NATURAL SYNTAX: ENGLISH DEPENDENT CLAUSES

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ABSTRACT

Natural Syntax is a developing deductive theory. The naturalness judgements are couched in naturalness scales, which follow from the basic parameters (or "axioms") listed at the beginning of the paper. The predictions of the theory are calculated in the deductions, whose chief components are a pair of naturalness scales and the rules governing the alignment of corresponding naturalness values. Parallel and chiastic alignments are distinguished, in complementary distribution. Chiastic alignment is mandatory in deductions limited to unnatural environments.

This paper wishes to acquaint the reader with the current version of Natural Syntax. By way of exemplification the paper covers selected topics within English dependent clauses.

Natural Syntax is a (developing) deductive linguistic theory that determines the presuppositions on the basis of which a (morpho)syntactic state of affairs can be made predictable, and thus synchronically explained. The two basic kinds of presuppositions are naturalness scales and rules of alignment among corresponding values of any two scales. Every (morpho)syntactic state of affairs is represented by two comparable variants. Natural Syntax contains no generative component.

I begin by listing the criteria with which Natural Syntax substantiates naturalness scales:

a) The parameter of favourable for the speaker and of favourable for the hearer. What is favourable for the speaker is more natural, the speaker being the centre of communication. Expressed in a scale: >nat (favourable for the speaker, favourable for the hearer). This view of naturalness is commonplace in linguistics (Havers 1931: 171), under the names of tendency to economize (utilized first of all by the speaker) and tendency to be accurate (mainly in the hearer's interest).

b)   The principle of least effort (Havers 1931: 171). What conforms better to this principle is more natural for the speaker. What is cognitively simple (for the speaker) is easy to produce, easy to retrieve from memory, etc.

c)   Prototypicality. What is nearer to the prototype is more natural for the hearer. The speaker favours non-prototypicality.

d)   Degree of integration into the construction. What is better integrated into its construction is more natural for the speaker.

e)   Frequency. What is more frequent tokenwise is more natural for the speaker. What is cognitively simpler for the speaker is used more. (However, the reverse does not obtain: what is natural for the speaker is not necessarily more frequent.)

f)   Small vs. large class. The use of (a unit pertaining to) a small class is more natural for the speaker than the use of (a unit pertaining to) a large class. During speech small classes are easier for the speaker to choose from than are large classes.

g)   Specialized vs. non-specialized use. The specialized use of a category is more natural for the speaker than its non-specialized use. Suppose that a language has reflexive personal pronouns. The latter are specialized for expressing reflexivity (whereas other personal pronouns are not specialized for expressing reflexivity, although they do express it under certain conditions) and their use for expressing reflexivity is very natural for the speaker: >nat (+, –) / reflexive personal pronoun expressing reflexivity.

h)   Given a construction, the movement of a unit to the left is more natural for the speaker than the movement of a unit to the right. (Movement to the left is more natural than non-movement; movement to the right is less natural than non-movement.)

i)   Acceptable vs. non-acceptable use. What is acceptable is more natural for the speaker than what is not acceptable. The very reason for the acceptability of a syntactic unit is its greater naturalness for the speaker with respect to any corresponding non-acceptable unit.

j)   What is more widespread in the languages of the world is more natural for the speaker (the typological criterion). What is cognitively simpler for the speaker is realized in more languages.

The basic format of our naturalness scales is >nat (A, B), in which A is favourable for the speaker and B is favourable for the hearer. A and B are the "values" of the scale. Whenever two basic scales are called for, the other assumes the shape >nat (C, D). Two expanded scales are allowed, namely >nat (A + B, B) and >nat (A, A + B); they are valid if the corresponding scale of the format >nat (A, B) is valid. Exemplification below.

The above criteria of naturalness (henceforth, axioms) are utilized to support our naturalness scales. Normally it suffices to substantiate any scale with one criterion, which backs up either value A or value B of the scale; the non-supported value is allotted the only remaining position in the scale. Of course, a scale may be supported with more than one criterion. Any clash among the criteria applied to a scale is to be handled with constraints on the combinations of criteria. So far only a few constraints have been formulated; I have not yet encountered much useable crucial language data.

