), image-schemata (verticality, progress) stereotypical models (a bachelor, to use the example of *Metaphors we live by*) or structural concepts ([there] clauses). These are the models which metaphors work by. Most of these metaphor mappings are common to a whole linguistic community. Some are not. Within a certain metaphorical mapping, some metaphors are lexicalised or obvious, others unexpected. Mappings derived from the corpus were classified as follows:

---

[8] René Doursata and Jean Petitot, 2005, Dynamical systems and cognitive linguistics: toward an active morphodynamical semanticsnext term, available online at sciencedirect.com

Table 3: Contrastive distribution according to the main mappings organizing metaphors in the corpora

	Metaphorical mapping	Example in both English and in French
1	[MUSIC IS A VERBAL LANGUAGE]	it 's like **writing** your **name** you know **writing** a **note** la musique en fait a **traduit** ce cet état là et
2	[MUSIC HAS POWER OVER BODY AND MIND]	and we we **connected** with these few people who were dancing around the bar at the back c' est le c' est la **communion** euh
3	[MUSIC IS A VIOLENT FORCE, A LIVING BEING]	our music was a little **hot-tempered** for the set éduquer la **brute** à la **souplesse** à l' intelligence c' est à dire le côté moteur
4	[MUSIC PIERCES, GOES IN AND OUT OF THE BODY] =[MUSIC IS AN OBJECT, TOUCHES THE BODY]	something **else** is sort of playing the music **through** you comme une espèce de d' **ouverture** supplémentaire **physiquement** qui me donnait le petit peu d' air
5	[MUSIC IS A CONTAINER, A BUILDING]	but I think it 's I think it 's there to to **contain** that de mettre de une partie de **moi-même** dans le dans le morceau dans l' expression
6	[MUSIC IS A PATH, A JOURNEY]	and the singer is the main I guess **vehicle** for the band members je peux gérer mon **atterrissage** c'est le côté instinctif

Metaphors, as illustrated in this Lakovian style classification, are already a translation—a translation from one concept to another. Mappings themselves are expressed by turning two concepts into a metaphorical "vector", a system of two points (the concepts), endowed with a direction given by some characteristics of the source concept which are mapped (*translatées* in French) onto the target concept, the co-textual or contextual topic. A multi-language corpus, provided it is large enough, is another form of translation, for speakers from two linguistic cultures are expressing their minds about music. Consequently, realisations of mappings in one sub-corpus are likely to be found 'culturally translated' in the other. The surface expressions of those mappings are sometimes surprisingly similar:

> (1) 'il y avait ce que j'appelais on va pas reparler de la mer hein ce que j'appelais du **flux** et du **reflux** c' est à dire que les mot …mais c'est pas une question de d'accélérer le tempo c'est une question de de en fait **d'énergie que l'on donne**' (220, F5)

is almost translatable by :

> (1') 'we kind of kind of make things **ebb** and **flow** a lot you know that contrast **in terms of energy level and and volume**' (210, F7)

Here, not only do we get the exact translation of *ebb and flow* in the French *equivalent*, but both metaphors are phrasal ones, and both are furthered by adding the concept of *energy* (une *question d'énergie que l'on donne* → *in terms of energy level and volume*). A better translation would be hard to come up with, for there is here a morphosyntactic translation from a NP (noun phrase) to a VP (verbal phrase), which is a common transposition from French to English (pelouses interdites → keep off the grass). In effect, speakers translate underlying concept mappings into surface realisation which involves morphosyntactic choices, syntactic and prosodic ones. The morphosyntactic differences may vary according to the mappings. Prosody has turned out to be the main tool for defining metaphor liveliness or *metaphoricity*, and in return is used to separate live metaphors from dead ones, the difference being that live metaphors conjure up two concepts simultaneously. Metaphorising is typical of how lexical innovation works thanks to cognitive models. Metaphoricity (meaning metaphor liveliness) is gradable[9]. Therefore it has to be appreciated by means of a gradable parameter.

---

[9] Anatol Stefanowitsch and Stephan Th. Gries, 2006, Corpus-based approaches to metaphor and metonymy: Patrick Hanks, *Metaphoricity is gradable.*

Purely lexical parameters do not seem to fulfil that role, for a given word either fits in with a mapping or does not. What's more some dead metaphors may be brought back to life. The only trace of that resurrection in oral speech seems to be prosody and intonation.

1. The Metaphors of Music and the Music of Metaphors:
A Prosodic Template for Live Metaphors

1.1 Introduction

The concept of salience is crucial in the surface realization of cognitive models. When dealing with a concept, whether perceived directly, or indirectly (a representation), other concepts are activated in the mind. These concepts may remain "in the background", or become as salient as the original concept, and they can even become more important. The elements which are mapped with the original concept are there lurking, and may pop up, either in the form of a metaphor or a comparison. True live metaphors have the source and the target coexist at the same level, though one is seen as the comment of the other, a visual metaphor of this phenomenon could be the oft used trick-of-the-eye drawing:

