

# On the polysemy of derivational exponents

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# 1. Typical cases

- Haspelmath (2002) mentions a well-known fact about French, namely that suffixing *-ier* to the stem of nouns that denote a fruit allows one to derive the name of the tree which yields this fruit.
- Examples (1) illustrate this phenomenon and (2) expresses the meaning it involves as an inference

(1) *pomm-ier* 'apple-tree', *prun-ier* 'plum-tree', *abricot-ier* 'apricot tree', *cocot-ier* 'coconut palm', *pamplemouss-ier* 'grapefruit tree', *avocat-ier* 'avocado tree', *banan-ier* 'banana tree', *groseill-ier* 'redcurrant bush'

(2) **Fruit tree**

If N denotes a kind of fruit, then N-ier denotes the tree that produces that fruit e.g. *poire* 'pear' / *poirier* 'pear-tree'.

- However many other nouns suffixed by *-ier* exist and have a completely different meaning
- (3) a. **Producer / trader** *bijout-ier* 'jeweller', *armur-ier* 'gunsmith', *céréal-ier* 'cereal farmer' *chemis-ier* 'shirt maker'
- b. **Hunter** *renard-ier* 'fox-hunter', *canard-ier* 'duck hunter', *loutr-ier* 'otter hunter'
- c. **Container** *sucr-ier* 'sugar bowl', *chéqu-ier* 'checkbook', *plum-ier* 'pencil box'
- d. **Boat** *langoust-ier* 'lobster boat', *thon-ier* 'tuna boat', *balein-ier* 'whaleboat'

- An inferential account can be devised for each of these cases too, as long as the base supplies us with the information needed to specify the meaning associated with these derived lexemes.

(4) **Producer/trader**

If N denotes a kind of artefact, then N-ier denotes the person who produces, sells or uses that artefact e.g. *horloge* 'clock' / *horloger* 'watchmaker'

(5) **Hunter** If N denotes a wild animal species, then N-ier denotes the agent who hunts that species e.g. *renard* 'fox' / *renardier* 'fox-hunter'

(6) **Container**

If N denotes a substance or an object having a specific use, then N-ier denotes the container where that substance or object is kept e.g. *sucre* 'sugar' / *sucrier* 'sugar bowl', *plume* 'nib' / *plumier* 'pencil box'

- In all these cases, an exponent is connected with multiple meanings:  
1 form ↔ n meanings
- This situation seems to support the idea that affix *-ier* is polysemic
- If this hypothesis is true, it should be possible to claim that *-ier* is intrinsically associated with several meanings such as 'agent', 'tree', 'container', 'boat', etc.
  - However these contents cannot be associated with *-ier* since they correspond to the entire meaning of the derived word
  - Under these conditions, any additional semantic instruction attached to *-ier* risks being redundant or otherwise eluding any formulation
- We only know for sure that the formulation of the appropriate derived meaning depends on two elements: the meaning of the base and the presence of the derivational exponent in question.
- It is difficult to conceive of the latter as a function that neatly applies to the semantics of the base to yield the meaning of the derived lexeme
- This is why an 'inferential approach' seems better suited to describe what is going on: it limits itself to providing the crucial clues

- Consequences for polysemy

- If the derivational suffix *-ier* is not associated with any fixed meaning, it cannot be a morpheme and has to be analyzed as a morph (Crysmann & Bonami, 2015, Haspelmath, 2020).
- Since it cannot, and need not, be correlated with any identifiable meaning, it cannot be polysemous either

- Empirical issues

- ① We have to account for the fact that several sets of derived lexemes suffixed by *-ier* exhibit completely different meanings and this account cannot resort to the polysemy of the exponent as an explanation of the phenomenon
- ② We need to uncover which elements play a role in the construction of the meaning of lexemes suffixed by *-ier*
- ③ Are they lexemes derived with other exponents that semantically behave like lexemes suffixed by *-ier*?

- Theoretical issues

- ① Do polysemous derivational affixes of a type different from *-ier* exist at all?
- ② If they do, which conditions make polysemy possible for some derivational exponents and which forbid this possibility for others?

