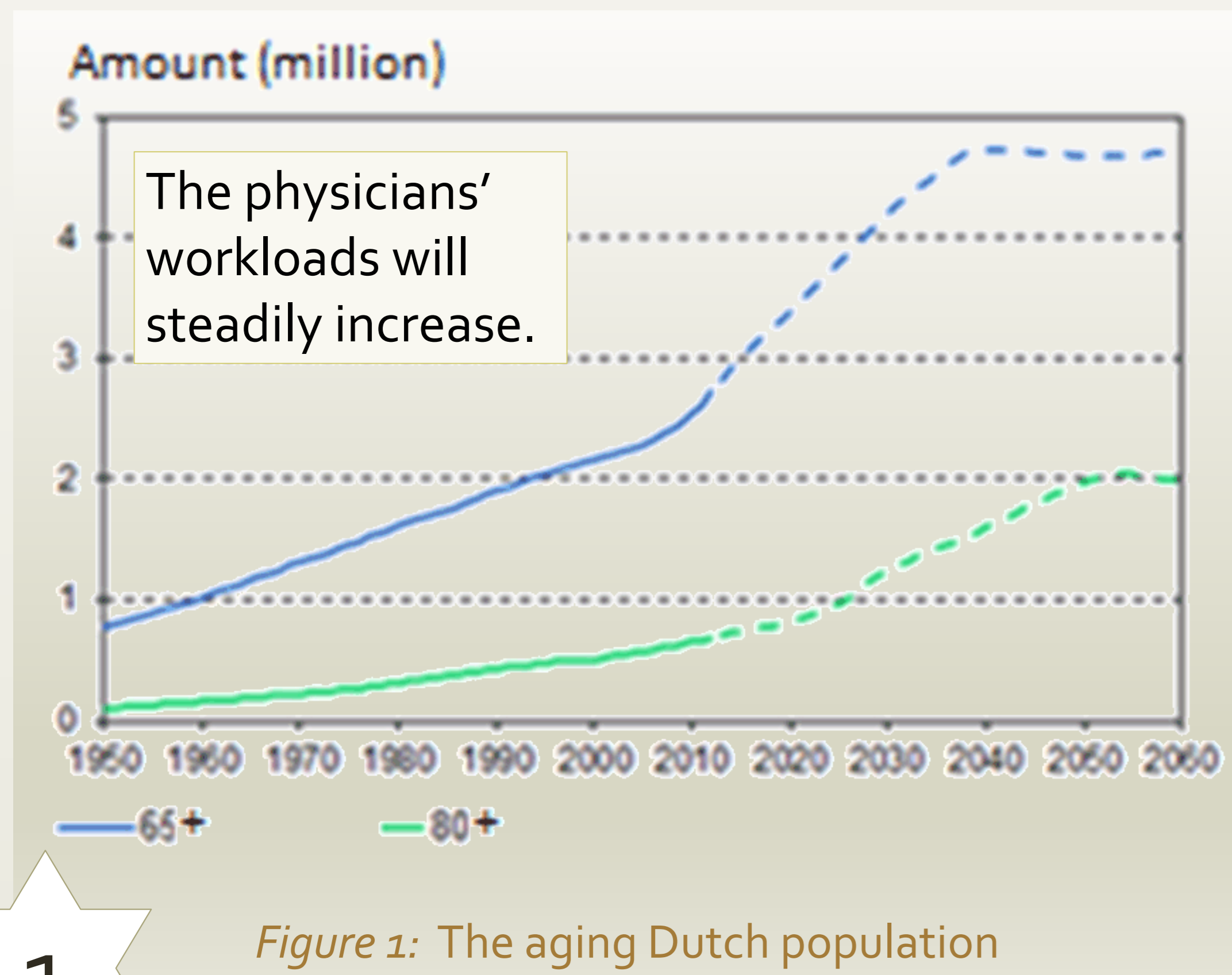


SPEECH TECHNOLOGY IN DUTCH HEALTH CARE: A QUALITATIVE STUDY

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Keywords: Speech Technology, Speech Recognition, Natural Language Processing, Health Care.

Objective: To investigate the barriers and possibilities of speech technology in Dutch health care.



