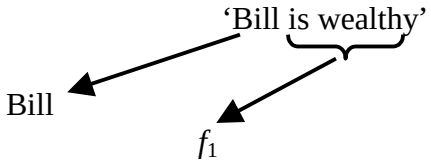
Fregean Semantics: Denotation (reference)

All linguistic expressions (proper names, predicates, sentences) denote **objects**.

- The denotation of a proper name is an **individual**.
- The denotation of a predicate is a **function** (which maps one object as *argument* to another object as *value*).
- The denotation of a sentence is a **truth-value**.
- A **concept** is a function whose values are truth-values.

Example: 'Bill is wealthy'

'Bill' denotes Bill. Bill = **D**('Bill')
'is wealthy' denotes a function, f_1. f_1 = **D**('is wealthy')



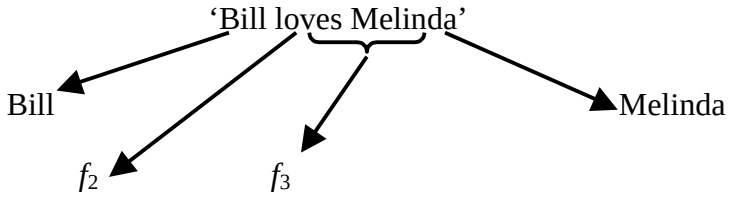
f_1 maps individuals onto truth-values: f_1 (Bill) = The True
That is, f_1 maps Bill onto The True.

D('Bill is wealthy') is a function of **D**('Bill') and **D**('is wealthy').
D('Bill is wealthy') = The True

> The denotation of the entire sentence is a function of the denotations of its parts.

Example: 'Bill loves Melinda'

'Bill' denotes Bill. Bill = **D**('Bill')
'Melinda' denotes Melinda. Melinda = **D**('Melinda')
'loves' denotes a function, f_2. f_2 = **D**('loves')
'loves Melinda' denotes a function, f_3. f_3 = **D**('loves Melinda')



f_2 maps individuals onto functions: f_2 (Melinda) = f_3
That is, f_2 maps Melinda onto f_3.
f_3 maps individuals onto truth-values: f_3 (Bill) = The True
That is, f_3 maps Bill onto The True.
D('Bill loves Melinda') is a function of **D**('Bill'), **D**('Melinda'), and **D**('loves').
D('Bill loves Melinda') = The True

> Again, the denotation of the entire sentence is a function of the denotations of its parts.

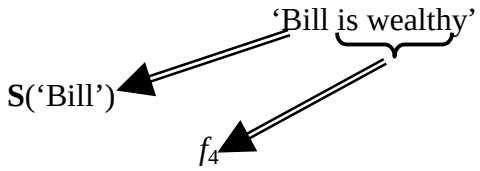
Fregean Semantics: Sense

All linguistic expressions (proper names, predicates, sentences) express **senses**.

- The sense of a predicate is a **function** from a sense to a sense.
- The sense of a sentence is a **thought** (i.e., a proposition).

Example: 'Bill is wealthy'

'Bill' expresses **S**('Bill').
'is wealthy' expresses a function, f_4. f_4 = **S**('is wealthy')



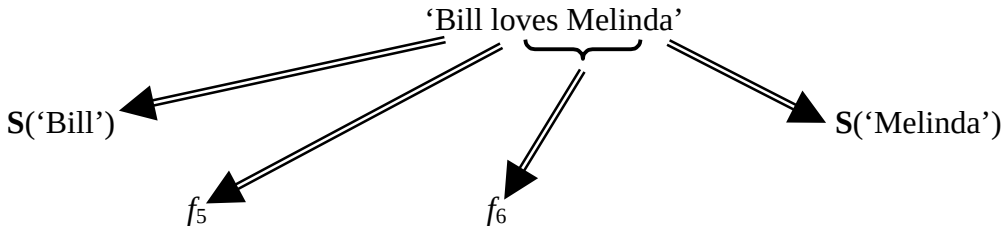
f_4 maps senses onto thoughts: f_4 (**S**('Bill')) = **S**('Bill is wealthy')
That is, f_4 maps **S**('Bill') onto the sense of 'Bill is wealthy'.

S('Bill is wealthy') is the *thought*, or proposition, that Bill is wealthy.
S('Bill is wealthy') is a function of **S**('Bill') and **S**('is wealthy').

> That is, the sense of the entire sentence is a function of the senses of its parts.

Example: 'Bill loves Melinda'

'Bill' expresses **S**('Bill').
'Melinda' expresses **S**('Melinda').
'loves' expresses a function, f_5. f_5 = **S**('loves')
'loves Melinda' expresses a function, f_6. f_6 = **S**('loves Melinda')



f_5 maps senses onto functions: f_5 (**S**('Melinda')) = f_6.
That is, f_5 maps **S**('Melinda') onto f_6, the function that is the sense of 'loves Melinda'.
f_6 maps senses onto thoughts: f_6 (**S**('Bill')) = **S**('Bill loves Melinda')
That is, f_6 maps **S**('Bill') onto the thought that Bill loves Melinda.
S('Bill loves Melinda') is a function of **S**('Bill'), **S**('Melinda'), and **S**('loves').

> That is, the sense of the entire sentence is a function of the senses of its parts.