The naturalness scales are an essential part of deductions, in which Natural Syntax expresses its predictions about the state of affairs in language data. An example of a deduction:

English. The numerical indication of frequency normally consists of a cardinal number followed by the word *times* – e.g., *four times* – except that there are one-word expressions available for the lowest numbers: *once*, *twice* and archaic *thrice* (*Collins Cobuild* 1990: 270-271).

The two variants: the type *once* and the type *four times*.

1. The assumptions of Natural Syntax:

1.1. >nat (type *once*, type *four times*)

I.e. the type *once* is more natural than the type *four times*. According to the criterion of least effort, item (b) in the list of axioms.

1.2. >sem (low, non-low) / number

I.e. any low number is more natural than any non-low number (Mayerthaler 1981: 15). – Low numbers are more easily accessible to the speaker. According to the criterion of favourable for the speaker, item (a) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D. See Note 4.1 below.

3. The consequences

If a language distinguishes between low and non-low numbers in numerical indications of frequency, such that one kind of number uses the pattern *four times* and the other kind of number uses the pattern *once*, then it is the low numbers that tend to use the pattern *once* and it is the non-low numbers that tend to use the pattern *four times*. *Q.E.D.* (The reverse situation is not expected).

4. Notes

4.1. Value A of scale 1.1. (= the type *once*) tends to combine with value C of scale 1.2. (= low number). Value B of scale 1.1. (= the type *four times*) tends to combine with value D of scale 1.2. (= non-low number); similarly in the remaining deductions, with the proviso that the alignment (unlike here) is sometimes chiastic. Chiastic alignment will be explained below.

4.2. Natural Syntax cannot predict the cut-off point between low and non-low numbers.

This deduction maintains that the state of affairs cannot be the reverse; i.e. that the numbers above "two" (or "three") would be one-word formations and that the numbers under "three" (or "four") would be two-word formations. All predictions of our Natural Syntax are restricted to such modest claims about the unlikelihood of the reverse situation.

In every deduction, the rules of alignment play a prominent role; compare item 2 in the above deduction. The alignment rules regulate the combinations of corresponding values of the two naturalness scales mentioned in the deduction. The alignment can be parallel or chiastic. Suppose that the two scales are >nat (A, B) and >nat (C, D). Parallel alignment pairs value A with value C, and value B with value D. Chiastic alignment pairs A with D, and B with C.

A paramount question is when the alignment is parallel and when chiastic. Parallel alignment is the default case. Chiastic alignment is necessary whenever a given deduction is limited to language data obtaining within an "extremely unnatural environment". This is defined as value B of the scale >nat (A, B),

provided the scale cannot be extended to the right; i.e. if there is no such value that would be even less natural than value B.

At the time of this writing, the state of the art cannot explain why there are two kinds of alignment and why they are distributed as they are.

This paper exemplifies Natural Syntax with English (finite and non-finite) dependent clauses. On the basis of the naturalness scale >nat (main, dependent) / clause, the value "dependent clause" is an extremely unnatural value. Whenever the deduction proceeds within dependent clauses, chiastic alignment applies and secures the correct predictions about the language data of the deduction. Certain complications will be mentioned as we go along. There follow my examples:

1) English. In comparative *than*-clauses the subject can move to the extreme right if it is contrasted with the subject of the matrix clause and if the verb is an auxiliary; for instance, *it is no more expensive than would be **the system you are proposing*** (Huddleston and Pullum 2002: 1107).

The two variants: contrasted subject in situ and on the extreme right of the *than*-clause. – The deduction proceeds within the extremely unnatural environment "dependent clause".

1. The assumptions of Natural Syntax:

1.1. >nat (+, –) / auxiliary

I.e. the auxiliary is more natural than the non-auxiliary. – According to the criterion of least effort, item (b) in the list of axioms.

A special case of 1.1.:

1.1.1. >nat (+, +/–) / auxiliary

I.e. obligatory auxiliary is more natural than optional auxiliary. – The scale assumes the permitted expanded format >nat (A, A + B) and is automatically valid because the corresponding basic scale 1.2. has been substantiated.

1.2. >nat (–, +) / movement to the right

I.e. lack of movement is more natural than movement to the right. – This is the very criterion of movement, item (h) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences

If a language distinguishes (within *than*-clauses) between the subject in situ and the subject at the extreme right, such that one kind of subject combines with an obligatory auxiliary verb and the other kind of subject combines with an optional auxiliary verb, then it is the subject in situ that tends to combine with an optional auxiliary verb and it is the subject at the right that tends to combine with an obligatory auxiliary verb. *Q.E.D*. (The reverse situation is not expected.)