Pros

of speech technology in literature

- 1 Improved and time-saving workflow in provision of health care services
- 2 Online registration (coordination of activity and documentation)
- 3 Quick access to documents
- 4 Reduction in cost and time in documenting information
- 5 Accurate (99%), legible and complete information
- 6 Reduction in patients' duration of hospital stay
- 7 Quality of patient care increases
 - Patient friendliness
 - Patient security

2

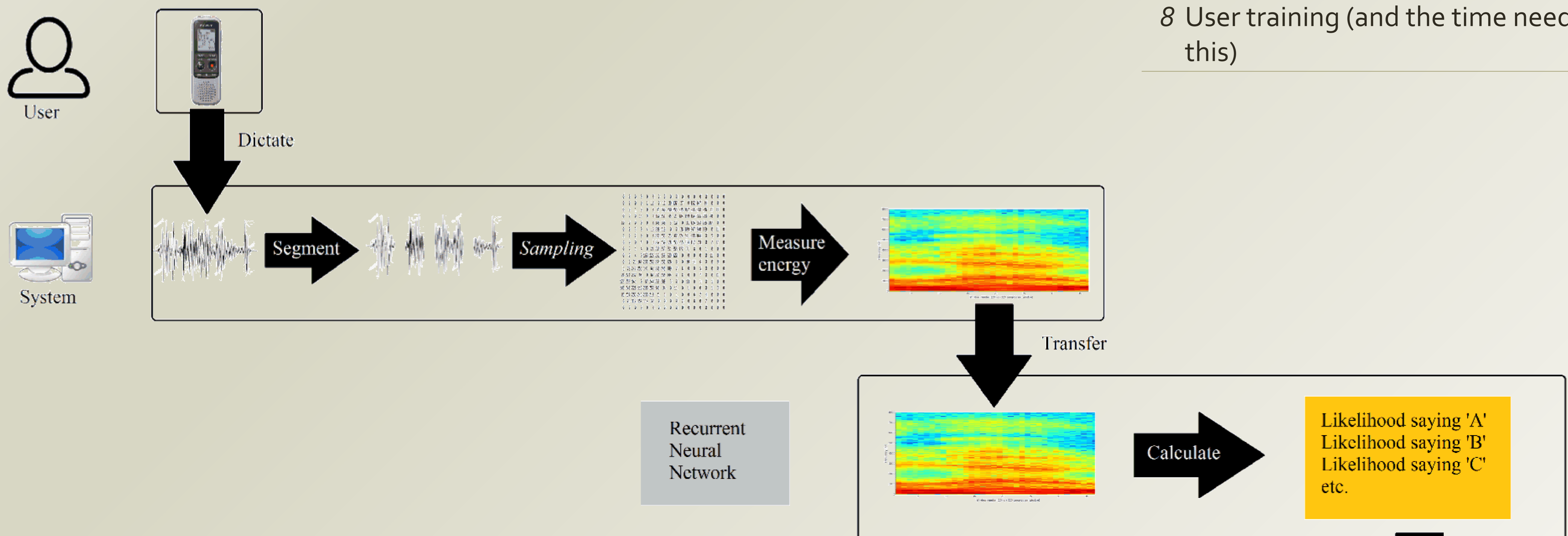
Cons

of speech technology in literature

- 1 Quality of the system depends on the dictionary
- 2 Initial cost of implementation and maintenance of technology
- 3 Sound pollution (noise)
- 4 Variety of accents
- 5 Adoption of work and acceptance by doctors and other health care providers
- 6 Correcting mistakes is time-consuming and needs to be done dedicated
- 7 Hardware requirements (microphones, sound cards, and speech engine software)
- 8 User training (and the time needed for this)

1

3



4

Pros

of speech technology from 10 interviews in daily practice

- 1 Higher quality of documentation
 - More time → more complete
 - Faster documenting → requires less remembering
- 2 More patient friendly
- 3 In short time, better than typing
- 4 Decreased report turnaround time (RTT)
- 5 Less time needed for administration
- 6 Accuracy: 99%
- 7 Costs earned back by faster workflows
- 8 Useful for reports without standard template

