

Coordination between gesture and prosody in two versions of the “Great Gatsby: 1974, 2013”

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Abstract

The cross-disciplinary study (phonetics and film study) aims at highlighting the coordination between posture and prosody in two versions of “The Great Gatsby”. The central aim of the study is to understand how prosodic variations are related to gesture in different acting schools. Formal and functional analysis of gesture and their relation to prosody, shows striking contrast between the acting styles.

Index Terms: prosody, gestures, postures, acting schools.

1. Introduction

In this paper a methodology and preliminary results of coordination between gesture and prosodic variations of two actors’ productions are presented. The goal of this study is to assess the expression of emotion through speech and gestures according to two well known acting schools.

In human communication, gestures have been the subject of investigations in fields like sociology, psychology, ‘natural history’ tradition of interaction studies; linguistics etc. [1] describes gestures as an integral part of speech, “a close examination of the coordination of gesture with speech suggests, these two forms of expression are integrated, produced together under guidance of a single aim”. Their semantic and pragmatic functions, parallel those of speech [2]. In the same way as speech, gestures are categorized in functions and forms. A number of function categories have been proposed in different domains. We have deemed adequate to apply a semantic and expressive approach instead of a structural or syntactic one, as the study deals with emotions. Our theoretical framework will be based on the semantic and expressive functional category of gestures presented by [2]: *Iconic* (the gesture gives an image of the shape or action, e.g. hands apart showing something huge), *metaphorics* (the gesture gives an image of an abstract concept, e.g. when speaking about arts), *deictics* (or pointing gestures, showing something), *emblems* (lexicalised gesture) and *effectives* (conveying emotions). Gestures have different forms, “...all gestures can be categorized according to their temporal and spatial characteristics” [3]. They can be described either as *dynamic* or *static* [3]. Forms of gesture differ from one culture to another (a head nod to say “yes” is different in Bulgaria than in most of the other European countries, they use the “no” head movement instead); they are combined most of the time with vocal cues. For example a high pitch and intensity plus hands gesticulation can represent anger. We will investigate if there is a correlation between forms of gestures and acoustic cues in the two versions of the “Great Gatsby”.

2. Prosodic analysis

In the field of emotions, different prosodic cues have been used to describe emotions and to find relevant information [4], [5]. In previous studies combination of several parameters, have been studied: duration, amplitude, fundamental frequency, intensity, pitch, speech/syllable rate etc. But fundamental frequency contours are considered as the most relevant cue in perceiving emotions. In our experiment, analysis relies on fundamental frequency contours (minimum, median, maximum) as well as combined to gestures.

3. Acting schools

Emotions and attitudes in films are imparted mainly through the instructions of the film’s director but also through the actor’s acting styles and personality. The two versions of the “Great Gatsby”, hence fore (GG1 for Jack Clayton, 1974 film and GG2 for Baz Luhrmann, 2013), reveal a visible difference in the aesthetic, acting styles and the use of voice techniques. The direction of GG1 and GG2 corresponds to different acting schools: the “American Academy of Dramatic Arts” and the Actors Studio/Method Acting respectively [6, 7, 8]. The former was founded in 1884 in New York, where working on voice was a predominant aspect of the actors’ training. Actors indicate their emotions mainly through the use of voice variations, while body movements and gestures were considered as secondary. It is considered as an “intellectual” school of acting based on the text/script with a rather static attitude. The latter is a more recent school founded in 1947 and is mainly based on psycho-physiological exercises where actors are trained on how to show feelings through motion. In Method Acting School, postures and gestures are predominant; emotions are shown through the body which totally embodies the character [8, 19, 10].

4. Methods and Materials

4.1. Materials

The material analyzed is drawn from “The Great Gatsby” 1974 (GG1) scene 10 (from 1:36:07 to 1:41:09) and 2013 version (GG2) chapter 9 (from 1:30:33 to 1:37:36). The scene shows the confrontation between Tom and Jay Gatsby in the presence of Tom’s wife and two friends. They were all lounging in armchairs as it was a very hot day, everybody was sweating and one could feel the tense atmosphere., This scene has been used in this study as a source for examples of different gestures and their correlation with prosody (mainly f_0 variations). We have decided that it would be more interesting to concentrate on the husbands’ reactions as they reveal a larger number of body movements.

