

“Workshop on the cognitive and computational aspects of
Extended Lexical Units”

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The multiword level constructions and categories

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Aim and approach

- Contribute to the classification of multiword units that fill the area between syntax and morphology
- Focus on Italian
- Constructionist approach (cf. Fillmore, Kay & O'Connor 1988, Goldberg 1995, 2006, etc.)
- Non-radical: constructions AND categories

Idioms and Construction Grammar

- Encoding vs. decoding idioms
 - e.g. *answer the phone* vs. *kick the bucket*
- Grammatical vs. extragrammatical idioms
 - e.g. *spill the beans* vs. *all of a sudden*
- Substantive (lexically filled) vs. formal (lexically open)
 - e.g. *going great guns* vs. *The X-er the Y-er*
- Idioms with vs. without pragmatic point
 - e.g. *by and large* vs. *see you later*

The lexicon-syntax *continuum*

Goldberg (2006:5)

Construction type	Examples
Morpheme	<i>pre-, -ing</i>
Word	<i>avocado, anaconda, and</i>
Complex word	<i>daredevil, shoo-in</i>
Complex word (partially filled)	[N-s] (for regular plurals)
Idiom (filled)	<i>going great guns, give the Devil his due</i>
Idiom (partially filled)	<i>jog <someone's> memory, send <someone> to the cleaners</i>
Covariational Conditional	<i>the Xer the Yer</i> (e.g. <i>the more you think about it, the less you understand</i>)
Ditransitive (double object)	Subj V Obj1 Obj2 (e.g. <i>he gave her a fish taco; he backed her a muffin</i>)
Passive	Subj aux VPpp (PP _{by}) (e.g. <i>the cat was hit by a car</i>)

The lexicon-syntax *continuum*

Croft (2001:17)

Construction type	Traditional name	Examples
Complex and (mostly) schematic	syntax	[SBJ <i>be</i> -TNS V- <i>en</i> by OBL]
Complex and (mostly) specific	idiom	[<i>pull</i> -TNS NP- <i>'s</i> leg]
Complex but bound	morphology	[N- <i>s</i>], [V-TNS]
Atomic and schematic	syntactic category	[N], [ADJ]
Atomic and specific	word/lexicon	[<i>this</i>], [<i>green</i>]

The lexicon-syntax *continuum*

Croft & Cruse (2004:255)

Construction type	Traditional name	Examples
Complex and (mostly) schematic	syntax	[SBJ <i>be</i> -TNS VERB- <i>en</i> by OBL]
Complex, substantive verb	subcategorization frame	[SBJ <i>consume</i> OBJ]
Complex and (mostly) substantive	idiom	[<i>kick</i> -TNS <i>the bucket</i>]
Complex but bound	morphology	[NOUN- <i>s</i>], [VERB-TNS]
Atomic and schematic	syntactic category	[DEM], [ADJ]
Atomic and substantive	word/lexicon	[<i>this</i>], [<i>green</i>]

Some constructionist studies on multiword lexemes I

■ “Constructional idioms” (Jackendoff 2002)

[V NP PP/AP/PRT]_{VP}

- resultatives (1)
- *way* construction (2)
 - (cf. Goldberg 1996; Verhagen 2003 for Dutch)
- *away* construction (3)
- V NP's *head off* (4)

- 1) *Wilma watered the tulips flat*
- 2) *Sue sang her way through dinner*
- 3) *We're twisting the night away*
- 4) *He's drinking his head off*

Some constructionist studies on multiword lexemes II

- “Periphrastic word formation” (Booij 2002a,b)
 - separable particle verbs in Dutch (cf. also Blom 2005)
 - [[*door*]P V]V’ ‘to go on V-ing’
 - [[*af*]P V]V’ ‘to finish V-ing’
 - 1) *dóorboren*
‘to go on drilling’
 - 2) (*het huiswerk*) *afmaken*
‘to finish one’s homework’
- Verb-particle constructions in English (cf. e.g. Cappelle 2005)

A functional classification of multiword units

- “pragmatic / situational” multiword units
 - formulae, sayings, exclamations, etc.
 - *see you soon, better safe than sorry, what the hell!*
- “grammatical / textual” multiword units
 - complex prep., complex compl., etc.
 - *in front of, apart from the fact that, as well as*
- “lexical / referential” multiword units
 - idioms, metaphors, complex predicates, etc.
 - *to kick the bucket, to throw in the towel, to hand out*

Cf. e.g. Becker (1975), Makkai (1972), Mel'chuk (1998), Moon (1998),
Nattinger & DeCarrico (1992), Wray (2002)

Phrasal words

- Phrasal Words are constructions whose function is to enrich lexical categories, or word classes
- Phrasal verbs, phrasal nouns, phrasal adjectives, etc.

