Resultatives and Causatives

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"Yes. If anything happens to me, he gets everything. Oh my God, Kat, he could murder me dead and get all my money."
Murder me dead? Somewhere a grammar teacher rolled over in her grave.
(K. Kijewski, *Stray Kat Waltz*, Putnam, New York, 1998, p. 64)

1 Introduction

• Transitive resultative constructions are often analyzed as single, but complex events, typically causative events (e.g., Carrier & Randall 1993:124-125, Dowty 1979:220, Goldberg & Jackendoff 2004, Jackendoff 1990, Pustejovsky 1991:64-65, RH&L 1998, 2001).

(1)   The waitress comes back, **wiping the silverware dry** with a cloth napkin before laying it out. (M.G. Jaffe, *Dance Real Slow*, Farrar Straus Giroux, New York, 1996, p. 24)

(2)   Last night, the dog **poked me awake** every hour to go outside. (G. Dunford, "Charity's for the Birds", *The Toronto Sun*, November 27, 1994, p. 6)

• One reason: easily given a paraphrase which explicitly references two events; can take the form '*causing event* CAUSE *result event*'.

(3)   *Tracy wiped the table clean* is paraphrasable as 'Tracy wiped the table causing it to be clean' or more colloquially 'Tracy cleaned the table by wiping it'.

• That is, the referent of the postverbal NP comes to be in the state denoted by the XP as a result of the action denoted by the verb.

• Thus, resultative constructions could be used to shed light on the nature of causative events.

• There are conditions on the relation between the two subevents in resultatives:

(4)   a.   The subevents need not be temporally dependent.
        b.   The result subevent cannot begin before the causing subevent.
        c.   Only the result subevent can bound the event as a whole.
        d.   There is no intervening event between the causing subevent and the result subevent; that is, causation is direct.
        (RH&L 2001:783, (45))

(5)   Direct causation is present between the causer and the final causee in a causal chain (1) if there are no intermediate entities at the same level of granularity as either the initial causer or final causee, or (2) if any intermediate entities that are present can be construed as an enabling condition rather than an intervening causer. (Wolff 2003:5)

• Resultatives are said to share these properties with lexical causatives (Goldberg 1995:194–195), especially (4d), which is taken as established for lexical causatives (e.g., Fodor 1970, McCawley 1978, Pinker 1989:66, Shibatani 1976, Smith 1970, but see Neeleman & van de Koot 2012).

(6)   Tracy cleaned the table.

• In discussions of lexical causatives, considerable attention is paid to the 'beginning' of the causal chain — the causer and the causing event — but less is paid to the 'middle', the part relevant to the direct causation condition — or if the direct causation condition is called into question, then the alternative condition relevant to ensuring that the two subevents indeed form a single event.

• Transitive resultatives are a good domain for examining the 'middle' of a causal chain: unlike lexical causatives they include explicit reference to the causing event (via the verb), as well as the result event (via the XP).

• Particularly relevant are a subtype of resultatives, nonselected NP resultatives, where the link between the causing event and the result event is left implicit.

(7)   Audrey flipped a mug into the air, caught it by its handle, and **poured it full**. (L. Greenlaw, *Fisherman's Bend*, Hyperion, New York, 2008, p. 219)

(8)   He had set an alarm, which rang at five thirty the following morning, **shrilling them both awake**. (R. Pilcher, *Voices in Summer*, St. Martin's, New York, 1984, p. 116)

• Key properties of nonselected NP resultatives:
(i) their postverbal NP is not the object of the verb (e.g., *pour the mug*; cf. *wipe the silverware*)
(ii) there is often an understood but unexpressed participant in the causing event (e.g., coffee)
(iii) there is an implicit link between the subevents (e.g., [pour the coffee] so [it fills the mug])

• In particular, although the understood participants are 'intermediate entities' of the same level of granularity as the causer and causee, the acceptability of these resultative constructions means that they do not count as 'intervening causers' for clause 2 of the direct causation condition (5).

