Linguistic side effects

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Mind Body

Mind	Body
Product	Action
Expression	Execution

What does language do?

Mind	Body
Product	Action
Expression	Execution

“I pronounce you husband and wife”

Mind	Body
Product	Action
Expression	Execution

"I pronounce you husband and wife"

"Deluge brings New York to its knees"

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“No representative from any company saw every sample”

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(1..20)**2 + (1..20)**2 == (1..20)**2
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My thesis—Linguistic side effects

Apparently noncompositional phenomena in natural languages can be analyzed like computational side effects.

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The analogous notions of evaluation context and order lead to more realistic theories of natural languages and better-understood designs of programming languages.

Analogous notions of evaluation context and order

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Generalizes: quantifier scope, jump destination.

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Generalizes: quantifier scope, jump destination.

More realistic theories of natural languages

Left-to-right *evaluation* order subsumes:

- In quantification,
  the preference for linear scope.

  Everyone praised someone.
  Someone praised no one.

- In anaphora,
  the difficulty of weak crossover.

  Everyone$_i$ praised his$_i$ mother.
  *His$_i$ mother praised everyone$_i$.

- In questions,
  the constraint against superiority.

  Who __ praised whom?
  *Whom did who praise __?

- In polarity licensing,
  the sensitivity to linear precedence.

  Nobody praised anybody.
  *Anybody praised nobody.

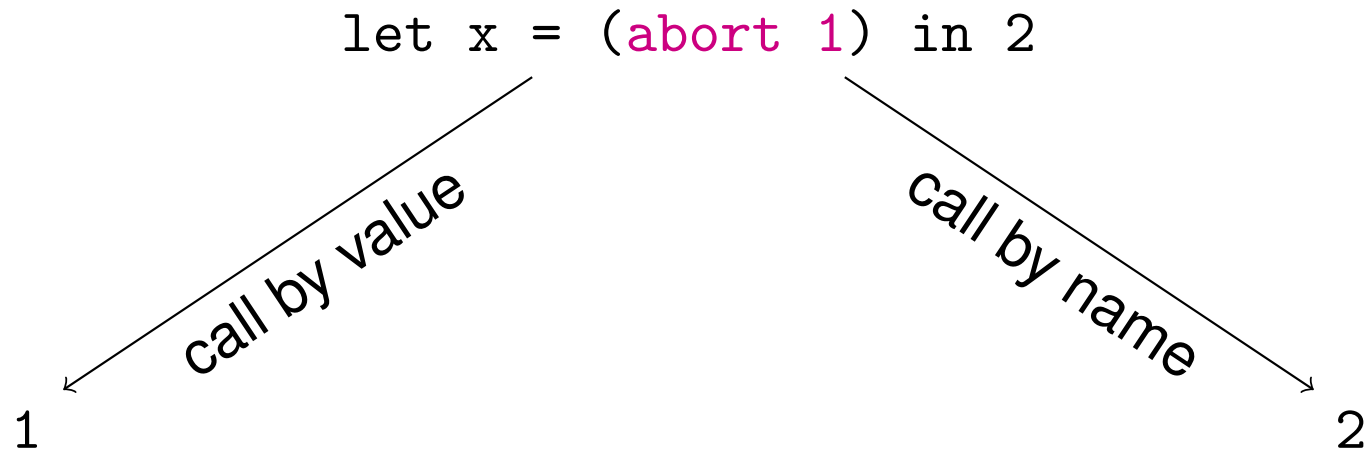
Better-understood designs of programming languages

Side effects pit expression against context.

```
let x = (abort 1) in 2
```

Better-understood designs of programming languages

Side effects pit expression against context.



