Language Faculty Science (Cambridge University Press)
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[The Glossary in the book does not appear in this form, due to the publisher's policy. The entries are organized much more thematically in this file than in the Glossary in the book.]

Glossary[1]

Language Faculty Science

language faculty
> That part of the human mind/brain that is hypothesized to be responsible for our ability to relate meaning to linguistic sounds/signs.
> [N.B.] [It is hypothesized to be part of the human biological endowment. The hypothesis is due to Noam Chomsky. For Chomsky's discussion of its 17th century predecessors, see Chomsky 1966.]

Universal Grammar (UG)
> The initial state of the language faculty. It is hypothesized to be universally shared by the members of the human species.

I-language
> The steady state of the language faculty. The UG is hypothesized to "grow into" it on the basis of the linguistic evidence available to the child in its linguistic environment.
> [N.B.] [The I-language, which is necessarily of a particular speaker, consists of those aspects of the UG that remain in her/his mind/brain and what has been "acquired" in the course of the linguistic maturation. The term I-language is introduced in Chomsky 1986 and the "I" in I-language stands for "internal," "individual," and "intensional."]

internalist
> In the context of language-related studies, an internalist is someone who is interested in properties of the language faculty.

Guess-Compute-Compare method
> One of the two most crucial defining properties of language faculty science as pursued in this book. It emphasizes the deduction of definite predictions and the pursuit of rigorous testability of the definite predictions.
> [N.B.] [The other defining property is that it takes the language faculty as its object of inquiry.]

exact science
> A research program in which *definite* predictions are *deduced* from hypotheses and are tested against experiments

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[1] For the terms that have been used in the literature, their explanations/definitions given below are not necessarily meant to be what is considered to be the general conception/understanding of such terms. They are meant to express my own understanding of such concepts in the context of language faculty science as outlined in this book.

Computational System (CS)

Computational System (of the language faculty)

The generative system that is hypothesized to be at the core of the language faculty.

[N.B.] [Since Chomsky 1993, it is generally understood in generative research that the Computational System takes as its input a set of items in the mental lexicon of a speaker of a language and yields as its output a pair of mental representations—one underlying sound/sign and the other meaning. According to Chomsky's (1993) model of the Computational System, which we adopt in this book, the only structure-building operation in the Computational System is Merge. Chomsky's (1993) model of the Computational System and Ueyama's (2010) model of judgments-making by an informant form a general framework for language faculty science as being pursued in this book.]

Merge

The only structure-building operation in the Computational System according to Chomsky's (1993) model of the Computational System. It combines two syntactic objects and forms one.

PF representation

One of the two output representations of the Computational System that serves as the basis for linguistic sounds.

[N.B.] [The mental representation corresponding to a given sentence is a pair of an LF representation and a PF representation, according to Chomsky's (1993) model of the Computational System. It is assumed that the PF representation has hierarchical structure and it may contain a syntactic object that has no phonetic content (so-called "empty categories").]

pf representation

It is a phonetic sequence of audible items that is directly read off a PF representation.

[N.B.] [It does not contain syntactic objects that have no phonetic content (so-called "empty categories").]

LF representation

One of the two output representations of the Computational System that serves as the basis for meaning that language faculty science should be concerned with, according to Chomsky's model of the Computational System.

model of judgment-making

A hypothesis about what goes on in the informant's mind when s/he judges the acceptability of an Example.

[N.B.] [The model of judgment-making we adopt is that of Ueyama 2010, which incorporates in it the model of the Computational System proposed in Chomsky 1993.]

FD

FD (Formal Dependency)

A hypothesized LF object. The structural condition on FD(a, b) is expressed in terms of the structural relation of c-command, which is directly definable by Merge.

[N.B.] [Language faculty science as addressed and pursued in this book tries to discover properties of FD, hypothesized to be universal, by putting forth structural and lexical hypotheses about it. We deduce definite consequences by combining such universal hypotheses with language-particular structural and lexical hypotheses, and by making those

consequences testable by means of bridging hypotheses.]

c-command

A *c-commands* B if and only if A is *Merged* with what contains B where we understand that the containment relation is reflexive.

