A base for canonical negation[1]

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1. Introduction

Before determining which criteria are relevant for constructing the theoretical space of possibilities in which to calibrate a particular phenomenon in Canonical Typology (henceforth CT), there must first exist a notional starting point (henceforth BASE) from which to anchor the investigation of a domain. Bases are an essential part of CT methodology since a CT research domain is underspecified without one; if there is no base with which to associate criteria indicating canonical behaviour, a 'canonical space' is created in which any linguistic input could be calibrated meaninglessly.

In existing applications of CT, such as Corbett (2006, 2007) the stripped back 'definitions' identified for the study of agreement (Steele 1978:610 in Corbett 2006:4) and suppletion (Mel'čuk 1994:358 in Corbett 2007:11) have been selected from a range of possibilities detailed in a substantial body of literature. However, what characterises these bases as 'good ones' or the most appropriate to use as a starting point from which to define linguistic constructs remains inexplicit. From a methodological standpoint, this is a nontrivial question because the quality of the outcomes in CT relate directly to the quality of criteria delimiting the canon and the base with which the criteria are associated. While criteria used in CT can be established through empirical observation, the principles

underlying the selection of suitable bases are less clear.[2] In this paper, I consider the significance of establishing an appropriate base in CT and how this may affect the outcomes of typological research using the CT method.

To exemplify the principles underlying formulation of an appropriate base, I consider the basic properties of LINGUISTIC NEGATION, a highly complex grammatical property of language, pragmatically rooted in communicative efficiency and semantically in the contrast between set-membership. While negation has been the subject of a considerable amount of attention in the philosophical, typological and theoretical literature, simple and elegant structure-independent definitions of the negation domain are absent in typological accounts.[3] This is partly because of the variability and interactional complexity of the category, but also because of the fundamental makeup of comparative concepts and the way they are employed in typological and descriptive research. CT offers an opportunity to carry out comparative work of complex phenomena such as negation by stripping all cross-linguistic variables out of the 'restrictive' or 'working' definition into criteria associated with a base. The base characterises only those aspects of the phenomenon that are general enough to be considered necessary properties for establishing the first broad approximation (i.e. the base) of a phenomenon. The base will also be sufficiently informative to enable the identification of a broad domain of investigation (which may well overlap with other domains). However, in establishing canonical negation (as opposed to the base for negation) we are dealing with notions of proximity to the ideal, rather than necessary and sufficient conditions. Canonical negation will therefore be characterised by those properties that help identify a linguistic construction as most

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[2] The question of which property is canonical and which is not also remains unclear to a large extent, but criteria can only be proposed where cross-linguistic or language internal variation provides evidence for differences across a single parameter.

[3] Sophisticated discussions of negation of course exist (e.g. Givón (1978), Horn (1978, 2001) and references therein) but none provides the elusive definition required by CT.

clearly satisfying the base properties.

2. The base: a notional starting point

All typological studies involve the identification of some form of constant and the subsequent investigation of variation in the properties and/or formal expression of this constant, cross-linguistically and/or language internally. In the standard strategy for typological research, as identified by Croft (2003:14), the first stage of research design involves determining the particular structure or situation to be explored.[4] The methodological starting point employed in the CT framework does not differ significantly from the standard methodology in this respect, yet there are several methodology specific considerations that inform the selection of the base around which phenomena specific criteria can be established.

A sufficient base definition in CT must include the 'indisputable' instances of the phenomenon and thus what Corbett (2007:9) refers to as the CANONICAL CORE. While canonical instances of a phenomenon under investigation need not exist, either within an individual language or indeed in any language, all examples of a particular phenomenon – canonical or otherwise – must satisfy the base for that phenomenon. The base sets out all those conditions that are minimally necessary for a construction or strategy to be considered relevant to the domain of investigation, but does not distinguish canonical instances of a phenomenon from non-canonical instances. For instance, linguistic data that satisfy the base used in investigating negation will have the same minimal properties, whether canonical or otherwise. With this is mind, bases with a broad meaning, and thus specific but minimal constraints, provide the best opportunities to meaningfully calibrate data within the multidimensional space set up by the associated criteria. This is because the characteristics required for a construction to be considered an instance of this phenomenon (i.e. the 'sufficient'

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[4] Croft (2003:14) indicates that this is a semantico-pragmatic structure or situation, but it need not be (e.g. phonological typology).