Figure 1: Boring's old/young woman and Rubin's Vase/face

The drawings[10] illustrates salience, which is baffled here, since some viewers see the old, others the young woman in the left hand side drawing, some see the vase first, others the faces in the right hand side drawing. But It has to be our reading path (top left to bottom right for most of us) which decides on which we see as topic and which as comment, the focus or the target. Just as the reading path in a sentence, indicates which is topic, which is focus. But the essential ingredient needed in oral language to determine what is salient is prosody. In the example below, there is no knowing which is which without the intonation:

(2) *et euh sinon ben les mots c' est c' est les notes en fait* (88, F3)

It may look as if the topic is word, and that words are compared to musical notes, but it is in fact the opposite, and there are two clues to the answer:

1/ [music is a language] is a conceptual mapping, as the findings in the corpus illustrates. The opposite is not.
2/ Prosodic contours show that *notes* is not realized with focal contours, and though the speaker usually finishes with a high rise, here *mots* has a higher frequency peak (F0max) and is emphatic by its duration. So prosody is at the origin of the focussing process, it is the same

---

[10] Olivier Piot , Mars 2002, Vers une Théorie Unifiée de la Prosodie du Français et de l'Anglais: des Emotions à la Phonologie.
[10] ADAMCZEWSKI, H, 1982 : Grammaire linguistique de l'anglais, Collection U, Armand Colin.

as asking someone to look at the left-hand side picture of figure 1, and saying focus on the white.

Other displacements or tropes are recognized as having a specific intonation, IRONY, MOCKERY, SARCASM, and there is no reason why metaphors should not also be. Similarly to other tropes they involve not delivering the information in the most natural way. They are therefore unpredictable, and represent a high input of information. The prosodic contours signal this high input, and also, in the case of live metaphors, seem to indicate an arduous delivery of the message. Innovative metaphorical heads are not smoothly delivered, they are often preceded and followed by a pause, repetitions, hesitations. But the speaker also has to signal this abnormal use to the listener for it not to be taken literally. As stated and well investigated by L. Cameron and A. Deignan[11], this is done by a series of discourse strategies, pauses, discourse markers, and also by the prosody. The more lively the metaphor, the more the prosodic contours will deviate from the norm.

1.2 Metaphor, Focus and Prosody in the Corpus

What would be the prosodic norm of a term which comments upon the topic by adding new information (which is what a live metaphor does by pairing two concepts which are not usually associated, hence creating unexpected, and novel information)? It would be that of a focus, or even a narrow focus.
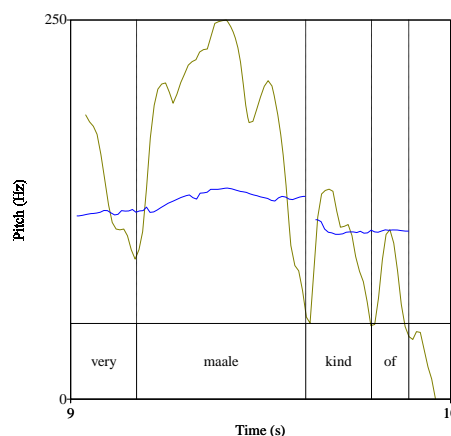

Figure 2: (3)*it 's a very it 's a very sort of er what 's the word I 'm looking a very sort of er what 's the word I 'm looking for a very* **male** *kind of thing* (26, E1)

The emphasis is strong in that non-innovating metaphor, but the contours are those of typical focus, though stretched out. Coming back to example (2) the contours show approximately the same phenomenon in French with a difference:

---

[11] Lynne Cameron, Alice Deignan, 2006, The Emergence of Metaphor in Discourse
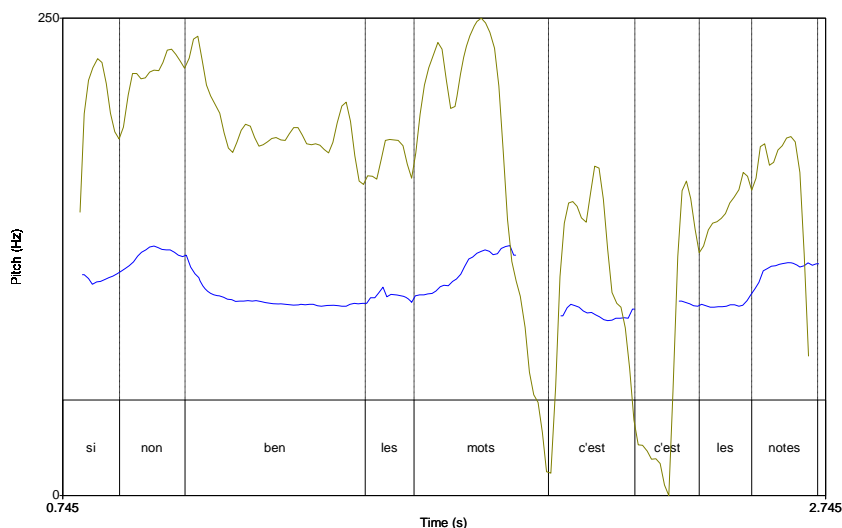
Figure 3: *ben sinon les *mots* c'est c'est les notes*
Results were obtained thanks to Praat. For all contours in this paper, unless mentioned otherwise, the intensity contour is in olive green, and the frequency in blue.

