# **2.2 Layers of information**

WhatsApp messages are built up in a hierarchy: a chat contains messages that contain tokens that contain characters. A corpus of WhatsApp chats should allow for all these layers to be queried. Additionally, there is meta-data about the chats (e.g. number of messages) and about the messages (e.g. the timestamp when they were written) and about the informant (e.g. his/her age) and about the tokens (e.g. part of speech). This makes our corpus a rather challenging and complex resource.

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	2005														
spk spk365 spk366				spk365											
	nke ade		vuoi	Aeh ho	solo 10 p	percento	di batteria	XO	Ah	ecco					
⊟ toke	n attributes								_					_	
tok	Anke	adesso	se	vuoi	Aeh	ho	solo	10	_	percento	di	batteria	XD	Ah	ecco
gloss	anche	adesso	se	vuoi	Aeh	ho	solo	10	_	percento	di	batteria	però	ah	ecco
tt_pos	ADV	ADV	PRO:refl	VER:pres	NOM	VER:p	ores ADV	NUM		NOM	PRE	NOM	ADV	INT	ADV
tt_lem	anche	adesso	50	volere	_UNKNOWN	N_ avere	solo	@care	d@	percento	di	batteria	però	ah	0000
⊖ mes	sage attribu	ites										_			
tok		Anke	adesso	se vuoi	Aeh ho	solo 10	percento	di b	atteri	а хо	Ah eo	200			
msg		Anke adesso se vuoi			Aeh ho solo 10 percento di batteria xo						Ah ecco				
msg_id		165379			165380						165381				
msg_type		content			content						content				
most_likely_lang		ita			ita						ita				
msg_tokens		4			8						2				
spk		spk365			spk366						spk365				
demographics_id		45			49						45				
gender		f			m						f				
age_range		18-24			25-34						18-24				
mothertongue		ita,Imo			ita						ita,Imo				
home postcode		1004			3014						1004				
school postcode					6500							_			
timestamp		30 mar	12.01		30 mar 13:32						30 mar 1:				

These layers can nicely be seen when browsing results from a query:

chat (complete)

Figure 1: Representation of layers when browsing results

### Chats

In this example, you find the chat back as an ID (chat138) at the top in pink in figure 1. If you want to see the whole chat, you see two options at the very bottom: chat (in context) (faster) or chat (complete) (can be slow). When you click on the little i in the top bar, you can also see meta data about the chat, such as the number of speakers, languages, total messages etc.

### Messages

In the chat in figure 1, you see three selected messages in blue:

- Message 165379: Anke adesso se vuoi
- Message 165380: Aeh ho solo 10 percento di batteria xo
- Message 165381: Ah ecco

As you can see, these messages have meta data assigned to them as well, e.g. the message ID and the speaker (these pieces of information are always available) as well as information provided by the informant such as age, mothertongue etc.

### Tokens

The individual tokens are marked in green in figure 1 and they are aligned to the message to which they belong.

Tokens, too, (can) have annotations that are assigned to them. In figure 1 you have the following meta data:

- Gloss: a normalization, i.e. a "translation" into standard spelling. A good example here is *xo*, which was normalized as <però>.
- tt\_pos: A part-of-speech annotation generated with TreeTagger.
- tt\_lem: The lemma for each token as it was created by TreeTagger.

The red token *di*, by the way, is the one that we queried for to create this screen shot.

## Labels

On all three layers, i.e. for chats, messages and tokens, as well as for all the meta data, you see the labels, e.g. msg\_id, gloss, home\_postcode etc. These labels are used for queries.

Examples:

- If you want to see the whole message 165380, your query is msg\_id="165380"
- If you want to find verbs in the present tense, your query is tt\_pos="VER:pres"

To see the query-labels for the chat as well as all the labels available in a specific sub-corpus, check the information for the sub-corpus.

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