4.2. Measurements

The method of analysis employed in this study is as follows: small segments of the scene were scanned in the aim of picking out postures and gestures with the corresponding speech units. Gestures and the associated pitch variation levels were annotated. A screen shot for each movement was segmented and plotted out on a chart for both versions. The movements were then labelled using the set of terms proposed by [2] for describing the functional and formal categories. In this study, we concentrated on the movements of the hands, arms head and trunk. Facial expressions were not included. The data was then labelled using Praat software [9], and an adapted human annotation scheme of IINTSINT [10]. Four tiers were labelled: orthographic, prosodic for inflection points of F0 contour. The tag assigned to each inflection point is relative to its predecessor and successor along the contour. The tag set is: M (medium), T (top), B (bottom) (for the speaker's voice range), H (higher), L (lower), U (up-step), D (down-step) and S (same). Corresponding F0 values to each inflection point is indicated in the third tier. The fourth tier shows the correlative gestures [11].

5. Results and discussion

Overall results show striking differences both in terms of acting style, gestures and emotions. In GG1 the nervous emotional tension in the confrontation scene is conveyed by the film-making techniques and the final cut rather than by the actors. Jay Gatsby (Robert Redford) was slouching in an arm-chair with a listening position, almost during the entire scene with limited gestures and using a monotonous calm voice. This static "peacock" attitude, contrasts with the husband's one, who was volatile and mobile, sitting down, standing up, pacing up and down the room, his hands in his trouser pockets, walking behind Jay Gatsby trying not to show his anger. Bruce Dern (husband) started hostility and provocation by asking: "*I'd like to know what kind of row you're trying to cause.*" He was standing up facing Jay Gatsby; the utterance was accompanied by a slight trunk bend and a low pitch (110Hz) with no voice variation (27 Hz). In GG2, when Joel Edgerton asks J. Gatsby: "*What kind of a row you trying to cause in my house anyway?*", he was standing away from J. Gatsby, hands crossed, very little pitch variation (69Hz) but a F0 increase on "*are you*" which correspond to his (T at 151Hz). In the second utterance the husband was annoyed by his wife's question asking him to have some self control. In GG1 and GG2, they both replied "*self control!*" as if surprised. A difference in attitude and pitch variation between the two is obvious (see figure 1 and 2). A higher pitch level (in GG2, and larger variation (165Hz) was observed with a down step at the end of the utterance, although he had a static attitude, standing up and hands crossed. Whereas in GG1, the husband speaks with calm low voice but there is an audible step-up in the terminal pitch at "control" (205Hz) and a head nod at the same time. In a last attempt to conquer his wife's heart again, he supplicated her in a whispery charming voice "*And not that day that I picked you up in my arms and carried you...*". Here the action of "*carry*" is said with a slight rise at the beginning of the utterance, then almost the same pitch but "*carry*" is showed by an iconic gesture and a rather long pause (1.51 ms) before the end. This gives account of his despair, as if he was weighing his words and expecting a positive reply after the effect of his seductive voice. The husband in GG2 version

