

Deverbal nominalizations and the 'Means' interpretation

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Introduction

A nominalization (NZN) is a noun

- that is morphologically constructed from a verbal predicate,
- that allows one to refer in discourse to what this predicate denotes,
- that shares typical distributional and semantic properties of nouns in the language in question.

According to this definition, *remplissage* in (1) must be considered a nominalization.

(1) *Dans nos huit centres, les bouteilles **sont remplies** de propane ou de butane liquéfié. . . Au cours de chaque **remplissage**, nos bouteilles sont systématiquement examinées.* (Web)

'In our eight centers, gas cylinders are filled up with liquefied propane or butane gas. . . During the filling operation, our gas cylinders are systematically checked up'

Introduction

- This definition has a domain wider than the classical *nomina actionis* (action nouns), since it subsumes not only actions e.g. eng *driving*, but everything which can be described as an eventuality (to use Bach's term), for instance states as fra *isolement* 'isolation' in (2).

(2) *L'absence de chemin de fer renforce l'isolement de la région.* (Web)
'The absence of railway increases the isolation of the area'

- On the other hand, it is narrower than other definitions since it excludes *nomina agentis* (agent nouns) e.g. eng *driver* from the realm of nominalization.

Introduction

- Works on nominalization have paid little attention to the ‘means’ interpretation, an exemplar of which is given in (3).
- (3) ***Wrapping*** protects your suitcase or bag, as well as a pram, bicycle, or other assets. (Web)
- ? typically illustrates this tendency, since the only categories she assumes for NZNs are Complex Event Nominals, Result Nominals and Simple Event nominals.
 - Only recently, NZNs with a ‘means’ interpretation have been distinctly classified in linguistic literature ??.

Introduction

- ? distinguishes referential NZNs from basic eventive NZNs
- Formers denote various concrete or abstract entities but not events and they include NZNs with the 'means' interpretation
 - **Product** e.g. eng *construction*
 - **Means** e.g. eng *wrapping*
 - **Psych stimulus** e.g. eng *entertainment*
 - **Path** e.g. ita *prolungamento* 'continuation'
 - **Collective** e.g. eng *administration*
 - **Locative** e.g. ita *entrata* 'entrance'
 - **Manner** e.g. fra *raisonnement* 'reasoning'
- Referential NZNs can be further split into two sets, which Melloni (2011 : 112) calls Entities in State and Sense Extensions, respectively.
- Sense Extensions include Collective, Locative and Manner.
- The rationale behind this move is that their meaning can be accounted for through pragmatic mechanisms which extent the sense of eventive nominals ??, ?.

Introduction

- Melloni (2011 :115) groups Products, Means, Psych stimulus and (less clearly) Path NZNs into a specific set she dubs Entities in State, because all these nominals denote entities associated with specific states.
- She claims that the set of interpretations exhibited by Entities in State captures the core semantics of Referential nominalizations.
- The delineation of the borders between these categories are not clear cut. It can be shown that many of the Entities in State are actually 'means' nominalizations.

Introduction

The issues addressed in this talk are the following :

- ① How can we characterize the Means interpretation ? In particular, how can Instrument and Means interpretations be distinguished ?
- ② How does the 'means' interpretation arise ? What makes a given NZN have this interpretation ?
- ③ Is the 'means' interpretation correlated with other meanings associated with NZNs ? In particular, should this interpretation be derived from other, more basic, meanings ?
- ④ How can morphology handle nominalizations exhibiting the 'means' interpretation ? What must be said in the grammar to account for this phenomenon ?

Identification

- A distinctive property of means NZNs is their capacity to head an NP occurring as the subject of their base-V, as exemplified in (4a).
- It follows from this property that these NZNs can regularly be associated with paraphrase (4b), a formalized version of which is given in (4c).

(4) a. *Our new central **heating** heats the whole basement.*

b. 'X such that X base-V Y' e.g. *heating* = 'X such that X heats Y'

c. $\lambda x. \mathbf{base-V}(e, x, y)$

- Paraphrase (4b), however, is not specific to means nominalization insofar as it is shared by Agent nominals too, as shown in (5).

(5) a. *The driver drove too fast and the car hit a lamppost.*

b. *driver* = 'X such that X drives Y'

Identification

- By definition, Agent nominals can co-occur with ADVs expressing volitionality, whereas this is impossible with Means nominalizations, as the contrast in (6) illustrates.