[N.B.] [The structural relation of c-command that is directly definable in terms of Merge, which is the only structure-building operation in the CS according to Chomsky's model of the Computational System.]

BVA(α, β)

The dependency interpretation detectable by the informant such that the reference invoked by singular-denoting expression β co-varies with what is invoked by non-singular-denoting expression α.

[N.B.] [The bridging hypothesis that makes reference to BVA(α, β), with α and β being specified, states that BVA(α, β) is possible only if there is FD(LF(α), LF(β)), where "LF(α)" stands for an LF syntactic object corresponding to expression α. In this book, we focus on BVA(α, β), with specific choices of α and β, as a probe into properties of FD and hence of the Computational System. BVA(α, β) seems to be a most effective probe if β is singular-denoting and α is not, and that is why we focus on this type of BVA(α, β). Although the term BVA comes from "**b**ound **v**ariable **a**naphora," the former should not be equated with the latter. We do not, for example, consider the anaphoric relation that may hold between *some boy* and *his* as an instance of BVA(α, β) but we take the one that may hold between *even John* and *his* as an instance of BVA(α, β).]

Prediction-deduction

prediction

A prediction in language faculty science is about an *individual* informant's judgment. It is deduced by the combination of universal hypotheses, language-particular hypotheses and a bridging hypothesis. It is a Yes Answer on [ok]Examples and a No Answer on *Examples.

universal hypothesis

A hypothesis about properties of the Universal Grammar. This book deals with structural and lexical hypotheses about FD.

[N.B.] [In order for the result of our Main-Experiment to be revealing about properties of the Universal Grammar, it is crucial that a predicted schematic asymmetry is given rise to, at least in part, by a universal hypothesis. With universal hypotheses and language-particular hypotheses, we deduce a definite consequence, but it is a bridging hypothesis that turns the definite consequence into a testable prediction.]

language-particular hypothesis

A hypothesis about language-particular properties of an I-language.

[N.B.] [The language-particular hypotheses that this book deals with are those about pf-LF correspondences and those about lexical specifications, and various bridging hypotheses.]

bridging hypothesis

Bridging hypotheses relate a particular dependency interpretation detectable by the informant to some LF object by stating the latter as a necessary condition for the former.

[N.B.] [They are hypotheses about effective probes for finding out about properties of the CS. We can deduce a *categorical* prediction about the *individual* informant's judgment by adopting

Chomsky's (1993) model of the CS and Ueyama's (2010) model of judgment-making by the informant, and combining the universal and language-particular hypotheses with a bridging hypothesis. With universal hypotheses and language-particular hypotheses, we deduce a definite consequence, but it is a bridging hypothesis that turns the definite consequence into a testable prediction.]

Schema

A schematic representation that covers, i.e., can be instantiated by, an infinite number of pf representations.

[N.B.] [An actual sentence used in an Experiment instantiates one of the three Schema types (Schema A, Schema B, and Schema C). Schema A and Schema B minimally specify where the two items mentioned in the bridging hypothesis (α and β of BVA(α, β) in the case of BVA) occur in a phonetic sequence. Any pf representation instantiating Schema B is predicted to be completely unacceptable, and some pf representations instantiating Schema A are predicted to be acceptable, at least to some extent, with the dependency interpretation specified by the bridging hypothesis.]

*Schema

A Schema such that, according to the hypotheses in question, any Example that instantiates it is completely unacceptable with the specified dependency interpretation, i.e., there is no LF representation corresponding to a pf representation instantiating the *Schema in which the structural and lexical conditions for the LF object/relation in question are all satisfied. It is Schema B among the three Schema types (Schema A, Schema B, and Schema C).

*Schema-based prediction

The prediction that any Example instantiating a *Schema (i.e., Schema B) is completely unacceptable with the specified dependency interpretation. It can be disconfirmed but it cannot be confirmed.

okSchema

Schema A and Schema C among the three Schema types (Schema A, Schema B, and Schema C).

okSchema-based prediction

The prediction that some Examples instantiating Schema A are acceptable to some extent, i.e., not completely unacceptable, with the specified dependency interpretation. It can be confirmed, but it cannot be disconfirmed.

fundamental schematic asymmetry

The asymmetry between the *Schema-based prediction and the okSchema-based prediction; the former can be disconfirmed but the latter cannot.