• Thus, identifying the precise relation between the subevents should provide insight into the well-formedness conditions on resultatives, including direct causation. Of particular interest: the relation that the postverbal NP holds to the causing event in nonselected NP resultatives, especially to any understood participant in this event as it qualifies as an 'intermediate entity'.

Goal of the talk: To probe these issues using naturally occurring data.

• The understood participant has not gone unnoticed (e.g., Iwata 2014, Kaufmann & Wunderlich 1998), with some indirectly pointing to a relation between this participant and the postverbal NP:

— Jackendoff (1990:226–227) and Sato (1987:93) say it often is an 'adjunct' of the verb: e.g., (7).

(9)   They poured coffee **into the mug**.

— However, it is not always clear that the postverbal NP bears an adjunct relation: e.g., (8).

2   The data and its sources

Focus: Transitive resultative constructions whose result XP is headed by an adjective,
      i.e. constructions of the form 'NP1 V NP2 AP', where AP is predicated of NP2;
      ignore constructions of the form 'NP1 V NP2 PP', where PP is predicated of NP2
      ignore intransitive constructions of the form 'NP1 V XP', where XP is predicated of NP1

• Resultative constructions with a reflexive pronoun postverbal NP will be subsumed under selected NP or nonselected NP resultative constructions as appropriate (e.g., selected NP *She scrubbed herself (red) with the loofah*, nonselected NP *The politician talked himself *(hoarse)*).

• The selected vs. nonselected NP subtypes are recognized for their descriptive usefulness; many formal accounts analyze all resultatives as having nonselected NPs; see Hoekstra (1988, 1992a, 1992b) for syntactic arguments and Grône (2014) for semantic arguments.

The source of the data: A collection of just under 1250 naturally occurring transitive resultative constructions predominantly drawn from newspapers and fiction written since the mid-1980s; some recent web examples have been added to explore particular verb–result AP combinations further.

A caveat: Since the examples are not drawn from a 'balanced' corpus designed to be representative of current English, they bear on claims about what options are posssible, but any counts should at best be taken to be suggestive of patterns that may exist.

3   Direct causation holds of nonselected NP resultative constructions

• Certain verb–result XP combinations are unattested with nonselected NP interpretations and, in fact, such interpretations seem unavailable.

• No nonselected NP interpretation of '*kick* NP *open/closed/shut*' is attested in the corpus.

• Yet some strings such as '*rub* NP *raw*' are found with selected and nonselected NP interpretations.

(10)   The salt [in the ocean water] rubbed their feet raw. (L. Alvarez, "For Cubans in Miami, the Gulf to their Homeland Narrows", *The New York Times*, December 21, 2014, p. 21)

(11)   . . . the author had rubbed her hands raw while scrubbing the hems of her older sisters' long dresses . . . (M.M. Hill, *Death Books a Return*, Pemberley Press, Corona del Mar, CA, 2008, p. 238)

• In fact, (12) does not allow the nonselected NP interpretation in (12a), although the scenario being described is plausible—and might have been described by such a resultative.

(12)   Sam kicked the door open.

      a.   Impossible interpretation: Sam kicks a ball which hits the door, causing it to open.

      b.   Possible interpretation: Sam's foot makes contact with the door, causing it to open.

• This example, like comparable examples in the corpus, allows the selected NP interpretation in (12b); on this interpretation a causer directly contacts the entity denoted by the postverbal NP.

The reason: The impossible interpretation violates the direct causation condition: the ball qualifies as a causer, so there is an intervening causer/event between Sam's action and the change of state.

— A launched ball is what Kearns (2000:241), drawing on Cruse (1973:19-20), terms a projectile: an entity that moves due to an imparted force; see also Wolff et al. (2010).

— Such an entity may itself impart this force to another entity through contact, just like other causers—agents, natural forces, and certain instruments—may (Wolff et al. 2010:96).

