

On the
foundation of
user feedback
concepts:

Extension of a
communication
ontology



Itzel Morales Ramírez

Agenda

- Motivation & Problem
- Communication ontology
- User Feedback concepts
- Conclusion

Motivation

- Mature the work presented in iStar2013
- User feedback encompasses some terms widely used in the RE field, as for instance:
 - feature request
 - bug report
 - user comment
 - etc.

Timeline

- 2009- Maalej et al., Context-aware user input mode (problems)
- 2009- Cleland-Huang et al., Discussion threads by topics (feature request)
- 2010- Seyff et al., Mobile requirements iRequire (needs)
- 2010- Ko et al., Bug reporting (defects)
- 2011- Schneider et al., Spontaneous feedback (feedback)
- 2013- Pagano et al., Empirical study (user feedback)
- 2013- Carreño et al., Software requirements evolution (user comments)

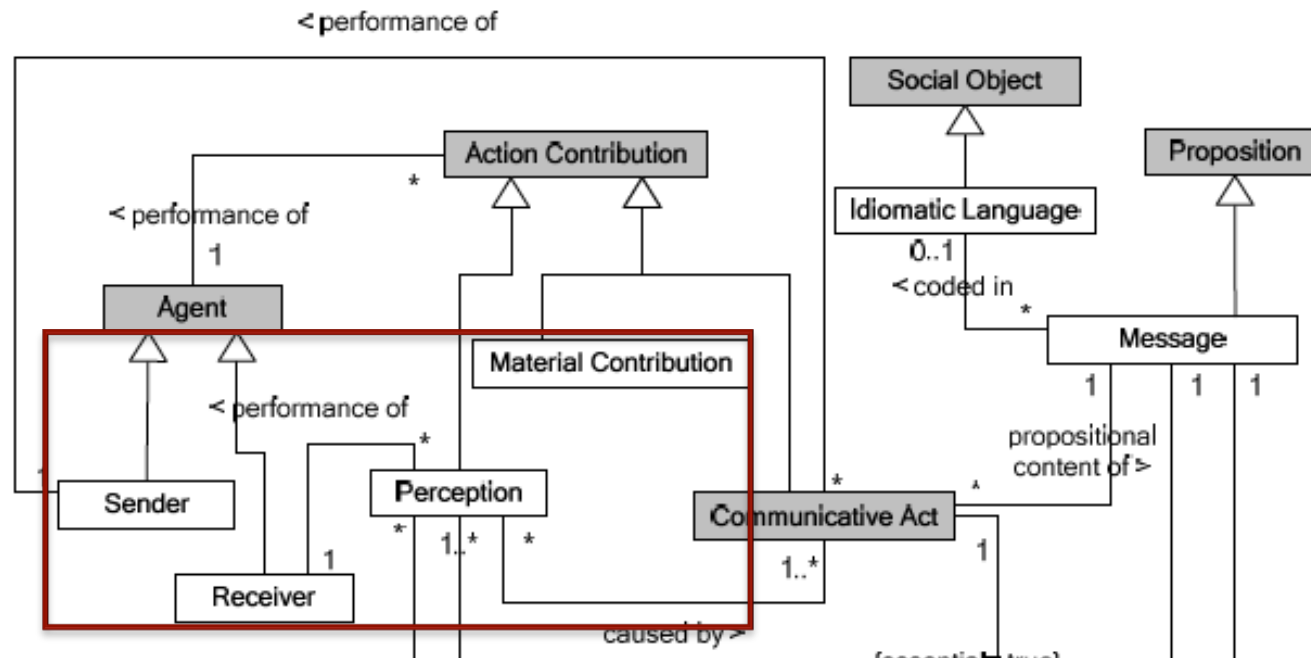
Problem

- No concrete definition
- Definition not founded in any ontology
- Meaningful information with the purpose of suggesting new needs, modifications, problem, etc., that will improve a software application.

