Defrosting frozen metaphors: idiom extensions and the proper representation of idiomatic expressions

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- Rather, the class is defined "by pointing at examples" (Egan 2008: 381).

(1) *kick the bucket, by the by, shoot the breeze, kingdom come, pull strings, take umbrage at, lay one's cards on the table, the cat's got X's tongue, take a bullet for*, etc.

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- So their meaning must be stored.
  - But how?

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  2. that sometimes they are not (i.e. such metaphors can be 'defrosted').

Outline

Mapping theories

Conventions about meanings

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- CONVENTION: when we talk about kicking a contextually salient bucket, we're actually talking about dying.

Transparency vs. opacity

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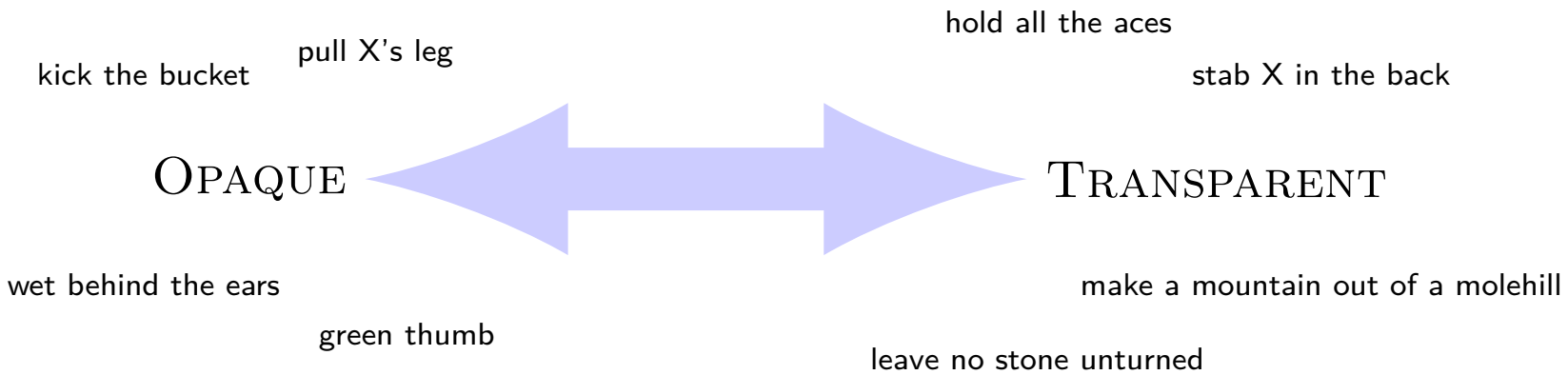
- (But can also be more or less transparent.)



Varieties of mapping theory

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- Pulman (1993): idioms are 'quasi-inference' rules:
  - $\forall x, y.\textbf{cat}(x) \wedge \textbf{bag}(y) \wedge \textbf{out-of}(x, y) \approx$
    $\exists a, z.\textbf{secret}(z) \wedge \textbf{revealed}(a, z)$

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- Egan (2008): idioms involve a 'pretence':
  - "If somebody reveals a secret, pretend there's some salient cat that they've let out of a bag."

Lexically flexible idioms

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- Although, not always totally free:

(4) Throw someone to the wolves/dogs/lions/#tigers/#foxes

Problems with mapping theories

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c. (He left me in the lurch.)

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(6) **Syntactic idiosyncrasy**:

a. We tripped the [?? light fantastic] all night long.
b. This was [?? by and large] a success.
c. It's no use beating about the bush.
d. He really came a cropper this time.

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(7) a. Jadzia kicked the bucket.
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(8) a. The strings that Benjamin pulled got Ezri promoted.
b. ?#The beans that Julian spilled caused a lot of drama.

Psycholinguistic evidence

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- Similar findings reported elsewhere (Estill & Kemper 1982; Cronk & Schweigert 1992; Cronk et al. 1993; Carrol & Conklin 2017).
- But if idioms involve first recognising the literal meaning, then computing the idiomatic one, they should be *more* computationally taxing, not less.

Direct access theories

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  - Historical origin, perhaps; but now conventionalised ('frozen').
- If idioms aren't interpreted via mapping, then they must be understood directly – i.e. they are 'lexically' encoded.
  - At the phrase level, e.g. Abeillé (1995); Findlay (2017, 2019).
  - At the word level, e.g. Kay et al. (2015); Bargmann & Sailer (2018).

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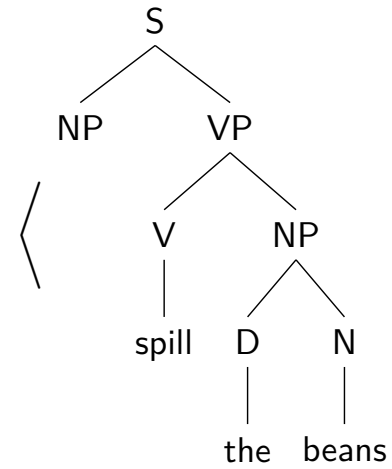
(10) 

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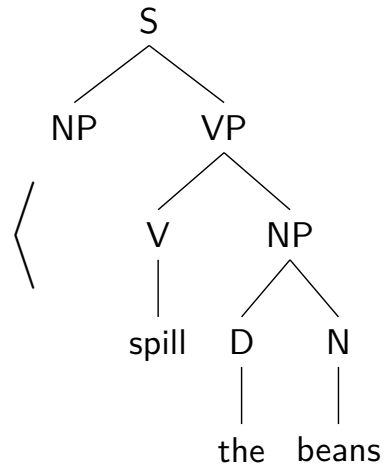
(10) 

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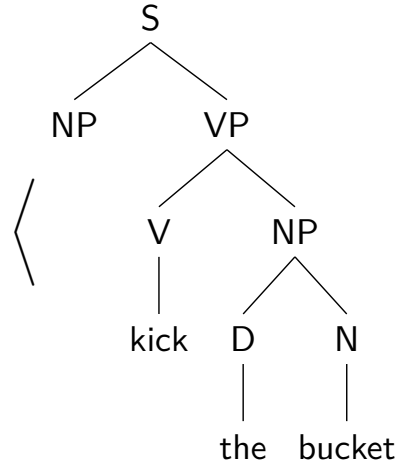
(11) $\langle$ 

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b. $\langle \text{the}, \lambda \mathcal{Q}_{\langle et, et \rangle} . \mathcal{Q} \rangle$
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(From Bargmann & Sailer 2018; see Findlay 2019: 58–77 for discussion and criticism of this approach.)

Difficult data

‘Inferred’ idioms

- Sometimes we can get away with extreme distortions of idioms:

(14) I could be chasing an untamed ornithoid without cause.

(15) Shit finally completes 29-month journey towards fan.

(16) Good gawd it’s another porcine flyer.