— Projectiles pattern with other causers with respect to common diagnostics (Cruse 1973:19-20):

(i) They pass the '*what* X *did*' test:

(13)   a.   What the ball did was break the window.

           b.   What Cameron/the crane did is break the window.

(ii) They may be subjects of certain transitive verbs:

(14)   a.   The ball broke the window.

           b.   Cameron/the crane broke the window.

Note: *shoot someone dead* is not a counterexample: it may appear to have an interpretation comparable to (12a), but it does not as the meaning of *shoot* involves firing a gun and not the bullet.

• (15) presents an example which is comparable to (12): again a nonselected NP interpretation is not possible, and again this interpretation would involve an intervening causer.

(15)   Tracy pushed the door open.

          a.   Impossible interpretation: Tracy pushed on a red button that sets a mechanism in operation that opens the door.

          b.   Possible interpretation: Tracy pushed on the door, causing it to open.

(16)   a.   What the red button did is open the door.

           b.   The red button opened the door.

The button serves as a (proxy for a) mechanism with its own energy source, qualifying as a causer.

• The impossible interpretations suggest transitive resultatives meet the direct causation condition.

4   More on the causing event: The verb in the resultatives

• A preponderance of the result states in the corpus are physically instantiated as in (17); cf. (18).

(17)   awake, bare, barkless, black, blank, bloody, clean, clear, closed, coarse, dark, dry, empty, flat, full, free, hoarse, insensible, . . .

(18)   clueless, crazy, helpless, loopy, speechless, witless, . . .

• Concomitantly, the actions that bring these physical states about involve physical manipulation, surface contact, impact, or force exertion.

• Thus, the verbs in resultatives are predicted to lexicalize such actions, especially those actions that are regularly performed to bring about the relevant result.

• Such verbs are typically what are called 'manner' verbs, a set which contrasts with 'result' verbs (L&RH 1991, 2013, RH&L 1998, 2010).

— Manner verbs: specify a manner of carrying out an action (e.g., *pound, sweep*);
     the manner may be conventionally associated with a certain result state,
     although the result isn't entailed (Talmy 2000).

— Result verbs: specify the result of an action (e.g., *remove, put, cover, empty, clean*);
     lexically specify a scalar change (Hay, Kennedy & Levin 1999, Rappaport Hovav 2008).

(19)   I just wiped the counter, but it's still dirty/sticky/covered in crumbs.

• A result XP can be used with a manner verb to explicitly express the achievement of a result.

(20)   # I just wiped the counter clean, but it's still dirty. (Contradiction)

(21)   # I just wiped the counter clean, but the wiping had nothing to do with the cleanness. (Contradiction)

• A resultative construction, in fact, is nothing more than a construction where a manner verb is combined with a result XP.

• Further, two-argument manner verbs need not express their non-effector argument (Levin 1999, RH&L 1998, 2010), the prerequisite for a nonselected NP resultative.

Next step: Consider some case studies to see what other properties of the manner verb and the result XP in a resultative license the well-formedness of the construction.

5   A case study: Result APs headed by the adjective *dry*

• This result AP, unlike many others, is equally prevalent in both selected NP and nonselected NP resultatives in the corpus, allowing the conditions on the use of each to be compared.

• An examination of the data shows that the type of resultative overwhelmingly correlates with the nature of the entity that the result *dry* is predicated of: is it a surface or a container?

(22)   Selected NP resultative/Result AP predicated of a surface:

   a.   The waitress comes back, wiping the silverware dry with a cloth napkin … (M.G. Jaffe, *Dance Real Slow*, Farrar Straus Giroux, New York, 1996, p. 24)

   b.   He took the towel from her hands and patted her face dry. (A. Meyers, *The Groaning Board*, Doubleday, New York, 1997, p. 266)

(23)   Nonselected NP resultative/Result AP predicated of a container:

      a.   Having ... drunk the teapot dry ... (E. Dark, *Lantana Lane*, Virago, London, p. 94)

      b.   One of them [=tea kettles] must've whistled itself dry ... (S.J. Conant, *Ruffly Speaking*, Doubleday, New York, 1995, p. 76)

		Selected NP	Nonselected NP
dry	(of a surface, e.g., counter, floor)	28	3
dry	(of a container, e.g., well, tank, lungs)	10	28

5.1 Selected NP resultatives: The entity is a surface

• When predicated of a surface, *dry* indicates the surface has no liquid on it.