Communication ontology

- Communication is an exchange of information between two individuals at least, where there is a mutual understanding.
- Extension of UFO (Unified Foundational Ontology)
- Communication ontology takes specific concept from UFO-C (social entities)

Ontology



Some definitions

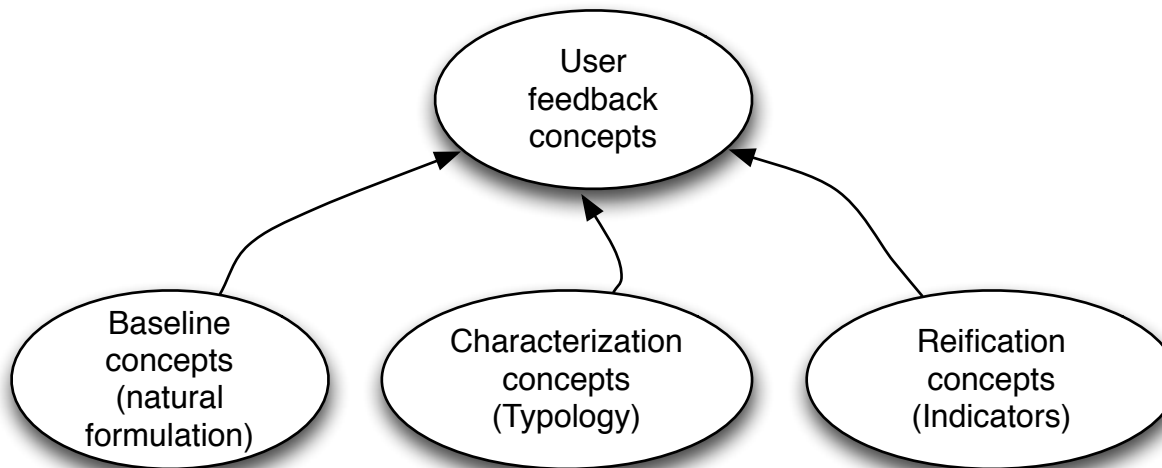
- **Material contribution:** contributions that modify the state of the world in a material way (physical). These contributions don't contain messages.
- **Perception:** it is associated to a message
 - **Message:** it contains something that it is desired to be transmitted, i.e. a message is a propositional content of a communicative act, coded in a **Idiomatic Language**

User feedback concepts

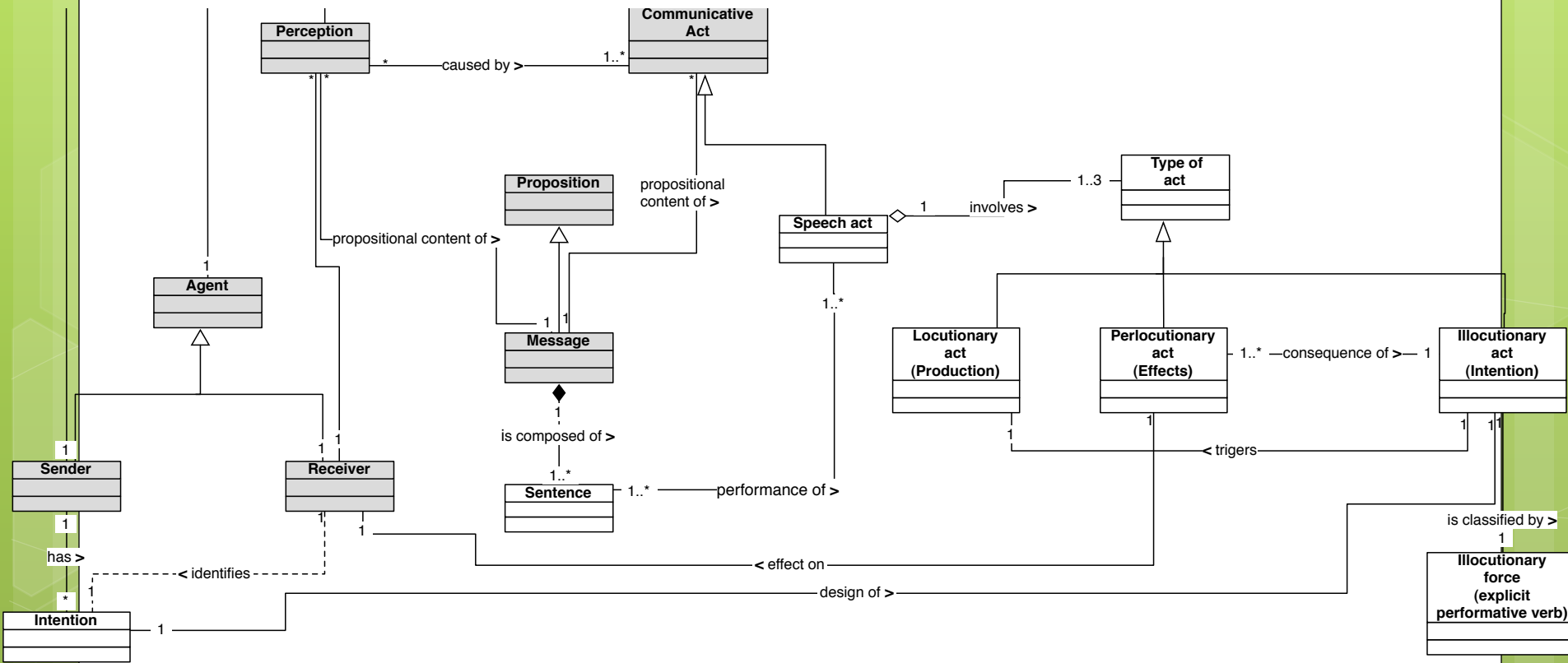
- Meaningful information with the purpose of suggesting new needs, modifications, problem, etc., that will improve a software application.