[N.B.] [The recognition of this asymmetry is a key to language faculty science as an exact science.]

predicted schematic asymmetry

The combination of a *Schema-based prediction and its corresponding okSchema-based prediction.

Experimental design

Main-Hypotheses

Main-Hypotheses of a given predicted schematic asymmetry are those that give rise to its *Schema-based prediction. The condition(s) specified by the Main-Hypotheses is/are satisfied

in the case of Schema A but not in the case of Schema B.

Sub-Hypotheses

Sub-Hypotheses of a given predicted schematic asymmetry are the hypotheses that give rise to it, excluding its Main-Hypotheses. The condition(s) specified by the Sub-Hypotheses is/are satisfied both in the case of Schema A and in the case of Schema B.

three-Schema set

A set of Schema A, Schema B and Schema C.

[N.B.] [An EPSA Experiment consists of a multiple of such a three-Schema set, and hence of a set of three Examples each instantiating one of the three Schemata.]

Schema A

One of the two [ok]Schemata among the three Schema types (Schema A, Schema B, and Schema C). Schema A is contrasted with the corresponding Schema B (=*Schema), both with a specified dependency interpretation.

[N.B.] [A consequence of our hypotheses is that, corresponding to a pf representation instantiating Schema A, there is an LF representation where the conditions imposed by the Main-Hypothesis/ses and the Sub-Hypotheses are all satisfied.]

Schema B

The only *Schema among the three Schema types (Schema A, Schema B, and Schema C).

[N.B.] [A consequence of our hypotheses is that, corresponding to a pf representation instantiating Schema B, there is no LF representation where the conditions imposed by the Main-Hypothesis/ses and the Sub-Hypotheses are all satisfied. Our Main-Experiment is designed so that, corresponding to a pf representation instantiating Schema B, there is an LF representation where the condition(s) imposed by the Sub-Hypothesis/ses on the LF object underlying the dependency interpretation in question is/are satisfied but not the one(s) imposed by the Main-Hypothesis/ses.]

Schema C

One of the two [ok]Schemata among the three Schema types (Schema A, Schema B, and Schema C) that is (as) identical (as possible) to Schema B, but without the dependency interpretation considered in the case of Schema B.

[N.B.] [The fundamental schematic asymmetry is between Schema A and Schema B. But Schema C has its own function of making the No answer to *Examples instantiating Schema B significant with regard to the validity of the Main-Hypotheses because a Yes answer to [ok]Examples instantiating Schema C makes it unlikely that the No answer to the *Examples instantiating Schema B is due to a parsing problem.]

*Example

An actual sentence used in an Experiment which instantiates Schema B.

[ok]Example

An actual sentence used in an Experiment which instantiates Schema A or Schema C.

Schema group (=SG)

One of the three dimensions by which the Examples of our Experiment are classified. The other two dimensions are Schema types (Schema A, Schema B, and Schema C) and Lexical groups.

[N.B.] [In a Main-Experiment discussed in this book, if its Main-Hypotheses are structural in nature, its Schema groups are often based on the structural hypotheses being tested therein.]

Lexical group (=LG)
>One of the three dimensions by which the Examples of our Experiment are classified. The other two dimensions are Schema type (one of Schema A, Schema B, and Schema C) and Schema groups.
>[N.B.] [In a Main-Experiment discussed in this book, if its Main-Hypotheses are structural in nature, the choice of a Lexical group is due to the choice of a particular bridging hypothesis.]

Types of experiments

Experiment
>An individual Experiment which is given a particular EPSA Experiment ID, such as EPSA [31]-4.

Main-Experiment
>An Experiment which tests for each informant the validity of the Main-Hypotheses of a predicted schematic asymmetry.
>[N.B.] [In order to effectively assess the validity of the Main-Hypotheses tested in the Main-Experiment, it is necessary to interpret its results by focusing on the informants whose judgments in the Main-Experiment are significant with regard to the validity of its Main-Hypotheses, i.e., those (i) for whom the Sub-Hypotheses of the predicted schematic asymmetry are valid and (ii) who clearly understand the instructions, including the intended dependency interpretation.]