(6) a. **Our new central heating voluntarily heats the whole basement.*

b. *The driver voluntarily drove to the foot of the volcano.*

c. $\lambda x. \mathbf{drive}(e, x, y) \wedge \mathbf{AGT}(e, x)$

- The grammaticality of (6b) can be accounted for assuming that (6c) is a correct (partial) semantic representation of *to drive*, where Agent is prototypically defined as in ?.
- The ungrammaticality of (6a) stems from the fact that Means nominalizations always denote events or inanimate entities but never participants to an event (cf. also ?).

Identification

- Means nominalizations are quite common and can be formed either on transitive (a)-(i) or intransitive (j)-(k) verbal constructions.

	Nominalization	Semantics	Gloss
(a)	<i>accompagnement</i>	'X X accompagner Y'	'side dish'
(b)	<i>amusement</i>	'X X amuser Y'	'amusement'
(c)	<i>consolation</i>	'X X consoler Y'	'solace'
(d)	<i>éclairage</i>	'X X éclairer Y'	'lighting'
(e)	<i>entourage</i>	'X X entourer Y'	'surroundings'
(f)	<i>rembourrage</i>	'X X rembourrer Y'	'filling'
(g)	<i>renseignement</i>	'X X renseigner Y'	'piece of advice'
(h)	<i>salissure</i>	'X X salir Y'	'dirty mark'
(i)	<i>terminaison</i>	'X X terminer Y'	'ending'
(j)	<i>affleurement</i>	'X X affleurer'	'outcrop'
(k)	<i>montée</i>	'X X monter'	'way up'

Table : Nominalizations with a Means interpretation

Identification

- Means nominalizations exist in many languages, if not all.

German	Italian	French	English	Gloss
<i>Abkürzung</i>	—	<i>raccourci</i>	—	'shortcut'
<i>Endung</i>	<i>terminazione</i>	<i>terminaison</i>	<i>ending</i>	'ending'
<i>Behinderung</i>	—	<i>empêchement</i>	<i>hindrance</i>	'hindrance'
<i>Heizung</i>	<i>riscaldamento</i>	<i>chauffage</i>	<i>heating</i>	'heating'
<i>Steigung</i>	<i>salita</i>	<i>montée</i>	—	'way up'
<i>Verlängerung</i>	<i>prolungamento</i>	<i>prolongation</i>	—	'extra time'

Table : Means Nominalization across languages

- As the examples make clear, no specific exponent marks NZNs with a Means interpretation (in French at least).

Properties of Instruments

- Typical Instruments are extensions of the more basic semantic role Agent. They are implements in a causal chain, the controller of which is a true Agent ?(p. 122).
- In a "prototypical action scenario" ?, a true Agent (i) is a volitional participant, (ii) who controls the action and (iii) performs it.
- True Agents may occur in subject position in a sentence where the instrument is expressed in an adjunct phrase.

- (7) a. Carol hit the horse with a stick.
b. Carol beat the dog with a stick.

Properties of Instruments

- Instrument can be foregrounded in the subject position only if the Agent is absent or backgrounded (Schlesinger's (1989) Naturalness Condition). Hence (8a) is grammatical only if it is part of a scenario described by (8b).
- Such an option is not available in (9b) because the V requires an Agent.

(8) a. (#)The stick hit the horse.

b. After being thrown into the air, the stick fell and hit the horse.

(9) a. *The stick beat the horse.

b. *After being thrown into the air, the stick fell and beat the horse.

Properties of Instruments

- Beating or writing are actions that must be carried out deliberately, not inadvertently (Schlesinger's Deliberation condition). Deliberateness entails control, and therefore always involves true Agents.
- Instruments may occur in subject position only when the verb denotes an event which may happen inadvertently as in (10b).
- However in that case, the instrument does not act as an instrument but merely as an object, to which what is reported in the sentence may be attributed.

(10) a. Carol wrote the letter with a fountain pen.

b. The fountain pen smudged the letter.

c. *The fountain pen wrote the letter.

- Main conclusion : **prototypical instruments may not occur in subject position** qua instruments, as shown in (10c).

Properties of Instruments

- However, Agent-like instruments, what ? or ? call pseudo-agents i.e. sophisticated functional artifacts, may be foregrounded in subject position as (11) illustrates.
- These pseudo-agents are essentially performers : they are not volitional entities and rarely have a thorough control of the action.
- The eventuality that they are involved in is always dynamic.

(11) The computer calculated the orbit of the two satellites in less than five minutes.

Properties of Instruments

- According to ?, a verbal construction may contain an instrument only if it conforms to the schema of inference in (12), which is a necessary condition.