properties) will be few. Instead of restricting the domain through the base itself, calibration along different criteria provides the opportunity to delimit the scope of typological investigation based along a large number of individual parameters or combinations/permutations of those parameters. The power of CT methodology is exploited when the base with which the criteria are associated is broad enough in scope to also include peripheral instances of a phenomenon. Empirically observable subtypes (i.e. cross-linguistically salient clusterings of properties) can be established by highlighting which properties are shared within particular semantic/functional domains once the canonical space has been set up.[5]

The bases used in CT applications so far define general domains of investigation. In his approach to agreement, Corbett (2006) employs Steele's (1978) characterisation of agreement as a useful starting point for further investigation:

> AGREEMENT:
> The term agreement commonly refers to some systematic covariance between a semantic property of one element and a formal property of another.
> (Steele 1978:610, cited in Corbett 2006:4)

Similarly, in his explication of suppletion, Corbett (2007) first identifies a base for the investigation before calibrating data in the space established by the related criteria:

> SUPPLETION:
> For the signs X and Y to be suppletive their semantic correlation should be maximally regular, while their formal correlation is maximally irregular… (Mel'čuk 1994:358, cited in Corbett 2007:11)

While dealing with different phenomena, and originally defined by different scholars, these bases share certain properties in common.

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[5] See sections 4 and 5 for discussion of how these claims relate to subtypes of LN.

The first is that they are 'stripped back' and minimal in content. A good base in CT will therefore elegantly define a phenomenon, but not attempt to explain why it is that way. In model applications of CT, parameters of variation should be incorporated into the criteria associated with the base, and not the base itself.

For 'difficult phenomena' (e.g. agreement, suppletion, negation, etc), which do not readily lend themselves to analysis using more traditional typological methods, it may be useful to define the base around a relationship of contrast or variation between two or more possibilities. This is evident in the bases used by Corbett given above in which contrasts between the semantic and formal characteristics of items in a suppletion relationship or agreement relationship are explained in terms of systematic behaviour, covariance, (ir)regularity and the logical extreme (i.e. maximality) to which these properties may apply. With this in mind, a base should be stateable in words (common in typological accounts of phenomena dealt with in primarily semantico-pragmatic terms, e.g. Timberlake 2007, Mauri 2008) and rely on interpretable concepts. This eradicates certain problems with cross-linguistic comparability that would arise in the use of semantic formulae. A purely verbal characterisation of bases is similar to the position taken by Haspelmath (2008a, 2008b) in proposing 'comparative concepts', yet bases differ from comparative concepts in that they are not defined based on the (minimum) range of functions that a particular grammatical category 'typically' or conventionally has (cf. Haspelmath characterisation of the *dative* in these terms) but the formal manifestation of a relationship that can be entirely modelled in the abstract, even though the concepts embodied in the base must be attested in language in order for the research to be worthwhile. This raises a query about the suitability of the bases used by Corbett for the agreement and suppletion spaces since neither Steele's not Mel'čuk's definition presupposes the necessity of the existence of the phenomena. For instance, Mel'čuk's definition identifies what it means to be maximally suppletive, but in CT, we are interested in calibrating variation – from canonical suppletion to peripheral types. A leap of faith from an existing definition of a logical extreme to the criteria for the canon is required if it is not recognized that the base definition must set up a domain in which

variation can occur. Domains can be either constrained by identifying two poles (and investigating the domain between those two poles) or through establishing a minimal amount of defining characteristics of exemplars to be considered part of a domain.

In formalizing the domain for suppletion, one must therefore establish a domain, in which the conditions for inclusion in that domain are explicit:

> SUPPLETION DOMAIN:
> For the signs X and Y to be maximally suppletive their semantic correlation should be maximally regular, while their formal correlation is maximally irregular. For the signs X and Y to be maximally non-suppletive their semantic and formal correlation is maximally regular. The suppletion domain exists between these two logical extremes.

From this domain, one could investigate canonical suppletion or canonical morphological regularity, depending on the view-point taken.

Similarly, it is possible to propose an agreement domain based on the starting point used in Corbett (2006). For agreement, the domain set up by the base can thought of as an empirically motivated theoretical domain or conceptual space, whereas the space of possibilities defined by criteria, and the clustering of properties within that domain, represents some form of linguistic reality, which may or may not coincide with the canon:

> AGREEMENT DOMAIN:
> For the elements X and Y to be in an agreement relation, there must be a systematic covariance between a semantic property of one element and a formal property of another. The agreement domain contains any relationships that exhibit these properties.