Cons

of speech technology from 10 interviews in daily practice

- 1 Initial costs of speech technology are high
- 2 Recognition decreases
- 3 System makes a lot of errors
- 4 Users need to adapt their way of speaking
- 5 Transformation to speech technology costs time and money
- 6 Doctors and others need to dictate in the context of the dictionary
- 7 Doctors and others need to correct mistakes by themselves
- 8 Doctors and others need to control the report by themselves
- 9 The system has a long learning curve

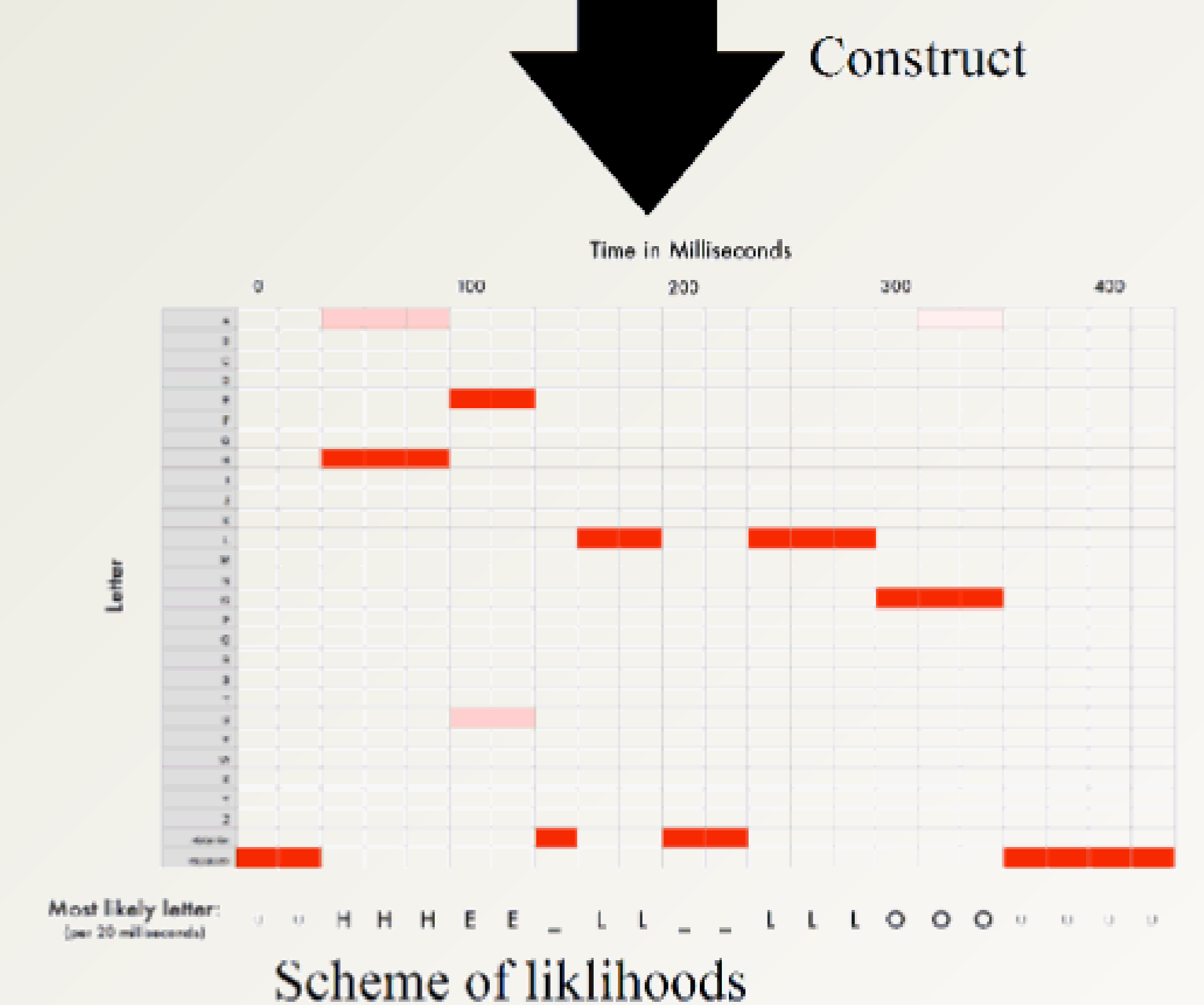


Figure 3: Process model from speech to text