• This state is brought about by removing any liquid from a surface.

• This is usually brought about through actions directed at a surface; many can be used even on a dry surface (e.g., *pat, rub, wipe*); further, some involve an instrument which can absorb or remove the liquid on the surface (e.g., *wipe*).

• The verbs attested in the resultatives lexicalize precisely such actions:

(24)   VERBS INCLUDE: blot, brush, dab, lick, rub, spin, wipe, ...

• Unsurprisingly, as these actions are directed at the surface, they are lexicalized by verbs which take the surface as object, giving rise to selected NP resultatives.

5.2 Nonselected NP resultatives: The entity is a container

• When predicated of a container, *dry* indicates the container is empty of liquid.

• This state is usually brought about by actions directed at the liquid in the container—the container's contents—rather than at the container itself.

• The relevant actions are of two types, depending on the nature of the container:

—- A 'true' or prototypical container or something construed as such:

(25)   Having ... drunk the teapot dry ... (E. Dark, *Lantana Lane*, Virago, London, p. 94)

The actions are designed to (re)move the liquid, perhaps through the use of an appropriate instrument; thus, they are lexicalized by verbs that take the liquid as their object.

(26)   VERBS INCLUDE: boil, drain, drink, pump, slurp. suck, whistle, ...

— A body part (e.g., the lungs, vocal tract) or even the body, which may be viewed as a container; occasionally, even an inanimate entity viewed as having an internal energy source:

(27) a. Davina and I erupted from the knife-sharp grass, shrieking our lungs dry … (M. Meyers, *Swimming in the Congo*, Milkweed, Minneapolis, MN, 1995, p. 29)

b. One of them [=tea kettles] must've whistled itself dry … (S.J. Conant, *Ruffly Speaking*, Doubleday, New York, 1995, p. 76)

The actions involve the secretion (usually by a human) of a substance or the emission of a sound—actions which may result in a body (part) becoming dry. The sound/secretion is usually unexpressed, but is sometimes the object of the verb lexicalizing the action (*shriek an ear-shattering shriek*).

(28) VERBS INCLUDE: boil, cry, shriek, sweat, talk, …

• In these examples, then, the container is not a basic participant in the action denoted by the verb and, thus, qualifies as a nonselected NP.

5.3 The bottom line on result APs headed by *dry*

• The nature of the postverbal NP affects the type of action needed to effect the result state.

• Nonselected NP resultatives emerge as states of containers can be altered by affecting the contents.

Note: The container–contents relation is privileged conceptually, if not linguistically.

— The ambiguity of *a cup of milk*: 'a cup filled with milk' or 'a quantity of milk equal to a cup'.

— A spatial relation comparable to the English preposition *in* is present in even small inventories of spatial relational terms (Levinson et al. 2003). This term encodes a figure contained in a ground. There is evidence that this relation is functional and not purely geometric: such terms apply equally to partial and full inclusion of the figure by the ground (e.g., flowers in a vase, an apple in a bowl).

Prediction (verified): Might expect that the state of a surface could be altered by an action directed at some third entity contiguous to the surface, giving rise to a nonselected NP resultative.

(29) … a skinny little white woman was washing a huge pile of fresh mixed greens and spinning them dry. (M. Maron, *High Country Fall*, Mysterious Press, New York, 2004, p. 145)

— Here greens are placed inside a salad spinner; the centrifugal force when it is in operation pushes any moisture off the greens.

— A reversal of the contents–container relation from the container *dry* nonselected NP scenarios.