Abstract definition that
needs to be well founded

Aspects involved in its conceptualization



Baseline concepts



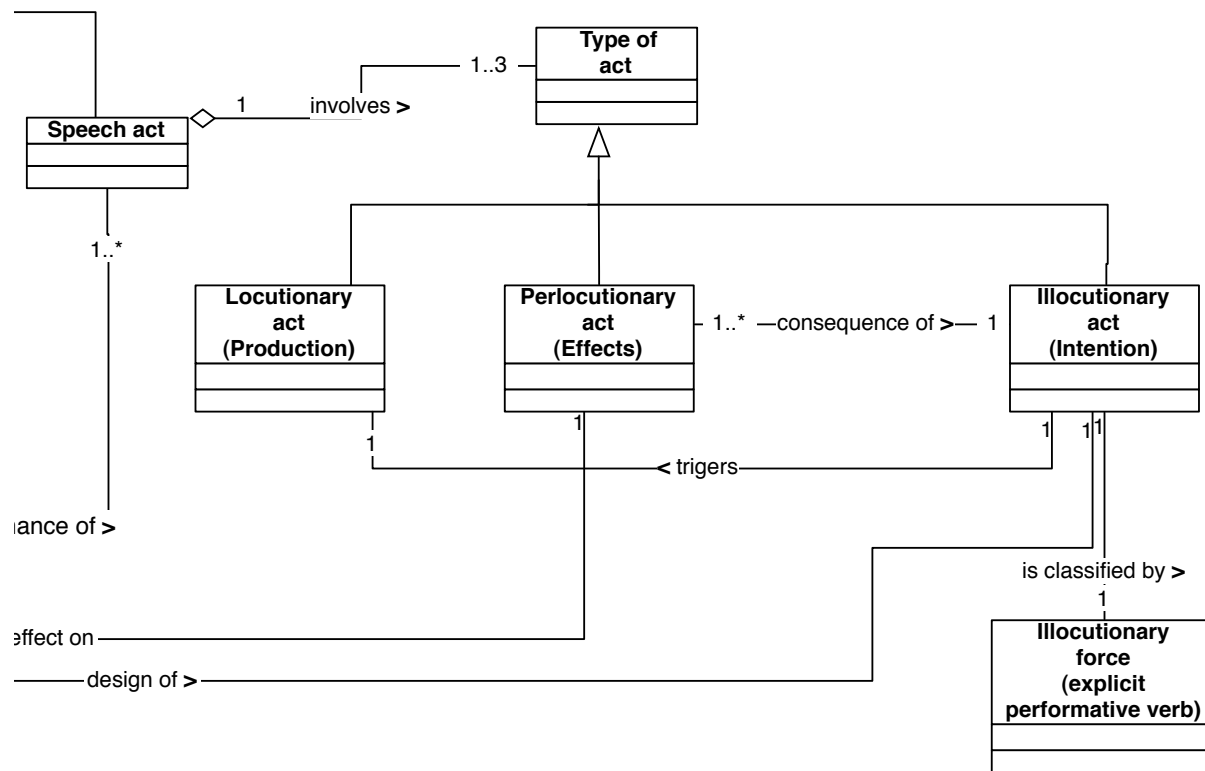
Natural formulation:

- **Speech acts:** are the basic unit in a linguistic communication. For each speech act there is a possible **Sentence** or set of sentences the literal utterance would constitute a performance of that speech act.

