Spoken Texts, Linguistics and Dictionaries

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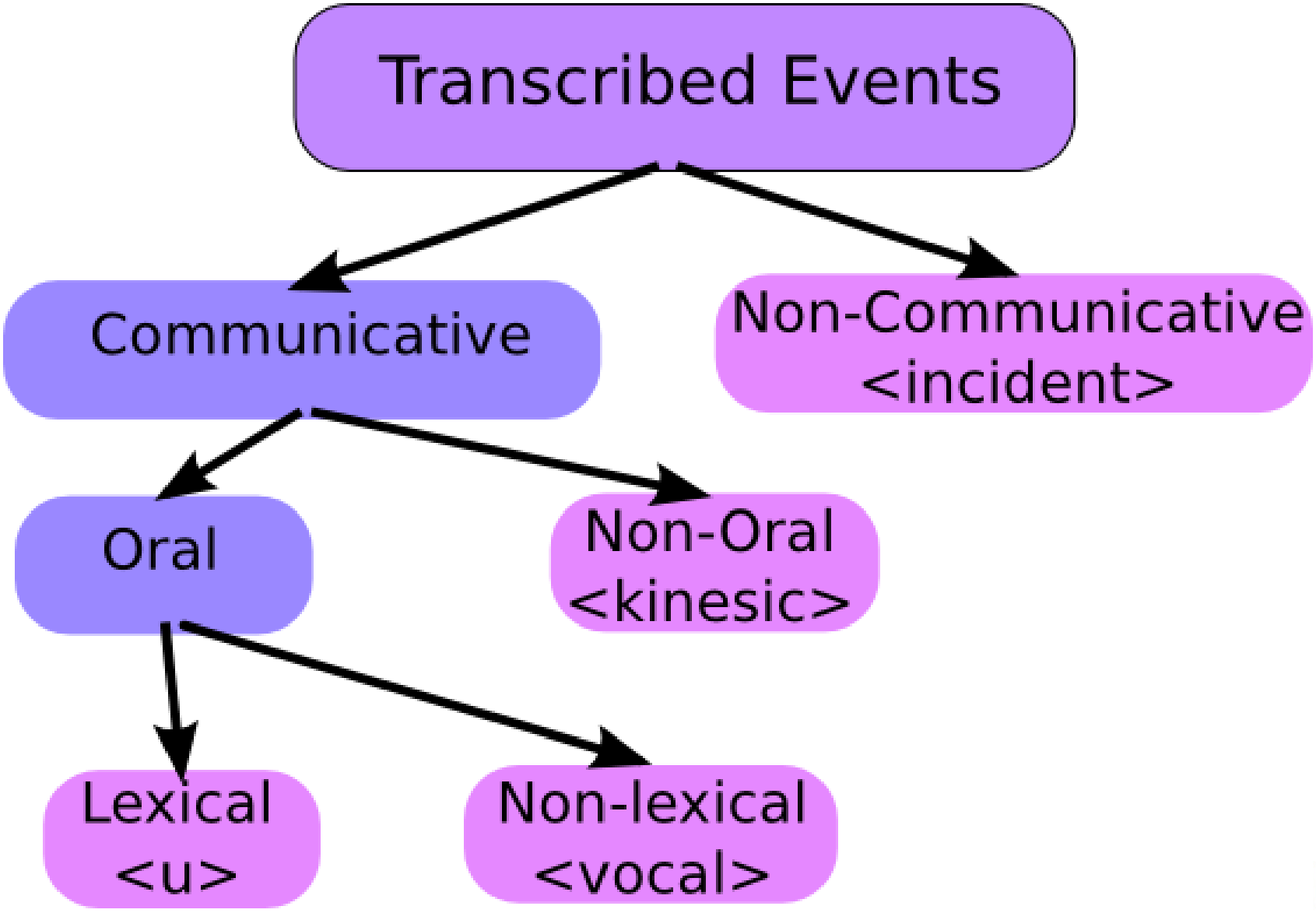
Spoken Texts

A spoken text may contain any of the following components:

- utterances
- pauses
- vocalized but non-lexical phenomena such as coughs
- kinesic (non-verbal, non-lexical) phenomena such as gestures
- entirely non-linguistic incidents occurring during and possibly influencing the course of speech
- writing, regarded as a special class of incident in that it can be transcribed, for example captions or overheads displayed during a lecture
- shifts or changes in vocal quality

What sort of events?