5.4 Results APs headed by the adjectives *empty* and *full*

Prediction: Result XPs headed by adjectives that are near-synonyms or antonyms of container *dry* like *empty* and *full* should pattern like it in resultatives; that is, they should be found in nonselected NP resultatives with the container as the postverbal NP.

• These result APs are found in nonselected NP resultatives comparable to those with container *dry*.

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(30) Tom waggled the bottle at me, and swigged it empty when I declined. (S.W. Boneham, *The Money Bird*, Midnight Ink, Woodbury, MN, 2013, p. 11)

(31) Maxey stood up to get a glass and pour it full of milk. (C. Cail, *Unsafe Keeping*, St. Martin's, New York, 1995, p. 146)

● These states are predicated of more entities than *dry*: they apply to solids as well as liquids.

● Thus, there are more actions can be done to containers to achieve these results, including some that involve affecting the container directly (e.g., *shake*), giving rise to selected NP resultatives.

(32) She knelt before him and taking one of his hands in hers, shook the bag empty. (P. Patterson, *Spirit Path*, iUniverse, Lincoln, NE, 2002, p. 94; https://books.google.com/books?isbn=0595216714)

		Selected NP	Nonselected NP
dry	(of a container)	10	28
empty		4	8
full		10	20

● The corpus includes proportionally more selected NP resultatives with *full* and *empty* than *dry*.

● Among them, 5 instances of the selected NP resultative '*fill* NP *full*', whose result AP reiterates the final state associated with a change of state verb, probably to overcome 'pragmatic halo' effects.

6 Refining the picture

6.1 When the AP is headed by the adjectives *clean/clear/bare/barkless/free*

● These adjectives denote states that involve:
— the absence of impurities from some entity (*clean*)
— the absence of any covering on a surface (*bare, barkless*)
— the absence of obstructions on a surface (*clear, free*)

● The relevant impurities, coverings, or obstructions can be explicitly expressed as an argument of these adjectives as in *clean of crumbs* or *bare of leaves*.

● The adjectives name states that are typically not inherent to an entity, but are externally caused; that is, they come about as a result of some sort of action on the entity.

Predictions (verified below):
— If the action is directed at the relevant entity, expect a selected NP resultative.
— If the action is directed at the impurities, expect a nonselected NP resultative.

6.1.1 Selected NP resultatives

● Attested selected NP resultatives involve actions that are conventionally performed with the goal of achieving one of these states; these actions involve contact with an entity through the exertion of a force of some kind, having as a side effect the removal of stuff/impurities/obstructions.

● Thus, these result APs are attested primarily with verbs of surface contact.

• These are selected NP resultatives since these verbs take the surface—the argument the result AP is predicated of—as their object.

(33)   Verbs in resultatives with an AP headed by *clean*:

    a.   SURFACE CONTACT VERBS: lick, rake, rub, scour, scrape, scrub, sweep, wipe, . . .

    b.   OTHER VERBS: cream, hose, shake, slap, smack, splash, . . .

(34)   a.   She moved her teacup and reached for the sponge, wiping the counter clean. (M. Powers, *Sunflower*, Simon & Schuster, New York, 1998, p. 146)

    b.   She had creamed her face clean . . . (E. Taylor, *The Soul of Kindness*, Chatto & Windus, Great Britain, 1964, p. 104)

• The impurities/stuff/obstructions are often left unexpressed, but they may be expressed in the *of* complement to the result AP, as in (35); however, they are not arguments of the verb.

(35)   a.   Lancelot, I noticed, had licked his scratched leg clean of blood. (B. Lee, *Death in Still Waters*, St. Martin's, New York, 1995, p. 75)

    b.   The bricks had been swept clean of every leaf. (M. Muller, *Trophies and Dead Things*, Mysterious Press, New York, 1990, p. 30)

6.1.2   Nonselected NP resultatives

• Attested nonselected NP resultatives involve actions directed at impurities/stuff/obstructions in order to remove them from some second entity; as a consequence, the second entity is in the desired result state; although not an argument of the verb, this entity is expressed as the postverbal NP.