Topic and focus are almost equivalent in this second example. In terms of category, they are basic-level, and in French, both could be focus out of context. The higher F0max peak for *mots*, and the greater intensity, but most of all, the substantial emphasis in syllable duration (363 ms for mots, 172 ms for notes) leaves no doubt as to the focus—*mots*. However, the contours are more those of a narrow focus than those of a live metaphor. The metaphor is lexicalised but not dead. But there is still an emphasis due to the special attention the speaker is drawing to its metaphorical use. The previous clause was:

> (3) *il y a la *ponctuation* ça serait plus ou moins le rythme*

which follows the same information pattern, so the speaker is relating to the discourse itself, and is in phase 2, which Henri Adamczewski[12] sees as a metalinguistic phase, in which language speaks as much about its functioning as it does about the extralinguistic world it refers to. This stage of argumentative level is characteristic of live metaphors and especially of dead metaphors which are being brought back to life. The prosodic data show that this level is expressed by certain prosodic contours.

Some metaphors do not have focal prosodic contours, are systematic anaphoric references to the topic and do not bring new information—they are lexicalised. Others bear focal contours and fit focal patterns which have been defined for French and English[13] according to the syntactic position of the stressed word. The third category is a form of emphasis that innovating metaphors seem to bear with different subcategories. The contours deviate from that of narrow focus in several ways which the observation of all metaphorical instances has allowed us to define. There cannot be one model of a LM type of emphasis, since just like focal contours, these depend on whether the stressed syllable is word final or not, sentence (or rhythmic phrase—RP) final in English, and whether it is RP final or not in French. Also referential values used as a gauge to calculate deviation have to be different for

---

[13] -Elisabeth Delais-Rousssarie Metrical organization, tonal association and **focus** in **French** ;
  - Caroline Féry, Focus and Phrasing in French

short and long syllables, and were worked out per speaker. Most live metaphors in French tend to appear at the end of the rhythmic group where the pitch accent typically occurs. So after having isolated the prosodic characteristics of LM, the degree to which a given stressed syllable fits these characteristics has to be worked out in terms of deviation from an average prototype for the given speaker and the position within the word and the RP. LMCs (Live Metaphor Contours) were found to have the following characteristics:

- A duration corresponding to that of narrow focus (average value for syllable type and speaker) *E(C2-C1)*
- A smaller pitch range *E(dF0)* than narrow focus
- A fundamental frequency peak (F0max) shifted to the right, measured by looking at the distance from frequency peak to syllable offset (C2) *E(dC2-F)*
- A widening of the proportionate distance from intensity peak to frequency peak →peak delay *E(Delay/C)*

The procedure which led to the establishment of the prototypical LMC contours has to be shrunk to its conclusions here, but empiric observations were made sense of by looking at theories linking emotions to prosody[14], hence all prosodic parameters are taken into account. For end-of-rhythmic-group stresses in French for instance, the only difference between a classic boundary tone and a LMC lies in the syllable duration, and/or in the position of the intensity peak.
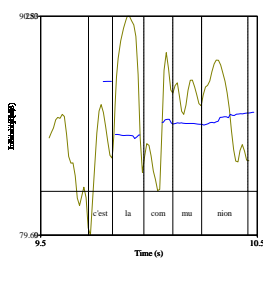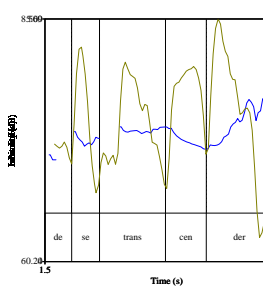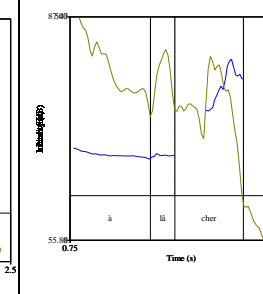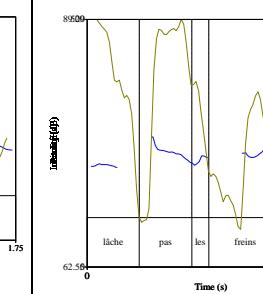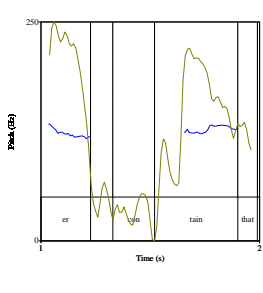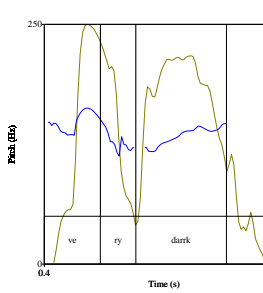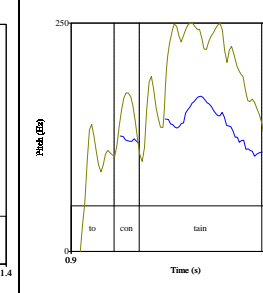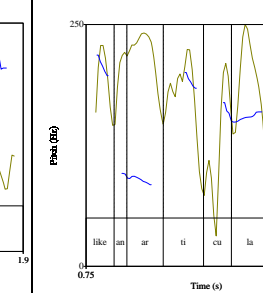
	LMC1 weak F0max gradient + long Duration	LMC2 steep F0max gradient+ long Duration	LMC3 narrow focus + peak delay	LMC4 same as Type1,2 but shorter duration
F R E N C H				
	*C'est la **communion** (110, F3)*	*De se **transcender** (238,F5)*	*ça a **lâché** (216,F5)*	*elle lâche pas les **freins** (227,F5)*
E N G + A M E R				
	*to be there to **contain** that (26,E1)*	*It's very **dark** (175,A5) (American speaker)*	*there to **contain** the pain (43,E1)*	*An **articulation** (90,E2)*

Figure 4: Typical prosodic contours for live metaphors in French, British and American English.