<teiCorpus> reminder

Grouping documents into a corpus allows you to factor out the metadata they have in common:

```
<teiCorpus>
  <teiHeader>
<!-- shared metadata -->
  </teiHeader>
  <TEI>
    <teiHeader>
<!-- specific metadata -->
    </teiHeader>
    <text>
<!-- ... -->
    </text>
  </TEI>
  <TEI>
    <teiHeader>
<!-- specific metadata -->
    </teiHeader>
    <text>
<!-- ... -->
    </text>
  </TEI>
</teiCorpus>
```

The notion of "utterance"

- problematic, but pragmatic
- a sequence of speech from a single speaker
- may be grouped into higher-level s
- or fragmented into smaller segments <seg> or <s>
- the *@who* attribute points to speaker information

Transcriptions of Speech

Elements defined: <broadcast>, <equipment>, <incident>, <kinesic>, <pause>, <recording>, <recordingStmt>, <scriptStmt>, <shift>, <u>, <vocal>, <writing>,

Classes defined: att.duration, model.divPart.spoken, model.global.spoken, model.recordingPart

Simple examples

Mixture of utterance and ‘paralinguistic’ information:

```
<u who="#Jan">This is just delicious</u>
<incident>
 <desc>telephone rings</desc>
</incident>
<u who="#Kim">I'll get it</u>
<u who="#Tom">I used to <vocal>
   <desc>coughs</desc>
 </vocal> smoke a lot</u>
<u who="#Bob">
 <vocal>
   <desc>sniffs</desc>
 </vocal>He thinks he's tough
</u>
<vocal who="#Ann">
 <desc>snorts</desc>
</vocal>
<u who="#Tom">Yeah
<kinesic>
   <desc>gives uplifted middle finger sign</desc>
 </kinesic>
</u>
```

Back channelling

```
<u who="#a">So what could I have done <vocal who="#b">
   <desc>tut-tutting</desc>
  </vocal> about it anyway?</u>
```

Example using other TEI elements

```
<u who="#mar">you never <pause/> take this cat for
show and tell
<pause/> meow meow</u>
<u who="#ros">yeah well I dont want to</u>
<incident>
 <desc>toy cat has bell in tail which continues
    to make a tinkling sound</desc>
</incident>
<u who="#ros">because it is so old</u>
<u who="#mar">how <choice>
   <orig>bout</orig>
   <reg>about</reg>
 </choice>
 <emph>your</emph> cat <pause/>yours is <emph>new</emph>
 <kinesic>
   <desc>shows Father the cat</desc>
 </kinesic>
</u>
<u trans="pause" who="#fat">thats <pause/> darling</u>
<u who="#mar">no <emph>mine</emph> isnt old
mine is just um a little dirty</u>
```

Shifts in voice quality

- Classic multiple hierarchy problem
  - can use <shift> or <milestone> to mark boundaries...
  - ... or can use typed <seg> elements
- useful also for code shifting

```
<u who="#LB">
 <shift feature="loud" new="f"/>Elizabeth
</u>
<u who="#EB">Yes</u>
<u who="#LB">
 <shift feature="loud"/>Come and try this <pause/>
 <shift feature="loud" new="ff"/>come on
<shift feature="code" new="fr-mru"/> 'tin va!

</u>
```

Sample prosodic feature list

(based on Boase, Survey of English Usage, 1990)

tempo	(fast, slow, getting faster, slower, etc.)
loud	loud, soft, getting louder, slower
pitch range	high, low, wide, narrow, ascending...
tension	slurred, tense, staccato, legato...
rhythm	regular, irregular, spiky rising or falling...
voice quality	whisper, husky, falsetto, giggle, sobbing, yawning, sighing...

