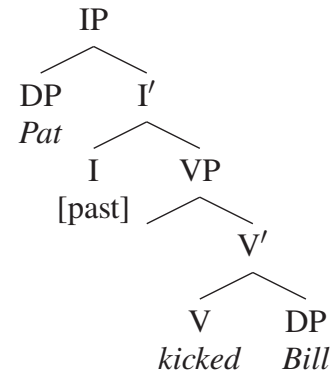# 1 Analysis

1.1 Syntax of passives
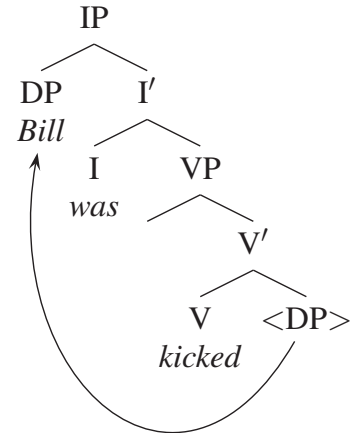
Basic syntax of a simple active

(1)   a. Pat kicked Bill.

       b. Bill was kicked.

For comparison, first we have something like the basic structure for the active sentence *Pat kicked Bill*.

Basic syntax of the passive
The standard syntactic analysis of the passive has the *argument* that was the object in the active sentence moving up to become the subject.

A-positions and A-chains (terminology)

A piece of terminology that will come up: The subject and the object here considered to be in "A-positions"—that is, positions in which one normally finds "arguments" of the verb.

In the passive, the "underlying object" has moved to become the subject. It moves into an argument position, which is thought of as "linking" these positions together. So, the pair of positions together is sometimes said to be an "A-chain."

2   Child passives

2.1   Patterns in acquisition

Children vs. passives

Maratsos et al. (1985): before age 4–5, children comprehend actional passives better than nonactional ones. Horgan (1978): short passives are produced and comprehended earlier than long passives.

(2)   Actional vs. nonactional passives

     a. Jasmine was combed (by Wendy).

     b. Peter Pan was feared (by Captain Hook).

(3)   Some produced short passives (Horgan 1978)

     a. Tree is broken.

     b. That was colored.

2.2   Adjectival passives

Verbal passives and adjectival passives

The passive form can function either as a verb or an adjective.

(4)   The door was closed and ominous.

(5)   The door was dramatically closed.

(6)   The door seems (completely) closed.

(7)   * The door was dramatically closed and ominous.

(8)   * The door was closed and ominous by Bill.

(9)   * The door seems dramatically closed.

What makes a good adjectival passive

Generally, non-action verbs make poor adjectival passives; action verbs are fine.

(10)   a.   * The door seems seen.

        b.   * The seen suspect fled.

        c.   * Seen though the movie was, John went again anyway.

(11)   a.   The cloth seems torn.

        b.   The torn cloth is useless.

        c.   Torn though the cloth was, John used it anyway.

Ah—so maybe, if kids are better at actional passives, what they're actually better at is *adjectival* passives.

2.3   Hebrew and German

Adjectival and verbal passives not always ambiguous

(12)   Verbal passives (verb: tense/agr, *by*-phrase ok)

     a.   Ha-yalda sorka   (al-yedey 'ima   shel-a).
        the-girl   combed.PASS (by   mother of-her)
        'The girl was combed by her mother.'

     b.   Ha-yalda tesorak   (al-yedey 'ima   shel-a).
        the-girl   will.combed.PASS (by   mother of-her)
        'The girl will be combed by her mother.'

Adjectival and verbal passives not always ambiguous

(13)   Adjectival passives (adj: gender/number, *by*-phrase out)

     a.   Ha-yalda hayta mesoreket   (*al-yedey . . .).
        the-girl   was   combed.ADJ (by   . . .)
        'The girl was combed (*by her mother).'

     b.   Ha-yalda tihiye   mesoreket   (al-yedey . . .).
        the-girl   will.be combed.ADJ (*by   . . .)
        'The girl will be combed (*by her mother).'

Acquisition order when it isn't ambiguous

You can tell the difference between verbal passives and adjectival passives in, e.g., Hebrew, German.

Berman & Sagi (1981): children learning Hebrew produce adjectival passives earlier than verbal passives.

Mills (1985): German is the same.

3 A-chains and deficits

3.1 Passives

Adjectival passives do not involve movement

The adjectival passive is *not* assumed to have the same kind of "movement from underlying object to subject" property that verbal passives have. Rather, they are assumed to have the same structure as any other adjectival construction (that is, *The door is closed* is like *The balloon is red*).
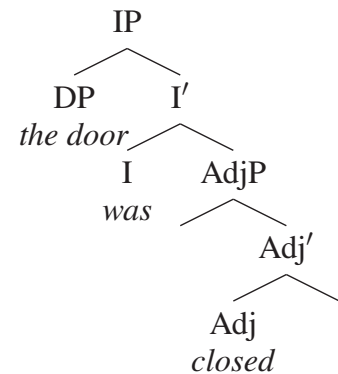
Early passives are adjectival passives

Borer & Wexler (1987). Properties above derive from the fact that early grammar only allows for the formation of adjectival passives, not verbal passives.

