An Advanced System

EVALUATING EVALUATIVE ARGUMENTS
(GEA, Moore & Carenini)

Motivation

  Prior work on argumentation generation focused on specific aspects

  Test and verify effectiveness of methods

Methods applied

  Fully implemented system (elaborate standard architecture)

  Base on insights from argumentation theory, social psychology, decision theory

Hypotheses

  Tailoring arguments to preferences of the addressee increases effectiveness

  Differences in conciseness significantly influence argument effectiveness

ARGUMENT GENERATION

Guidelines and their interpretation

Supporting/opposing evidence to a claim and its strength
Based on a model of user values and preferences
(elicited in an initial interview, converted into function components)

Positioning the main claim
In first place (easy to follow), or at the end (if support needed)

Selecting supporting/opposing evidence
Strong evidence given in detail, weak evidence in brief or omitted

Arranging/ordering supporting evidence
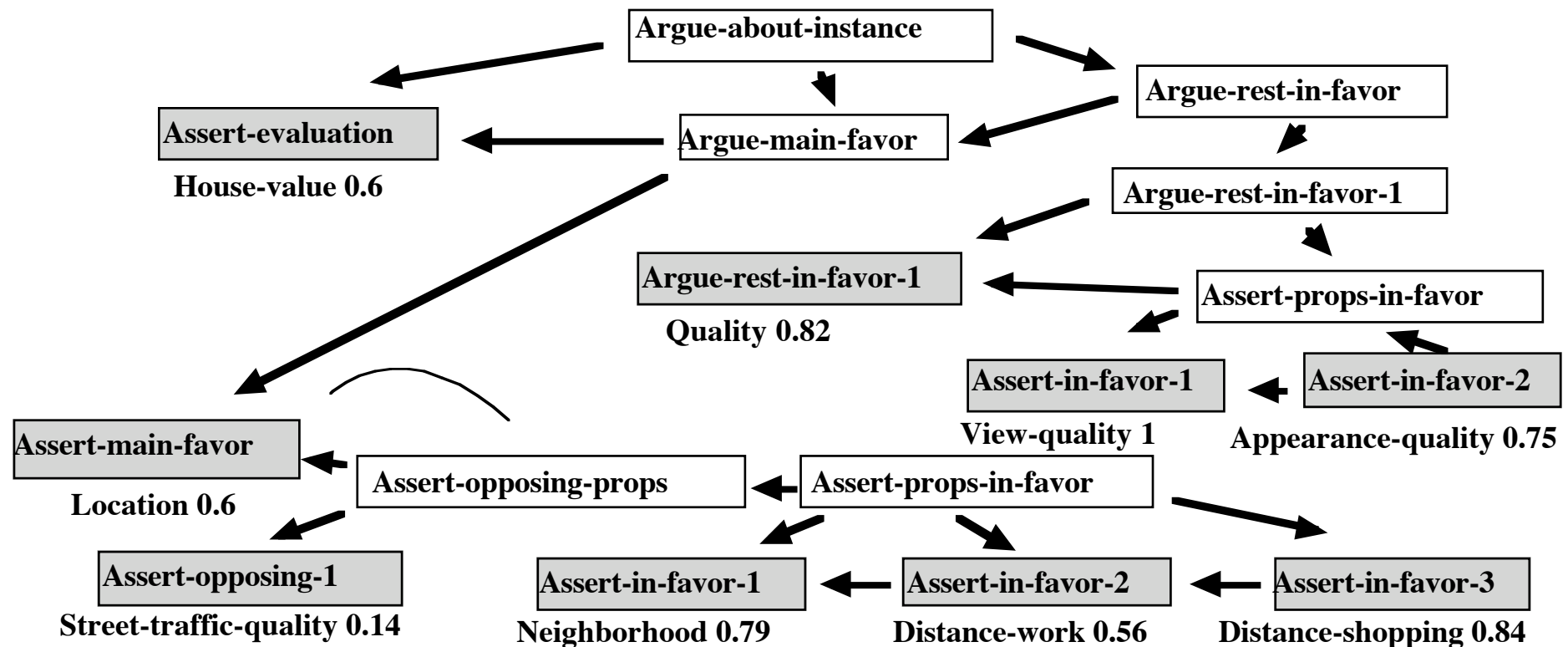**Strongest argument first, one strong argument saved for last**

Arranging/ordering counterarguments
Ordering conversely as above, refutations to strong ones may be added

Ordering supporting and opposing evidence
Opposing evidence first, if known; otherwise last

AN EXAMPLE

Argue-about-instance

Argue-rest-in-favor

Assert-evaluation

House-value 0.6

Argue-main-favor

Argue-rest-in-favor-1

Argue-rest-in-favor-1

Quality 0.82

Assert-props-in-favor

Assert-in-favor-1

View-quality 1

Assert-in-favor-2

Appearance-quality 0.75

Assert-main-favor

Location 0.6

Assert-opposing-props

Assert-props-in-favor

Assert-opposing-1

Street-traffic-quality 0.14

Assert-in-favor-1

Neighborhood 0.79

Assert-in-favor-2

Distance-work 0.56

Assert-in-favor-3

Distance-shopping 0.84

House 2-33 is an interesting house. In fact, it is in a reasonable location in the safe Eastend neighborhood. Even though the traffic is intense on 2nd street, house 2-33 is reasonably close to work. And it also offers easy access to the shops.. Furthermore, the quality of house 2-33 is good. House 2-33 offers an excellemt view. And it also looks beautiful.

EXPERIMENTS

The task

Subjects have to perform a selection task

At the end, a new house is introduced, to be incorporated in the selection

Settings

1. No argumentation - only graphical information

2. Arguments tailored to user preferences, concise

3. Arguments tailored to user preferences, verbose

4. Arguments not tailored to user preferences, concise

Results

Variants with argumentation scored better

Variant 2 scored significantly better than variant 3

Variant 2 scored marginally better than variant 4