(17) While the scientists work out how bad the Omicron variant is or isn’t, the government has reimposed mask-wearing in shops and on public transport for at least the next three weeks. Consequently, a number of prams have been swiftly emptied of all toys.

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- A situation which contains porcine flyers is one in which pigs fly.

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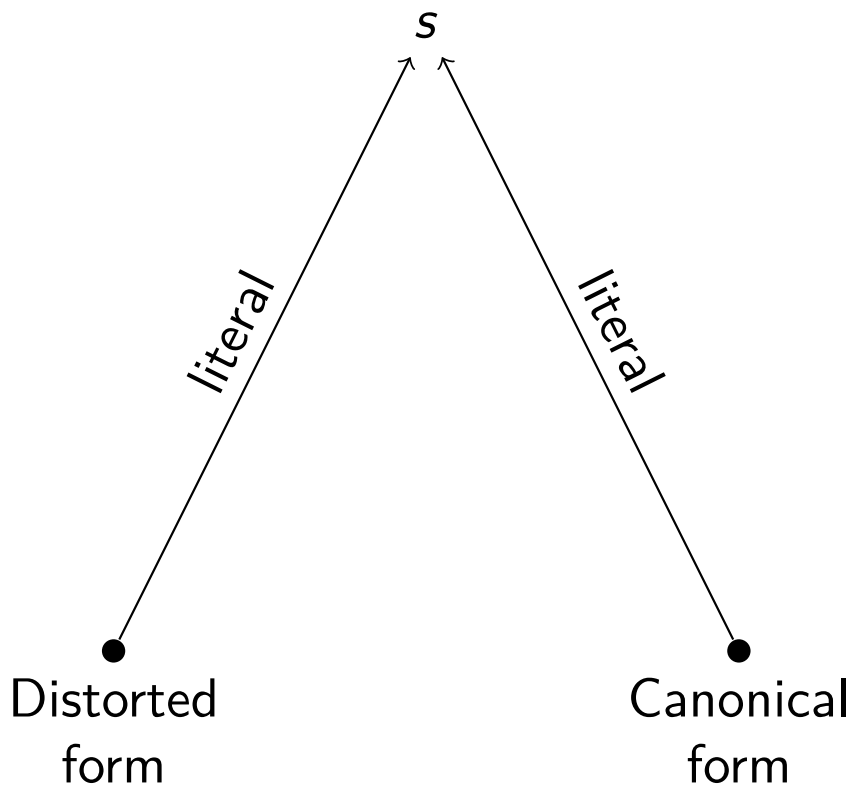

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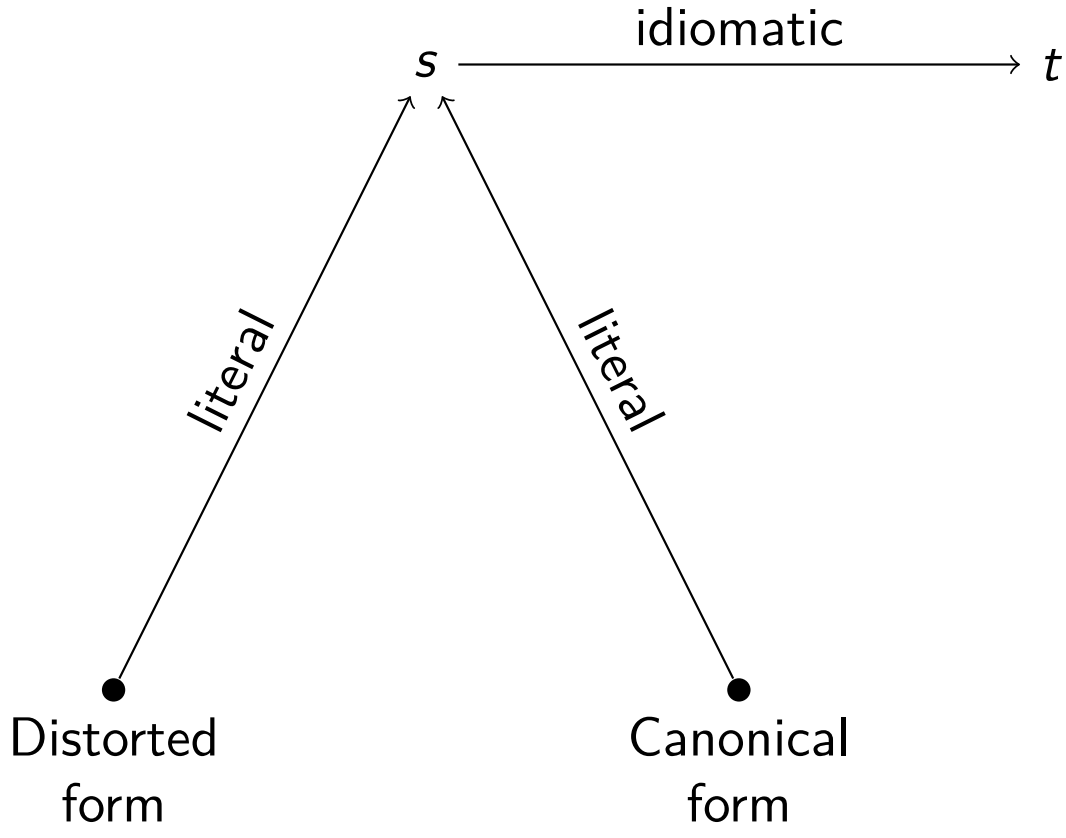