Phrasal nouns in Italian

Structure	Example	Glosses
$[N + ADJ]_N$	<i>carta telefonica</i> <i>anima gemella</i>	`phone card' `kindred spirit'
$[ADJ + N]_N$	<i>seconda serata</i> <i>terzo mondo</i>	`second part of the evening' `third-world'
$[N + N]_N$	<i>conferenza stampa</i> <i>effetto serra</i>	`press conference' `greenhouse effect'
$[N + PREP + N/V_{INF}]_N$	<i>casa di cura</i> <i>macchina da scrivere</i>	`nursing home' `typewriter'
$[X \text{ CONJ } X]_N$	<i>botta e risposta</i> <i>coltello e forchetta</i>	`tit-for-tat' `knife and fork'
Lexicalized sentences	<i>cessate il fuoco</i> <i>nontiscordardimé</i>	`cease-fire' `forget-me-not'

Phrasal verbs in Italian

Structure	Example	Glosses
[lightV + (DET) + N] _v	<i>fare una passeggiata</i> <i>prendere avvio</i>	`to have a walk' `to begin'
[lightV + ADJ] _v	<i>stare fresco</i> <i>stare attento</i>	`to keep one's head' `to be careful'
Particle Verbs [V + PRT] _v	<i>andare via</i> <i>buttare fuori</i>	`to go away, to leave' `to throw out / to lay off'
Metaphorical/ Idiomatic VP	<i>alzare il gomito</i> <i>portare acqua al proprio mulino</i>	`to crook / lift one's elbow' `to bring grist to <someone's> mill'
[V + [PREP + N]] _v	<i>mettere in moto</i> <i>essere di guardia</i>	`to start up' `to be on watch'

Phrasal adjectives in Italian

Structure	Example	Glosses
[PREP + (DET) + N] _{ADJ}	<i>fuori stagione</i>	'out of season'
[PREP + ADJ] _{ADJ}	<i>in bianco</i>	'sleepless (night), blank (cheque)'
[X CONJ X] _{ADJ}	<i>vero e proprio</i>	'true, real'
[ADJ + ADJ] _{ADJ}	<i>bianco sporco</i>	'off white'
[ADJ + N] _{ADJ}	<i>giallo canarino</i>	'canary-yellow'

Phrasal adverbs in Italian

Structure	Example	Glosses
[PREP + (DET) + N] _{ADV}	<i>sulla carta</i>	'on paper, theoretically'
[PREP + ADJ] _{ADV}	<i>al verde</i>	'flat broke, down and out'
[X CONJ X] _{ADV}	<i>anima e corpo</i>	'body and soul'
[N + PREP + N] _{ADV}	<i>gomito a gomito</i>	'shoulder to shoulder'
[PREP + (DET) + N + PREP + (DET) + N] _{ADV}	<i>dalla padella alla brace</i>	'out of the frying pan into the fire'

Main structural criteria

- Level of constructionality
- Level of specification (or schematicity)

Level of constructionality I

- **Phrasal Words with low constructionality**
 - lexical constructions that do not refer to a more abstract construction, but are the result of a process of lexicalization/metaphorization
 - fully specified
 - 1) *andare alla grande* (lit. to go at.the great) 'to go great guns'
 - 2) *tirare le cuoia* (lit. to pull the leathers/skin) 'to kick the bucket'
 - 3) *su per giù* (lit. up for down) 'more or less'
 - with an "argumental" slot
 - 4) *portare acqua al <PROPRIO> mulino*
'to bring grist to <SOMEONE'S> mill'

Level of constructionality II

■ Phrasal Words with medium constructionality

– lexical constructions that refer to a construction that presents a “lexical” slot that can be filled by a very limited set of lexical items, that might be, e.g.:

– synonymous (1)

– antonymous (2)

– aspectual variants (3)

1) *fare luce / chiarezza* (lit. to_do light / clearness) ‘to shed light’

2) *fare bene / male* (lit. to_do good / bad) ‘to be good for / to hurt’

3) *essere / mettersi d'accordo* (lit. to be / put.REFL of agreement)
‘to be in agreement / to come to an agreement’