used a very low pitch with a range of (B at 78Hz and T at 126 Hz), hands always crossed as gesture. The scene ends up by the husband provoking J. Gatsby: "*certainly not for a swindler...*" in GG1, with a left head tilt, a (B at 87Hz) and no increase in F0. J. Edgerton's reaction in GG2 "*certainly not for a common swindler like you*", his attitude was still static, but one can perceive the intensity in his voice when he called J. Gatsby "*a common swindler*", but with a small increase in F0. In this confrontation scene, we have noticed that the acting style and the use of gestures and voice variations are completely different in the two versions (see table 1). In GG1, there is a real contrast between J. Gatsby (Robert Redford's) static listening position and Bruce Dern who was mobile and demonstrating his speech with several gestures (n° 15: stop gesture, n°18 deictic/pointing...) [11], thus giving more strength to his speech. The expected fist fight and "blast" did not take place in this version. This might explain the small pitch variations in his voice (see table 2). Jay Gatsby's attitude in GG2 is totally different; Di Caprio delivered a "neurotic" version in this scene, showing clearly his irritability and highly nervous state through micro-gestures and postures, for instance: shaking his foot, leaning his head, walking forward to and backward from the window, helping himself to a drink several times, shouting etc. In the confrontation scene, Joel Edgerton, embodies the role of a deceived husband, ready to fight, although he stood stiff and edgy far away from J. Gatsby with his hands crossed for most of scene. But emotions were perceived more in his acting style when comparing pitch contours. (See table 2). As he does not show many gestures in this scene, he acts using his voice, with perceived pitch variations or even with sarcastic laughter (twice) "*you must be crazy*". This static attitude or posture corresponds to the classical school of acting and contrasts with Di Caprio's Actors Studio/Method and its dynamic approach. In GG1, Bruce Dern's acting style and emotions, are conveyed more through gestures (with clear trajectories), than through the use of vocal cues. He embodied the role according to the Modern Actors method school.

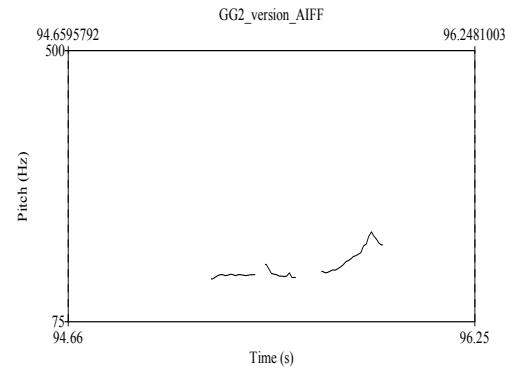


Figure 1: "*Self-control!*" GG1

The coordination between gesture and prosody is different in the two versions. In GG1, Bruce Den's gestures are combined with slight changes in pitch; however F0 values do not show systematic marked cues. His gestures sometimes correspond to a Top level like in GG1 "*self control*", to a rise "*not that day*" or even to a Bottom value "*like you*". In GG2 the use of voice is predominant, with pitch variations reaching the Top range of the speaker but combined with static gestures.

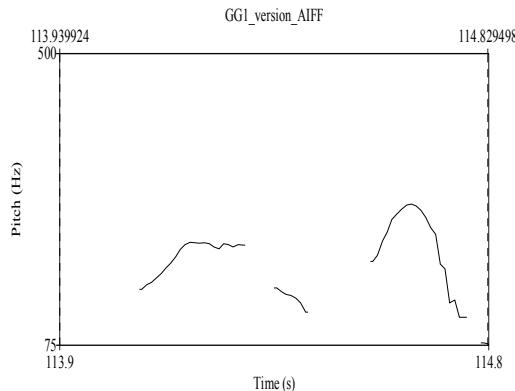


Figure 2: "Self control!" GG2

GG1/ Gesture	Dynamic/ Static	GG2	Dynamic/ Static
1. Trunk forward	+	Hands crossed	-
2. Head nod	+	Hands crossed	-
3. Trunk forward	+	Hands crossed	-
4. Hands lifted <i>Iconic</i> "carry"	+	Hands crossed	-

Table 1. Spatiotemporal components of gestures (+ for dynamic, - for static)

Utterances/ GG1	F0 values Hz Minimum/ Maximum	Utterances/ GG2	F0 values Minimum Maximum
I'd like ...you're Self control	115 88 147 215	...are you ...cause ... Control ... control	151 (T) 82 (B) 280 (T) 215 (B)
...and not ... my arms ...common ..a ring	138 108 87 (B) 127 (T)	... Bowel ... your Certainly Like you	127 (T) 78 (B) 149 (T) 77 (B)