4. Notes

4.1. The movement of the subject to the extreme right is different from subject-verb inversion, in which the finite verb moves over the subject to the LEFT (a very natural movement according to Natural Syntax); e.g., *he is* vs. *is he*.

4.2. Following Huddleston and Pullum (2002: 1148) I conclude that a similar state of affairs to that in *than*-clauses obtains in comparative *as*-clauses; for instance, *he would be a devout Catholic, as would be* **both his brothers**. I have modified the somewhat unclear only example of my source so that it is now less ambiguous in the respect under discussion.

2) English. Comparative clauses introduced with the subordinator *as* or *than*. Such clauses cannot use the empty subject *it*; for instance, *I shall act* **as seems best**. However, the empty *it* is used if the clause contains a gap; for instance, *he got* **more than it is possible to get today**. (The verb *GET* takes a direct object, but the latter is absent after *to get* in the example; Bache and Davidsen-Nielsen 1997: 412.) This deduction does not encompass comment clauses, such as *as* (*it*) *appears from her essay*.

    The two variants: comparative clauses containing and lacking a gap. – The deduction proceeds in the extremely unnatural environment "dependent clause".

1. The assumptions of Natural Syntax:

1.1. >nat (Ø, *it*) / empty subject

    I.e. zero realization of empty *it* is more natural than its non-zero realization. According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (+, –) / gap

    I.e. the presence of a gap is more natural than its absence. – According to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences

If a language distinguishes (within comparative *as*- and *than*-clauses) dependent clauses containing and lacking a gap, such that the empty subject *it* is realized in one kind of dependent clause and is not realized in the other kind of dependent clause, then it is the dependent clauses lacking a gap that tend not to realize the empty subject *it* and it is the dependent clauses containing a gap that tend to realize the empty subject *it*. *Q.E.D*. (The reverse situation is not expected.)

3) English. Conditional *if*-clauses. If the finite verb of the clause is *should*, *were* or *had*, such a finite verb can move to the beginning of the clause and the subordinator *if* is suppressed; for instance, **if any visitors should come**, *I will say you are not here* vs. the synonymous **should any visitors come**, *I will say you are not here* (*Collins Cobuild* 1990: 351).

    The two variants: the type *if any visitors should come* and the type *should any visitors come*. – The deduction proceeds in the extremely unnatural environment "dependent clause".

1. The assumptions of Natural Syntax:

1.1. >nat (type *should any visitors come*, type *if any visitors should come*)

    I.e. the type *should any visitors come* is more natural than the type *if any visitors should come*. – According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (+, –) / colloquial language

I.e. the colloquial language is more natural than other registers. – Many languages use only the colloquial register. According to the typological criterion, item (j) in the list of axioms.

A special case of 1.2.:

1.2.1. >nat (+/–, –) / colloquial language

I.e. optional use outside the colloquial language is more natural than obligatory use outside the colloquial language. – The scale assumes the permitted expanded format >nat (A + B, B) and is automatically valid because the corresponding basic scale 1.2. has been substantiated.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences

If a language distinguishes between the type *if any visitors should come* and the type *should any visitors come*, such that one type is used outside the colloquial language only, and the other type in all registers, then it is the type *should any visitors come* that tends to be used outside the colloquial language only, and the type *if any visitors should come* tends to be used in all registers. *Q.E.D.* (The reverse situation is not expected.)

The matrix clause is not considered to be interfering with the dependent clause if what is at issue is the position of the dependent clause with respect to the matrix clause (even when the dependent clause occupies the middle position!). In such cases chiastic alignment continues to apply:

4) English. Conditional *if*-clauses are located more frequently BEFORE than AFTER the matrix clause. Other adverbial clauses prefer the position AFTER the matrix clause (Biber et al. 1999: 834).
The two variants: *if*-clauses and other adverbial clauses. The deduction proceeds in the extremely unnatural environment "dependent clause".