Why? Borer & Wexler attribute it to that *movement* from the underlying object position to the subject position. The "A-Chain Deficit Hypothesis"—their idea is that children before a certain age (5–6, for whatever reason) are unable to represent this kind of movement.

What children do instead

If children can't actually form a verbal passive, then any passive sentences they produce have to be produced using the adjectival passive (which doesn't have this movement, but is restricted to stative interpretations and is incompatible with a *by*-phrase).

At around age 5–6, the ACDH "matures away" (like the UCC, but at a later age) and passives become possible.

3.2 Unaccusatives and unergatives

The arguments of transitives

Going back to the active sentence *Pat kicked Bill*, this has a kicker (we'd say the "agent" of the event, the instigator), and a kickee (we'll call it the "theme" of the event, the affected party). This is a *transitive* sentence because it has two arguments, the kicker and the kickee.

Not all verbs are transitive, though. Some verbs have just one argument. These are the *intransitives*. However, there are two kinds of intransitives.

Two kinds of intransitives

The two kinds of intransitives are differentiated by whether the single argument is an "agent" or a "theme."

Verbs like *dance*, *laugh*, *swim* have just an agent, somebody who *does* something. These are called... *unergatives*.

Verbs like *melt*, *fall*, *sink* have just a theme, something to which something happens. These are called... *unaccusatives*.

Passives are like unaccusatives

The standard syntactic analysis of the unaccusative is just like the passive—the idea is that "themes" always start in an "underlying object" position, even if that's the only argument. But if it is, it moves up to become the subject.
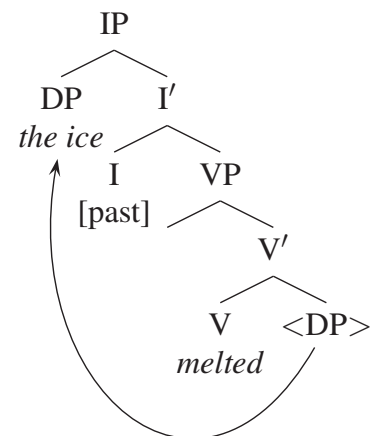
Passives are not like unaccusatives

Although passives and unaccusatives both involve making an "underlying object" ("theme") a subject, there is a difference between them as well. In a passive, you can re-introduce the agent with a *by*-phrase.

(14) Bill was kicked by Pat.

And there's some evidence that the meaning of "agent" is still there in the passive, even without the *by*-phrase.

(15) Bill was kicked [PRO to gain an advantage].

(16) * The ice melted [PRO to gain an advantage].

3.3 Predictions for unaccusatives

Unaccusatives should act like passives

The obvious prediction is that if the movement in passives is at the root of children's problems with it, unaccusatives should have the same problem. Yet children do use unaccusatives.

(17)	a.	My teddy bear gone.	(Sarah 2;3)
	b.	Marie go.	(Sarah 2;3)
	c.	I fall down.	(Sarah 2;6)

S-homophones

Babyonyshev et al. (2001) suggest that this is in fact the case, and bring evidence from Russian on this point (which we'll return to). But for the problem at hand, they suggest that because children *can't* represent unaccusatives, they have to make do with an unergative representation.

Borer & Wexler suggest that evidence in favor of this idea comes from over-causativization:

(18) a.   The doll giggled.

    b.   * Peter giggled the doll.

(19) a.   The ice melted.

    b.   Peter melted the ice.

Italian auxiliary selection

In Italian, the difference between unaccusatives and unergatives shows up in the auxiliary that is used in the past tense. But children seem to use the right auxiliaries with the right verbs in Italian. And they use the right auxiliary in reflexive constructions.

(20)   a.   * Gianni ha andato.

   b.   Gianne è andato.

So: There does seem to be some evidence that children *know* the difference between unergatives and unaccusatives. For one thing, they presumably don't have to re-learn all of the unaccusative verbs once it becomes possible. Also it's very non-adult-like to start a "theme" in the "agent" position in the sentence.

3.4   Russian unaccusatives

Russian genitive of negation

Babyonyshev et al. (2001). In negative sentences, an object under negation can be accusative (if the object is definite/specific) or genitive (if the object is indefinite/non-specific).

(21)   Ja ne poluchil pis'ma.
   I   not received letter.ACC.PL
   'I didn't receive the/some letters.'

(22)   Ja ne poluchil (nikakix)   pisem.
   I   not received (NEG.kind.GEN.PL) letter.GEN.PL
   'I didn't receive any letters.

(23)   Ja poluchil pis'ma / *pisem.
   I   received letter.ACC.PL / *letter.GEN.PL
   'I received the/some letters.'

Russian genitive of negation (cont'd)

Arguments of unaccusatives and passives (pronounced in their postverbal position) can also be marked with genitive of negation. Idea: this is something that is specially available to an argument that is inside the VP.