Table 2. F0 variations (maximum: Top, minimum: Bottom)

out a more energetic acting style and a greater impact on the audience. The outcome of Joel Edgerton's performance (from the same "Acting method") is surprisingly "classical", using more voice variations with limited and static postures to embody the role of a deceived husband. Alternation enabled him to convey his emotions passing from provocation, supplication, seduction, and denigration which led to the final blast of anger. The tension in the confrontation scene in GG1 is realized by film-making techniques such as: framing, cutting, silence... a "Koulechov effect" where editing the different film plans created an atmosphere of tension, which was not really conveyed by the actors' performance. However the coordination between postures and pitch variations increased the dynamics to the interactions in the confrontation scene. The coordination between gestures and prosody seems to be clear in differentiating the two acting schools, although no recurrent acoustic cues were found in this study. In this new field of research; implementation of more methodological tools will broaden the scope of the coordination between prosody and gestures in film studies.

7. References

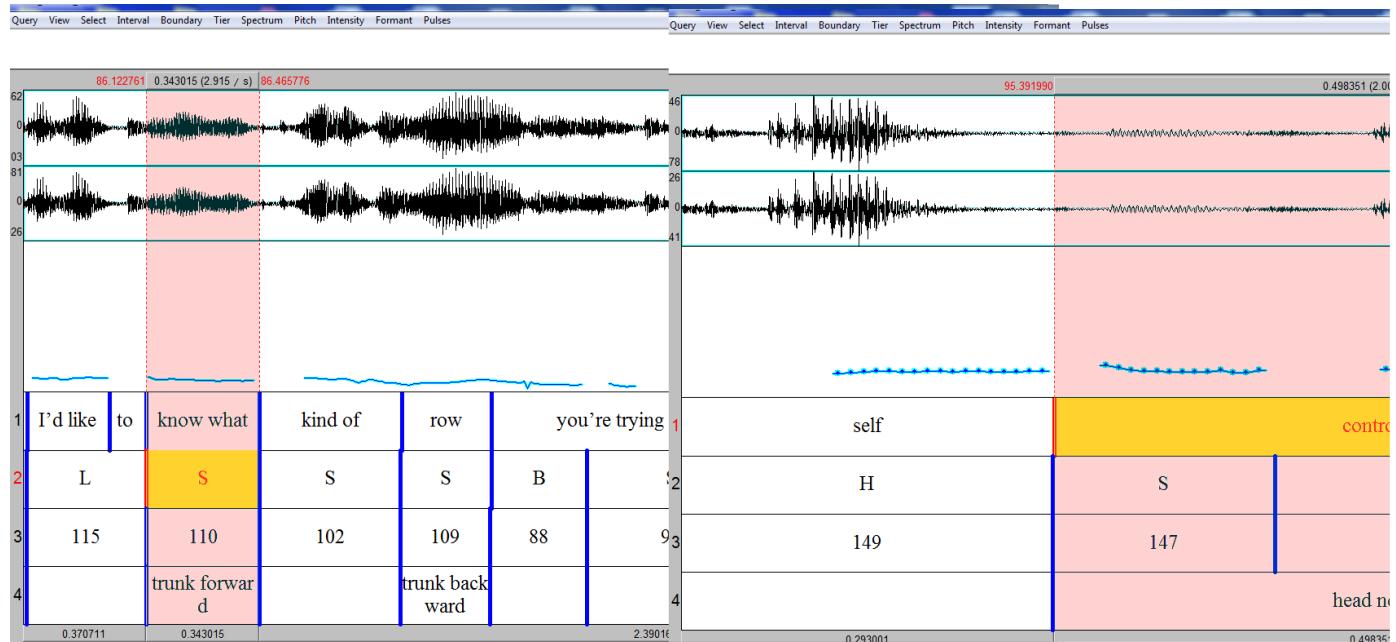
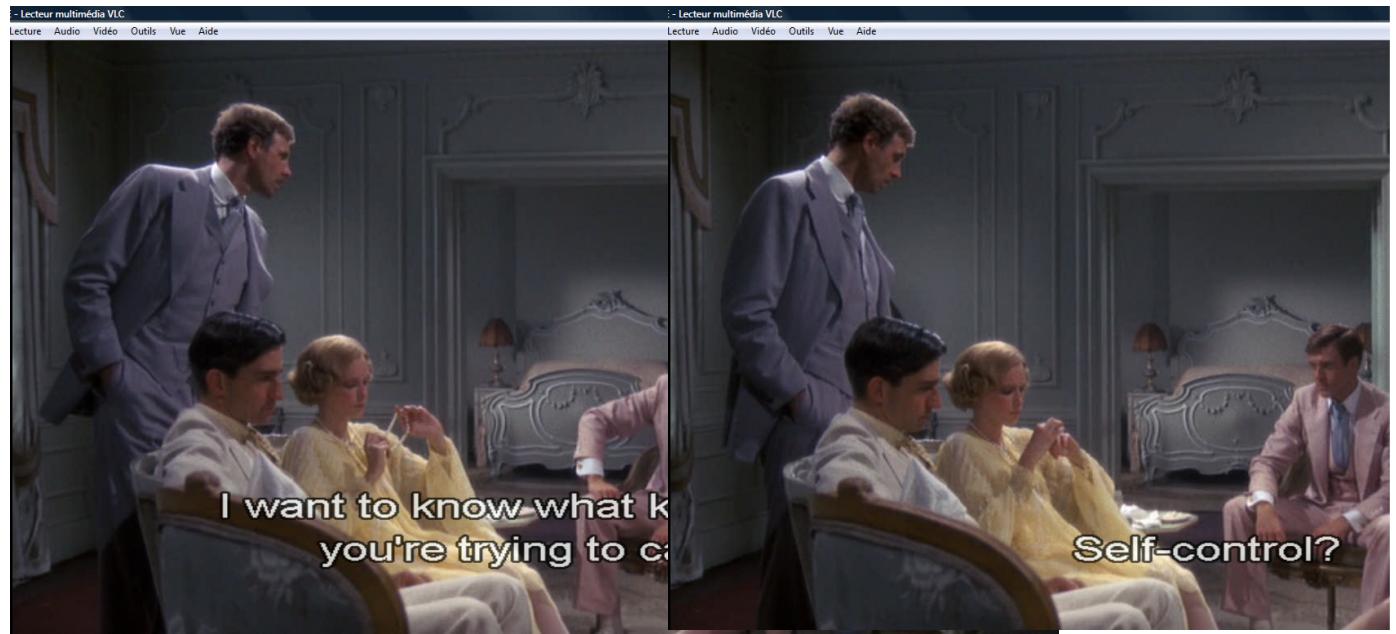
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6. Conclusion