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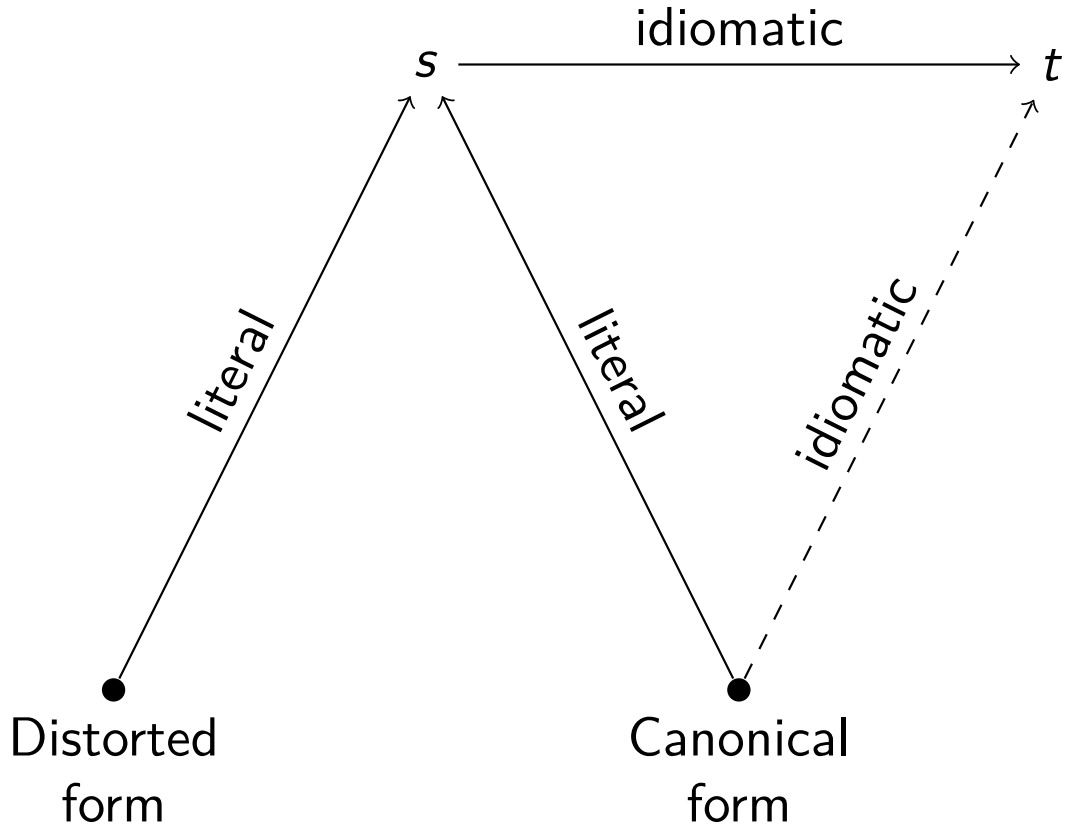

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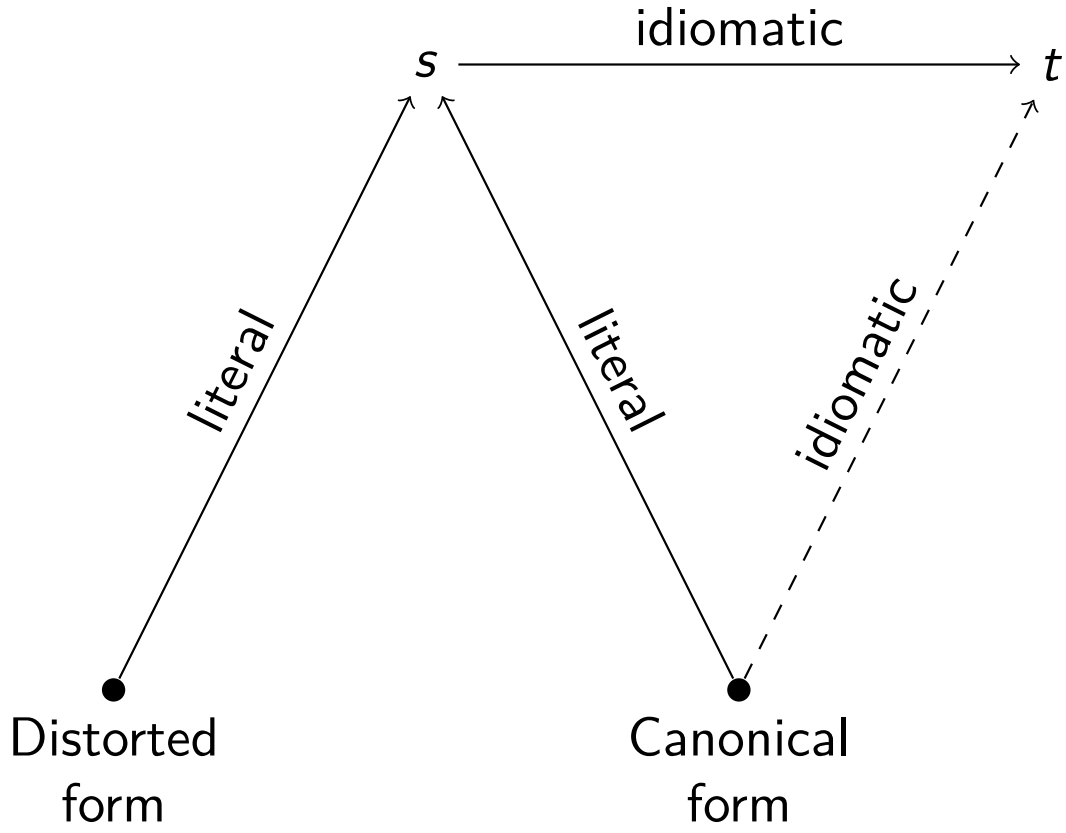

- Two ways of getting to idiomatic meaning . . .

Idiom extensions

- 'Idiom extensions' offer a further challenge:

(18) When John let the cat out of the bag it was him who got scratched.

(19) Livia didn't quite kick the bucket, but she took a good strong swing at it.

(20) The strings we've been pulling to keep you out of prison are fraying badly.

(21) Sometimes the person you'd take a bullet for is behind the trigger.

(22) I had butterflies in my stomach and they had big wings on them.

(23) This month, Meriden City Council's chickens came home to roost, and they laid a big stinky egg on Meriden taxpayers.

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⇒ My anxieties had wings??

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- That is, we need a mapping theory.

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- These examples do, however, have a certain *affected* quality . . .

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Processing speed

- By analogy to McGlone et al. (1994).

(24) He was barking up the wrong tree. $<$
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(25) He was barking up the right tree. $\approx$
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Syntactic flexibility

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(26) a. #The bucket was kicked by Jadzia.
b. #The bucket which Jadzia kicked was sudden.
c. #Which bucket did Jadzia kick?
etc.

Syntactic flexibility

- But there are attested examples of highly flexible uses (Bargmann 2017):

(27) a. When you are dead, you don't have to worry about death anymore [. . .]. The bucket will be kicked.

b. For those of you who don't know, my computer's motherboard finally kicked its last bucket.

c. They say famous people die in threes, and I've believed them since that summer in 1997 when Nusrat Fateh Ali Khan, Mother Teresa and Lady Di all kicked their respective buckets in unison and the world ran out of flowers.

d. It's clear that Stein's bucket is going to be kicked right from the start. Despite this, the death still carries emotional weight.

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- Each idiom provides a *pretence statement*, Π, which links pairs of situations. (On situation semantics see e.g. Kratzer 1989.)

(28) $[s : \phi] =_{def}$ ϕ interpreted with respect to situation s.

(29) $$\Pi_{\mathbf{ps}} = \lambda s \lambda t. \forall x, y([s : \mathbf{connection}_{\mathbf{id}}(y) \wedge \mathbf{exploit}_{\mathbf{id}}(x, y)] \leftrightarrow [t : \mathbf{string}(y) \wedge \mathbf{pull}(x, y)])$$

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- Both direct access and mapping: the idiomatic meaning is encoded, and the pretence statement is included as a CI (Potts 2005), or at some other side-dimension.