## 2. Empirical issue. The origin of derived meaning

- The meaning of the derived nouns in *-ier* mentioned so far cannot be obtained through the combination of the meaning of their parts inasmuch as the derivational exponent lacks any identifiable meaning
- I assume that this derived meaning comes from the discourse the derived lexemes occur in and, more broadly, from the lexical networks they belong to
- Word and Paradigm approach
  - For inflection, Blevins (2016, 170) claims that “Paradigmatic relations (...) operate over larger sets of words (...) It is the affiliation with these larger sets of forms that principally constrains uncertainty in the association between individual word-forms and grammatical properties”.
  - For derivation, the association between individual derived words / lexemes and their meaning is constrained by the morphological derivational series they belong to
  - The items of each series have distinct syntactic distributions, hence distinct meanings



- Example: the word *sucriers* exhibits two different meanings in (7a) and (7b), respectively 'sugar bowl' and 'sugar manufacturer' because it is correlated with a lexeme that belongs either to derivational series (8a) or (8b)

- (7) a. L'analyse des possibilités de l'éthanol (...) fait clairement apparaître que les *sucriers* et les distillateurs ne contribueraient que modestement à ce dessein national. (Web)
- b. (...) verres de couleur pour les vitraux d'églises et un verre ressemblant à une porcelaine demi-transparente pour les *sucriers* et les compotiers (Web)
- (8) a. *houblon* 'hop' / *houblonnier* 'hop farmer', *betterave* 'beetroot' / *betteravier* 'beetgrover', *céréale* 'cereal' / *céréaliier* 'grain farmer'
- b. *endre* 'ash' / *endrier* 'ash tray', *plume* 'nib' / *plumier* 'pencil box', *légume* 'vegetable' / *légumier* 'vegetable dish', *chèque* 'check' / *chéquier* 'checkbook'

- The meaning is built in discourse through sentences such as (7) and the semantic inferences they allow to draw
- These inferences are not the same in (7a) and (7b) since the verbal construction is different in both sentences, as (9)-(10) show.

- (9) a. *les sucriers et les distillateurs contribuent modestement à ce dessein national*  
'sugar manufacturers and distillers modestly contribute to this national design'
- b. \**les sucriers et les compotiers contribuent modestement à ce dessein national*  
'sugar bowls and compote dishes modestly contribute to this national design'

⇒ in (9), *sucriers* denotes a human being

- (10) a. *un verre ressemblant à une porcelaine demi-transparente pour les sucriers et les compotiers*  
'a glass which looks like semi-transparent porcelain for sugar bowls and compote dishes'
- b. \**un verre ressemblant à une porcelaine demi-transparente pour les sucriers et les distillateurs*  
'a glass which looks like semi-transparent porcelain for sugar manufacturers and distillers'

⇒ in (10), *sucriers* denotes a container made of glass or china

- These inferences are of the same nature as those put to the light by Dowty (1989) in the constitution of thematic roles

### 3. Empirical issue. Triggering mechanisms

- Two points emerge from the discussion
  - The main semantic source of the derived meaning is the base
  - The base's referent is supposed to have an ontology rich enough for the derived meanings to be distinguished from one another without problem
- This view is not complete however, insofar as suffix *-ier* too plays a role in the construction of the derived lexeme's meaning: it puts constraints on the type of information of its base which can be activated
- This can be illustrated through the contrast between adjectives suffixed in *-ier* and *-eux*, a topic discussed at length in Corbin & Corbin (1991).

- Both adjectives *laitier* and *laiteux* are derived from *lait* ‘milk’
- To account for the contrast between (11a) and (11b), Corbin & Corbin (1991) contend that, semantically,
  - suffixation in *-ier* builds a prototype of the base noun’s referent and selects pragmatic properties of this prototype, excluding sensory or intrinsic properties
  - whereas suffixation by *-eux* selects from the intrinsic properties of the base noun referent (see also Fradin, 2007)

(11) a. *un ciel laiteux* ‘a milky sky’ / a’. *\*un ciel laitier*

b. *\*une coopérative laiteuse* / b’. *une coopérative laitière* ‘a dairy cooperative’

- The grammaticality judgements attested in (11) depend on the semantic relationship between the referent of the base-noun (milk) and that of the head-nouns (sky, cooperative)
- In (11a) color of the sky = color of the milk (intrinsic property); in (11b) the cooperative collects milk and manufactures dairy products (pragmatic relationships)

- The comparison between *-ier* and *-eux* suffixation was more relevant for Corbin & Corbin (1991) than for us to the extent that these authors claimed that *-ier* was primarily used to build adjectives, which were converted in nouns afterwards
- Nevertheless, it can be argued that suffixed nouns in *-ier* impose similar constraints on the relationship between their referent and their base-noun
- According to Corbin and Corbin, this relationship must be pragmatic i.e. it must express action on the real, scenarios involving human actors, be use-oriented, etc.
- But Roché (1998) has shown that other types of relationship can be attached to derived lexemes suffixed by *-ier*, for instance spatial or synecdochical relationships

- Can't we save the idea that suffix *-ier* is polysemous giving it a very abstract meaning of which the various observed meanings would be particular instances ? This idea raises two problems
  - Analyses that use abstract representations rarely provide all the (formal) steps to obtain the senses attested from the abstract formula (Victorri & Fuchs, 1996)
  - In the case of *-ier*, various meanings can be grouped together because they exhibit some semantic similarity (Roché, 1998). But these groupings cannot be subsumed under a unique abstract meaning because they are too different from one another viz. they involve an agentive relationship vs. a spatial one vs. an identification vs. a synecdoche (Roché, 2006)
- In what follows, I would like to show how fine-grained distinctions are crucial to formulate the meaning and identify the denotatum of derived nouns in *-ier*.

