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Πανεπιστήμιον Αθηνών

Empirische Sprachforschung

User Interface Design for the interactive use
of Online Spoken German Journalistic Texts
for the International Public

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1. User Requirements and Error Data

- The present approach concerns a set of **specifications** for an annotation module and its user-interface for the interactive use of online spoken German journalistic texts.
- The proposed design targets to provide the **in-context indication of ambiguous or connotative linguistic and paralinguistic information** to **non-native speakers** of the German language, in particular, students, translators and journalists.
- The boundaries of possible differentiations in respect to the semantics of expressions become less evident in spoken journalistic texts, where they are highly context-dependent and determined by their usage in the language community.



For the successful implementation of the proposed module

- a detailed approach to User Requirements is necessary [3], [8].
- The target user-group usually has an above-average or even a fairly good fluency of a foreign language such as German or more than one foreign languages,
- but are either non-native speakers and/or often lack the necessary exposure to the culture related to the foreign language concerned, especially if the place of work/ correspondence changes frequently.
- Thus essential information in on-line texts presented either in a subtle form or in an indirect way (“explicitation”, [4]), such as text-in-context relationships and socio-textual practices is often undetected.



The international public

- is generally interested to be able to have an **insight** in respect to a specific issue or event from a not always explicitly expressed **insider's or an outsider's point of view or from an international perspective.**
- Furthermore, the international public often has to **make choices** in respect to what types of online spoken/written journalistic texts to use for professional purposes and what types of online spoken/written journalistic texts to omit and/or discard.
- This **decision-making process** may be time-consuming, since the User is required to read or hear the text many times.



Typical indicators of connotative features

- such as **fixed expressions and idioms** do **not occur often enough** in texts to signalize a point of view or attitude conveyed
- and many **paralinguistic elements** may be **absent** in some multimedia files, for instance in a cases where the speaker (for, example, a correspondent) is not visible.
- Furthermore, in languages such as Standard German, it is observed that speakers do not always demonstrate obvious changes in **prosody** when making subtle ironic statements, changes **not easily detected by an international audience**.
- Additionally, paralinguistic elements expressing speakers' or journalists' attitude may be **misinterpreted or overlooked** by an international audience, unless extreme emotions are expressed.



The proposed specifications and related annotation module

- is language-specific and its basic parameters are designed based on translational error-types retrieved from empirical data concerning the language pairs English, German and Greek.
- Most data involves mistranslations of spoken and written journalistic texts (data provided from graduate courses for professional translators), as well as failure to correctly interpret paralinguistic elements in online multimedia journalistic files by transcribers and professional journalists.



The data

- was collected from graduate courses for journalists (M.A in Quality Journalism and Digital Technologies, Danube University at Krems, Athena- Research and Innovation Center in Information, Communication and Knowledge Technologies, Athens, Institution of Promotion of Journalism Ath.Vas. Botsi, Athens)
- and from data transcribed from spoken journalistic texts in European Union projects, especially the CIMWOS Project [9].



2. Combination with Transcription Tools and User Interface

- The online transcribed spoken journalistic texts are scanned by the proposed morphologically-based module and the User is presented with an output in the module's user-interface constituting the actual text with an **in-context indication** of all the instances of
 - (a) **ambiguous** or
 - (b) **connotative** linguistic information and
 - (c) **language and culture-specific paralinguistic features**, which are signaled in different categories, based on error data obtained from the above-mentioned sources [9].
- These signalizations are the most commonly occurring types of such information observed in spoken German journalistic texts, namely **(1) “Stress”, (2) “Casual”** and **(3) “Non-neutral”**
- and indicate **elements stressed by the speaker (1), a casual tone (2) or connotative features (3)** respectively.