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- Call π the relation which determines the single pair of *minimal* situations for which Π holds.
- For any pretence statement Π of the form $\lambda s \lambda t. \forall x_1 \ldots x_n (\phi \leftrightarrow \psi)$, and any situations s and t, there is a π such that
  - $\langle s, t \rangle \in \pi$ and
  - $[\![\Pi]\!](s)(t) = 1$
  - for each $s' < s$, $[\![\lambda s. \forall x_1 \ldots x_n \phi]\!](s')$ is undefined, and
  - for each $t' < t$, $[\![\lambda t. \forall x_1 \ldots x_n \psi]\!](t')$ is undefined.

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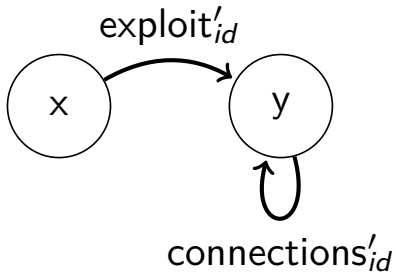

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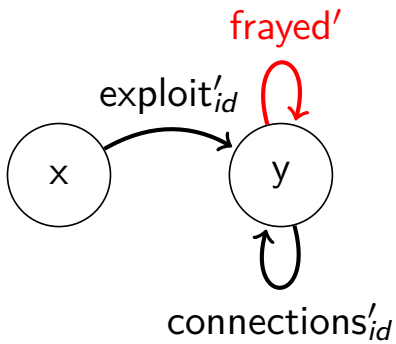

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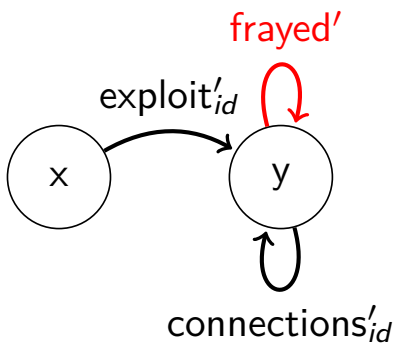

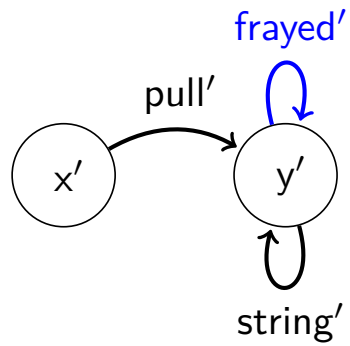

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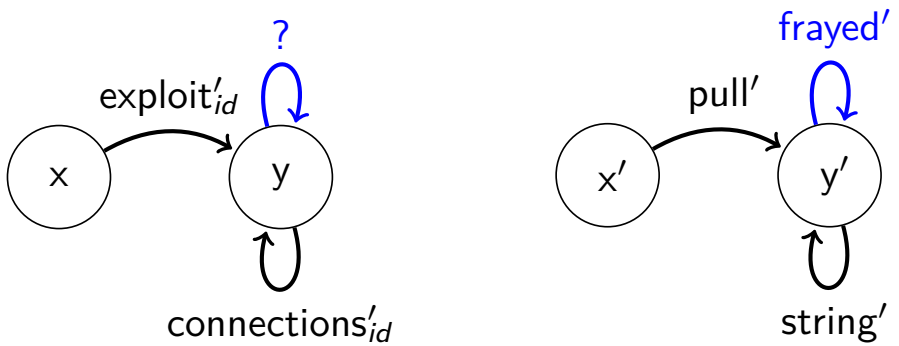

- Extend $\pi_{\mathbf{ps}}(s)$ with q and then extend s **analogously**.

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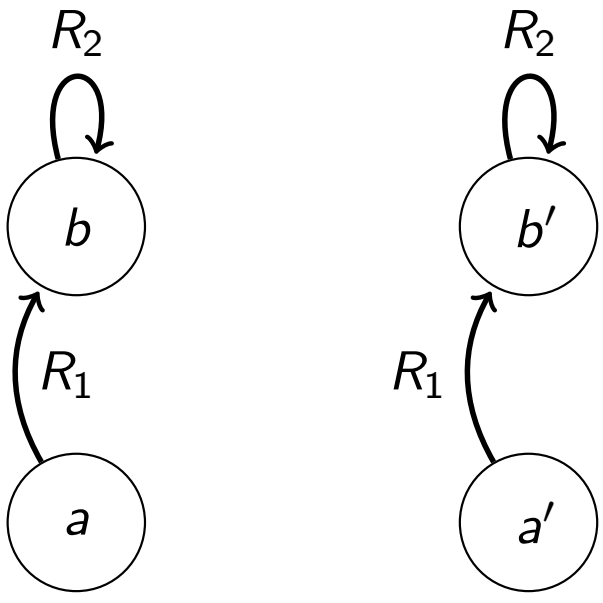

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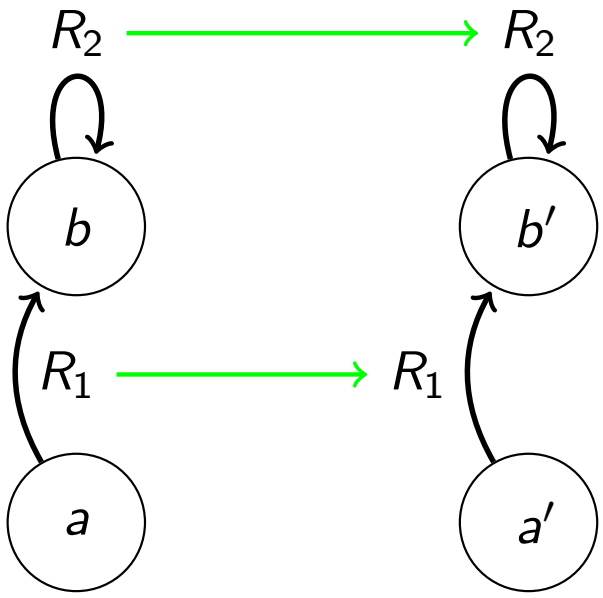

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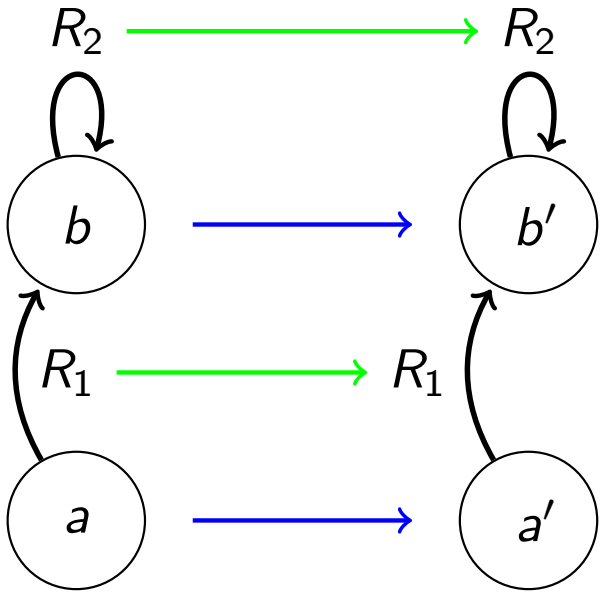