Sub-Experiment
>An Experiment that tests for each informant (i) the validity of Sub-Hypotheses of a predicted schematic asymmetry and/or (ii) the reliability of the design of the Main-Experiment such as how we convey the intended dependency interpretation to our informants.
>[N.B.] [The more empirical evidence we have accumulated in Sub-Experiments in support of Sub-Hypotheses, the more significance we can assign to the result of the Main-Experiment with regard to the validity of its hypothesis/ses.]

experiment
>An experiment in language faculty science consists of a Main-Experiment and its Sub-Experiments. The term *experiment* is also used in this book when referring to an experiment in general.

single-researcher-informant experiment
>An experiment whose only informant is the researcher who has designed the experiment.
>[N.B.] [Once we adopt the internalist approach and emphasize the significance of deducing definite and categorical predictions from our hypotheses, it follows that empirical research in language faculty science starts with an attempt to obtain a confirmed predicted schematic asymmetry in a single-researcher-informant experiment. The single-researcher-informant experiment should yield a confirmed predicted schematic asymmetry. The confirmed predicted schematic asymmetry thus obtained should be replicated in multiple-informant experiments—ultimately in multiple-non-researcher-informant experiments.]

single-informant experiment
>An experiment that has only one informant.
>[N.B.] [Given the internalist approach, this is where we can start evaluating the validity of our hypotheses about the language faculty.]

multiple-informant experiment
>An experiment that has more than one informant, which should be understood as a collection of single-informant experiments.

[N.B.] [The purpose of a multiple-informant experiment is to see if the result of a single-researcher-informant experiment is replicated, rather than to see if the reported judgments by a group of informants exhibit a (statistically) significant difference on the *Examples and the ^{ok}Examples.]

multiple-non-researcher-informant experiment

A multiple-informant experiment whose informants are not familiar with theoretical or empirical issues addressed in the experiment.

Informant judgments

See **model of judgment-making** under **Computational System**

No Answer

The reported judgment that the Example in question is completely unacceptable (with the specified dependency interpretation). In the book, "No" is used instead of "No Answer" when the context makes it clear what is intended.

Yes Answer

The reported judgment that the Example in question is acceptable at least to some extent (with the specified dependency interpretation). In the book, "Yes" is used instead of "Yes Answer" when the context makes it clear what is intended.

resourcefulness

It refers to the informant's ability, in judging Examples in an Experiment, to imagine various pragmatic contexts and to try different parsing possibilities (and different lexical specification when applicable).

[N.B.] [It is understood, in light of the considerations that have led to the fundamental schematic asymmetry, that it can increase, but cannot decrease, the %(Y) on a given Schema.]

informant classification

The determination of whether the reported judgments by a given informant in a Main-Experiment can be regarded as significant with regard to the validity of its Main-Hypotheses.

[N.B.] [The determination is based on the reported judgments by the informant in the Sub-Experiments for the Main-Experiment (ME). It is for the purpose of making the result of the ME as significant as possible with regard to the validity of the Main-Hypotheses tested in the ME.]

Experimental results

confirmed predicted schematic asymmetry

The predicted schematic asymmetry that has been supported by Experimental results. When the *Schema-based prediction has survived a rigorous attempt at disconfirmation and the corresponding ^{ok}Schema-based prediction has been confirmed, the reported judgments by the informants on the relevant *Examples and ^{ok}Examples are said to constitute a confirmed predicted schematic asymmetry.

[N.B.] [It is suggested in this book that constituting a confirmed predicted schematic asymmetry is a necessary condition for a set of informant intuitions on a set of Examples in an Experiment to be regarded as a reflection of properties of the Computational System. We can address whether we obtain a confirmed predicted schematic asymmetry at various levels of experiments. The confirmed predicted schematic asymmetry attained in a single-informant experiment becomes more convincing if it is reproduced in a multiple-informant experiment.]

significance of the Experimental result

   The significance of an Experimental result is evaluated with regard to the validity of the Main-Hypothesis/ses in a Main-Experiment.