(12) $X V Y \rightarrow X V Y$ with Z

- Consequently, *the stick* in (13a) cannot be considered as an Instrument. On the contrary, *fountain-pen* in (10a) can, since it belongs to the class of 'writing instruments'.

(13) a. Carol hit the horse. \nrightarrow Carol hit the horse with a stick.

b. Carol wrote the letter. \rightarrow Carol wrote the letter with a writing instrument.

Properties of Instruments

- But in order to be interpreted as an Instrument, a verbal argument has to comply with the additional constraint (14)
- (14) **Reusability Constraint** An Instrument must denote (i) an object, (ii) existing by itself as a separate entity before and after the event in which it has been used as an instrument.
- This constraint allows us to discard the complement of *with*, *avec* or *mit* as a suitable Instrument in (15).
- (15) a. *John built the wall with breeze blocks.*
 b. *Marie a affranchi la lettre avec un timbre.*
 'Mary stamped the letter with a stamp'
 c. *Der Arzt heilte den Patienten mit Kamille.*
 'The doctor cured the patient with camomille'

Properties of Instruments

- A third property of Instruments is that they constitute a cline along three dimensions : performance, control and appropriateness.
- Scale : pseudo-Agent devices (computer, rotary press) ; prototypical instruments (knife, hammer) ; natural ordinary objects (stick, stone).
- Scalar oppositions
 - **Performance** Pseudo-Agent devices perform the action by themselves generally better than the Agent can / Ordinary instruments or tools help the Agent to perform the action.
 - **Control** Sophisticated pseudo-Agent devices almost control the action they are performing / Prototypical instruments or tools are manipulated and controlled by the Agent.
 - **Appropriateness** Prototypical instruments and pseudo-Agents are goal-oriented artifacts which are always interpreted as instruments / Natural ordinary objects may be interpreted as instruments only locally, when they enter scenarios in which they help an Agent to achieve an action.

Properties of Means

- Means Nominalizations show none of the three properties typical of Instruments that we have just brought to light.
- **Positioning** In contrast to Instruments, Means NZNs freely occur in subject position as many examples have abundantly shown.
- Moreover, Means NZNs denoting an abstract entity cannot occur in a PP headed by *with*, or its equivalents in other languages (cf. (16a)), whereas Instrument NZNs regularly can (cf. (16b)).

- (16) a. **Luc a renseigné l'agent double avec un **renseignement** pourri.*
 'Luke gave information to the double agent with an unreliable piece of information'
- b. *Carole a écrit la lettre avec un **stylo-plume.***
 'Carol wrote the letter with a fountain-pen' (= (10a))

Properties of Means

- **Reusability Constraint** (i) Means NZNs need not denote an object : their referent can be a substance (17a), a location (17b), or an eventuality (17c).

- (17) a. *une épaisse doudoune dont le **rembourrage** sortait par une déchirure* (Web)
 'a thick down jacket the filling of which was escaping through a tear'
- b. *L'**entourage** de la résidence est verdoyant et arboré.* (Web)
 'The surroundings of the residence are green and planted with trees'
- c. *Un **empêchement** de dernière minute a fait rater son train à Jules.*
 'A last minute hindrance made Jules miss his train'

Properties of Means

- **Reusability Constraint** (ii) In addition, the functional property defining prototypical Instruments may always be negated (cf. (18a)), whereas this move is impossible for some Means NZNs, as (18b) illustrates.

(18) a. *Il y a un **couteau** sur la table mais il ne coupe pas.*

'There is a knife on the table, but it does not cut'

b. **Il y a une **salissure** sur la robe, mais elle ne salit pas.*

'There is a stain on the dress, but it does not stain'

- The nominalizations in question are those derived from a V denoting a dense property.
- A predicate is dense if it denotes a state which must be continuously maintained in order for the predicate to be true. *Absent* and *in the bag* are dense predicates, whereas *intelligent* or *ill* are not ?.

Properties of Means

- **Scalarity** It seems impossible to distinguish subspecies within the domain of objects denoted by Means nominalizations on the basis of scalar properties attached to them, contrary to what has been observed for Instruments.

Interim conclusion

Means nominalizations can readily be distinguished from Instruments.