1. The assumptions of Natural Syntax:

1.1. >nat (after the matrix clause, before the matrix clause) / adverbial clause

I.e. the position of the adverbial clause AFTER the matrix clause is more natural than the position of the adverbial clause BEFORE the matrix clause. – In English more adverbial clauses stand after the matrix clause than before it. According to the frequency criterion, item (e) in the list of axioms.

1.2. >nat (*if*-clauses, other adverbial clauses)

I.e. *if*-clauses are more natural than other adverbial clauses. *If*-clauses are a small class, other adverbial clauses taken together a large one. According to the criterion of small vs. large class, item (f) in the list of axioms. See 4. Note.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences

If a language makes a distinction between *if*-clauses and other adverbial clauses, such that one class of clauses prefer to stand BEFORE the matrix clause and the other class of clauses prefer to stand AFTER the matrix clause, then it is the *if*-clauses that tend to prefer the initial position and it is the other adverbial clauses that tend to prefer the final position. *Q.E.D.* (The reverse situation is not expected.)

4. Note. Scale 1.2. does not assert that *if*-clauses are the most natural adverbial clauses. The scale only asserts that *if*-clauses are more natural than the average of the remaining adverbial clauses taken together.

5) English. Adverbial dependent clauses. Adverbial dependent clauses are most frequently placed at the end of the matrix clause. They are least frequently placed inside the matrix clause (*Collins Cobuild* 1990: 344; Biber et al. 1999: 830).
The two variants: adverbial dependent clauses inside the matrix clause and other adverbial dependent clauses. – The deduction proceeds in the extremely unnatural environment "dependent clause".

1. The assumptions of Natural Syntax:

1.1. >nat (inside the matrix clause, at the beginning/end of the matrix clause) / dependent clause

   I.e. a dependent clause placed inside the matrix clause is more natural than a dependent clause placed at the beginning/end of the matrix clause. – It is easier for the hearer to identify dependent clauses at the beginning/end of the matrix clause, and therefore such dependent clauses occupy position B in the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (more, less) / frequent

   I.e. what is more frequent is more natural than what is less frequent. – This is the very criterion of frequency, item (e) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences

If a language makes a distinction between dependent clauses inside matrix clauses and at the beginning/end of matrix clauses, such that one kind of dependent clause is more frequent and the other kind of dependent clause is less frequent, then it is the dependent clauses inside matrix clauses that tend to be less frequent and it is the dependent clauses at the beginning/end of matrix clauses that tend to be more frequent. *Q.E.D.* (The reverse situation is not expected.)

6) English. Conditional clauses introduced with the subordinator *if* or *unless*. The *unless*-clauses usually follow the matrix clause. The *if*-clauses can precede or follow the matrix clause. Examples: ***if you do that*** *I shall be very pleased*, *they will even clean your car* ***if they're in the mood***, *there can be no new growth* ***unless the ground is cleared*** (*Collins Cobuild* 1990: 349).

   The two variants: *if*-clause and *unless*-clause. – The deduction proceeds in the extremely unnatural environment "dependent clause".

1. The assumptions of Natural Syntax:

1.1. >nat (*if*, *unless*)

   I.e. the subordinator *if* is more natural than the subordinator *unless*. – According to the criterion of least effort, item (b) in the list of axioms. The subordinator *unless* is semantically narrower ('if not') than the subordinator *if*, hence more favourable for the hearer (therefore it occupies position B of the scale). According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (matrix-clause-final, matrix-clause-initial) / position of adverbial dependent clause

   I.e. the matrix-clause-final position of the adverbial dependent clause is more natural than the matrix-clause-initial position of the adverbial dependent clause. – Most English adverbial dependent clauses occupy the matrix-clause-final position. According to the frequency criterion, item (e) in the list of axioms.

A special case of 1.2.:

1.2.1. >nat (only matrix-clause-final, both matrix-clause-initial and matrix-clause-final) / position of adverbial dependent clause

   I.e. the obligatory matrix-clause-final position of an adverbial dependent clause is more natural than the optional matrix-clause-final position of an adverbial dependent clause. – The scale assumes the permitted expanded format >nat (A, A + B) and is automatically valid because the corresponding basic scale 1.2. has been substantiated.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences

If a language distinguishes between conditional *if*-clauses and conditional *unless*-clauses, such that one kind of clause usually occupies the matrix-clause-

final position, and the other kind of clause usually occupies either the matrix-clause-initial or the matrix-clause-final position, then it is the *if*-clauses that tend to occupy either the matrix-clause-final or the matrix-clause-initial position, and it is the *unless*-clauses that tend to occupy the matrix-clause-final position only. *Q.E.D.* (The reverse situation is not expected.)