- Investigations will be limited to derived nouns suffixed in *-ier*
- Derived adjectives will only be mentioned as additional examples

Examples	Category	Constituents
<i>potier</i> 'potter'	<b>Derived N (dN)</b>	<i>potier</i>
	<b>Base-N (bN)</b>	<i>pot</i> 'pot'
<i>industrie laitière</i> 'dairy industry'	Head-N (hN)	<i>industrie</i> 'industry'
	Derived-A (dA)	<i>laitier</i>
	Base-N (bN)	<i>lait</i> 'milk'

Table: Terminology

- We are interested by the nature of the relationship between the referent of the derived-N (dN) and that of the base-N (bN)



- The agentive relationship is the relation with the greatest number of derived nouns
- According to Roché, originally agentivity oscillates between the two poles mentioned in (12)
- The point is that the formulation of the meaning assigned to the derived N varies according to the properties associated with the referent of the base N

(12) a. X[AGT] is in charge of Y

b. X[AGT] takes care of Y

- A sample of examples will illustrate some typical cases

(13) **Producer/trader**

If bN denotes a concrete artifact having a specific use, then N-ier denotes the person who makes, repairs or sells that artefact e.g. *pot* 'pot' / *potier* 'potter'; *chemis-ier* 'shirt maker', *sabot-ier* 'clog maker'

(14) **Operator** If bN denotes a machine or a boat, then N-ier denotes the agent who drives or operates that machine e.g. *grue* 'crane' / *grutier* 'crane operator'; *pirogu-ier* 'canoeist', *aérost-ier* 'aerostat pilot'

(15) **Keeper** If bN denotes an institution that provides services for consideration, then N-ier denotes the agent who runs or is in charge of this institution e.g. *hôtel* 'hotel' / *hôtelier* 'hotelkeeper'; *boutiqu-ier* 'shopkeeper', *cabaret-ier* 'innkeeper'

(16) **Practitioner** If bN denotes an activity, then N-ier denotes the agent who practices this activity e.g. *couture* 'sewing, dressmaking' / *couturier* 'fashion designer'; *cuisin-ier* 'cook', *contreband-ier* 'smuggler'

- A few examples of non-agentive derived nouns

- (17) **Protection** If bN denotes a body-part, then N-ier denotes a piece of equipment that protects this body-part e.g. *jambe* 'leg' / *jambière* 'greave'; *mentonn-ière* 'chin bar', *vis-ière* 'visor'
- (18) **Habitat** If bN denotes a wild animal, then N-ière denotes the area where this animal lives e.g. *héron* 'heron' / *héronnière* 'place where herons live'; *escargot-ière* 'snail-farm', *fourmil-ière* 'ant hill'
- (19) **Functional opening** If the bN denotes a shooting instrument or a part of an object intended to be adjusted to a larger container, then the dN denotes the opening (hole, slot) through which what is shot passes or inside which the object is fastened to the container e.g. *bouton* 'button' / *boutonnière* 'buttonhole'; *arch-ère* 'loophole', *chat-ière* 'catflap', *coutr-ière* 'plough part to maintain the coulter'

- The just-mentioned examples show that the base referent provides crucial information for the formulation of the semantic relationships between the bN and the dN
- This is possible only because the base nouns denote entities with a rich ontological content
- On the model of what happens for *sucrier*, the semantic relationships in question
  - are rooted in morphological series of derived Ns where the meaning / form correlation is kept constant
  - are made visible though the recurrent inferences that can be drawn from the sentences in which the derived nouns suffixed in *-ier* occur
- Moreover, complex nouns derived in a way similar to derivatives in *-ier* are included in morphological families, which can be stacked to form paradigm-like networks where the semantic relationship specific to each member and between members can be deduced from the place of the members in the network