---

[14] Olivier Piot , Mars 2002, Vers une Théorie Unifiée de la Prosodie du Français et de l'Anglais: des Emotions à la Phonologie.

Figure 4 gives examples of typical prosodic contours for both French and English LMCs (live metaphor contours). They correspond to different types of emphases, bearing in different ways on duration and frequency, but all have in common the delay of the F0max peak with regard to that of intensity. Type 1 and 2 seem to match metaphors intended to be innovative or 'alive' by speakers.

The three first sub-categories feature abnormally long syllable duration, which is one of the characteristics of emphasis. Frequency rises till the offset of the syllable for the two first types, reaches a peak before the offset for the third type. As for the fourth type, there is no emphasis at the syllable duration level and a constant pitch rise, it corresponds to short vowel sounds inserted in the prosodic flow (not at a boundary tone). So what are the underlying functions at work? Two notions[15] must be introduced, maturity and tonus.

1.3 Maturity

Maturity is the assessment of one's familiarity, ability to understand a concept, or the probability that one can cope with it. Maturity is linked to frequency, for we tend to fix frequency at a level which corresponds to the mean frequency at which we spoke at the age when we had this degree of maturity. So if something is really obvious for the speaker the following sentence,

You've never heard of that!
T'as pas entendu parler de ça!

will therefore finish by a high rising pitch, expressing incredulity on the surface, but on a deeper level, we map this lack of knowledge in the other with a certain frequency level.

According to the theory developed in Olivier Piot's thesis, both maturity and pitch become associated, or mapped together; and this is an experiential mapping for with age, from birth, mean frequency decreases steadily till the age of 25, whereas knowledge increases (in theory). For interrogations the assessment of this maturity is that of the speaker, for assertions, that of the addressee with regard the information (his likelihood to know it) or the concept (his likelihood to be able to deal with it). We can thus assess via frequency our representation of the world (the speaker's view of the world linked with one event), our representation of the addressee's world, the addressee's world and the addressee's representation of our world. A long pitch curve may then in turn be the assessment of the addressee and then the addresser's knowledge and familiarity with what is at stake, not only the "thing" we are talking about, but the language we use or the time when the addressee may take the floor. This could be one explanation of the high rise in conversational French—as long as there is this high rise, the speaker is signalling that the other is not ready, mature, to take the floor.

1.4 Tonus

Tonus is linked to the somatic nervous system which provides a quicker response to emotions than the autonomous nervous system which is seen as a regulator. Tonus may be seen as the outlet for a nervous charge created by a restraint, an absence or a problem. The resolution of the problem goes with the release of the nervous charge. Both are associated, this is why pain triggers crying and shouting. The lack of a term to encode an existing representation is a form of absence or problem, which is solved when a term is found. The solving of this lexical problem releases almost simultaneously the tonus, which works on the respiratory muscles,

---

[15] Ibid

the phonic system, sub glottal pressure and vocal chords. As an effect, frequency rises steadily, and intensity is quickly released, because it is not regulated.
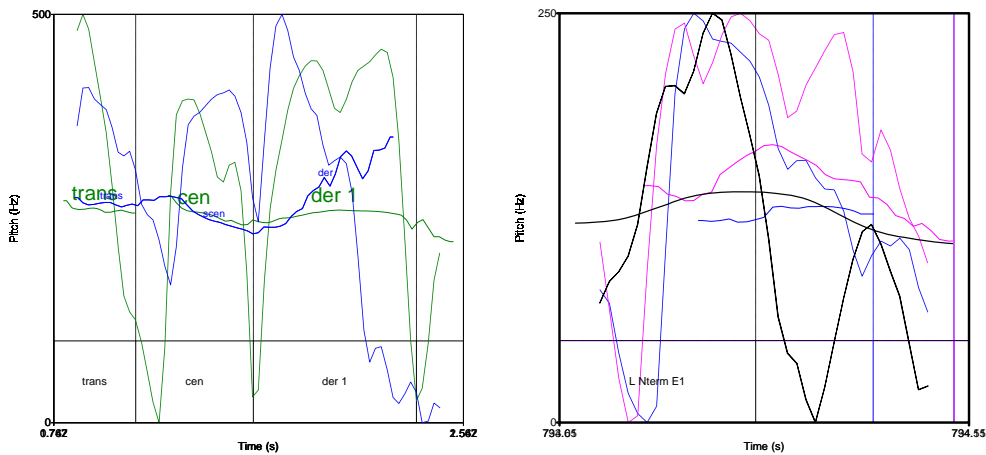