As can be seen from the results the coordination between postures and voice variations in acting engenders the film's atmosphere in general and brings a significant difference in the actor's role. Pitch variations associated to postures allowed Di Caprio according to the "Acting Method" to personify a "neurotic" character in the confrontation scene, thus bringing

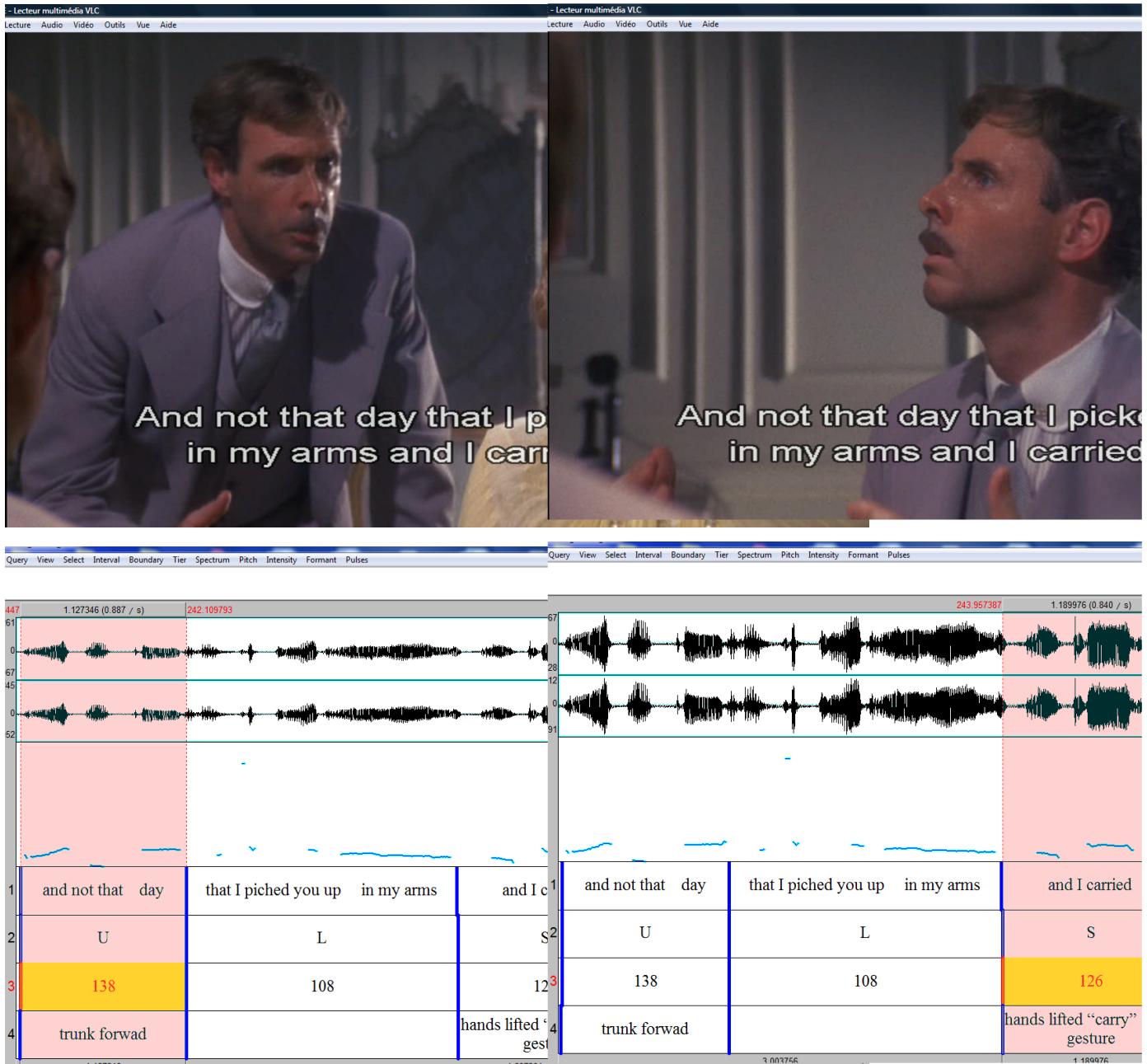


[11] “Great Gatsby” 1974



1. Husband: **trunk forward**

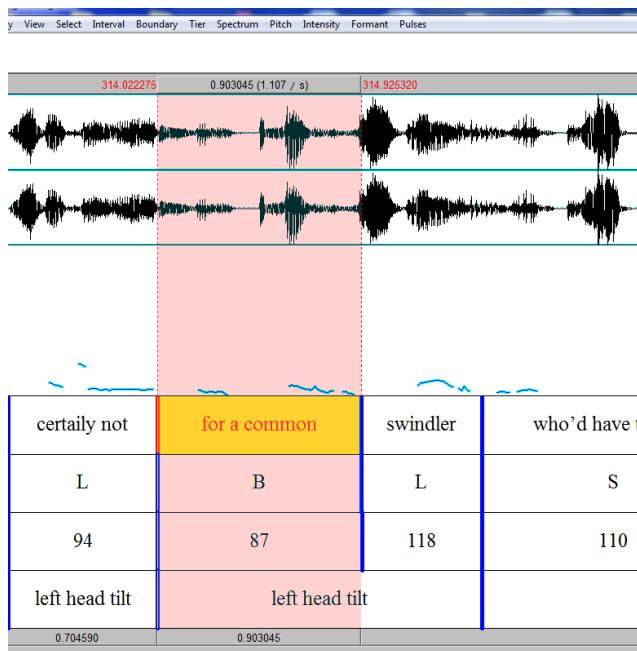
2. Husband: **head nod**



3. a. Husband: **bends trunk**, staring at his wife

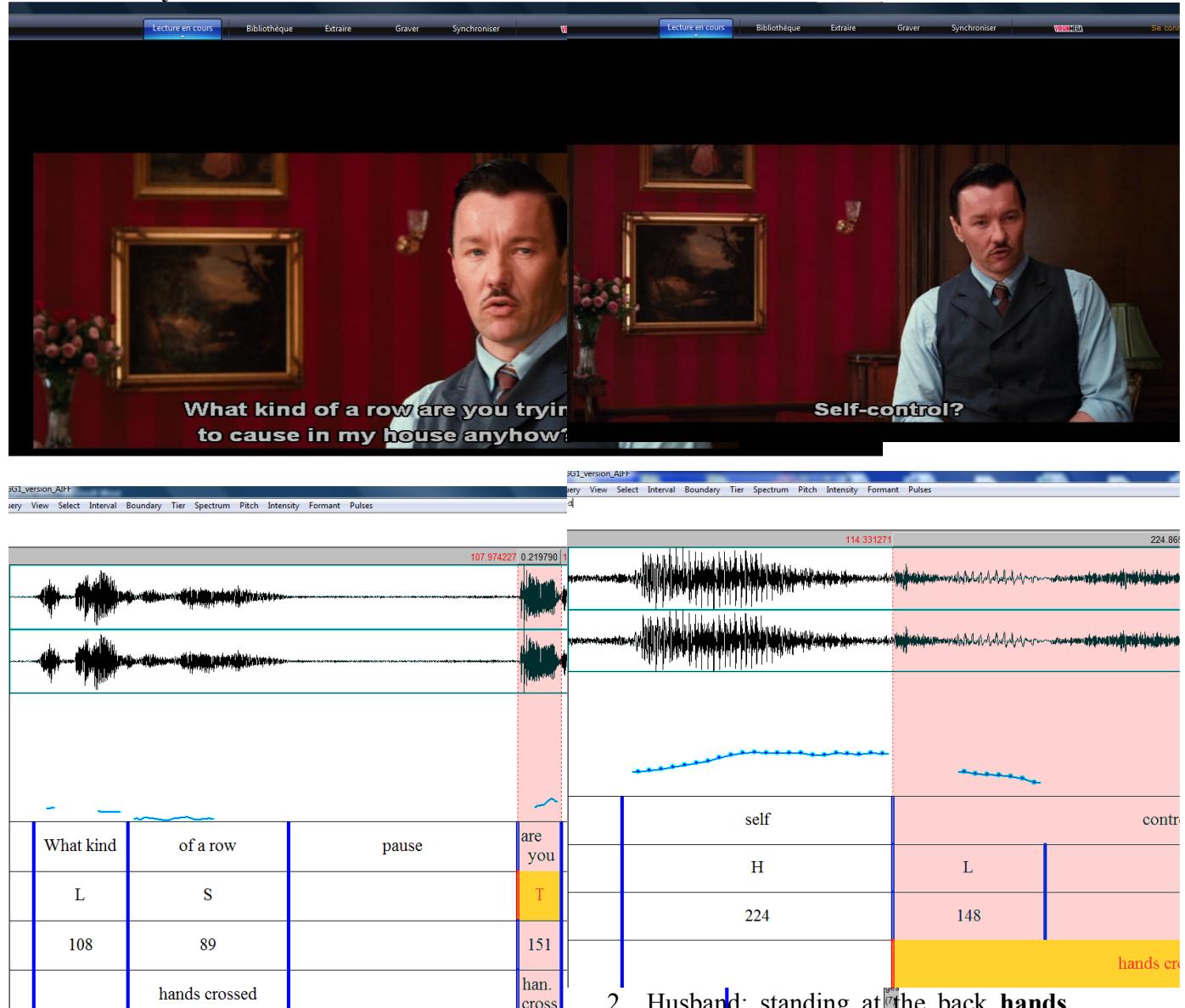
3. b. Husband: **hands lifted up** showing the "carry" gesture