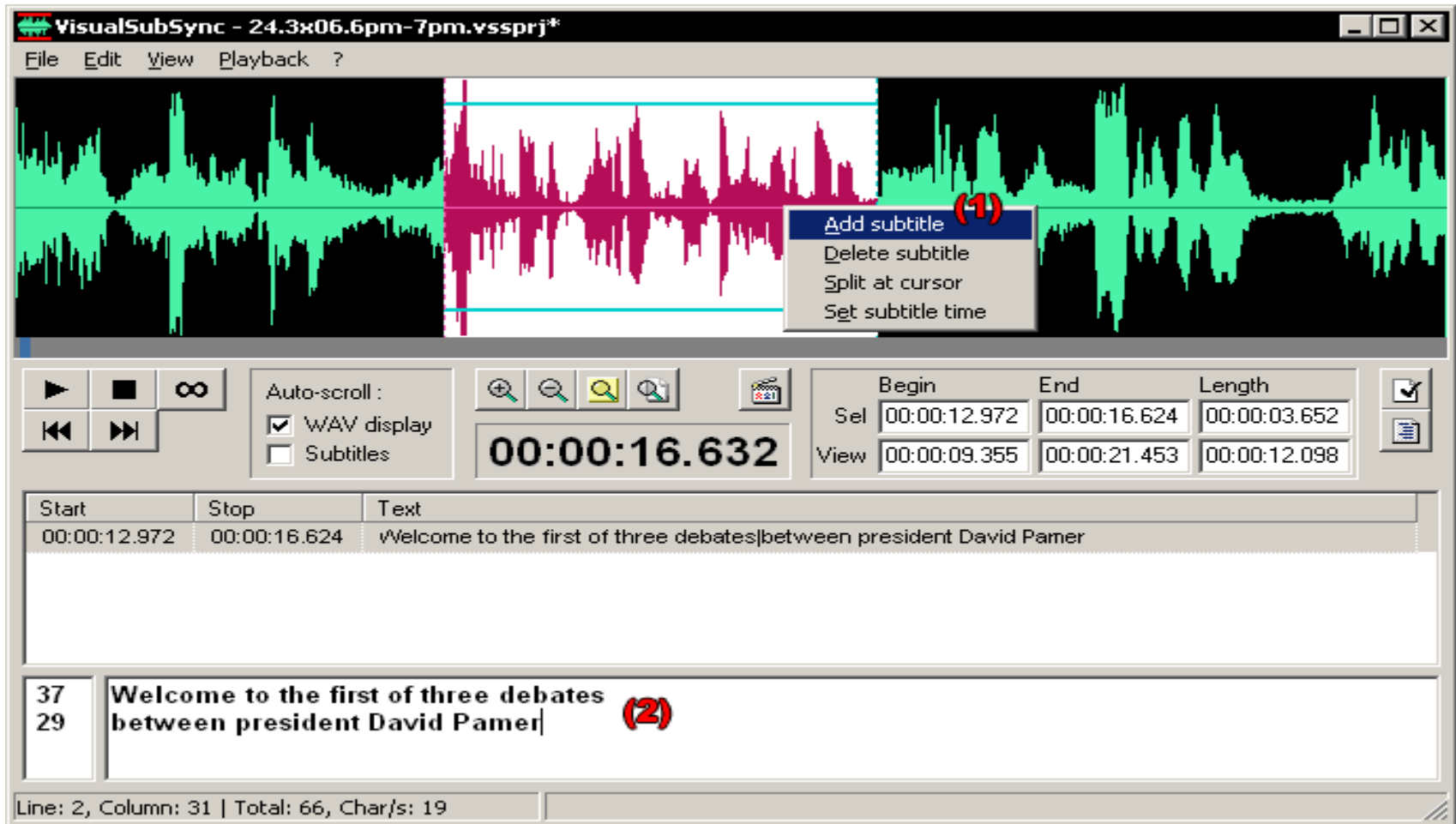


The module is designed to be able to be compatible with most commercial transcription tools,

- some of which are available online [10], [11] (Figure 1).
- Specifically, the module operates on **keyword detection** at **morpheme-level** or **word-level** based on interaction with a **simple database** which is, however, constructed on ontological principles, and may be visible and extended by the User.
- The **database** concerns a restricted set of word stems and suffixes as well as a defined set of verb stems that may be enriched.
- **Incoming text** may also be downloaded written journalistic texts from the internet such as blogs.