Researchers need to define their own terms

<shift/> example

```
<u who="#a">Listen to this <shift new="reading"/>The government is
confident, he said, that the current economic problems will be
completely overcome by June<shift/> what nonsense!</u>
```

or as an <incident>

```
<u who="#a">Listen to this
<incident>
   <desc>reads aloud from newspaper</desc>
 </incident> what nonsense!</u>
```

<vocal> vs <u>

Compare:

```
<vocal who="#ann">
  <desc>snorts</desc>
</vocal>
```

and

```
<u who="#ann">
  <vocal>
    <desc>snorts</desc>
  </vocal>
</u>
```

<writing> example

```
<u who="#a">look at this</u>
<writing who="#a" type="newspaper" gradual="false">
Government claims economic problems <soCalled>over by
June</soCalled>
</writing>
<u who="#a">what nonsense!</u>
```

Timing issues

- pausing: use <pause> element
- duration: use @*dur* attribute
- synchronization: use @*synch* attribute
- overlap: use @*trans* attribute

<pause> example

```
<u>Okay <pause dur="PT2M"/>U-m<pause dur="PT75S"/>the scene opens
up
<pause dur="PT50S"/> with <pause dur="PT20S"/> um
<pause dur="PT145S"/> you see a tree okay?</u>
```

Overlap

```
Mutt: Have you heard the --
Jeff: the election result?
Mutt: It's a disaster!
```

```
<u who="#mutt">have you heard the</u>
<u trans="latching" who="#jeff">the election result</u>
<u who="#mutt">its a disaster</u>
<u who="#jeff" trans="overlap">its a miracle</u>
```

More overlap

```
<u who="#tom">I used to smoke <anchor xml:id="TS-p10"/> a lot more
than this <anchor xml:id="TS-p20"/> but I never inhaled the
smoke</u>
<u start="#TS-p10" end="#TS-p20" who="#bob">You used to smoke</u>
```

Synchronization

```
<u who="#mutt">have you heard <anchor synch="#t1"/>the</u>
<u who="#jeff" synch="#t1">the election result</u>
<u who="#mutt" synch="#t2">its a disaster</u>
<u who="#jeff" synch="#t2">its a miracle</u>
<!-- Elsewhere in Document -->
<timeline origin="#t1">
 <when xml:id="t1"/>
 <when xml:id="t2"/>
</timeline>
```

Participant Description

```
<particDesc>
 <listPerson>
  <person xml:id="P-1234" sex="2" age="mid">
   <p>Female informant, well-educated, born in Shropshire UK, 12
Jan 1950, of unknown occupation. Speaks French fluently.
Socio-Economic status B2.</p>
  </person>
  <person xml:id="P-4332" sex="1">
   <persName>
    <surname>Hancock</surname>
    <forename>Antony</forename>
    <forename>Aloysius</forename>
    <forename>St John</forename>
   </persName>
   <residence notAfter="1959">
    <address>
     <street>Railway Cuttings</street>
     <settlement>East Cheam</settlement>
    </address>
   </residence>
   <occupation>comedian</occupation>
  </person>
 </listPerson>
</particDesc>
```

<scriptStmt> example

```
<sourceDesc>
 <scriptStmt xml:id="CNN12">
  <bibl>
   <author>CNN Network News</author>
   <title>News headlines</title>
   <date when="1991-06-12">12 Jun 91</date>
  </bibl>
 </scriptStmt>
</sourceDesc>
```

Similarly for recordings...

```
<recordingStmt>
 <recording type="audio" dur="P30M">
  <respStmt>
   <resp>Location recording by</resp>
   <orgName>Sound Services Ltd.</orgName>
  </respStmt>
  <equipment>
   <p>Multiple close microphones mixed down to stereo Digital
Audio Tape, standard play, 44.1 KHz sampling frequency</p>
  </equipment>
  <date>12 Jan 1987</date>
 </recording>
</recordingStmt>
```

Detailed <recording>

```
<recording type="audio" dur="P10M">
 <equipment>
  <p>Recorded from FM Radio to digital tape</p>
 </equipment>
 <broadcast>
  <bibl>
   <title>Interview on foreign policy</title>
   <author>BBC Radio 5</author>
   <respStmt>
    <resp>interviewer</resp>
    <name>Robin Day</name>
   </respStmt>
   <respStmt>
    <resp>interviewee</resp>
    <name>Margaret Thatcher</name>
   </respStmt>
  </bibl>
 </broadcast>
</recording>
```