Natural formulation: (2)

- **Speech acts involve:**
 - **Locutionary act** is the act of “saying something”.
 - **Illocutionary act** makes reference to the way in which the locutions are used and in which sense.
 - **Perlocutionary act** is the effect on the audience that may be achieved.

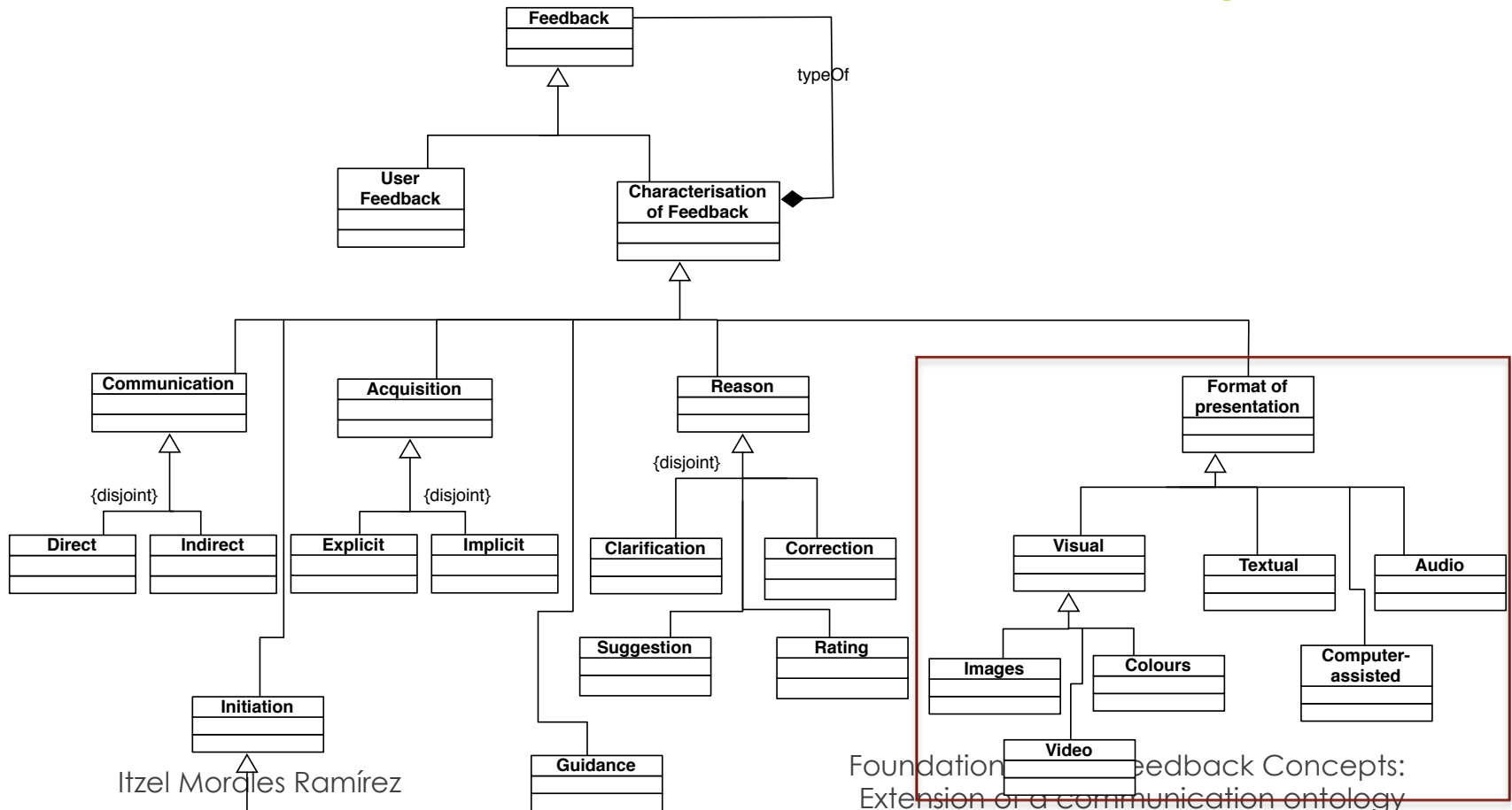
Natural formulation: (3)