Stative relations

- The stativity of the Means NZNs stems from the fact that they are derived from lexical verbs heading a stative construction (= Null Hypothesis).
- These stative constructions embody either a spatial or a causal relationship.
- As a consequence, the interpretation of Means NZNs comes in two varieties, spatial or causal, which reflects their respective origin.
- Note that static situations, in which "nothing happens", may be conceived of as causes even in a Force Dynamic Model of causation ?, citeWolff2007. Wolff mentions (19) as an example of such "continuing state of causation" (Wolff, 2007 : 106).

(19) *Dirt caused the valve to stay open.*

The spatial relationship

- *Entourage* 'surroundings' illustrates The case of a Means NZN correlated with a spatial construction.
- The base-V *entourer* 'to surround' heads spatial construction (20), which is exemplified by (21).
 s = state, CIRCESS = circumessive i.e. 'around Y'
- A schematic semantic representation of *entourage* is given in (22).

(20) a. NP0 entourer NP1

b. $\lambda y. \lambda x. \lambda s. (\text{LOC}(x, \text{CIRCESS}(y)), s)$

c. SN0 = x = FIG, SN1 = y = GRND

(21) *Une forêt de hêtres entoure la résidence.*

'A beech forest surrounds the residence'

(22) $\lambda x. \cap \lambda y. \exists s. (\text{LOC}(x, \text{CIRCESS}(y)), s)$?

'X such that X is _located_ around Y'

The causal relationship

- The causal relationship is illustrated by *amusement* ‘amusement’, when this noun appears in sentences such as (23).
- The base-V *amuser* ‘to amuse’ heads construction (24), where the semantic representation is modeled on ?.
PAT = patient, EXP = experiencer, e = event
- Consequently, the semantics of *amusement* will look like (25).

(23) *Son seul amusement était les visites de ses petits-enfants.*
‘Her only amusement was the visits of her grandchildren’

(24) a. NP0 amuser NP1

b. $\lambda y. \lambda e_1. \exists s_2. \exists x. \mathbf{cause}(e_1, s_2) \wedge \mathbf{ACT}(x, e_1, \dots) \wedge \mathbf{enjoyed}(y, s_2)$

c. SN0 = e_1 , SN1 = $y = \text{EXP}$

(25) $\cap \lambda e_1. \lambda y. \exists s_2. \exists x. \mathbf{cause}(e_1, s_2) \wedge \mathbf{ACT}(x, e_1, \dots) \wedge \mathbf{enjoyed}(y, s_2)$
‘Eventuality e_1 such that e_1 causes Y to be enjoyed’

Mixed relationship

- In fact, the majority of Means NZNs have an interpretation which combines both the spatial and the causal relationship.
- This situation is illustrated in (26) with fra *rembourrage* ‘filling’, a rough semantic representation of which is given in (27).

(26) a. *Luc a changé le **rembourrage** du canapé.*

‘Luke changed the filling of the sofa’

b. [[rembourrage]] \equiv ‘X such that X is inside Y (= sofa)’

c. [[rembourrage]] \equiv ‘X such X causes Y (= sofa) to be less firm’

(27) $\lambda x.\lambda y.\exists s_1.\exists s_2. (\text{LOC}(x, \text{INESS}(y)), s_1) \wedge \text{cause}(s_1, s_2) \wedge \text{firm}(y, \delta_2, s_2) \wedge \delta_2 < \delta_1$

‘X such that X is inside Y and this causes Y to be firm at a lesser degree (than before)’

The double interpretation

- When a morphological V occurs in both an agentive and a stative construction, the Means nominalization is correlated uniquely with the latter one.
- This very common situation is illustrated by the verbal lexemes *équiper*₁ and *équiper*₂, which are respectively agentive and stative.

(28) a. *La marine syldave a équipé ses frégates d'un nouveau radar.*
 'The Syldavian navy equipped its frigates with a new radar'

b. *L'équipement des nouveaux navires a pris du retard.*
 'There is delay in the equipment of the new ships'

(29) a. *Des radars dernier cri équipent les récents monocoques.*
 'Recent mono-hulls are equipped with state-of-the-art radars'

b. *L'équipement des monocoques surpasse celui des catamarans.*
 'The equipment of mono-hulls overpasses that of catamarans'

Roots of the interpretation

- Assuming that the meaning of Means NZNs follows from their stative origin does not explain why they do not simply denote a state as did, for instance, *isolement* 'isolation' in (2), repeated here under (30)?
- In other words, why doesn't *entourage* mean (32) based on the model of what happens for *isolement* in (31)?