Level of constructionality III

- **PWs with high constructionality**
 - constructions that refer to a more abstract construction in the inheritance hierarchy and, therefore, can be represented at different levels of specification

Levels of specification and inheritance hierarchies

- Abstract lexical construction $[X Y]_Z$
- Middle lexical construction $[X Y_1]_Z$
- Phrasal word $[X y]_Z$ *or* $[x y/y_1]_Z$
- Construct $x y/y_1$

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X, Y, Z = categories - X_1, Y_1, Z_1 = sub-categories
 x, y, z = concrete instantiations of X, Y, Z categories

Case studies

- Particle verbs
- Binomial constructions

Case-study 1

Particle verbs I

- Particle verbs do exist in Italian (cf., a.m.o., Simone 1997, Masini 2007)

- 1) *andare dentro* `to go in, to enter`
- 2) *venire fuori* `to come out`
- 3) *dare via* `to sell`
- 4) *volare via* `to blow off`
- 5) *trascinare giù* `to drag down`
- 6) *correre su* `to run down(wards)`

Case-study 1

Particle verbs II

- Particle verbs in Italian are not a calque from Germanic languages but autonomously emerged in Italian due to a series of structural changes from Latin to Italian (cf. Masini 2006a, Iacobini & Masini 2007, Iacobini 2007)
- In contemporary Italian, particle verbs are a constructional strategy to form motion verbs

Case-study 1

Particle verbs IV

- [*mandare avanti*]_{PV} 'to send ahead'
↓ **metaphorical inheritance link**
[*mandare avanti*]_{PV} 'to run (a business)'
- [V PRT]_{PV}
↓ **instantiation inheritance link**
[*fare fuori*]_{PV} lit. to make (out) 'to kill'
- [*andare avanti*]_{PV} 'to go ahead'
↓ **metonymic inheritance link**
[[*andare avanti*]_{PV} a V]_V 'to keep on doing V'
1) *andare avanti a mangiare* 'to keep on eating'

Case-study 1

Particle verbs V

- [V *via*]_{PV}

<V with the direction "away">

↓ **metonymic inheritance link**

[V_{of wiping/scratching} *via*]_{PV}

<V untill the end, to succeed in V-ing> [+telic]

- 1) *fregare* 'to rub' > *fregare via* 'to rub up/off/away'
- 2) *graffiare* 'to scratch' > *graffiare via* 'to scratch off'
- 3) *raspare* 'to rasp' > *raspare via* 'to scrape off/away'
- 4) *scartavetrare* 'to sand' > *scartavetrare via* 'to sand off'

Case-study 2

Binomial constructions I

- Binomial constructions are to be found in many languages
 - (cf. e.g. Malkiel 1959, Cooper & Ross 1975, Lambrecht 1984, Jackendoff 2005)
 - 1) Sp. *alto y bajos* 'ups and downs'
 - 2) Fr. *noir et blanc* 'black and white'
 - 3) Ger. *Messer und Gabel* 'knife and fork'
 - 4) Rus. *plot' i krov'* 'flesh and blood'
 - 5) It. *anima e corpo* 'body and soul'
- In Italian, they display a large variety of possible combinations (Masini 2006b)

Case-study 2

Binomial constructions II

- $[X Y]_Z$ $[(L) [A]_X L [B]_X]_Z$
 X = or \neq Z; A = or \neq B; L = CONJ or PREP
 <entity or event that refers to a frame
 defined by A and B>
- $[X y]_Z$ $[[A]_X e [B]_X]_Z$ L = e 'and'
- $[X Y_1]_Z$ $[ADJ1 e ADJ2]_{ADJ3}$
 - 1) *vero e proprio* lit. true and proper 'true, real'
- $[X Y_1]_Z$ $[N1 e N2]_{ADJ}$
 - 2) *casa e famiglia* lit. home and family 'heart and home'
 - 3) *acqua e sapone* lit. water and soap
 'simple, with no make-up'