Whenever the deduction mentions the matrix clause beside the dependent clause (excepting the position of the dependent clause in relation to the matrix clause), the (default) parallel alignment applies. Examples:

7) English. In comparative *than*-clauses the subject can move to the extreme right if it is contrasted with the subject of the matrix clause and if the verb of the dependent clause is an auxiliary; e.g., *it is no more expensive than would be **the system you are proposing*** (Huddleston and Pullum 2002: 1107).
　　The two variants: the contrasted and the non-contrasted subject of the *than*-clause.

1. The assumptions of Natural Syntax:

1.1. >nat (–, +) / contrastedness

　　I.e. lack of contrastedness is more natural than presence of contrastedness. – Contrastedness is in the interest of the hearer because it eases the decoding process. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (–, +) / movement to the right
　　I.e. lack of movement to the right is more natural than movement to the right. – This is the very movement criterion, item (h) in the list of axioms.

A special case of 1.2.:

1.2.1. >nat (–, +/–) / movement to the right

　　I.e. obligatory lack of movement to the right is more natural than optional lack of movement to the right. – The scale assumes the permitted expanded format >nat (A, A + B) and is automatically valid because the corresponding basic scale 1.2. has been substantiated.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences

If a language distinguishes (within comparative *than*-clauses) between contrasted and non-contrasted subjects, such that one kind of subject can move to the right, and the other kind of subject cannot move to the right, then it is the contrasted subject that tends to optionally move to the right, and it is the non-contrasted subject that tends not to move to the right. *Q.E.D.* (The reverse situation is not expected.)

8) English. Conditional *if*-clauses. If the *if*-clause precedes the matrix clause, the latter can be strengthened with the particle *then* at the beginning. For instance, *if this is what was happening in the sixties,* ***then*** *I'm glad I wasn't around then* (*Collins Cobuild* 1990: 349). Matrix clauses containing *then* and *if*-clauses are better balanced than are matrix clauses lacking *then* and *if*-clauses (Quirk et al. 1985: 1001). I interpret the former case to mean that the *if*-clause is less well integrated into its matrix clause than in the latter case.
　　The two variants: presence and absence of the particle *then* if the dependent clause precedes the matrix clause.

1. The assumptions of Natural Syntax:

1.1. >nat (–, +) / matrix-clause-initial *then*

　　I.e. a lacking matrix-clause-initial *then* is more natural than a present matrix-clause-initial *then*. – According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (more, less) / integrated into matrix construction

　　I.e. what is more integrated into the matrix construction is more natural than what is less integrated into the matrix construction. – This is the very criterion of integration into the matrix construction, item (d) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences

If a language distinguishes (within matrix-clause-initial *if*-clauses) between strengthening and non-strengthening of the matrix clause with the particle *then*, such that the *if*-clause is more integrated into the matrix construction in one case and less integrated in the other case, then it is the strengthened sentence that tends to have the *if*-clause less integrated into the matrix construction and it is the non-strengthened sentence that tends to have the *if*-clause more integrated into the matrix construction. *Q.E.D*. (The reverse situation is not expected.)

9) English. Dependent clauses of time. If the construction is non-finite, the subject must not be realized (and it must be coreferential with the subject of the matrix clause); for instance, *I deliberately didn't read the book **before going to see the film*** (*Collins Cobuild* 1990: 348). – The coreferentiality of the subjects is dealt with in deduction (10).
   The two variants: the finite and the non-finite construction of the dependent clause. – The matrix clause is also involved: the dependent clause is fully understood only if the hearer has access to the subject of the matrix clause.

1. The assumptions of Natural Syntax:

1.1. >nat (non-finite, finite) / construction of dependent clause

   I.e. the non-finite construction of the dependent clause is more natural than the finite one. – Non-finite dependent clauses are more frequent in languages at large than finite dependent clauses. According to the typological criterion, item (j) in the list of axioms.

1.2. >nat (–, +) / realized subject

   I.e. a non-realized subject is more natural than a realized subject. – According to the criterion of least effort, item (b) in the list of axioms.

