



Linguistic Realization of Information Packaging

based on Vallduvi and Engdahl 1995
and other references

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Linguistic Realization of Information Packaging

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Outline

- » Building the common ground
 - » Focus-ground
 - » Topic-comment
 - » Link-tail
- » Instruction-based approach
- » Realization of instructions in language
 - » Intonational
 - » Syntactic
 - » Morphological
 - » Word Order
 - » Contrastive particles
- » Generalizations and differences
 - » English
 - » Catalan, Turkish
 - » West Germanic
 - » East Slavic



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Information packaging

First introduced by Chafe (1976)

- packaging refers to phenomena [...] that have to do primarily with **how the message is sent** and only secondarily with the message itself (Chafe 1976)
- speakers seem to form their utterances so as to structure the information [...], usually or perhaps always **in accordance with their beliefs about the hearer** [...] (Prince 1986)

Information packaging

- (a) Mary hates chocolate.
- (b) Chocolate Mary hates.
- (c) Chocolate Mary loves.

φ, ψ – meaning expressed as a logical formula

A, B – information-packaging instruction

Information packaging

- (a) Mary hates chocolate. φ, A
- (b) Chocolate Mary hates. φ, B
- (c) Chocolate Mary loves. ψ, B

φ, ψ – meaning expressed as a logical formula

A, B – information-packaging instruction

IP primitives

» **Focus-Ground:**

divides the sentence into a part that anchors the sentence to the previous discourse and an informative part that makes some contribution to the discourse

» **Topic-Comment**

‘the most general characteristic of predicative constructions is suggested by the terms ‘topic’ and ‘comment’[...]: the speaker announces a topic and then says something about it”. (Hockett 1958)

IP primitives: FOCUS

FOCUS – def. an informative, newsy, dominant or contrary-to-expectations part of the sentence

- a. The pipes are [F RUSTY].
- b. The pipes [F are RUSTY].
- c. [F The PIPES are rusty].
- d. [F The PIPES] are rusty.
- e. The pipes [F ARE] rusty.

IP primitives: FOCUS

FOCUS – def. an informative, newsy, dominant or contrary-to-expectations part of the sentence

- | | |
|-----------------------------|-----------------------------------|
| a. The pipes are [F RUSTY]. | narrow focus |
| b. The pipes [F are RUSTY]. | wide focus |
| c. [F The PIPES are rusty]. | all-focus S |
| d. [F The PIPES] are rusty. | narrow focus |
| e. The pipes [F ARE] rusty. | verum focus (!=verb narrow focus) |

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Focus must be **relationally** new in the discourse, and not necessarily denotationally new: the presence of the definite article in (c) indicates that pipes are known to the hearer.

IP primitives: FOCUS

FOCUS – def. an informative, newsy, dominant or contrary-to-expectations part of the sentence

What about the pipes? In what condition are they?

a. The pipes are [F RUSTY].

What about the pipes? What's wrong with them?

b. The pipes [F are RUSTY].

Why does the water from the tap come out brown?

c. [F The PIPES are rusty].

I have some rust remover. You have any rusty things?

d. [F The PIPES] are rusty.

I wonder whether the pipes are rusty.

e. The pipes [F ARE] rusty.

IP primitives: FOCUS

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e. The pipes [F ARE] rusty.

Problem: questions like “What's new?” are often assumed not only to accept but also to require an all-focus answer. Also: most naturally occurring examples of S with a complex ground occur in context other than Q&A pairs.

IP primitives: GROUND

GROUND – def. non-informative, known or expected part of the sentence.

Rochemont, 1986 argues that the ground has an antecedent in the previous discourse, whereas focus has not.

Counterexamples ...?

Problem: such partition takes the newness of focus in denotational sense and not relational in discourse.

IP primitives: TOPIC (2)

- » topicless sentences (consisting entirely of comment) = all-focus sentences
 - » presentational or new sentences (Schmerling 1976)
 - » neutral descriptions (Kuno 1972)
 - »thetic sentences (Kuroda 1972)

(a) The screen DIED.

(b) The SCREEN died.

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(a) The screen DIED.

topic-comment

(b) The SCREEN died.

topicless (all-focus)

Terminological minefield

- (a) other uses of FOCUS
- (b) other uses of GROUND
- (c) other uses of TOPIC
- (d) other uses of COMMENT

Terminological minefield

- (a) other uses of FOCUS : “new”, “NewInfo”, “rheme”, “dominant constituent”, etc.
- (b) other uses of GROUND : “background”, “presupposition”, “open-proposition”, “OldInfo”, “given”, “theme”, “topic”, etc.
- (c) other uses of TOPIC : used as synonym to GROUND, discourse topic (topicality), link
- (d) other uses of COMMENT : background (?), tail

Ground split : LINK & TAIL

Why do we need two articulations?