Figure 5a: - *ça peut être un révélateur d'une personnalité de transcender de se transcender* (238, F5)
Figure 5b: - *I think the structure has to be there to contain if you like the pain (…)yes I think it's there to to contain that* (46, E1)

Figure 5a: Contours for the same word said in what seems to be a normal emphasis and a metaphorical one show the effect of maturity and tonus on frequency and intensity. The intensity peak in the LMC contours (in blue) falls from the syllable onset steadily, whereas the frequency rises steadily. In the neutral emphasis, the intensity is more regulated and the frequency rises to a peak and falls. Both uses are metaphorical but one is meant to be felt as such by the speaker, and that is the second utterance (*de se transcender*), which would be classified under LMC2. The latter section of the frequency contours in the LM would theoretically correspond to the self assessment of the speaker with regard to the lexical use, which is a reflexive use of the verb *transcender*. By empathy and unconscious self assessment the tail of the frequency curve remains high, meaning that the speaker herself is not familiar with the usage or has doubts as to its appropriateness.

Figure 5b features the average contours for long word-terminal narrow focus for this speaker in black, the first occurrence of *contain* in red and the second in blue. In this second occurrence the intensity peak is shifted to the right, the frequency peak to the left. These contours are of an LMC1 type according to the prototype model, and correspond to real innovation.

2. Results of the Use of the Prosodic Template with the [MUSIC IS A JOURNEY] Mapping

The results below are an extract of classified metaphorical uses according to their prosodic characteristics. Values were worked out in terms of percentage of deviation with regard to the mean value for the type of syllable and the speaker. This has only value as a prototype, since the size of the corpora in both languages and three dialects does not allow radical conclusions. Metaphorical utterances with prosodic values that differ enough (>10%) from mere focus or narrow focus may be classified under the metaphorical prosodic model established (LMC). However, tests carried out at random with reference corpora seem to confirm results.

2.1 Results in French

sp	word	MS	LSA	Environment	E(dF0)	E(C2-C1)	E (F -I)	E (dC2)
F2	partir	VER:infi	0,19	ça c'est pour dire attention pour dire attention on va **partir**	-97,2	12,6	70,6	-50,9
F5	mouvance	NOM	0.03	il y a un genre de euh comment de de liberté de **mouvance** enfin	-83,7	-5,5	53,7	-39,2
F5	accélère	VERB:pres	-0,01	on reprend cette énergie on la **freine** on l'**accélère**	-13,3	-1,9	51,5	-34,6
F9	sortir/sillon	VER:infi	0,18	la métaphore du **sillon** (…) ça implique que c' est quelque chose dont tu peux pas **sortir**	100,5	3,8	48,2	-34,9
F5	mouvement	NOM	0,14	mais euh et qui donne du **mouvement** en fait de dans le	-80,6	-7,3	31,4	-19,2
F8	mètres	NOM	0,04	c' est comme le gars qui qui fait les cent mètres et le gars qui fait les mille **mètres** mais les gars	-29,2	27,7	27,2	-35,6
F5	coincé	VER:pper	0	donc on est **coincé** par le par le **parcours**	-50,2	-35,8	26,4	-11,1
F5	partent	VER:pres	0,11	il fallait que les choses sortent il fallait que les choses se ouais **partent**	-91,9	4,1	20,3	-17,9
F9	repères/ paumés	ADJ	0,05	des fois l' autre te donne des repères des fois les deux sont **paumés**	-9,9	31,6	19,5	-24,7
F8	quelque part	VER:infi	0,16	on va se **rejoindre quelque part** dans une autre **direction**	-1,0	41,9	18,5	-15,3
F5	sorties	NOM	0,08	t'as des entrées des sorties	56,0	-4,6	18,0	-26,3
F2	machine en route	NOM	0,04	enfin je veux dire euh enfin de moteur qui met la **machine en route**	10,0	-22,4	16,0	-8,6
F5	avancer	VERB:infi	0,06	il y a des moments où j'avance où je freine et j'**avance**	-21,3	35,3	14,0	0,1
F9	entre	PRP	0,23	t' as des entrées des sorties et **entre** tu fais ce que tu veux	57,0	-40,3	13,3	2,2

				tu sais que t' as des t' as des stops à certains **endroits** t' as des entrées des sorties				
F9	endroits	NOM	0,06		-30,2	-7,0	9,8	-9,8

Table 4: Extract of French metaphors classified under [MUSIC IS A PATH]
Metaphors are first classified according to the peak delay parameter then by syllable
duration. The potential live metaphors are highlighted in green. The code for speakers is
located in the first column.

Metaphors which are found to be highly emphasized develop the same cognitive mapping.
Music is a road, a journey, a route with stops and turnings, on which musicians move forward,
drive, run, and accelerate. Every stage of the journey is present:

starting off → (*qui met la machine en route*/switches the engine on), the speed (*on la freine
on l'accélère*, you put the brakes, you slow it down)

the route itself → *parcours* (the route) , *liberté de mouvance* (freedom to roam), *à certains
endroits* (in some places), *route* (road), *quelque part* (somewhere), *une autre direction*
(another direction)

the navigating process → *t'as des stops, des entrées* (inlets), *des sorties* (turn off), *les deux
sont paumées* (both are lost)

Most metaphors classified under that conceptual mapping are phrasal and range from very
low (*accélère* →*-0.01*) to medium (*partir* → *0.19*) in terms of semantic distance from the topic.
There is no clear correlation with semantic distance (worked out from written corpora (lsa)),
but a clear correlation between mapping and metaphorical emphasis.