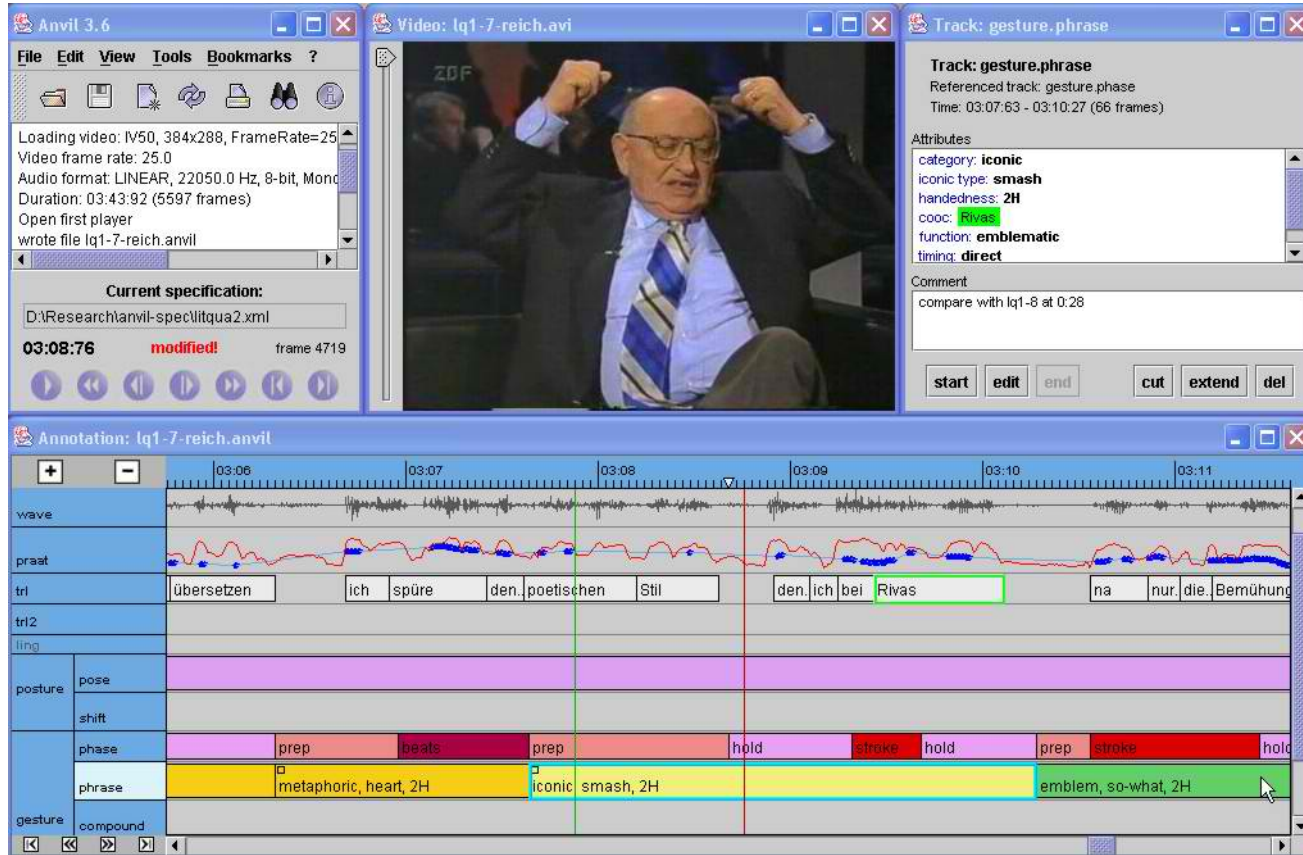


Examples of commercial transcription tools available online. www.visualsubsync.org



Εικόνα 1: How to create subtitles and captions for videos

Examples of commercial transcription tools available online. <http://www.anvil-software.de/>



Εικόνα 2: Anvil Software transcription tool

2.1 User Interaction and User Interface

- The proposed module **combines spoken words with paralinguistic elements**, which are sometimes **existent**, such as in the case of prosodic emphasis, or sometimes they are **non-existent** or too subtle to be detected by non-native speakers.
- The combination of words with paralinguistic elements allows
 - (a) a better understanding of the **connotative elements** in spoken texts and
 - (b) may additionally also be used for research and development purposes in respect to **mapping of spoken word and prosody and/or gesture**.



During the transcription

- written words belonging to the categories “STRESS”, “CASUAL” and “NON-NEUTRAL” described in Section 3 are automatically **highlighted**.
- Sections with **higher amplitude** corresponding to prosodic emphasis are automatically selected and signaled, either from the automatically generated pitch contours provided by many available transcription systems or only as signaled peaks in amplitude in the simpler systems.
- The possibility **of gestures**, often occurring along with such words and prosodic emphasis, is retrieved in the respective temporal points in the wav file by the User.



User interaction may be described in three steps

which correspond to **three respective levels in the annotation module** appended to the transcription tool employed by the User.