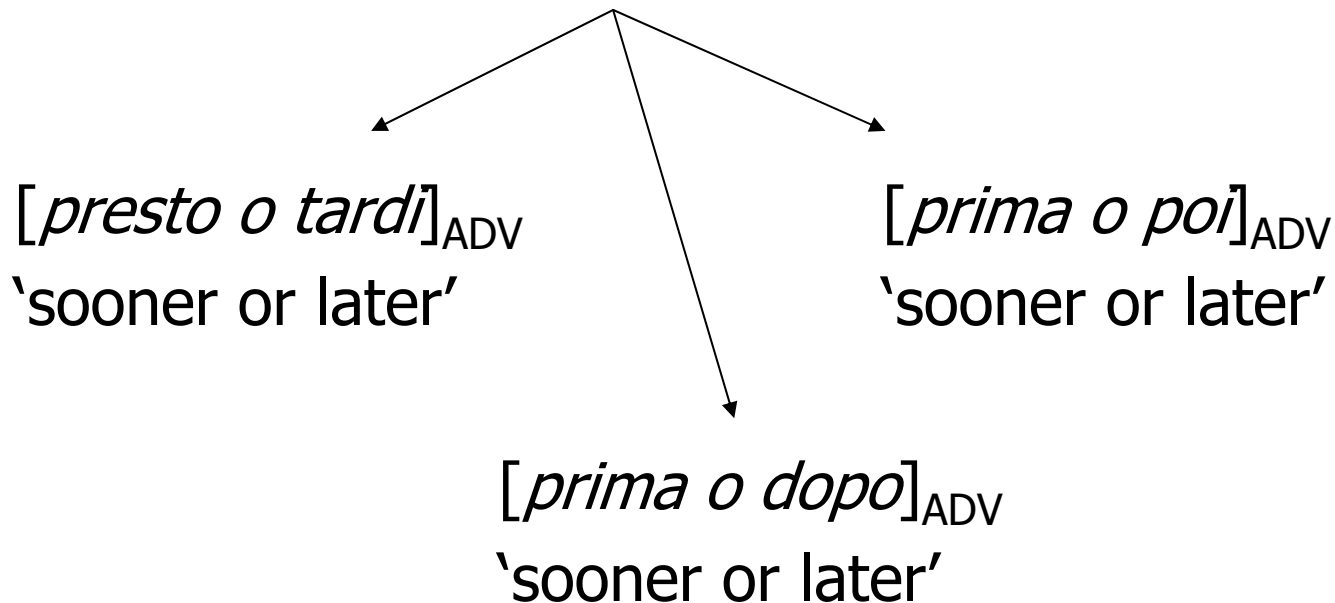
Case-study 2

Binomial constructions III

- “closed” hierarchies

[ADV1 *o* ADV2]_{ADV3}

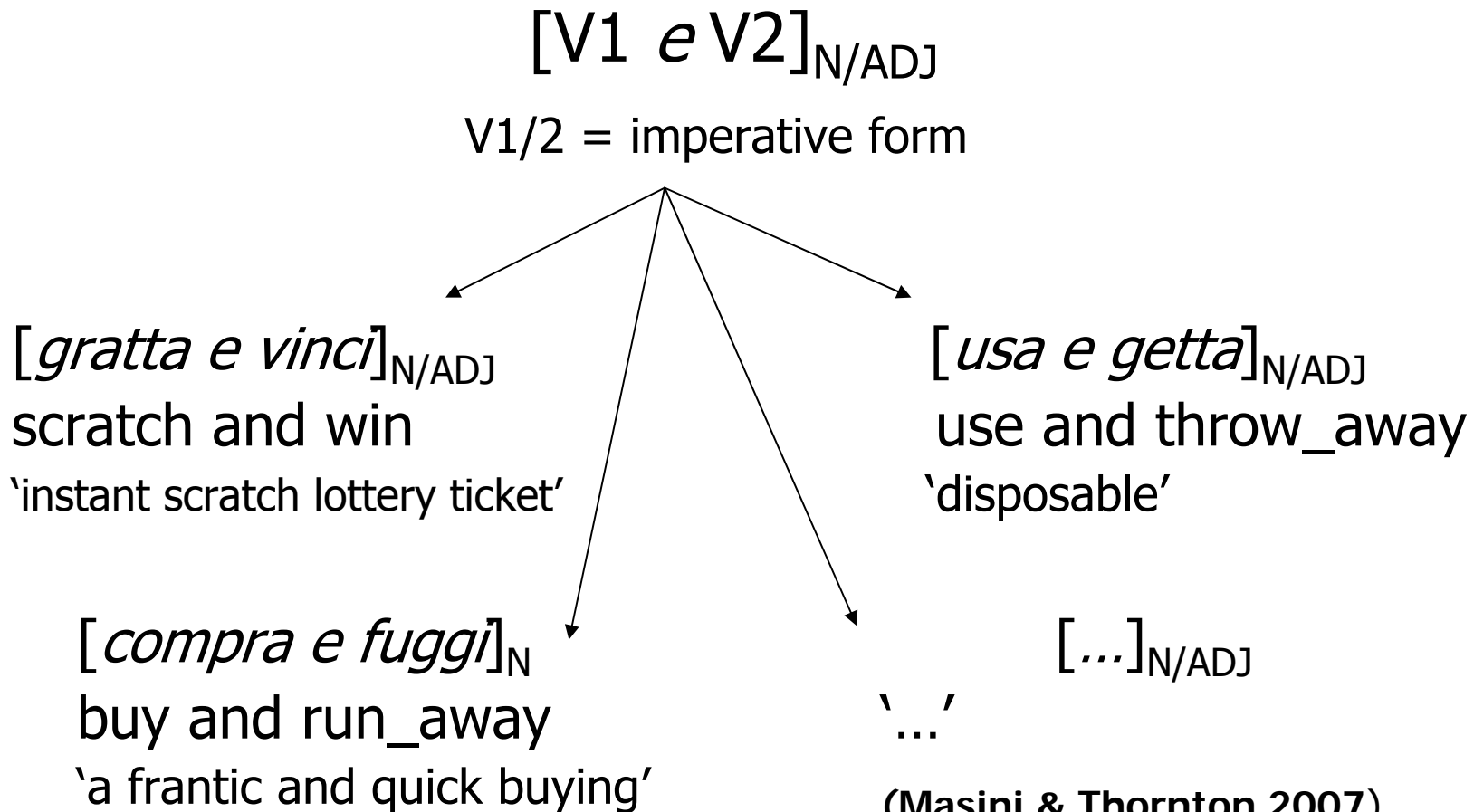
ADV1/2 = antonymous temporal adverbs



Case-study 2

Binomial constructions IV

- “open” hierarchies



(Masini & Thornton 2007)

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Case-study 2

Binomial constructions V

- A sub-case of the $[V1 \ e \ V2]_{N/ADJ}$ construction

- $[V1 \ e \ ri-V2]_{ADV}$

($V2 = ri-$ 're-' + $V1$; $V1/2 =$ imperative form)

1) *gira e ri-gira*

lit. turn and re-turn

'at the end of the day'

2) *batti e ri-batti*

lit. beat and re-beat

'at the end of the day'

3) *pensa e ri-pensa*

lit. think and re-think

'at the end of the day'

Some observations I

- The domain of phrasal words is not completely idiomatic and irregular, but displays some areas of regularity and productivity that are captured by middle and abstract lexical constructions, hierarchies and specification mechanisms
- Not all types of specification are equal
 - e.g. lexical *vs.* categorial
- Not all types of slots are equal
 - e.g. argumental *vs.* lexical

Some observations II

- Middle lexical constructions are different in nature from “traditional” partially filled idioms (e.g. *jog* <someone's> *memory*).
- Middle and abstract lexical constructions are rather an implementation of the notions of **constructional idiom** (Jackendoff) and **periphrastic word formation** (Booij)

Some observations III

- Periphrastic word formation and phrasal words are crucially bound to lexical categories (or word classes)
 - abstract constructions may undergo categorial specification
 - the input of constructions contains information about lexical categories
 - phrasal words have output lexical categories
 - the emergence of phrasal words may be driven by the need to “restore” a certain word class (e.g. particle verbs and verbs of motion)

Multiword and morphology I

- Construction Morphology:

“[w]ord formation patterns can be seen as abstract schemas that generalize over sets of existing complex words of a particular morphological shape, and specify how new complex words can be created”

(Booij 2005a:1; cf. also Booij 2005b, 2007)

Multiword and morphology II

- The domain of phrasal words is functionally similar to derivational morphology
 - **modification** (e.g. particle verbs, most complex nominals with a PREP)
 - **transcategorization** (e.g. support verb constructions)
 - **creation of completely new lexemes** (e.g. binomial constructions)
- The multiword level is a proper structural level of analysis in-between syntax and morphology in which lexical meanings can be encoded and different degrees of productivity can be accounted for

Computational implications

- A specific multiword level of annotation should be included that is different from but interacts with the morphological and the syntactic ones
- The internal structure of phrasal words should remain visible, since input morphological or categorial information may be crucial to detect the construction
- Which and how many categories for annotation?

Bedankt!

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