(36)   VERBS INCLUDE: blow, eat, rub, spoon, suck, . . .

(37)   Others require you to take an air shower that blows you clean in the vestibule. (S. Boxer, "Moving From Scruffy Quarters to a Limestone Labyrinth", *The New York Times*, April 15, 2001, p. 18)

(38)   . . . the outside land which had been eaten bare by goats and horses . . . (A.W. Upfield, *Sinister Stones*, 1954; Collier Books, New York, 1986, p. 172)

• Noteworthy are *spit* and *sweat*, which have the result XP predicated of a body part; these verbs denote the emission of a secretion from this body part (e.g., saliva, sweat); the secretion may bring impurities away with it, resulting in the cleanness of the relevant body part.

(39)   Caz had to spit her mouth clean . . . (A. Keegan, *Cuckoo*, Headline Book, Great Britain, 1994; St. Martin's, New York, 1995, p. 32)

• Grône (2014) cites the nonselected NP resultative in (40) with the change of state verb *melt*, which resembles the other nonselected NP examples: the snow on the tree melts, leaving the trees clean.

(40)   . . . the warm snap had melted the trees clean. (COCA; Grône 2014:427)

Summary: The selected and nonselected NP resultatives with result APs headed by *clean* and related adjectives differ as to whether the action denoted by the verb is carried out on the postverbal NP or on an entity that impinges on this NP; if the latter, then this NP is nonselected.

6.2 When the AP is headed by the adjective *awake*

• Wakefulness, a state holding only of animate entities, can be brought about using actions that impinge on the sleeper.

• There are several ways of bringing this state about:
— A causer can cause a sleeper to awake through physical contact or manipulation
— A causer can cause a sleeper to awake by making a sound or even by gazing at the sleeper
— A sleeper might wake him/herself through an involuntary bodily process or through a deliberate activity intended to restore wakefulness.

Predictions (verified below):
— If the causer directly manipulates the sleeper, expect a selected NP resultative.
— If the causer emits a sound/gaze or does a bodily process, expect a nonselected NP resultative.

6.2.1 Selected NP resultatives

• Attested selected NP resultatives involve causers awakening the sleeper through some sort of physical contact or manipulation.

• Thus, they have verbs of contact by impact or of force exertion, which lexicalize these actions.

(41)   VERBS INCLUDE: bump, hug, jerk, kiss, poke, slap, tickle, tug, . . .

(42)   a.   Last night, the dog poked me awake every hour to go outside. (G. Dunford, "Charity's for the Birds", *The Toronto Sun*, November 27, 1994, p. 6)

        b.   . . . the moment he was deeply asleep Vinck was tugging him awake . . . (J. Clavell, *Shogun*, Atheneum, New York, 1980, p. 652)

• These are selected NP resultatives since these verbs take the sleeper—the argument that the result AP is predicated of—as their object.

6.2.2 Nonselected NP resultatives

• Many of the attested nonselected NP resultatives involve the causer emitting a sound—usually a loud or shrill sound—or less often directing a gaze at the sleeper.

• Thus, they have verbs of sound emission, of manner of speaking, or of looking (e.g., *stare*), which lexicalize these actions.

• Such verbs are typically intransitive, with the emitter or speaker as subject, and to the extent they may take an object, it denotes sounds or words (e.g., *shout an answer*).

(43)   VERBS INCLUDE: bark, crow, jangle, scream, shout, shrill, stare, . . .

        a.   . . . the roosters that scratch in the yard of Brastagi's best hotel crowed me awake that dawn a few months ago . . . (T. Robbins, "Treks for the Sophisticated Traveler", Section 6, Part 2, *The New York Times*, March 16, 1986, p. 8)

        b.   Even Charlotte had been unable to stare her awake as she usually did. (J. McGown, *Unlucky for Some*, Ballantine, New York, 2004, p. 203)

• The sleeper, however, is not the object of these verbs, so such resultatives express the sleeper as a nonselected postverbal NP.