Babyonyshev et al. argue that unaccusatives and passives still involve an A-chain, of the same kind as in English. What's different is that the A-chain is kind

of abstract—it doesn't rely on movement in the same way, but it still has to "reach up and touch" the SpecIP subject position.

Predictions for ACDH-age children

If there is still an A-chain here, we expect young children to have trouble. There is no possibility of "S-homophones" here, because the object (unaccusative argument) is visibly still in the object position. So, it doesn't look like an unergative.

For *transitives*, there is is no particular problem predicted, no A-chain needed.

Base result: 30 kids tested in Moscow, between 3;0 and 6;6. With transitives, they use genitive about 75% of the time where it should be used, and around 4% of the time where it should not be used.

Results by subject

Babyonyshev et. al looked the pattern of responses (in terms of case) for four verb types. This broke the children into classes

- transitive non-specific   (adult: gen)

- transitive specific   (adult: acc)

- unaccusative   (adult: gen)

- bleached unaccusative   (adult: gen)

- Kids who don't know how to use GoN at all.

- Kids who use GoN like adults (post-ACDH kids).

- Kids who use GoN right for transitives, not for unaccusatives.

- *Kids who use GoN right for unaccusatives, not for transitives.
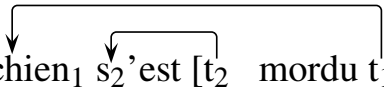
4 External arguments

4.1 External Argument Requirement Hypothesis

Reflexives and auxiliary selection

Synder, Hyams & Crisma (1994) found that French children get auxiliary selection correct, from a young age—in particular, with reflexive clitics, which arguably involve an A-chain.

(24)   Le chien$_1$ s$_2$'est [t$_2$ mordu t$_1$].

Passives, unaccusatives, and these reflexives all have an A-chain. But the first two of these *lack an external argument* (no "underlying subject," in other words). Thus, an alternative to ACDH: the External Argument Requirement Hypothesis (EARH): children need an external argument.

What else does EARH predict?

EARH predicts that children will do poorly on anything without an external argument.

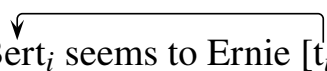- Fine: transitives, unergatives.

- Not fine: unaccusatives, passives.

Also would seem to predict no "weather verbs" like in "it rained." Kirby & Becker (2007) find them, though, and way too early. (Adam by 2;6, Eve by 1;12, Nina by 2;2, Peter by 2;6).

4.2 Raising verbs

Raising verbs

Wexler (2004) reported children having trouble with "raising verbs":

(25)   Bert$_i$ seems to Ernie [t$_i$ to be wearing a hat].

Children should have trouble with *seems* generally under EARH, or with the raising itself under ACDH. And children seem to do fine on "it seems" cases— breaking in favor of the ACDH over EARH. (Romance auxiliaries remain mysterious, though.)

(26)   It seems to Ernie [that Bert is wearing a hat].

5 High science

5.1 Motivating movement

More raising verbs

Becker (2006) found that kids do very well with:

(27) The hay$_i$ seems t$_i$ to be on the ground.

(28) The dog$_i$ seemed t$_i$ to be purple.

So, it's the experiencer (the "to"-phrase) that seems to be causing the trouble with raising structures (though the experiencer is fine in *it*-structures).

Even weirder fact

Hirsch & Wexler found (I believe, here I'm relying a bit on memory from a 2004 talk) that children do fine with experiencers in raising constructions *in wh-questions*.

(29) # Bert seems to Ernie to be wearing a hat.

(30) Who seems to Ernie to be wearing a hat?

Theoretically, under a proposal made by Wexler (2004), this is actually predicted. The idea is that *Bert* is unmotivated to move (it's not the A-chain exactly that's the problem, but making the DP move in the first place), but if it has to move for another reason (like being a *wh*-word), then everything's fine.

5.2 Smuggling

Smuggling

Hyams & Snyder (2005) propose an analysis that has the effect of saying that the movement motivation is curtailed if the movement makes an A-chain *over* a DP (the idea is basically that you can't do a longer movement than necessary, and the closer DP could have moved instead), then a particular type of movement ("smuggling") is required. And what children have trouble with is "smuggling."

This gets most everything: Romance reflexives (the *se* doesn't get in the way, it's a clitic), passives (implicit or explicit agent gets in the way, smuggling required), unaccusatives (no smuggling required—are we sure kids have trouble with

these?), raising past experiences (experiencer gets in the way, smuggling required), raising without experiencers (no smuggling required).

5.3   Beauty and awe

Beauty & Awe: Lg. Acq. as high science (Wexler 2004)+

- Passives hard? Why? The movement. What else has the movement?

- Unaccusatives? Maybe also hard. But Romance reflexives aren't. Is it the external argument? What else lacks an external argument?

- Raising verbs? Hard, but only when there's the movement. So, it's the movement still, but not A-chains, maybe the motivation for the movement. When might you be independently motivated to move?

- *Wh*-words in raising contexts? Possible. But raising without experiencer seems to be possible. Why?

- Kids can't smuggle? But we'll need to re-evaluate unaccusatives.