

# Einführung in die Pragmatik und Diskurs

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## Homework 3: Generation of Referring Expressions Due on Tue 9.5.2006

When handing in your homework, please obey the following instructions:

- Send me your homework by **Tuesday 9 May** by email as a **pdf** or **ps** file (if this is not possible, a Word document is also acceptable, but please not **swx**; if all fails, please leave a hard copy in my mailbox in the secretariat (Frau Maurus)).
- Please don't forget to write your name in your document.
- Use "Homework" and the date of the session in the subject line of your email.
- You can write in German or in English.

### Task 1

What referring expression does each of the algorithms described in [1]<sup>1</sup> generate for the entity *a*, given the context set specified below. The algorithms are: (i) full brevity, (ii) greedy heuristic, (iii) incremental.

*a*: <type:desk; origin:sweden; color:dark,gre; price:200; material:metal>

*b*: <type:desk; origin:italy; color:light; price:300; material:metal >

*c*: <type:chair; origin:sweden; color:light; price:200; material:metal >

*d*: <type:chair; origin:italy; color:dark; price:300; material:metal,cotton  
>

*e*: <type:chair; origin:italy; color:dark; price:-; material:metal >

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<sup>1</sup>You can find the journal in the library, but to make it really easy for you, there is a link to a soft copy on the course website.

*f*: <type:desk; origin:sweden; color:dark,greys; price:500; material:wood  
>

*g*: <type:desk; origin:sweden; color:grey; price:200; material:metal >

(for each object, there is a list of its properties, where a property may have none, one or more values, e.g., the entity *a* is both dark and grey, whereas the entity *e* has no price)

The ordering of the properties for the incremental algorithm is as given above, i.e.: type > origin > color > price > material

(Note that the results do not have to be the same, and some algorithms may give multiple results.)

## Task 2

Construct an example (i.e., give a context set, an ordering of properties and a target entity) where the incremental algorithm fails (i.e., it does not produce a uniquely identifying description), although some uniquely identifying description would be possible (by another algorithm).

## Task 3 - optional

(This task is optional. If fulfilled, it will yield 2 bonus points, independently of the fulfillment of the above three tasks.)

You can do something practical: Implement the incremental algorithm. (You can use a programming language of your choice. To hand in your homework, send me commented code along with a brief description, and a set of test examples: input-output. I will either try your implementation out myself or I will want to see a brief demonstration –we would arrange an appointment for that.)

## Literatur

- [1] Robert Dale and Ehud Reiter. Computational interpretations of the gricean maxims in the generation of referring expressions. *Cognitive Science*, 19:233–263, 1995.