Object	Agent	Activity	Place
chapeau	chapelier	chapellerie <sub>1</sub>	chapellerie <sub>2</sub>
'hat'	'hatter'	'hat trade'	'hat store'
—	couturier	couture <sub>1</sub>	—
—	'dress designer'	'dressmaking'	—
hôtel	hôtelier	hôtellerie <sub>1</sub>	—
'hotel'	'hotelier'	'hotel business'	—
jument	—	—	jumenterie <sub>2</sub>
'mare'	—	—	'mare stud farm'

Table: Example of derived nouns network

- The semantic relationship between members of column Agent and Activity, or Agent and Place is kept constant, which allows one to formulate the meaning in a uniform manner
- However, we saw that the meaning associated with Agent or Place may vary in function of the nature of the object referred to by Object
- None of these semantic variations depends on a semantic content attached to suffix *-ier* or *-erie*

- The large apparent polysemy of the *-ier* derivatives stems from the fact that the base referent can denote many different entities, and that many of the properties of these entities can be involved in the relationship between the bN and the derived referent
- In no way can this apparent polysemy be attributed to the suffix
- Nevertheless, can affixal polysemy be embodied in other derived lexemes?

## 4. Theoretical issue. Do polysemous affixes exist?

- The meaning of nouns derived from verbs is directly correlated with the variables appearing in the semantic representation of the verb
- This meaning changes in function of the variable selected as the designated variable
- Ns suffixed in *-eur* denote an agent since the designated variable of their semantic representation is the agent variable  $x$  of agentive verbs, as shown with *nageur* 'swimmer' in (20a)
- In (20b), the designated variable of *lavoir* corresponds to the landmark of a spatial (inessive) relationship, of which the correlated figure is the event denoted by *laver* 'wash'. Hence the dN *lavoir* 'wash house' denotes a place of washing

(20) a.  $nageur' = \lambda x \exists e. [\mathbf{swim}'(x, e) \wedge \text{AGT}(x)]$

b.  $lavoir' = \lambda z \exists y x \exists e. [\mathbf{wash}'(x, y, e) \wedge \text{AGT}(x) \wedge \text{PAT}(y) \wedge \text{LOC}(e, \mathbf{in}'(z))]$

- The definition of what an instrument is can be discussed at length (Koenig *et al.* , 2008, Huyghe & Tribout, 2015); here I assume that it is an object that an agent has to use to complete a given action and that this object exists before and after the action
- This idea is embodied in the representation given for *tondeuse* in (21)

$$(21) \textit{tondeuse}' = \lambda z \exists y x \exists e^1 \exists e^2. [\mathbf{shear}'(x, y, e^1) \wedge \text{AGT}(x) \wedge \text{PAT}(y) \rightarrow \mathbf{use}'(x, z, e^2) \wedge \text{INS}(z)]$$

- The semantic representation associated with the V *TONDRE* can also be used to formulate the meaning of the agentive N *tondeur*, given in (22). Obviously, the variable linked with the AGT is selected here

$$(22) \textit{tondeur}' = \lambda x \exists z y \exists e^1 \exists e^2. [\mathbf{shear}'(x, y, e^1) \wedge \text{AGT}(x) \wedge \text{PAT}(y) \rightarrow \mathbf{use}'(x, z, e^2) \wedge \text{INS}(z)]$$



- To be associated with several meanings, it is sufficient for a derivational exponent that it can form N derivatives from several verbal variables. This is what is observed for *tondeur* / *tondeuse* (agent) et *tondeuse* (instrument). In this case, it is justified to say that the affixes in question have several meanings and are therefore polysemous or rather polyfunctional (Salvadori & Huyghe, 2022).
- Among the exponents of this type, we find French suffixes *-eur* 'Agent', 'Instrument', *-oir* 'Location', 'Instrument', 'Patient', *-age* 'Action', 'Location', 'Result' and a few others. All of them seem to form nouns from verbs
- It is impossible to use the inferential approach to account for the semantics of derivatives in *-eur*, *-oir*, inasmuch as there is no element endowed with a rich ontology in the semantic representation of their base, which is a mere variable
- If this conclusion is well founded, it would mean that there are two morphological derivation regimes, in which affixes cannot be considered identically

# Conclusion

- The semantic account of derived Ns suffixed by *-ier* supposes the existence of a lexical ontology, whose categories involve fine-grained distinctions rooted in everyday life and not uniquely based on conceptual differentiation and super-subordinate relations (cf. WordNet).
- The suffixation in *-ier* is a system inherited from the Latin, which has been remodeled and whose whole sections have collapsed and have been replaced. The metaphor of the volcano could be useful: derivatives resulting from ancient eruptions remain although the crater from which they come is inactive; but new craters have appeared since and create new forms, which sometimes duplicate the old ones. We have to imagine how to describe morphological derivation of that type

Thank you  
Merci

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