(4) *des fois l' autre te donne des repères des fois les deux sont* **paumés**
(5) *on va se* **rejoindre quelque part** *dans une autre* **direction**

Both metaphors are realized with approximately the same prosodic contours, they also express
the same idea, (sometimes you follow one another, sometimes you get lost, and sometimes
you meet up again). The fact that there is greater coherence between deep semantic structure
and surface phonological realisation tends to show that in a given mapping, metaphoricity is
not linked to the choice of words but to morphosyntactic constraints.

sp	word	MS	LSA	Environment	E(dF0)	E(C2-C1)	E (F -I)	E (dC2)
A2	full blown	IN	0,14	we don't necessarily go **full blown into** but it 's just like a little hint of this	-69,09	10,26	58,74	-30,94
A9	deviation	NN	-0,03	you do n't have no **room** for **deviation**	-80,17	-19,93	27,69	0,81
A2	on/loosely	IN	0,17	you always fall back **on** your tracks (…) but **loosely**	234,87	9,24	22,97	-16,29
E12	journey	NN	0,05	the musicians do take you **on** a	-31,25	77,78	21,47	-30,47

Code	Word	POS	Value	Context				
				journey into into and er it it can be on two **levels** I mean there 's there 's there 's the the there 's the **surface** there 's just the enjoyment of it				
E12	underneath	IN	0,04	I think it 's on the **journey** to that change **underneath** the just the enjoyment so	-25,57	-18,42	20,51	-6,26
A7	**Along**	**IN**	**0,13**	'll record himself and play **along** with it	15,35	34,02	19,62	-5,31
A4	flowing	VVG	0,04	it 's like you know everything everything is **flowing** but it 's real **light**	-25,31	-11,62	18,21	-7,99
A10	out	JJ	0,15	he just really he really played it **out**	79,33	-18,97	14,52	12,50
A7	go	IN	0,1	that you that you think about where you might want to **go**	-89,85	62,13	14,32	-32,34
A5	vehicle	NN	0,04	and the singer is the main I guess **vehicle** for the band members	265,57	27,39	12,00	-45,50
E12	journey	NN	0,05	I think it 's on the **journey** to that change **underneath** the just the enjoyment	105,33	22,11	8,37	-9,42
A7	dynamical	JJ	0,02	that we do play with dynamical levels	-29,28	17,06	6,73	-9,45
E11	boundaries	NNS	-0,02	he 's he 's within known **boundaries** you know he 's not as er he 's not as **off** on a **tip** as as as Kelly Joe Felps	-48,11	32,04	4,19	28,48
A2	room	NN	0,11	and often times there 's not a lot of **room** within that because it has to be very arranged	-33,82	-50,25	2,60	-1,87
A3	wide open space	NN	0,06	then it 's just like **wide open space** er I mean it kind of	250,22	32,68	2,40	1,56

Table 5: Extract of English metaphors classified under [MUSIC IS A PATH]
A codes for American speakers, E English speakers.

The metaphors considered live by the speakers according to the prosodic gauge vary from the French findings. They seem to tap largely into the landmark—trajectory—trajector conceptual model which has been investigated by Capelle and Declerck[16] '*Spatial and temporal*

---

[16] Bert Cappelle*, Renaat Declerck, 2004, Spatial and temporal boundedness in English motion events

boundednesss in English motion events' but seem to be organised around uses of *in/into*, and *on*. Uses of the three prepositions *in*, *on*, and *at* may be seen as being functions of *identification*, *differentiation* without rupture, and *rupture*[17]. In other words, the same as for IN, not the same as but continuous to some degree for ON, and separated, unrelated for AT. Many of the metaphorical uses in English seem to involve this model. Here, the liveliest metaphors (or those intended to be so by the speakers) are a variation on the prepositional model:

> (6) *we don't necessarily go **full blown** into but it 's just like a little hint of this*
> (7) *you always fall back **on** your tracks (…) but **loosely***
> (8) *the musicians do take you **on** a **journey** into into and er it it can be **on** two **levels***

Into in (6) is opposed to *hinting at*, and thus coherent with identification. In (7), on is clearly an expression of differentiation, the musician is on and off the "*tracks*", and *loosely*. This could be opposed to the use of IN in the expression 'in the groove'. In (7) we clearly have a hesitation between IN and ON, *on a journey into into (…) on two levels*, as if the prepositions came first, as a germ around which the discourse is then organised. So apart from the metaphors which may found literally translated in the French corpus there is this specificity of the English prepositional model. Music is seen as a trajectory along which or on which the trajector[18] (moving object) moves, but music may also be the trajector:

> (9) *you can feel that feel that **move** the improvisation **moving into** the next section you know it 's coming* (E5)

In that case the musician is seen as being with the music (*I was into it into it* E10), identified with it. Here the PATH model overlaps that of the CONTAINER. Music and the musicians are both conceptualised as containers which are either connected, communicating, or merged into one.