(30) *L'absence de chemin de fer renforce l'isolement de la région.*
 'The absence of the railway increases the isolation of the area'

(31) $[[\text{isolement}]] \equiv \cap \lambda s. \exists x. \text{isolated}(x, s)$
 'state of X being isolated'

(32) $[[\text{entourage}]] \equiv \cap \lambda s. \lambda y. \exists x. (\text{LOC}(x, \text{CIRCESS}(y)), s)$
 'state of X being _located_ around Y'

Root of the interpretation

- The answer I would tentatively suggest is that a stative predicate may give rise to a nominalization only if
 - (i) it expresses a property of (the referent of) its argument,
 - (ii) the argument about which it is predicated is informationally salient as a first link in a network of relations.
- Condition (i) makes spatial stative predicates unsuited for the job, since spatial location does not express a property of the arguments it involves.
- Condition (ii) bars stative predicates appearing in a stative causal relationship because they are, by definition, embedded deep within a network of relations : informationally, they side with the result rather than with the cause.
- The only solution left is to select the variable which initiates a causal chain and/or the FIGURE argument.

Origin of Means NZNs

- No condition whatsoever bears on the origin of nominalizations exhibiting a Means interpretation.
- They may come from a result NZN, as is the case of fra *enjolivement*, which is derived from the modification V *enjoliver* 'to embellish' ?, ?

(33) X[AGT] enjoliver₁ Y[PAT] →

*enjolivement*₁ = 'action of embellish' (eventive meaning)

*enjolivement*₂ = 'embellishment' (result meaning)

*enjolivement*₂ = *enjolivement*₃ (Means meaning) = 'X such that X embellish₃ Y'

Origin of Means NZNs

- Or they may not, as it is the case with fra *raccourci* ‘shortcut’, which is based on stem 12 of the morphological V *raccourcir* ‘to shorten’.
- The point is that (34a) does not entail (34b) : the result of shortening a path does not make the remaining part a shortcut.
- The meaning of *raccourci* follows from a causative stative construction, of which (35) is an illustration.

(34) a. *La municipalité*[AGT] *a raccourci la rue*[PAT] *de 100 m*[DEG].
 ‘The town council shortened the street by 100 meters’

b. *La municipalité a créé un raccourci.*
 ‘The town council has created a shortcut’

(35) *Ce chemin raccourcit le trajet (de 20 minutes | 2 km)*
 ‘This way makes the path shorter by (20 minutes | 2 km)’

Origin of Means NZNs

- Special attention has to be paid to NZNs based on performative verbs such as *to guarantee*, *to attest*, *to authorize*, etc.
- Derived nouns *guarantee*, *attestation*, *authorization*, etc. are not NZNs with a result interpretation but rather the material counterpart of the verbal performative formula constitutive of the verb meaning. This explains
 - why these NZNs have the same performative force as the verbal formula, making them performative Means nominalizations.
 - why these NZNs have no eventive meaning as shown in (36).

- (36) # *Our **authorization** to travel to Syldavia took place yesterday.*
 # *Marta sneezed during the **authorization** of spending more money.*

By-product

- I would like to argue that grammar has not much to say about Means nominalizations, because they are by-products of the grammatical system yielding nominalizations.
- In a language where nominalizations exist, the exponents used to distinguish them as such are available for Means nominalizations at no cost, provided they are not aspectually restricted (as *-en* vs. *-ung* in German ?).
- If the language in question also has spatial and causal stative constructions, this suffices to make Means NZNs lexemes possible, insofar as their semantics merely results from abstracting away from the meaning of the verbal construction.

Predictions

- The proposed account makes three predictions that have to be empirically tested in the future.
- **Stative base** It predicts that languages lacking either the spatial or the causative stative construction (or both) cannot have the corresponding Means nominalization.
- **Rarity** Since verbal stative constructions are not at all prototypical verbal constructions, the account predicts that Means NZNs should be rare among the languages of the world.
- **Low saliency** Agent or Instrument derived nominals are very widespread ?, because the reality they denote is cognitively salient. On the contrary, Means NZNS denote entities whose role is not very salient even though its specificity is undoubtable. This predicts that the absence of any distinct marking makes them hardly discernible.
Issue for the future : is the same low visibility observed in languages such as Quiché, which uses the same exponent for Agent and Means nouns ??

Three main points

- Means nominalizations exist on their own and should not be confounded with Instrument or Agent nouns ?.
- Their existence is tied to the existence of stative spatial or causative verbal construction in the language in question.
- Both because of their origin and the lack of specific exponent these NZNs show a low degree of saliency in comparison with other morphologically derived constructs.

THANK YOU
KÖSZÖNÖM SZÉPEN

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