... and for settings

```
<setting xml:id="KDFSE002" n="063505" who="#PS0M6">
  <name type="place">Lancashire: Morecambe </name>
  <locale> at home </locale>
  <activity> watching television </activity>
</setting>
```

Linguistics

- associating simple linguistic analyses and interpretations with text elements
- semantic or syntactic interpretations which an encoder wishes to attach to all or part of a text
- mainly covering linguistic information
- as often in the TEI, you can do the same thing in many ways:
  - using generic <seg> elements with *@type* attributes
  - using the straightforward *canned* analyses described here
  - using the more powerful and general TEI Feature Structures

Linguistic units

To mark up text for linguistic purposes:

- `<s>` (s-unit) contains a sentence-like division of a text.
- `<cl>` (clause) represents a grammatical clause.
- `<phr>` (phrase) represents a grammatical phrase.
- `<w>` (word) represents a grammatical (not necessarily orthographic) word.
- `<m>` (morpheme) represents a grammatical morpheme.
- `<c>` (character) represents a character.
- `<pc>` (punctuation character) represents a single punctuation mark.

From the att.segLike class, these elements all have *@type* and *@function* attributes

Example of linguistic markup

Compare

```
<u>Like a suck of one of my sweets?</u>
<u>No I don't take sweets from strangers, oh God</u>
```

with....

linguistic markup

```
<u who="PS1K5">
 <s n="5963">
  <w type="AV0">Like</w>
  <w type="AT0">a</w>
  <w type="NN1">suck</w>
  <w type="PRF">of</w>
  <w type="CRD">one</w>
  <w type="PRF">of</w>
  <w type="DPS">my</w>
  <w type="NN2">sweets</w> ?</s>
</u>
<u trans="smooth" who="PS1BY">
 <s n="5964">
  <w type="ITJ">No </w>
  <w type="PNP">I </w>
  <w type="VDB">do</w>
  <w type="XX0">n't </w>
  <w type="VVI">take </w>
  <w type="NN2">sweets </w>
  <w type="PRP">from </w>
  <w type="NN2">strangers</w>
  <c type="PUN">, </c>
  <w type="ITJ">oh </w>
  <w type="NP0">God</w>
 </s>
```

Mixing analysis with structure

Analytic units often cross structural boundaries. The <cl> (clause) elements here cross the verse lines (<l>). We can use the *@part* attribute to show how a <cl> can be assembled:

```
<div type="stanza">
 <l>
  <cl part="I">Tweedledum and Tweedledee</cl>
 </l>
 <l>
  <cl part="F">Agreed to have a battle;</cl>
 </l>
 <l>
  <cl part="I">For Tweedledum said Tweedledee</cl>
 </l>
 <l>
  <cl part="F">Had spoiled his nice new rattle.</cl>
 </l>
</div>
```

Phrase segmentation

```
<s>
 <cl type="finite-declarative" function="independent">
  <phr type="NP" function="subject">It</phr>
  <phr type="VP" function="predicate">
   <phr type="V" function="verb-main">was</phr>
     also
  <phr type="NP" function="predicate-nom.">a crucial year for
me</phr>
  </phr>
 </cl>
</s>
```

Words with lemmas and morphemes with types

```
<s xml:lang="la">
  <w lemma="timeo">timeo</w>
  <w lemma="danaii">Danaos</w>
  <w lemma="et">et</w>
  <w lemma="donum">dona</w>
  <w lemma="fero">ferentes</w>
</s>
```

or

```
<w type="adjective">
  <m type="prefix" baseForm="con">com</m>
  <m type="root">fort</m>
  <m type="suffix">able</m>
</w>
```

Nested <w>

```
<s>
  <w>I</w>
  <w>
    <w>did</w>
    <m>n't</m>
  </w>
  <w>do</w>
  <w>it</w>
  <pc>!</pc>
</s>
```