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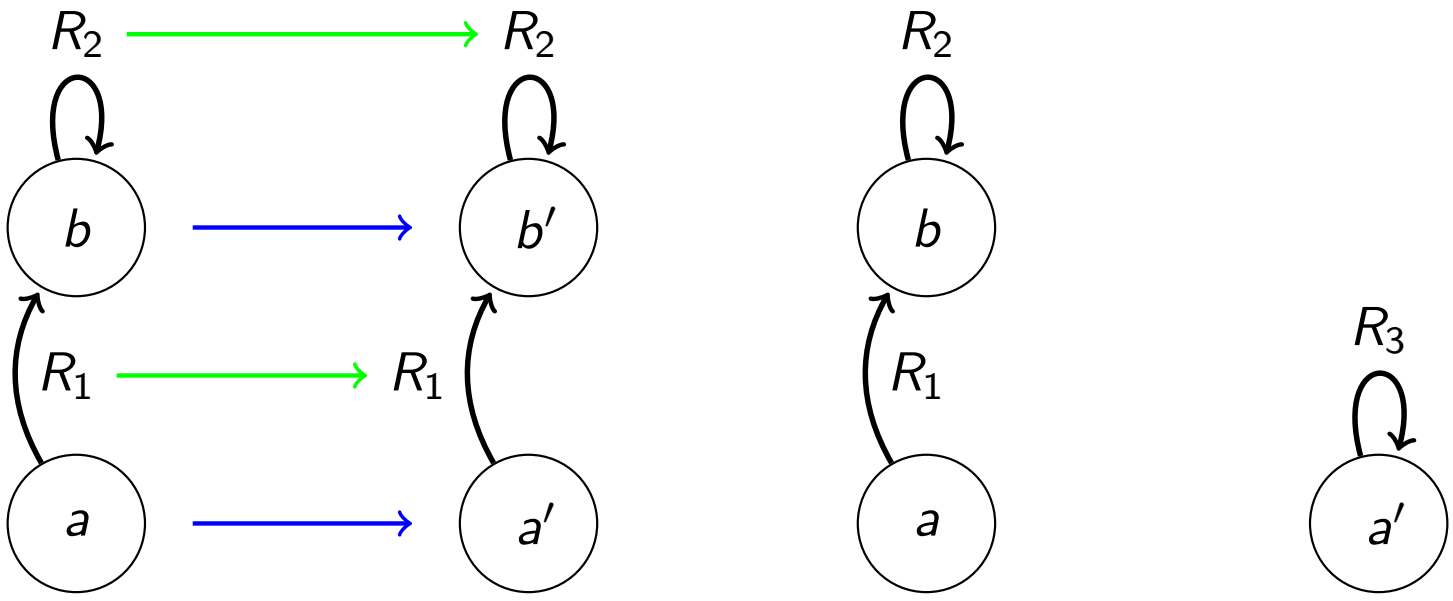

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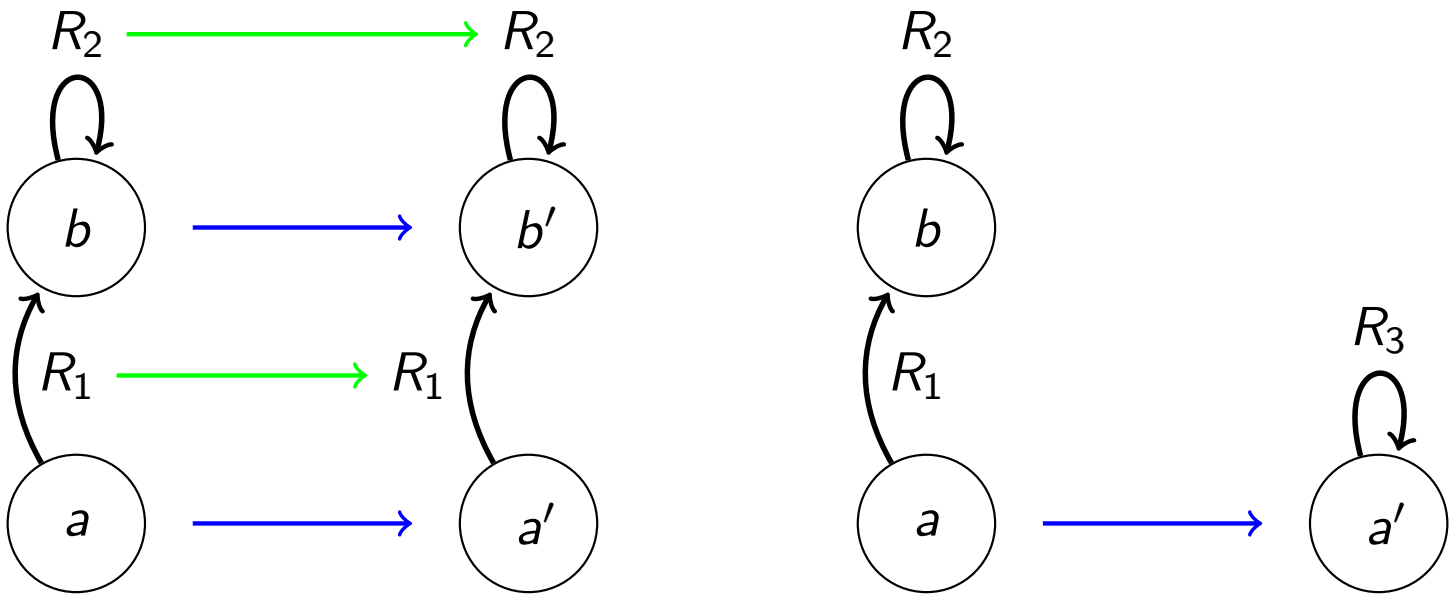