She gave [F a SHIRT] to Harry.

To Harry she gave [F a SHIRT].

She [C gave a SHIRT to Harry].

She [C gave a shirt to HARRY].

Ground split : LINK & TAIL

Why do we need two articulations?

She gave [F a SHIRT] to Harry.

To Harry she gave [F a SHIRT].

says nothing about the position of the element of the ground

She [C gave a SHIRT to Harry].

She [C gave a shirt to HARRY].

says nothing about why the comment is intonationally different

Ground split : LINK & TAIL

Two partitions is not enough, yet they intersect

What about John? What does he drink?

[T John] [C drinks BEER].

[G John drinks] [F BEER].

Ground split : LINK & TAIL

Two partitions is not enough, yet they intersect

$S = \{\text{Focus, Ground}\}$; $\text{Ground} = \{\text{Link, Tail}\}$

[G [L John]] [F drinks BEER].

[G [L John] [T drinks]] [F BEER].



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Role of primitives:

FOCUS = update potential of S; all S have a focal segment

GROUND = usher for the focus (only if ushering is required)

- » **LINK** = locus of update
- » **TAIL** = how focus fits in discourse (a non-default mode of update is required)

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FOCUS = update potential of S; all S have a focal segment

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“Information packaging reflects the way the speakers take into account their assumptions about the structure of the hearer’s information state in order to optimise information update.” (V&E)

Instruction types

- (1) **Link-focus instruction:**
 - Tell me about the people in the White House. Anything I should know?
 - The president [F hates CHOCOLATE].
- (2) **Link-focus-tail instruction:**
 - And what about the president? How does he feel about chocolate?
 - The president [F HATES] chocolate.
- (3) **All-focus instruction:**
 - The president has a weakness.
 - [He hates CHOCOLATE].
- (4) **Focus-tail instruction:**
 - You shouldn't have brought chocolates for the president.
 - [F He HATES] chocolate*.

* "he" could be treated as a link. However, V&E argue that since English does not allow a sentence without the subject, the pronoun serves only as a grammatical place-holder, and not as a link.



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Packaging tools

Languages can realize information packaging, using different linguistic means:

- » intonational (English, German, Dutch)
- » syntactic (Catalan, Turkish, Hungarian)
- » morphological (Japanese, Navajo)
- » discourse particles (Russian)
- » word order (Russian, other Slavic lang.)
- » other

Intonational: English: focus

Focus-ground partitions are encoded by shifting the position of nuclear stress on one invariable syntactic structure:

- a. The pipes are [F RUSTY].
- b. The pipes [F are RUSTY].
- c. [F The PIPES are rusty].
- d. [F The PIPES] are rusty.
- e. The pipes [F ARE] rusty.

The pitch accent associated with nuclear stress is labelled A accent in Jackendoff, 1972 (H*)

H* is associated with one particular word within the focus and is followed by a falling boundary tone (L%).

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Focus-ground partitions are encoded by shifting the position of nuclear stress on one invariable syntactic structure:

- | | | |
|-----------------------------|---|---------------------------|
| a. The pipes are [F RUSTY]. | } | informationally ambiguous |
| b. The pipes [F are RUSTY]. | | |
| c. [F The PIPES are rusty]. | } | informationally ambiguous |
| d. [F The PIPES] are rusty. | | |
| e. The pipes [F ARE] rusty. | | |

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Intonational: English: focus (2)

John [F left a note [F on the TABLE]].

John [F left [F a NOTE]] on the table.

- » The sentences are ambiguous only if used out of context.
- » *a note* and *on the table* appear in a default position, no matter what their informational status (focus or tail).
- » The whole “burden of realization” is placed on **intonational dimension**

Intonational: English: Links

- » The accent on links is **distinct** from the pitch accent that characterizes focus. The link-related pitch accent is dubbed B accent in Jackendoff, 1972, and is defined by high tone preceded by a distinctive low level (L+H*).
- » Links are sometimes associated with the fronted position in the sentence, but it does not need to be so.
- » Topicalized links in English must also be associated with L+H* tone so the syntactic marking (word order) is optional (or even redundant).

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Where can I find the cutlery?

- (a) [L The forks] are in the CUPBOARD...
- (b) ... but [L the knives] I left in the DRAWER.

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Where can I find the cutlery?

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- (b) ... but I left [L the knives] in the DRAWER.

Intonational: English: Tails

Tails are typically **deaccented**.

John [F LEFT].

Is it a link-focus or a focus-tail sentence?

Intonational: English: Tails

Tails are typically **deaccented**.

John [F LEFT].