Word analysis

```
<s>
  <w ana="#AT0">The</w>
  <w ana="#NN1">victim</w>
  <w ana="#POS">'s</w>
  <w ana="#NN2">friends</w>
  <w ana="#VVD">told</w>
  <w ana="#NN2">police</w>
  <w ana="#CJT">that</w>
  <w ana="#NP0">Kruger</w>
  <w ana="#VVD">drove</w>
  <w ana="#PRP">into</w>
  <w ana="#AT0">the</w>
  <w ana="#NN1">quarry</w>
  <w ana="#CJC">and</w>
  <w ana="#AV0">never</w>
  <w ana="#VVD">surfaced</w>
</s>
```

Interpretation

```
<interpGrp type="POS">
  <interp xml:id="AT0">Definite article</interp>
  <interp xml:id="AV0">Adverb</interp>
  <interp xml:id="CJC">Conjunction</interp>
  <interp xml:id="CJT">Relative that</interp>
  <interp xml:id="NN1">Noun singular</interp>
  <interp xml:id="NN2">Noun plural</interp>
  <interp xml:id="NP0">Proper noun</interp>
  <interp xml:id="POS">Genitive marker</interp>
  <interp xml:id="PRP">Preposition</interp>
  <interp xml:id="VVD">Verb past tense</interp>
</interpGrp>
```

Dictionaries

The TEI defines a module for encoding human-oriented monolingual and multilingual dictionaries, glossaries, and similar documents. These are not just for standalone use, but could be for a wordlist or glossary accompanying a digital edition.

Dictionary Structures

- <entry> contains a reasonably well-structured dictionary entry
- <entryFree> (unstructured entry) contains a dictionary entry which does not necessarily conform to the constraints imposed by the entry element
- <superEntry> groups successive entries for a set of homographs

And other structures like...

- <hom> (homograph) groups information relating to one homograph within an entry
- <sense> groups together all information relating to one word sense in a dictionary entry, for example definitions, examples, and translation equivalents

Inside these structures

- <form> groups all the information on the written and spoken forms
- <gramGrp> groups morpho-syntactic information about a lexical item
- <def>contains a definition
- <cit> contains a cited quotation
- <usg> contains usage information
- <xr> contains a cross-reference
- <etym> encloses the etymological information
- <re> contains a related entry
- <note> contains a note or annotation.

<entry> example

```
<entry>
 <form>
  <orth>competitor</orth>
  <hyph>com|peti|tor</hyph>
  <pron>k@m"petit@(r)</pron>
 </form>
 <gramGrp>
  <pos>n</pos>
 </gramGrp>
 <def>person who competes.</def>
</entry>
```

Multiple senses

```
<entry>
 <form>
  <orth>disproof</orth>
  <pron>dIs"pru:f</pron>
 </form>
 <gramGrp>
  <pos>n</pos>
 </gramGrp>
 <sense n="1">
  <def>facts that disprove something.</def>
 </sense>
 <sense n="2">
  <def>the act of disproving.</def>
 </sense>
</entry>
```

Inside <form>

- <orth> gives the orthographic form
- <pron> contains the pronunciation(s)
- <hyph> contains a hyphenated form
- <syll> contains the syllabification
- <stress> contains the stress pattern
- <lbl> contains a label for a form, example, translation, or other piece of information

What? There is more inside <form>?

- <gram> for grammatical information
- <gen> identifies the morphological gender
- <number> indicates grammatical number
- <case> contains grammatical case
- <per> contains the grammatical person (1st, 2nd, 3rd, etc.)
- <tns> indicates the grammatical tense
- <mood> contains information about the grammatical mood of verbs
- <iType> indicates the inflectional class

<form> example

```
<form>
  <orth>brag</orth>
</form>
<gramGrp>
  <pos>vb</pos>
</gramGrp>
<form type="infl">
  <orth>brags</orth>
  <orth>bragging</orth>
  <orth>bragged</orth>
</form>
```

Another tasty <entry>

```
<entry>
  <form>
    <orth>rémoulade</orth>
    <pron>Remulad</pron>
  </form>
  <gramGrp>
    <pos>n</pos>
    <gen>f</gen>
  </gramGrp>
  <cit type="translation" xml:lang="en">
    <quote>remoulade</quote>
    <quote>rémoulade</quote>
    <def>dressing containing mustard and herbs</def>
  </cit>
</entry>
```