Example (OSS forum)

- Consider the utterance “Is there some example code I could look at?”,
the **Locutionary act** corresponds to the utterance of this sentence,
the **Illocutionary act** corresponds to the speaker's intention to make the audience aware that she has a request,
and the effect, i.e. the **Perlocutionary Act**, is that the speaker got the audience to handle her request.

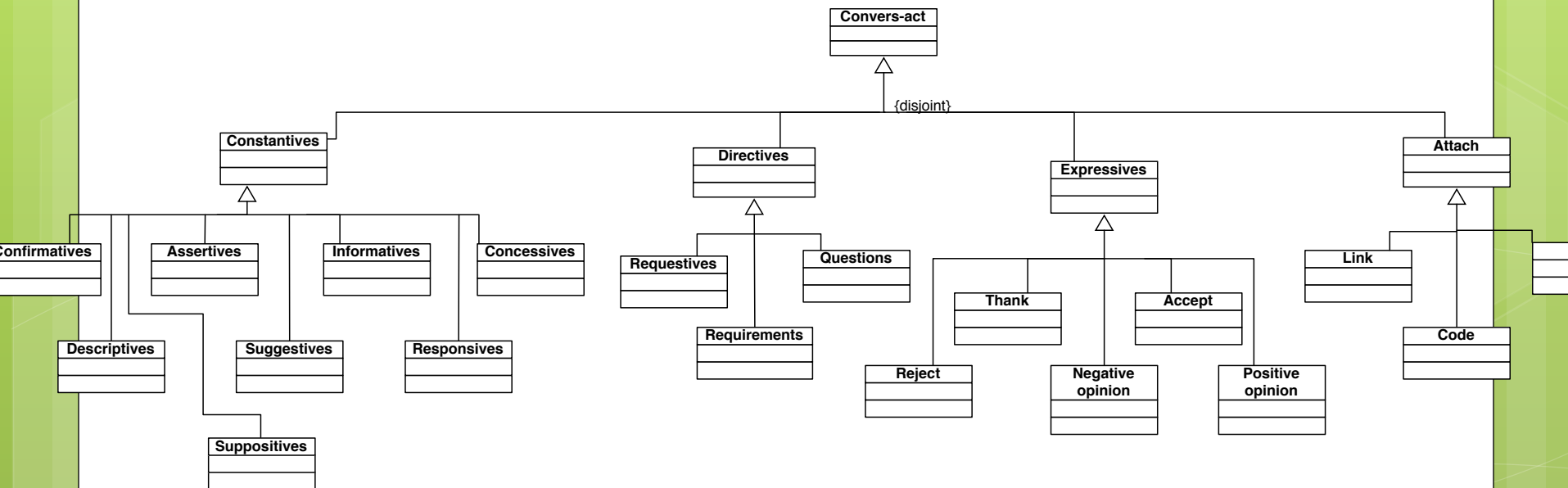
Characterization concepts



Typology

- Characterization of the user feedback
- Understanding the intention/purpose or reason
- Application of the decorator pattern, taken from UML

Reification concepts



Indicators

- Empirical work based on analysis of data
- Application of NLP techniques
- Fragment of text reifying the intention/
purpose contained in user feedback

Conclusion

- User Feedback concepts
- Extension of a communication ontology
- Aspects involved in its conceptualization

Thank you!

- Suggestions and comments are welcome
- **“There is no learning without reflection”**
By Ben Snyder
<http://www.systemation.com/there-is-no-learning-without-reflection/>