If a language distinguishes finite and non-finite clauses of time, such that the subject is realized in one kind of clause and not realized in the other kind of clause, then it is the finite clauses that tend to contain a realized subject and it is the non-finite clauses that tend to lack a realized subject. *Q.E.D*. (The reverse situation is not expected.)

10) English. Dependent clauses of time. If the construction is non-finite, the subject must not be realized (and it must be coreferential with the subject of the matrix clause); for instance, *I deliberately didn't read the book **before going to see the film*** (*Collins Cobuild* 1990: 348). – This deduction deals with the coreferentiality of the subjects.
   The two variants: the finite and the non-finite construction of the dependent clause. – The matrix clause is also involved: the dependent clause is fully understood only if the hearer has access to the subject of the matrix clause.

1. The assumptions of Natural Syntax:

1.1. >nat (non-finite, finite) / construction of dependent clause

   I.e. the non-finite construction of the dependent clause is more natural than the finite one. – Non-finite dependent clauses are more frequent in languages at large than finite dependent clauses. According to the typological criterion, item (j) in the list of axioms.

1.2. >nat (+, –) / coreferential subject

   I.e. a coreferential subject is more natural than a non-coreferential subject. – A coreferential subject is not favourable for the hearer (therefore it occupies position A of the scale) because it impedes the decoding process. According to the criterion of favourable for the speaker, item (a) in the list of axioms.

A special case of 1.2.:

1.2.1. >nat (+, +/–) / coreferential subject

I.e. obligatory use of a coreferential subject is more natural than optional use of such a subject. – The scale assumes the permitted expanded format >nat (A, A + B) and is automatically valid because the corresponding basic scale 1.2. has been substantiated.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences

If a language distinguishes finite and non-finite clauses of time such that the subject of one kind of clause is obligatorily coreferential and the subject of the other kind of clause is optionally coreferential, then it is the finite clauses that tend to have an optionally coreferential subject, and it is the non-finite clauses that tend to have an obligatorily coreferential subject. *Q.E.D.* (The reverse situation is not expected.)

If there is an internal division of an extremely unnatural environment into more and less natural parts, a special situation obtains within the more natural part: against expectation, parallel alignment applies. Dependent clauses are in fact divided into finite and non-finite ones, and the corresponding naturalness scale is >nat (non-finite, finite) / dependent clause. (This scale is substantiated in deductions (9) and (10) above.) Consequently we find parallel alignment in deductions restricted to non-finite dependent clauses:

11) English. A non-finite clause of purpose introduced with *in order to* can elide *in order* if the clause is affirmative; if the clause is negative, *in order* cannot be elided. For instance, *we left early (in order) to miss the rush-hour* vs. *he modified the story somewhat in order **not** to offend his parents* (Huddleston and Pullum 2002: 728).
    The two variants: an affirmative and a negative non-finite clause introduced by *in order to*. – The deduction proceeds in the more natural part of the extremely unnatural environment "dependent clause".

1. The assumptions of Natural Syntax:

1.1. >nat (affirmative, negative)

I.e. affirmative is more natural than negative. – Affirmative is usually not coded with any special means. According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (*to*, *in order to*) / clause of purpose

I.e. the introductory element *to* is more natural than the introductory element *in order to*. – According to the criterion of least effort, item (b) in the list of axioms.

A special case of 1.2.:

1.2.1. >nat (*to* & *in order to*, only *in order to*)

I.e. optional use of the introductory element *in order to* is more natural than its obligatory use. – The scale assumes the permitted expanded format >nat (A + B, B) and is automatically valid because the corresponding basic scale 1.2 has been substantiated.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences

If a language distinguishes (within non-finite clauses of purpose) between affirmative and negative clauses, such that one kind of clause is introduced either by *to* or by *in order to*, and the other kind of clause is introduced by *in order to* only, then it is the affirmative non-finite clauses that tend to be introduced either by *to* or by *in order to*, and it is the negative non-finite clauses that tend to be introduced by *in order to* only. *Q.E.D.* (The reverse situation is not expected.)
    I have exemplified English finite and non-finite dependent clauses, trying to predict certain aspects of their syntactic behaviour in "deductions" whose pivotal element are the parallel and chiastic alignments of naturalness values.

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