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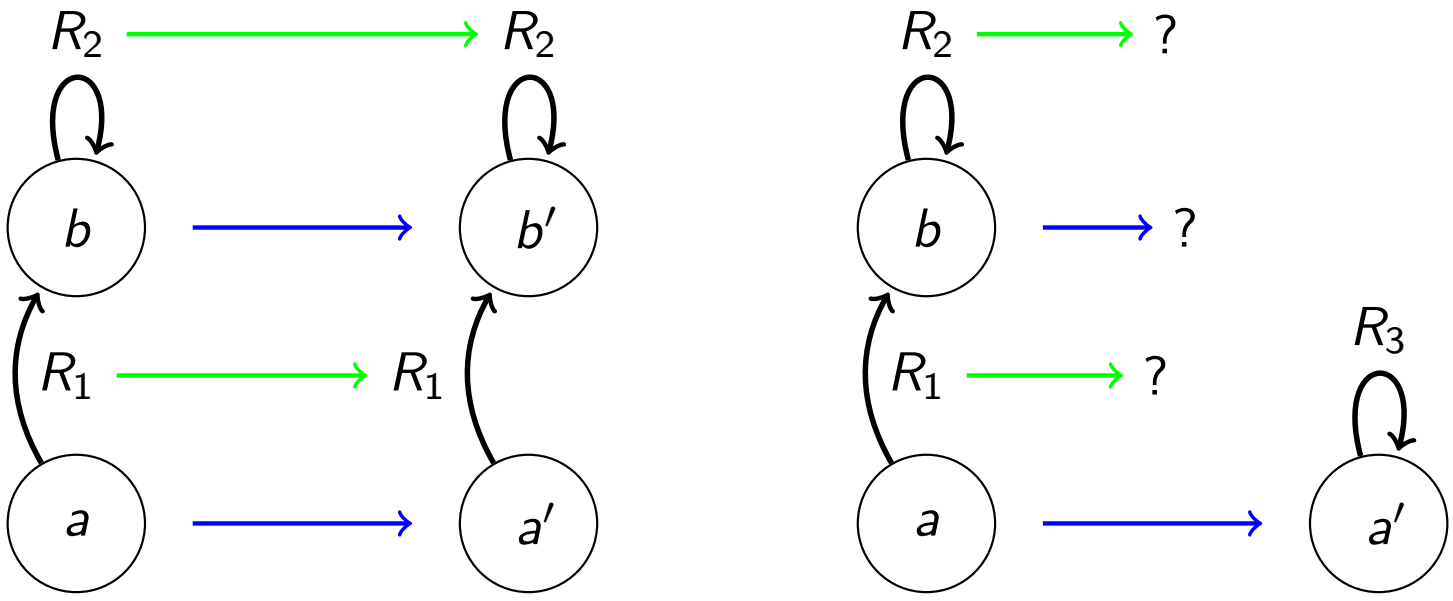

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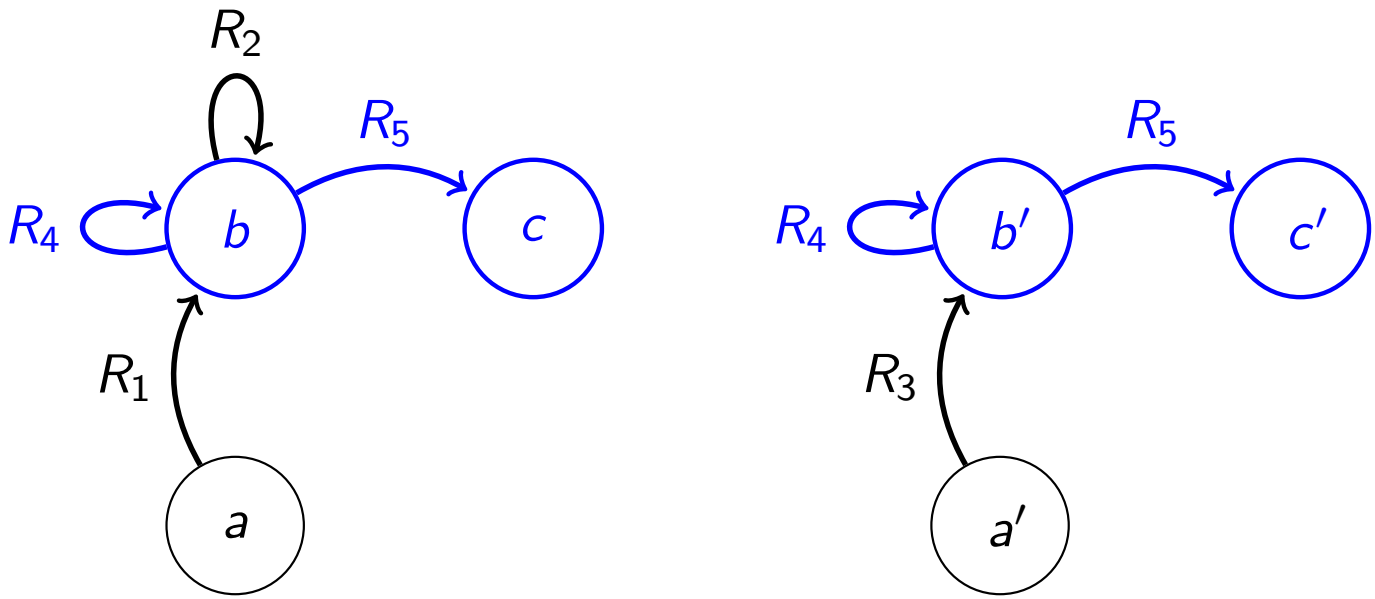

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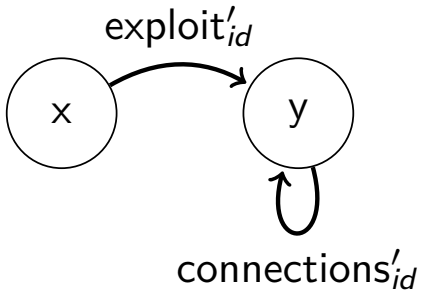

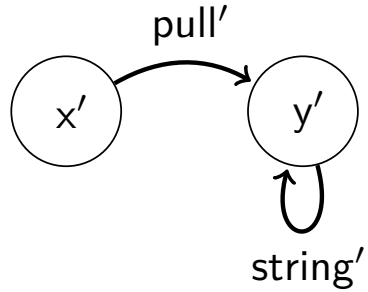

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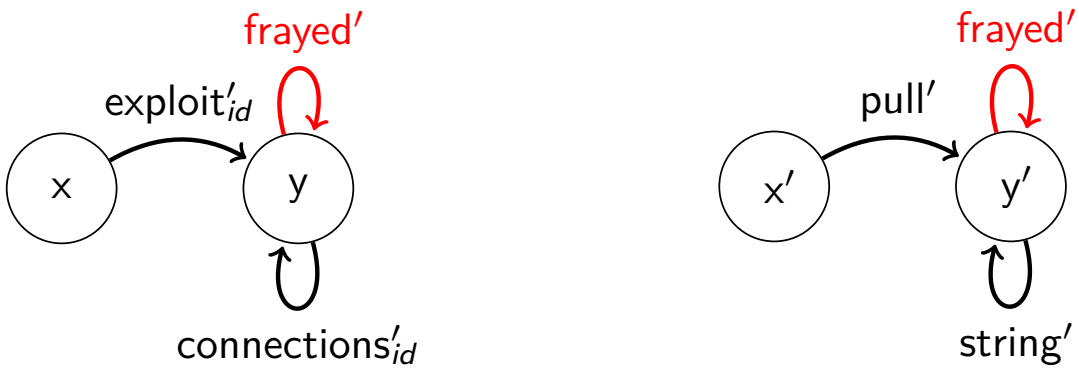

