Creating Silver Standard Annotations for a Corpus of Non-Standard Data

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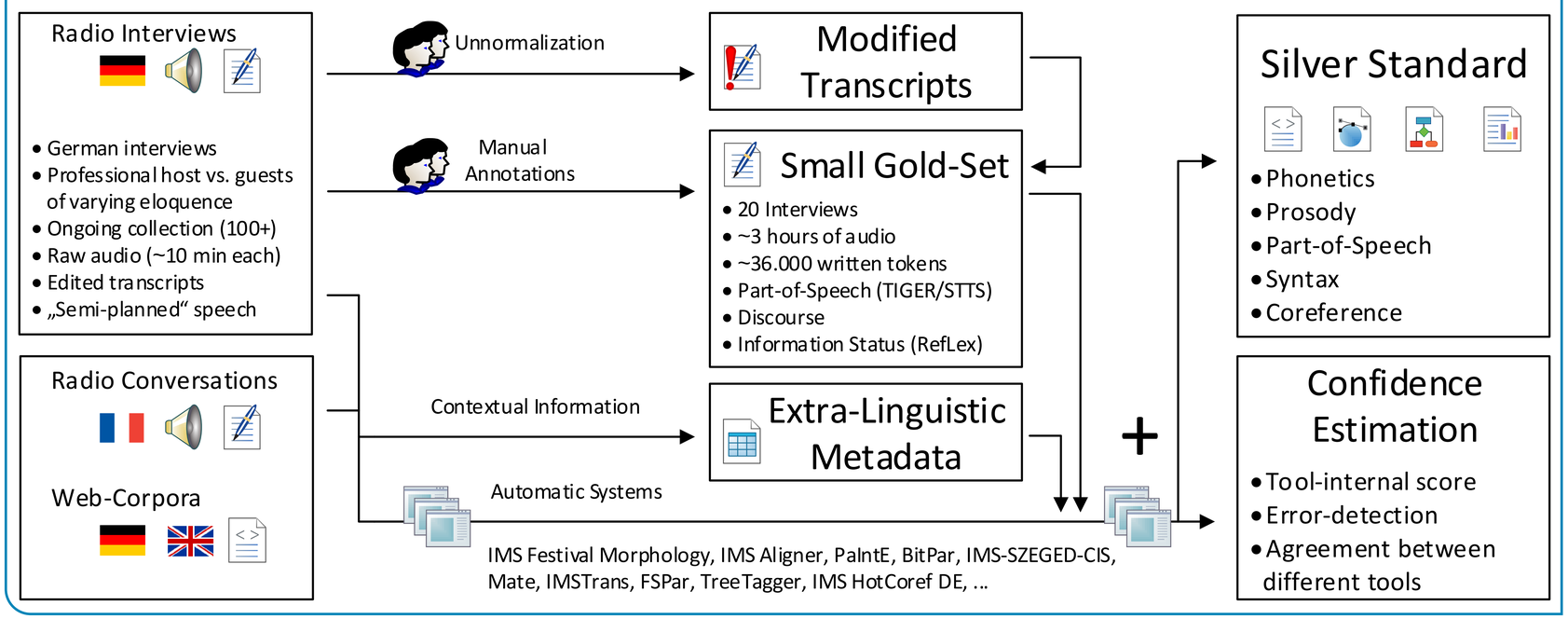
Annotation Workflow



Data

- Non-static collection of German radio interviews (currently 100 interviews of about 10 minutes each, starting from May 2014)
- Multi-modal data: audio recordings and written transcripts
- Both types of available primary data are equal in status: transcript reflects decisions of transcriber
- Small manually annotated gold-standard set
  - additional manual unnormalization step for transcripts to further move towards non-canonicality
  - 20 interviews totalling about 3 hours and 36.000 written tokens
  - balanced for gender of host and guest and the guest's respective political role
  - annotated for part-of-speech with TIGER/STTS guidelines by Brants et al. (2004) and Schiller et al. (1999) with additions by Seeker (2016), information status according to RefLex scheme by Baumann and Riester (2012), and discourse.
- Canonicality of the data defined by its processability (Petrov and McDonald, 2012)
- Interviews represent a setup between planned/read speech (laboratory conditions: canonical data) and spontaneous conversation (non-canonical data)

Confidence Estimation

- Provided as additional (meta-)annotation layers so they can easily be used in exploration tools like ICARUS (Gärtner et al., 2013)
- Exploiting annotation redundancies
  - horizontally (multiple annotations of same type)
  - vertically (related annotations of different types)
- Multiple sources for confidence estimation
  - exposure of tool-internal scores
  - counting relative number of tool-specific fallback decisions, e.g. root attachment of leftover tokens (Faaß and Eckart, 2013)
  - error or inconsistency detection (DECCA, Boyd et al., 2008)
  - agreement scores between multiple tools (e.g. George, 2016)
  - evaluation results on appropriate gold-standard subset
- Ideally at least one confidence estimation per "real" annotation
- No standardization defined for confidence values yet
  - no general interpretation – only tool-internal comparability
  - no comparability for confidence values from different sources
- Confidence information can then be used to create excerpts of the data suitable for a given research question or application

Unnormalization

- Introducing features of orality into the edited transcript
- Process: detailed annotation guidelines, two annotators per transcript, conflict resolution by a thrid person
- Main principles:
  - correct and completely heard words should be part of the modified transcript
  - the transcript is changed as little as possible
- Result: non-canonical data for speech and text processing alike

Examples: audio, transcript, unnormalization

- Insertion of omitted words, but no inclusion of filled pauses
  - obwohl die [...] in vielfach **äh** günstiger sind als
  - obwohl die [...] vielfach günstiger sind als
  - obwohl die [...] in vielfach günstiger sind als
- Insertion of repeats, but no inclusion of false starts
  - teilweise aber nicht für **je**.. für alle Geräte
  - Teilweise, aber nicht für alle Geräte.
  - Teilweise, aber nicht für, für alle Geräte.
- Reversion of syntactic correction
  - Von Hamburg bis Rheinland-Pfalz **gibt es** regelrechte Konjunkturprogramme für den Bau von Holzhäusern, die man später auch für studentische Wohnungen und für anderen Bedarf nutzen kann.
  - Von Hamburg bis Rheinland-Pfalz werden regelrechte Konjunkturprogramme für den Bau von Holzhäusern, die man später auch für studentische Wohnungen, für anderen Bedarf nutzen kann.
- Omission of inserted words:
  - Und ich glaube, oder ich weiß auch
  - Und ich weiß auch

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