3. Discussion: Metaphors as Hypercoding Strands of Discourse

Oral discourse may be seen as organized much like genes in the sense that it is structured by an alternation of non coding sequences (you know, like, erm), coding sequences (first referential level) and hypercoding sequences (second referential level). Live metaphors are both coding and hypercoding. Contrary to lexicalised metaphors, they refer both to a notion and to the metaphorical process itself. They are also hypercoding in the sense that they innovate and are thus on a higher informational level—a double focus. This double focus is voiced with a corresponding emphasis the parameters of which were modelled by computing the prosodic data. This template was then tested on English and French samples of radio broadcast.

---

[17] Eric Gilbert, 2002, Ebauche d'une formalisation des prépositions In, On et At, Available on-line from http://134.59.6.81/cycnos/document.html?id=11
[18] Huddleston, R., Pullum, G.K., (2002), The Cambridge Grammar of the English Language, CUP, Cambridge
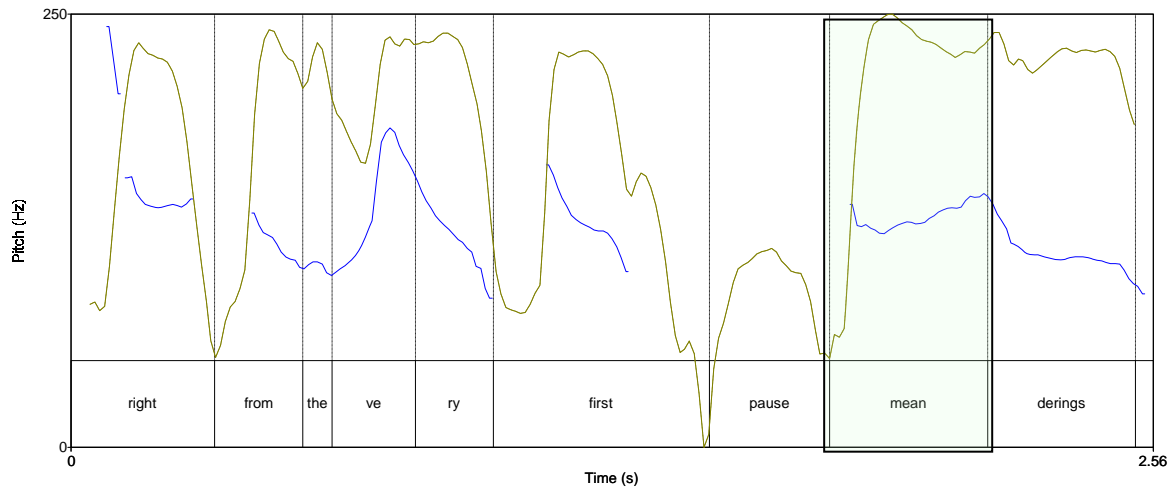
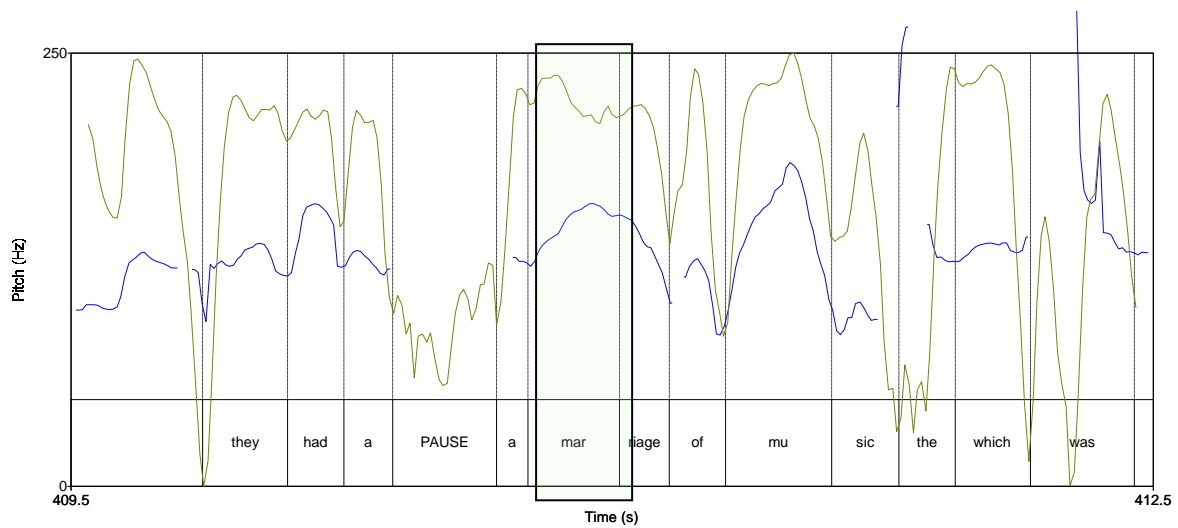**Figure 6**: 'right from the very first me**an**derings of writing' → LMC type 1

