# Why the butterflies in your stomach can have big wings: combining formal and cognitive theories to explain productive extensions of idioms

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- Example (Egan 2008: 392):
  - (1) If you let this cat out of the bag, a lot of people are going to get scratched.

#### Outline



The problem with direct access theories

Mapping theories

Problems with mapping theories

A hybrid account

Conclusion





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  - ▶ or at the word level, e.g. Kay et al. (2015); Bargmann & Sailer (2018).



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  - ⇒ My anxieties had wings??

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- ▶ Isn't this just 'word play' or 'meta-linguistic' in some way?
  - Definitely not meta-linguistic in the conventional sense of talking about language.
  - There is no definition of word play, but even if there were and idiom extensions were to fall into that category, they would still involve language and should therefore be worthy of analysis.



# Mapping theories

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  - (4) Jadzia kicked the bucket.
- ► CONVENTION: when we talk about kicking a contextually salient bucket, we're actually talking about dying.

## Varieties of mapping theory



- ▶ Pulman (1993): idioms are 'quasi-inference' rules:
  - ▶  $\forall x, y. \mathsf{cat}(x) \land \mathsf{bag}(y) \land \mathsf{out\text{-of}}(x, y) \approx \exists a, z. \mathsf{secret}(z) \land \mathsf{revealed}(a, z)$
- ► 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."

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  - ► (Although, not all idioms share this property . . . )



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then we have a classic four-part analogy:

kicking the bucket :: dying

taking a good strong swing at the bucket :: ??



# Problems with mapping theories

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    - a. He left me in the lurch.
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  - (8) 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.

### Idioms are not syntactically free



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  - (9) a. Alex kicked the bucket.
    - b. #The bucket was kicked by Alex.
  - (10) a. The strings that Kim pulled got Alex promoted.
    - b.?#The beans that Julian spilled caused a lot of drama.

### Psycholinguistic evidence



- ► Swinney & Cutler (1979): subjects recognise sentences with idioms faster than paired controls without.
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- Similar findings reported elsewhere (Estill & Kemper 1982; Cronk 1992, 1993).
- But if idioms involve first recognising the literal meaning, then computing the idiomatic one should be *more* taxing, not less.

#### Interim Conclusion



▶ For (at least some) idioms, the mapping approach is not correct.



# A hybrid account



▶ We've reached something of an impasse:



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- ▶ We've reached something of an impasse:
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- ▶ Proposal: the two theories handle different parts of the data—there are two different uses of idioms.



#### Core vs. extended

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- Syntactically restricted vs. freer

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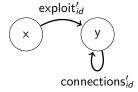
- The core cases are handled by one of the direct access accounts mentioned above.
- The extended cases require a form of the mapping theory, augmented by a theory of analogy (to which we turn shortly).
- ▶ Lexical entries for idioms/idiom parts contain both
  - 1. their idiomatic meaning, directly encoded, and
  - information about the conventional relationship between the source and target domain (i.e. the metaphorical mapping).



- (14) a. Alex tried to pull some strings,
  - b. but they were frayed.
  - Assume (14a), interpreted idiomatically, is true in the real world.

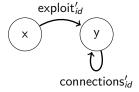


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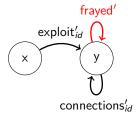


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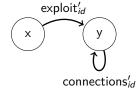


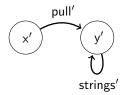


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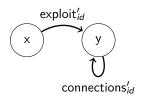


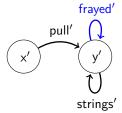




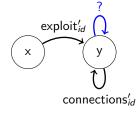


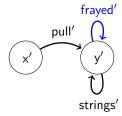




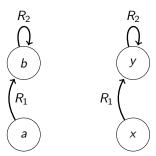




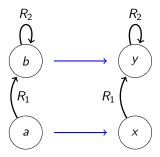




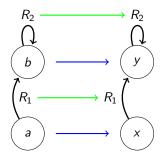




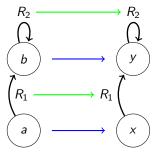


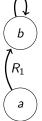








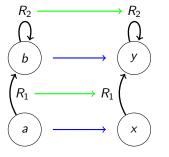


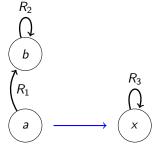


 $R_2$ 

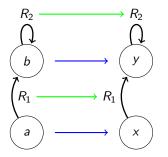


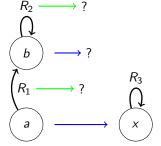








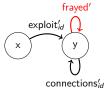


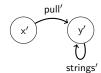


### Frayed strings



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- Two kinds of idiom use: core and extended.
- Core use is unmarked/default, but metaphorical route can be coerced.

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