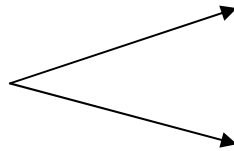


non-contrastive link
(How come she's all alone?)

Intonational: English: Tails

Tails are typically **deaccented**.

John [F LEFT].



non-contrastive link
(How come she's all alone?)

tail
(Why didn't she come with John?)

Intonational: English: Weak proforms

Are these sentences (a) and (b) informationally distinct?

(a) He hates CHOCOLATE.

(b) The president hates CHOCOLATE.

(a) John LOVES beer.

(b) He LOVES it.

Intonational: English: Weak proforms

Are these sentences (a) and (b) informationally distinct?

(a) [F He hates CHOCOLATE].

(b) The **president** [F hates CHOCOLATE].

(a) John [F LOVES] beer.

(b) [He LOVES it].

Intonational: English: Weak proforms

Are these two sentences informationally distinct?

Vallduvi 1992 argues so:

- | | |
|---|----------------------------|
| (a) [F He hates CHOCOLATE]. | all-focus lacking a ground |
| (b) The president [F hates CHOCOLATE]. | focus-link-tail |
| | |
| (a) John [F LOVES] beer. | focus-link-tail |
| (b) [He LOVES it]. | all-focus lacking a ground |

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Are these two sentences informationally distinct?

Vallduvi 1992 argues so:

(a) [F He hates CHOCOLATE]. all-focus lacking a ground

(b) The **president** [F hates CHOCOLATE]. focus-link-tail

(a) John [F LOVES] beer. focus-link-tail

(b) [He LOVES it]. all-focus lacking a ground

Canonical prosody: John loves BEER.

Non-canonical prosody: ? He loves IT.

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Vallduvi 1992 argues so:

(a) [F He hates CHOCOLATE]. all-focus lacking a ground

(b) The **president** [F hates CHOCOLATE]. focus-link-tail

(a) John [F LOVES] beer. focus-link-tail

(b) [He LOVES it]. all-focus lacking a ground

Canonical prosody: John loves BEER.

Non-canonical prosody: ? He loves IT.

“he” grammatical place-holder

Syntactic: Catalan: Focus

Compare:

- (a) El Joan va deixar una nota damunt la TAULA.
- (b) El Joan hi va deixar una NOTA, damunt la taula.
- (c) El Joan l'hi va DEIXAR, una nota, damunt la taula.

“John left a note on the table”.

Syntactic: Catalan: Focus

Compare:

- (a) El Joan [F va deixar una nota damunt la TAULA].
- (b) El Joan [F hi va deixar una NOTA], damunt la taula.
- (c) El Joan [F l'hi va DEIXAR], una nota, damunt la taula.

“John left a note on the table”.

Syntactic: Catalan: Focus

Compare:

LEFT-DETACHMENT

- (a) El Joan [F va deixar una nota damunt la TAULA].
- (b) El Joan [F hi va deixar una NOTA], damunt la taula.
- (c) El Joan [F l'hi va DEIXAR], una nota, damunt la taula.

“John left a note on the table”.

Association of A accent and FOCUS is attained **not by intonational phrasing** but by means of **syntactic operation** which removes non-focal elements from the scope of A accent.

Syntactic: Catalan: Links & tails

The directionality of detachment in Catalan syntax resolves the ambiguity in sentences with unaccented subjects in English:

(a) Why didn't she come with John?
[F Se'n va ANAR], el Joan.

right-detachment:
TAIL

(b) How come she's all alone?
El Joan [F se'n va ANAR].

left-detachment:
LINK

John left.

Intonation & word order: Germanic: focus

West Germanic (German and Dutch) adopt both: intonational dimension and syntactic operations

The default nuclear stress is on **preverbal object position**.

Karl hat [F dem Kind [F [F das BUCH] geschenkt]].

Intonation & word order: Germanic: focus

West Germanic (German and Dutch) adopt both: intonational dimension and syntactic operations

The default nuclear stress is on **preverbal object position**.

Karl hat [F dem Kind [F [F **das BUCH**] geschenkt]].

What did Karl give to the child?

Intonation & word order: Germanic: focus

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Karl hat [F dem Kind [F [F das BUCH] geschenkt]].

What did Karl give to the child?

What did Karl do for the child?

Intonation & word order: Germanic: focus

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What did Karl give to the child?

What did Karl do for the child?

What did Karl do?

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The default nuclear stress is on **preverbal object position**.

Karl hat [F dem Kind [F [F das BUCH] geschenkt]].

What did Karl give to the child?

What did Karl do for the child?

What did Karl do?

Intonation & word order: Germanic: focus

However: the non-default nuclear stress on the indirect object allows
ONLY a narrow-focus reading

Karl hat [F dem KIND] das Buch geschenkt.