Figure 7: They had a (pause) a **marriage** of music which was not (Broadcast on Radio 2 - Wed 06 Jun 2007 - 23:00) → LMC type 3 (lexicalized metaphor brought back to life by speaker)
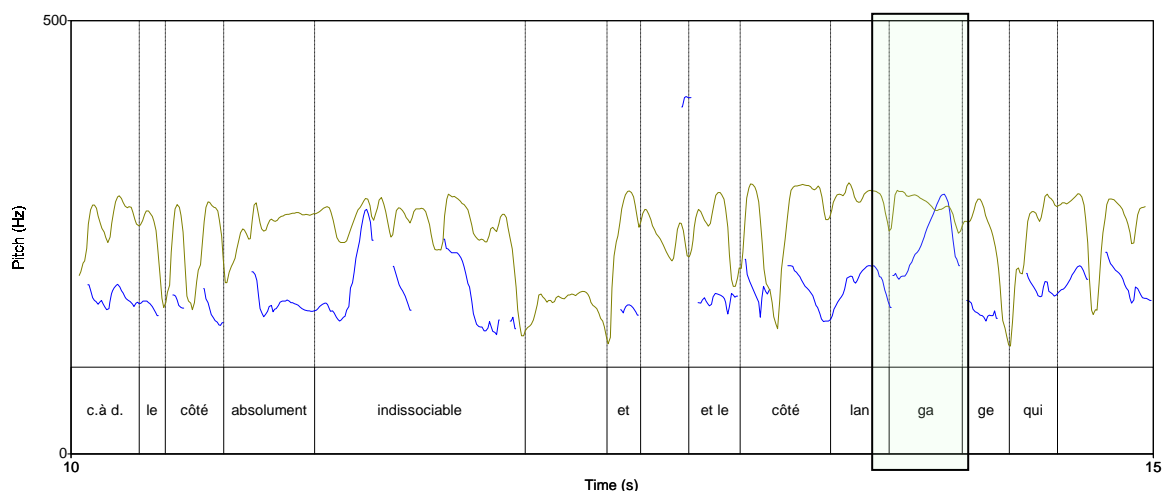
Figure 8: c'est à dire le côté absolument indissociable et le côté langage (france musique Feb, 2007) → LMC type 3 (a refocussed dead metaphor, a process underlined by the discourse marker '*le côté*')

Searching for the prosodic template revealed some metaphors which seem to abide by the characteristics established from the corpus findings. Larger corpora will have to be tested in order to refine the template and see what other emphases it might cover. Determining how speakers in different languages cope with innovating metaphorically in one particular conceptual domain may be helpful in many ways. Without being able to conclude at this early stage of the research, and not having enough data in the corpus to draw definite conclusions, it seems from the findings that the importance of the organisation of spatial cognitive models centred on prepositions in English could have a retroactive effect onto the scope of metaphorical uses. The English just like the French seem to conceptualise the MUSICAL PATH as having levels, or of changing levels:

> (10) as opposed to being one level all the way (E7)
> (11) t'as trop de couches sonores (F1)

But the English trajectory may be played **on** or *in*. And this seems to give information as to degree of the identification of the musician with the music. This choice is sometimes difficult to make for some speakers:

> (12) but all the songs are they will have a **head** which we play the melody **in** and then this has a form and er well we improvise **on on…**

Total identification of the musician with the melody is contrasted with the improvisation part which is more a case of "an attempt to identify with the music".
The French model is similar and many instances of SUR (translation of ON) are to be found, but hardly ever in innovating metaphors. The innovative metaphors seem to be transposed in different morphosyntactic categories.

Also whereas the container and the path models are expressed in different areas in French, they seem to be expressed jointly in English (*we don't necessarily go **full blown into** but it 's just like a little hint of this,* E2).

Conclusion: Redefining the Metaphoreme

Metaphors are the surface realisation of conceptual mappings which do not only work as vectors connecting source and target concepts but also whole networks of concepts giving birth to conceptual models and structural models. Amongst the forces at play in the *metaphoreme* bundle[19], prosodic characteristics, along with other classical markers (pauses, repetitions, discourse markers, informational structure and semantic distance), seem to be a good indicator of metaphor liveliness. Some lexicalised metaphors are prosodically given a new lease of life, and they are coherent with other innovating metaphors pertaining to the same conceptual domain.

The first conclusion which the prosodic approach enables us to reach is that metaphor liveliness is not entirely linked to a deep semantic level of conceptual mappings but to morphosyntactic realization, which may be innovative or not. Metaphors are created along the networks made available by the mappings, they both have to abide by and break the morphosyntactic rules of the language (*les choses elles ont lâchées quoi on va dire ça a lâché*, F9 → things let loose, you can say that it loosened up). Metaphors may be brought back to life by speakers and signalled as such by means of an emphasis on the metaphorical process itself. Metaphoricity in oral discourse can only be seen in time, and not as fixed for a given usage.

A second research direction is opened up by the capacity to track metaphoricity. Metaphors are a level of enunciation at which there is a switch from the purely notional referential (referring to the external world) to a mixed reference to both the world outside and the words themselves. This seems to be signalled by prosody, through specific patterns of intensity and fundamental frequency contours. Using these as a gauge allows a form of assessment of metaphoricity, which in turn might be used to investigate the profound differences between languages.

References

Sylvain Loiseau (2002)
Rapide revue des différents standards autour d'XML et introduction à la Text Encoding Initiative (TEI) (http://www.revue-texto.net/Corpus/Manufacture/index.html)