   [N.B.] [Along with the concept of "prediction-deduction," this provides a conceptual basis for informant classification.]

%(I)

   The percentage of the informants in a given experiment who have reported Yes on at least one of the *Examples under consideration while at the same time reporting an answer on at least one okExample instantiating Schema A.

   [N.B.] [Since the *Schema-based prediction is that the %(Y) on a *Schema is 0, the %(I) is also predicted to be 0. If the confirmed predicted schematic asymmetry obtained in a single-informant experiment is replicated in a multiple-informant experiment, which is a collection of single-informant experiments, the %(I) should be 0 in the multiple-informant experiment. It is in this sense that the %(I) tells us about the reported judgments by *individual* informants, not about the average, or the distribution, of the reported judgments by a group of informants.]

%(Y) on an Example

   The percentage of the Yes Answers among all the answers given on the Example in question.

%(Y) on an Schema

   The percentage of the Yes Answers among all the answers given on the Examples instantiating the Schema in question.

   [N.B.] [%(Y) on an Example or the one on a Schema can be about an individual informant or about a group of informants. The %(Y) on Schema B in an Main-Experiment should be 0% for any informant (i) for whom the Sub-Hypotheses in the Main-Experiment are valid and (ii) who clearly understands the instructions, including the intended dependency interpretation.]

default criterion values

   The %(Y) on Schema A and the %(Y) on Schema B that we use as the default values in classifying informants in this book. They are 25% or higher for the %(Y) on Schema A and 0 for the %(Y) on Schema B.

   [N.B.] [The default criterion values are often not mentioned in our result charts. The choice of 0% for the %(Y) on Schema B is a logical consequence of the proposed methodology, but that of 25% for the %(Y) on Schema A is not.]

N(I)

   The number of the informants who have provided answers on the Examples being considered in a given Experiment

reproducibility

   One of the key concepts in any scientific research program that an experimental result must be replicated (with everything relevant being equal).

   [N.B.] [Reproducibility in language faculty science can be pursued at different levels.

across-example-reproducibility

   Reproducibility with regard to a given informant's judgments on Examples that instantiate the same Schema. This thus pertains to within-informant reproducibility.

   [N.B.] [We predict the No answer to every *Example instantiating a *Schema if the relevant hypotheses are all valid and if the Experiment has been designed and conducted properly and if the result of the Experiment is interpreted properly on the basis of the results of its Sub-

Experiments. This includes that each informant clearly understands the instructions, including the intended dependency interpretation.]

across-informant-reproducibility

Reproducibility with regard to whether a confirmed predicted schematic asymmetry obtained in a single-informant experiment gets replicated with other informants.

[N.B.] [It is suggested that attaining across-informant reproducibility within a language is a prerequisite for pursuing across-language reproducibility.]

across-language-reproducibility

An abstract level of reproducibility, going beyond a particular language. What is reproduced at this level is a demonstration of the (provisional) validity of a universal hypothesis. The demonstration is based on obtaining different confirmed predicted schematic asymmetries in different languages. But the predicted schematic asymmetries in different languages are all given rise by the same universal hypothesis, combined with language-particular hypotheses.

[N.B.] [At this level of abstraction, not only do we have to consider different sets of Examples of different languages as reflecting the same universal properties of the language faculty but we should also be prepared to understand that seemingly very different dependency interpretations (in different languages) can reflect the same universal properties.]

across-occasion-reproducibility

Reproducibility with regard to an individual informant's judgments on the same set of Examples on different occasions, such as on different dates.

[N.B.] [We are often concerned with whether the informant judgments form a confirmed predicted schematic asymmetry on different occasions. But, at a less theoretical level, we can also address reproducibility with regard to a given informant's judgments on the same Example or the same set of Examples on different occasions.]

within-informant-reproducibility

Reproducibility with regard to an individual informant's judgments, including across-example reproducibility and across-occasion reproducibility.

[N.B.] [It is suggested that attaining within-informant reproducibility is a prerequisite for pursuing across-informant reproducibility.]

within-language-reproducibility

Across-informant reproducibility within one language.