“Great Gatsby” 2013



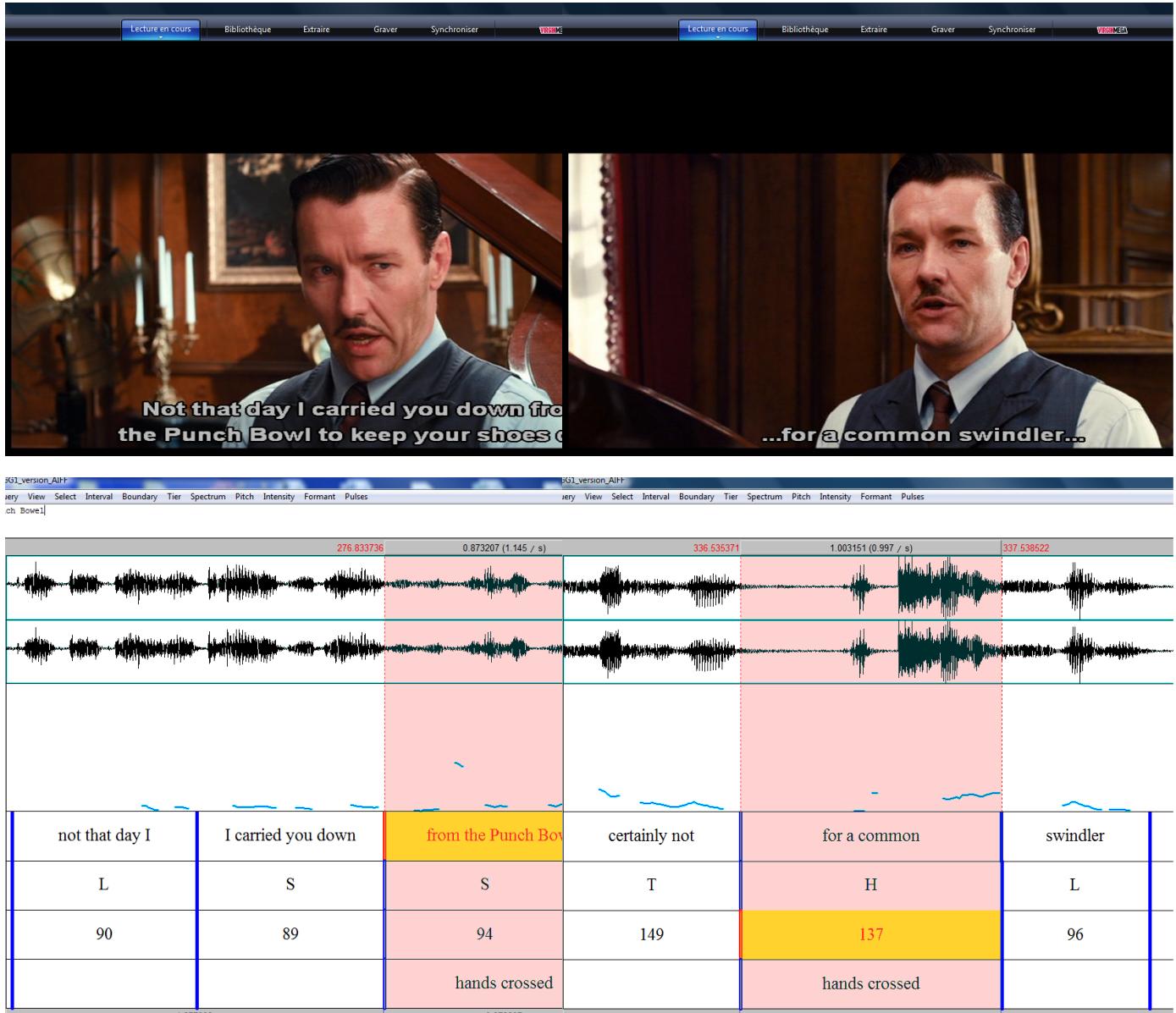
4. Husband: left head tilt

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1. b. Husband: standing at the back **hands crossed!**

2. Husband: standing at the back **hands crossed**



3. Husband: moves one step forward,
(hands still crossed)
4. Husband: Standing straight up (**hands still crossed**)