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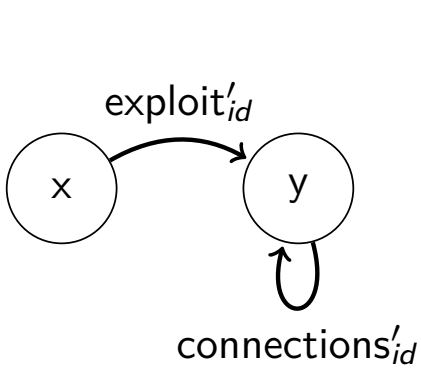

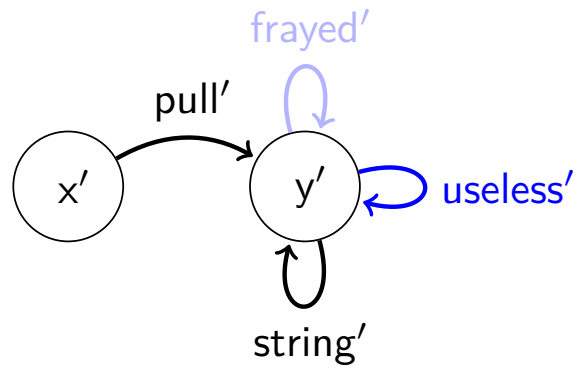

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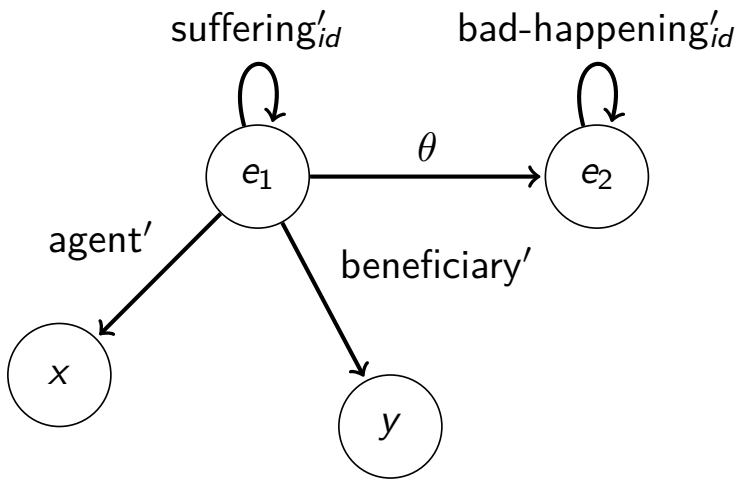

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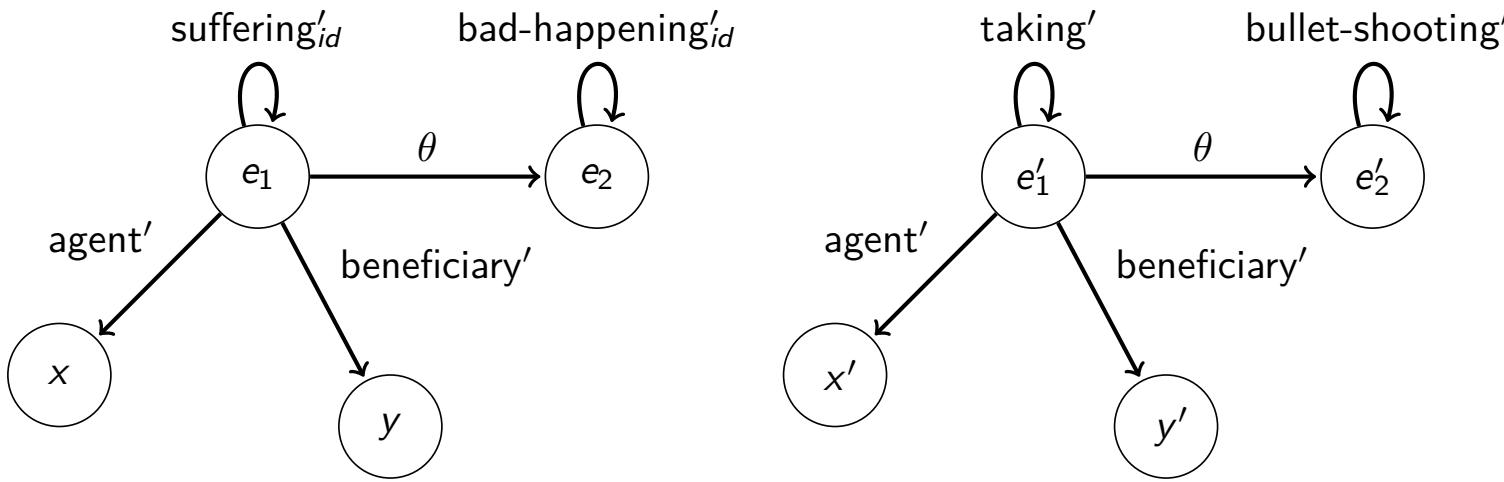

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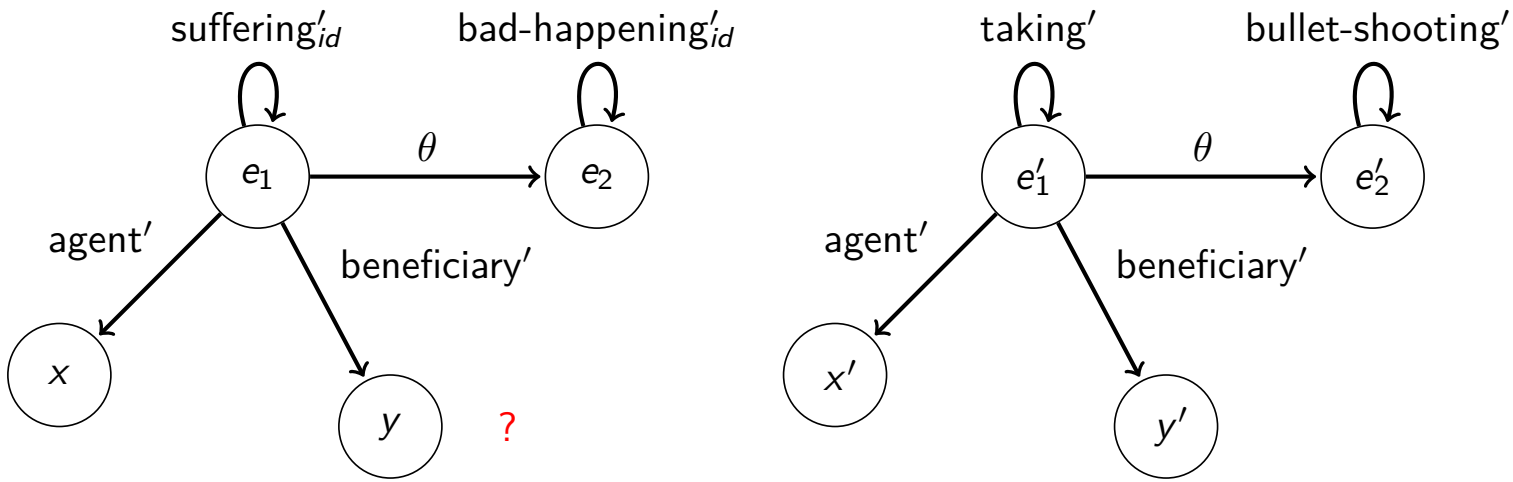