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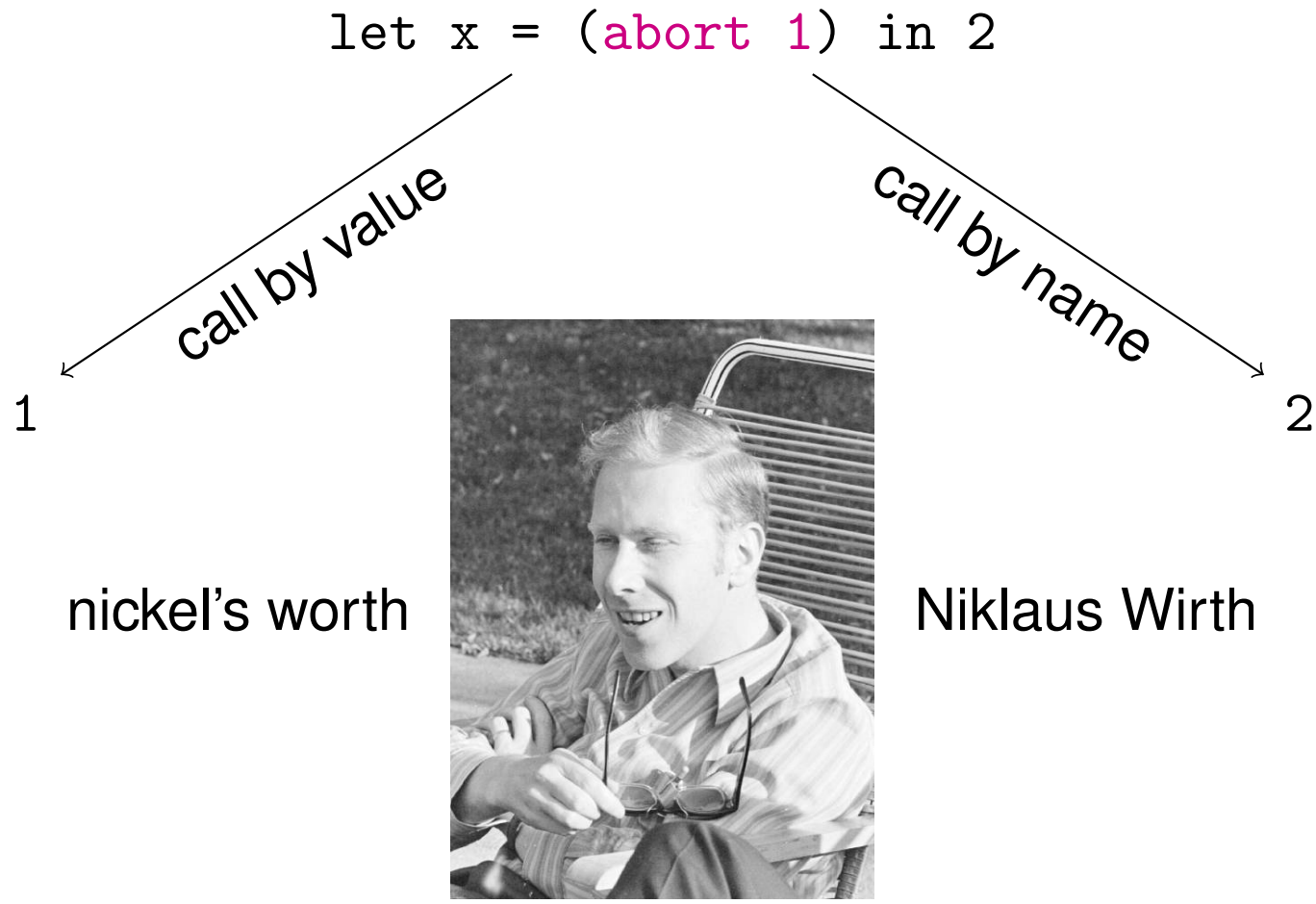

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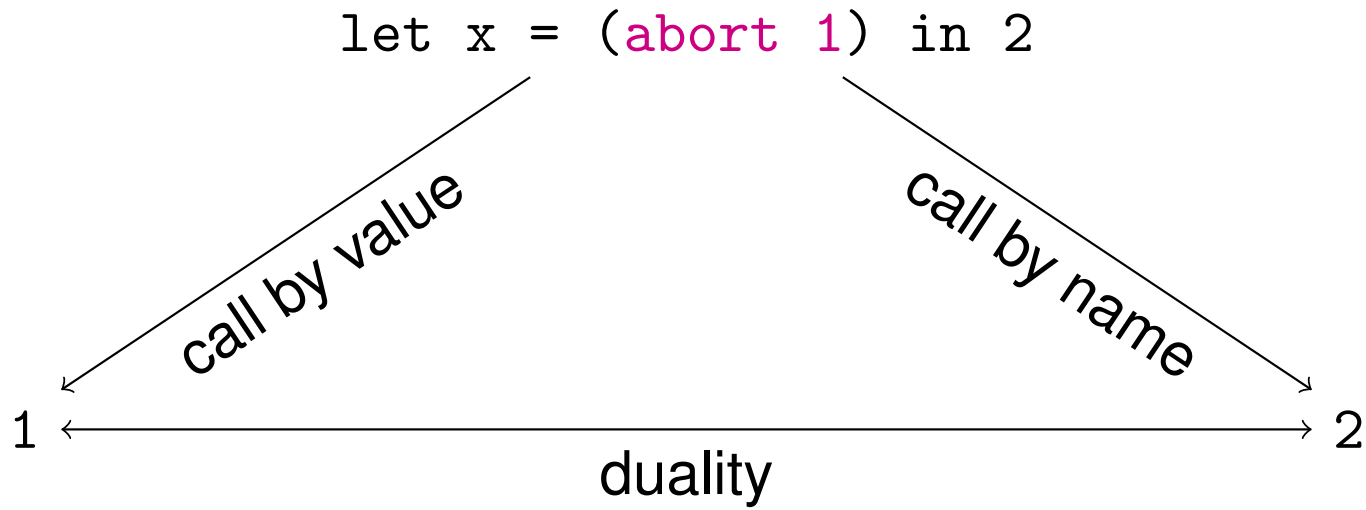

Thanks to …

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