• Although the sound/words/gaze are left unexpressed, they could be considered to impinge on the sleeper: the sound waves or the gaze make 'contact' with the sleeper.

• A smaller number of attested nonselected NP resultatives involve sleepers waking themselves through an involuntary bodily process or a deliberate activity.

• They include verbs lexicalizing actions which do not themselves take the sleeper as an argument, but as the state holds of the sleeper, the result AP *awake* is predicated of a reflexive pronoun, which qualifies as a nonselected NP.

(44)   VERBS INCLUDE: blink, cough, puff, read, snort, scream, shout, shower, stretch, . . .

(45)   a.   . . . he squirmed down, standing by her knees as he blinked himself awake. (S.F. Havill, *The Fourth Time Is Murder*, St. Martin's, New York, 2008, p. 221)
        b.   Yarborough was "a biblio-holic" and history buff who "read himself awake each morning." (J. Gonzalez, "Hundreds Mourn Yarborough", Texas Section, *The Fort Worth Star-Telegram*, January 31, 1996, p. 17; Nexis)

6.3   When the postverbal NP is a body part: Result APs headed by the adjective *raw*

• The adjective *raw* is attested in resultatives in the sense 'abraded, chafed'—a sense predicated of body parts—rather than the individual-level senses 'uncooked' (e.g., *raw meat*) or 'unprocessed' (e.g., *raw materials*).

• Concomitantly, the postverbal NP in such resultatives is almost invariably a body part.

• This state is externally caused to hold of a body part and comes about as a result of certain actions involving repeated, usually back and forth contact with this body part.

• Such actions are typically lexicalized by verbs of surface contact which take the surface—in these examples, the body part—as their object, giving rise to selected NP resultatives.

(46)   VERBS INCLUDE: bite, burn, floss, flay, lick, pluck, rub, scour, scrape, scrub, . . .

(47)   a.   Aunt Essie . . . scoured her fingertips raw with a brush to get all the tar out from under her nails . . . (M. Maron, *Home Fires*, Mysterious Press, New York, 1998, p. 39)
        b.   . . . the wiry grasses that would whip her legs raw within minutes. (V. McDermid, *Booked for Murder*, The Women's Press. London, 1996, p. 7)

• In fact in the corpus, this result AP is overwhelmingly found in selected NP resultatives, even if in the literature it is used in parade examples of nonselected NP resultatives, as in (48).

(48)   In its spare scenes of Andrew literally drumming his hands raw . . . (http://www.amny.com/ entertainment/whiplash-an-intense-marvel-of-a-movie-1.9485585; 12/17/2014)

• In the nonselected NP examples, the result AP is still predicated of a body part and the verb denotes an action that is performed on some unexpressed entity using that body part as a facilitating instrument; it is in the performance of this action that the body part becomes abraded or chafed.

7 On the wellformedness of transitive resultatives

The relevant question again: What is the relation between the causing and result subevents in a resultative construction? Of particular interest: the relation that the postverbal NP holds to the causing event in nonselected NP resultatives, especially to any understood participant in this event as it qualifies as an 'intermediate entity' with respect to the direct causation definition (5).

7.1 Selected NP resultatives

• The result state in the entity denoted by the postverbal NP is one that a causer, perhaps using an instrument, brings about by acting directly on this entity, usually via physical manipulation.

• Concomitantly, verbs denoting actions involving contact with a surface or exertion of a force on an entity are prevalent in selected NP resultatives.

• The choice among these semantic types depends on the nature of the result state.

• There is no 'intermediate entity' (except perhaps for a facilitating instrument) and, thus, no 'intervening causer' (let alone, an 'intervening event') in selected NP resultatives: the causer directly affects the postverbal NP, bringing about the result state.