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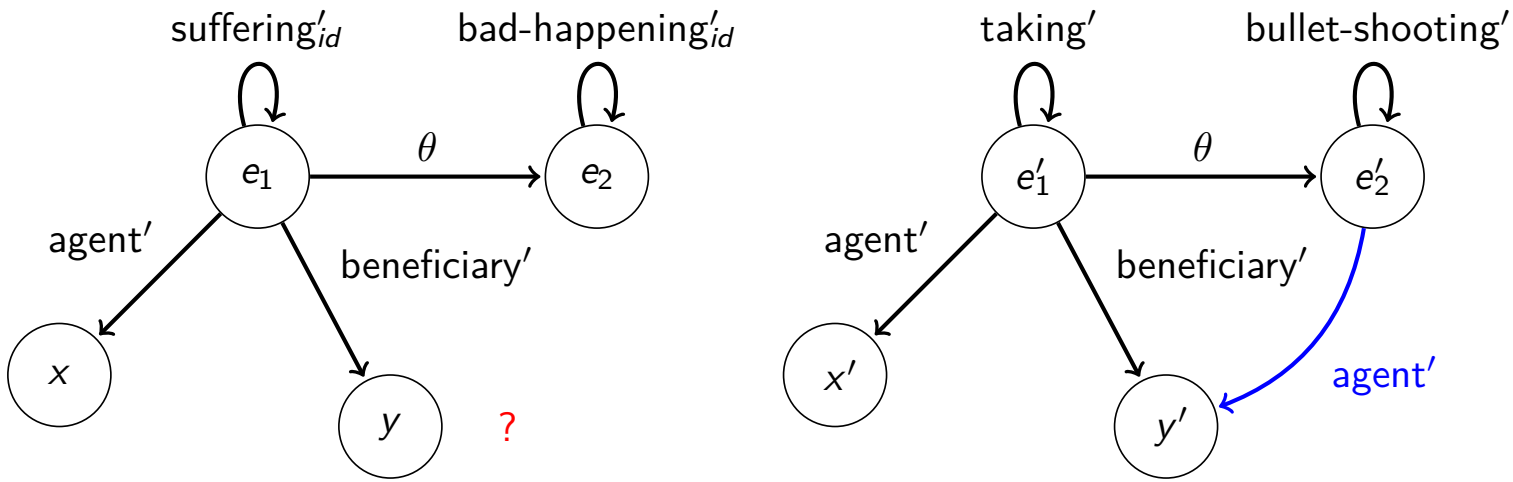

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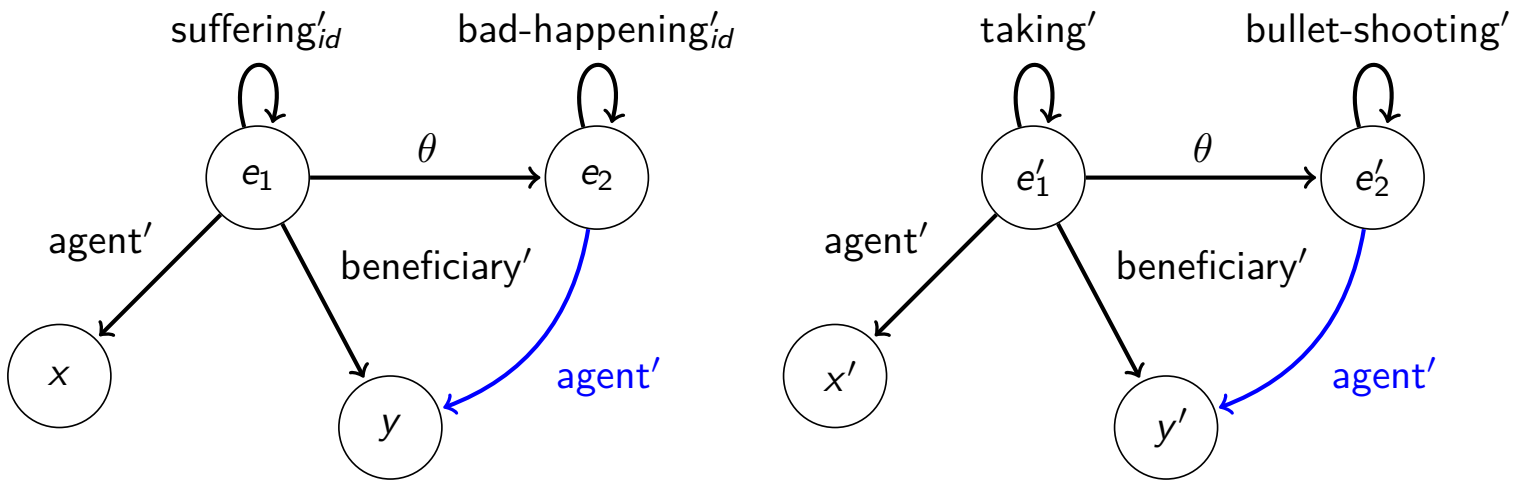

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- *spill the beans* = decomposable (*spill* : **divulge**′, *beans* : **secrets**′)
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- Transparency/opacity harder to capture, but one way to be transparent is for $s \sqsubseteq t$ (i.e. s is an instance of t).

Conclusions

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- Two formally distinct uses of idioms: **core/frozen** and **extended/defrosted**.
- Formally-minded linguists have tended to opt for a direct access account which privileges the former.
- But it is not impossible to give a formal account of the latter.

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- Conjunction modification (Ernst 1981):

  (34) Shepard enjoys pulling Jack's tattooed leg.

  (35) With the recession, oil companies are having to tighten their Gucci belts.

  (36) The Six Million Dollar Man came over and lent us a helping electronic hand.

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- Can we bring figurative language more fully into the theoretical fold?

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