Fery identifies the particular pitch accented associated with focus in German as a bitonal falling accent (H*L). V&E argue that since the H* is always followed by a falling boundary tone, the focus tone in English (H*) and the one described by Fery are analogous.

Intonation & word order: Germanic: links

The pitch accent associated with links is L*H (rising tone) or H*L (falling tone).

This means: that if falling tone is used for linkhood, there is no phonological way to distinguish it from focus.

BUT: whenever an H*L accent is used in a sentence to denote linkhood, there always exists a second H*L to realise focushood. In experiments, subjects still perceive the focal one as more prominent (other effects, e.g. duration)

Syntactic: Hungarian: focus

Hungarian also uses syntactic operations.

- » as opposed to Catalan, it does not remove a ground element from a focal slot, but moves foci to a default focal slot.
- » Hungarian is a (arguably) VO language. In order to obtain focal prominence, the object must be placed left-adjacent to the verb (“focal position”):
 - » *Attila felt [F a FOLDRENGESTOL].
 - » Attila [F a FOLDRENGESTOL] felt.“Attila feared the [F EARTHQUAKE].

Syntactic: Hungarian: ground

- » Ground elements may appear postverbally or in a left-hand position that precedes the focus position.
- » Ground elements that appear prefocally are associated with **link interpretations**.
- » **Tails** appear post-verbally

[G [L Mary]] [F JANOST] [G [T latta a kertben]].

Mary saw John in the garden.

Syntactic: Hungarian: Focus Projection

Mari [F [F [F LATTA] Janost] a kertben].
“Mary saw John in the garden.

John [F left a note [F on the TABLE]].

Syntactic: Hungarian: Focus Projection

→
Mari [F [F [F LATTA] Janost] a kertben].
“Mary saw John in the garden.

Focus projection
to the RIGHT

←
John [F left a note [F on the TABLE]].
John [F left [F a NOTE]] on the table.
←

Focus projection
to the LEFT

Morphological: Japanese

Japanese *wa* correspond to our notions of link.

John-*wa* sono hon-o yonda.

John the book read

“John read the book”

The English analogue would be a B-accented subject

The Catalan analogue would be a left-detached subject.

Wa-marked phrases need not appear sentence-initially, but left-hand placement is a default position.

Morphological: Navajo

Similar strategy is observed in Navajo:

Did John wreck the CAR?

Nda, Jaan [F chilitsoh *ga'*] yiyilcho.
(No, John wrecked the TRUCK).

#Nda, [F Bil *ga'*] chidi yiyilcho.
(#No, BILL wrecked the truck).

Often (in languages with morphological strategy), different morphemes are used for foci in declarative and interrogative sentences or for different types of focus.

Discourse particles: Russian

Russian (among other) uses special **discourse particles** to indicate the information structure of the sentence:

- to**: marks a set of sets of related propositions (equivalently, a set of questions) which is generated by introducing alternatives to a kontrastive element within the link
- zhe**: marks a set of propositions which differ from each other in the value of (at least) one term. The kontrast set for *zhe* contains members which are mutually exclusive: if one proposition is true, the other one(s) is/are false.
- ved'**: marks a set of propositions which differ from each other in the value of at least one term. However, there are important differences between them

Word order: Russian

MAYBE: может быть / быть может / может

- Что–то он задерживается./ He is late for some reason.
- Не беспокойся! Может быть, машина опять сломалась.(neutral)
/Don't worry! Maybe, his car broke down.

- Что–то он задерживается. Это на него не похоже.
- Быть может (+F), что–то случилось. (+F)
/Hmm, maybe, something has happened.

- Ср. также антифокализацию (может):
- А, может, ничего и не случилось. (-F) или (-F, +contrast)
/Or maybe nothing really happened.



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Summarizing some phenomena

	English	Catalan	Dutch	Turkish
INTONATION	Plastic A & B accents	Non-plastic A accent	Plastic A & B accents	Plastic A & B accent
WORD ORDER	Links optionally fronted	Ground in detachment slots	Links normally fronted	Ground OR foci in designated slots (?)

Summarizing some phenomena

LINKHOOD:

- » English: realised through B-accent (different from focus)
- » Catalan: left-hand syntactic slot (no intonational marking)
- » Turkish: leftward movement
- » German: can be realized through the same accent as focus

TAILHOOD:

- » Catalan: all ground elements must be out of focal position (right-detached)
- » English: deaccented

FOCUS:

- » English: must be realized through A-accent
- » Catalan: must appear in focal slots

FOCUS PROJECTION:

- » Hungarian: strictly to the right
- » Turkish, English: can project to the left



References

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