- In the **first step**, the User listens to the recorded speech and/or video and adds the respective text to the speech signal, a standard process for most transcription tools.
 - When specific word types are written corresponding to possible connotative features, the proposed additional module **highlights** these word types in a respective color determined by the User **(1)**.
- In the **second step**, the recorded speech and/or video can be replayed by the User. The points containing the previously highlighted words are compared to the speech signal and the respective **tag**, according to the amplitude of the speech signal, is produced namely **“STRESS”**, **“CASUAL”** and **“NON-NEUTRAL”**(2).
- As an optional **third step**, the proposed annotation module allows the User to append **additional comments**, especially in respect to paralinguistic features not related to the speech signal (facial expressions, gestures) **(3)**.



3. Database: Combination of Word Categories with Paralinguistic Features

- Words related to the tag “STRESS” for Spoken German are all word categories combined with prosodic stress, signaling what the speaker considers important to underline and are detectable with a rise in amplitude in speech signal.
- The stressed words are of additional importance if they also coincide with the “NON-NEUTRAL” category described here.
- In less formal contexts, a casual and/or friendly or communicative attitude related to the tag “CASUAL” is signaled by specific sets of particles, adverbials and exclamations that are, however, not accompanied by prosodic stress.
 - Typical examples are the expressions “doch”, “eben”, “gleich”, “doch bitte” [1], [2]. In order to be classified as “CASUAL” elements, such words selected in text level should be accompanied by lack of prosodic emphasis, otherwise, they are marked as “STRESS” words.



The detection of specific sets of words

- is used in regard to the detection of “NON-NEUTRAL” elements.
- These words are often combined with paralinguistic elements. However, these features are not always present or not easily detectable by the international public.
- The detection of these words is based on the flouting of the Gricean Cooperativity Principle, especially in regard to the violation of the Maxims of Quality and Quantity [2], [6], [7].



Specifically, the strategy concerns morphological processing

- operating on **(A) a word-stem basis** [2] involving the detection of
 - (1) **adjectives and adverbials**, containing **semantic features** related to **(i) descriptive features (ii) mode (iii) malignant/benign action** or **(iv) emotional/ethical gravity**,
 - (2) **verb-stems** from verbs containing **semantic features** (including implied connotations in language use) related to **(i) mode (ii) malignant/benign action** or **(iii) emotional/ethical gravity**[2].
 - These verb stems are located low in an ontology, approachable with Selectional Restrictions [5] of the modifying type (and/or Wordnets).



Morphological processing

- also operates **on (B) a suffix basis** involving the detection of
- **(2) suffixes producing diminutives** and
- **(3) a predefined set of derivational suffixes** resulting to a **nominalization of verbs** (derivational suffixes producing participles and actor thematic roles are excluded) or a **verbalization or adjectivization of proper nouns**.
- Thus, a specified and finite set of "marked" suffixes (such as, “-erei”) is defined, as well as a defined group of "marked" verb-stems, such as “schuften” (partially equivalent to “to slave away”).



Examples

- Typical examples of the “NON-NEUTRAL” category occurring in the on-line spoken texts are the expressions
- “(ein) schoenes (Wahlversprechen)” (“that’s some (ironic: great) pre-election promise) and
- “zurueckegegerudert” (= to row back, used instead of the expression “to go back”)
 - (Speaker: Correspondent (Male), Spiegel Online, CDU/CSU-Wahlprogramm: Wer glaubt an Steuergeschenke? 29.06.2009).



Table 1. Levels of proposed annotation module and transcription tool

AVAILABLE TRANSCRIPTION TOOL: Speech Signal and/or Video & Transcribed Text and annotation scheme /respective levels provided by tool

MODULE :

LEVEL 1: Automatic word spotting and highlighting & combination with speech signal and/or video in time

LEVEL 2: Mapping of highlighted words with speech signal and/or video in time & respective tag : “STRESS”, “CASUAL”, “NON-NEUTRAL”

LEVEL 3: (Optional) Template for additional comments by User (comparison with other paralinguistic elements)



4. Conclusions and Further Research

- The present approach intends to capture the **three most commonly occurring categories** of **lexical** information related to **paralinguistic** information constituting connotative features in **spoken German journalistic texts**.
- For the **international audience**, the **elements selected by the module** can be “**safer**” **pointers** to the intentions and/or spirit of the speaker than most culture-specific paralinguistic elements related only to prosody and gesture.
- **Further research** in spoken German journalistic texts may provide more categories of connotative information not easily detectable to the international public.
- **Implementation** of the proposed annotation module to various user groups such as professionals and/or students will provide evaluation results for further development.



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· Last modified: 2009/07/14 by viswhat, date accessed: 03.09.15

Εικόνα 2: Anvil Software transcription tool: <http://www.anvil-software.de/>, date accessed: 13.09.2015



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