• Thus, such resultatives meet the direct causation condition on well-formed resultatives.

7.2 Nonselected NP resultatives

• The result state in the entity denoted by the postverbal NP is one that a causer, perhaps using an instrument, brings about by acting on an understood entity which bears a close relation to the entity denoted by the postverbal NP in such a way that this action causes a change of state in it.

• The action on the understood entity often involves physical manipulation and, concomitantly, the verb denotes an action such as contact with a surface or exertion of a force.

• In some instances, the action involves the emission of a substance or sound/gaze that impinges on the entity denoted by the postverbal NP; the construction then has a verb of substance or sound emission, manner of speaking, looking, or bodily process.

• Recapping, the understood entities fall into two major types (see Appendix for more):

— A physical entity which is spatially contiguous to the entity denoted by the postverbal NP, e.g., in a contents–container relation or inalienable possession relation to it.

EXAMPLE: In (49) the understood entity, tea, is contained in the entity denoted by the postverbal NP, *the teapot*.

(49)   Having ... drunk the teapot dry ... (E. Dark, *Lantana Lane*, Virago, London, p. 94)

— An emitted substance, sound, communication, or gaze which moves into 'contact' with the entity denoted by the postverbal NP.

EXAMPLE: In (50) the understood entity, the sound of the alarm, makes 'contact' with the entity denoted by the postverbal NP, the sleeper.

(50)   He had set an alarm, which rang at five thirty the following morning, shrilling them both awake. (R. Pilcher, *Voices in Summer*, St. Martin's, 1984, p. 116)

• However, the understood entity does not in any sense constitute an 'intervening causer' since it does not have any internal energy source of its own (Wolff et al. 2010).

• Thus, such resultatives meet the direct causation condition despite the nonselected NP.

8   Conclusion

• This study explored a subtype of resultative construction that sheds light on the nature of the direct causation condition and causation more generally.

• It confirms that the direct causation condition is indeed important to the well-formedness of resultative constructions.

Appendix: Attested resultative subtypes

See Levin (2015) for case studies and examples underlying these tables.

Selected NP resultatives

Result AP	Postverbal NP	Action type	Example
dry	surface	surface contact	wipe the forks dry
clean/clear/bare	surface	surface contact	wipe the table clean
empty/full	container	exerting force/ingesting	shake the bag empty
open/closed/shut	container	exerting force/impact/rupturing	tear the bag open
open/closed/shut	portal/barrier	exerting force/caused manner of motion	push the door open
flat/smooth/thin	physical entity	exerting force/surface contact/	smash the grape flat
free	attached entity	exerting force/body-internal motion	jerk the key free
raw	body part	surface contact	scrub fingers raw
awake	animate entity	exerting force/surface contact	jerk Tracy awake

Nonselected NP resultatives

Result AP	Postverbal NP	Unexpressed entity	Action type	Example
dry	container	contents	manner of liquid removal sound/secretion emission	drink the teapot dry
full/empty	container	contents	manner of putting/ ingesting	pour the dish full
clean	body part	secretion	emission of secretion	spit one's mouth clean
clean/clear/ bare	surface	debris/stuff on surface	ingesting/surface contact	blow/eat the field bare
open/shut/ closed	container	lid/seal	action on lid/seal	pop the can open
open/shut/ closed	container	closure	action on closure/lock	click the case open
flat/thin/ smooth	force recipient	body part/ instrument	surface contact	stomp the hat flat/ run the pavement thin
free	attached entity	connection to anchor	force exertion/ surface contact	kick oneself free
raw	body part	force recipient	surface contact	scrub one's fingers raw
awake	perceiver	sound/gaze	sound emission/ directing gaze/ bodily process	bark/snort/stare someone awake
awake	addressee	sign/words	manner of speaking bodily process	cough/shout someone awake
hoarse	'subject'	sound/body part	manner of speaking/ bodily process	shout/cough oneself hoarse

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