If a language does not have exemplars that meet the defining characteristics of a domain (e.g. a language without agreement) it

would simply be irrelevant to the investigation.

There appear to be two main types of uses of CT methodology currently executed by typologists. One is EXPLORATORY CANONICAL TYPOLOGY, in which a base is used to define the domain of investigation and criteria are established and associated with that base as a result of observed cross-linguistic variation within that domain. In this execution of the methodology, the canonical core (which has properties independent of the base) falls out from the establishment of criteria on empirical grounds. Examples of exploratory CT include Corbett's work on suppletion and agreement, but also Everaert's work on relativisation (this volume) and my position on negation (first adopted in Bond 2007). The quality of the results of this type of work is highly dependent on the quality of the base definition. Fortunately, the typologist using the CT methodology does not necessarily need to construct a novel base; we may already know something about the adequacy of existing definitions of the phenomena under consideration exactly because CT is guided by existing typological studies or experience (cf. the bases used by Corbett 2006, 2007). However, some caution should be exercised here since existing definitions of phenomena that have not been widely studied (or even those that have) are often Eurocentric and therefore randomly selected in terms of their cross-linguistic significance. Bases in CT should be sympathetic to existing work, but should not always rely heavily upon it, since sometimes taking a novel perspective is rewarding or necessary.

CT may also be used retrospectively to examine existing typologies. In such instances, which I refer to as RETROSPECTIVE CANONICAL TYPOLOGY, the results of an established typology are reviewed. In work of this kind, the canonical core is established before the criteria and base. Examples of this include Siewierska's perspective of the passive in CT (this volume) and Nikolaeva and Spencer's examination of the possession-modification scale (this volume). Somewhere between these two applications lies a third way. For instance in Nikolaeva's treatment of finiteness in CT (this volume), the base to which the criteria apply is effectively whatever meets the criteria of clausehood, yet the criteria point to establishing finiteness (a property of the clause) rather than clausehood itself

(which would have a number of other canonical properties). In such cases, the base may be conceived of as being like an 'input' in a multidimensional space; here, a clausal input in the finiteness space. As with Spencer and Luis' approach to clitics (this volume), the concern is with theoretical constructs in linguistics and the assessment of their applicability; the base is a secondary concern.

In Exploratory CT, the validity of a base should ideally be supported empirically, by independent evidence from sub-disciplines of linguistics and the language sciences such as L1 and L2 acquisition, psycholinguistics, physiology, etc. This may of course be an idealistic viewpoint, but in some cases – especially in examining grammatical categories – this may be possible. In this sense, the concept of the base contrasts the concept of the canon, because the canon is an idealized point of convergence resulting from the instantiation of empirically motivated criteria. The canon itself may be rare or non-existent.

In summarising the necessary properties of bases in CT, I propose that:

(i)   For exploratory uses of the CT methodology, a base definition is obligatory because the criteria that establish the multidimensional space in CT are necessarily associated with a notional starting point and do not exist in isolation.

(ii)   Bases should be broad in scope and thus maximally inclusive.

(iii) Bases should be minimal in content and thus only contain the combination of properties deemed necessary to establish a phenomenological domain.

(iv)   A base should provide enough information about the phenomenon to determine whether it exists in the languages sampled.

(v)   Bases should be supported by empirical evidence from other sub-disciplines of linguistics or the language sciences.

In the following section I relate these properties of bases directly to negation and discuss which considerations must be made in selecting an appropriate base.

3. Existing definitions of negation

Linguistic negation (henceforth LN) is a category manifested grammatically to some effect in every language.[6] Despite the significance of this phenomenon in linguistics, the semantic components required for a basic definition or comparative concept of LN remain unclear. This is in part due to the complexity of the phenomenon and the fact that negation can be manifested in various ways within the same language and across languages. Despite these intuitions and the apparent universality of negative constructions in human language, the necessary and sufficient formal or functional properties of negation are seldom explicitly defined in language descriptions, typological or theoretical studies dealing specifically with the subject. Where linguistic definitions for negation are provided, they are frequently vague, simplistic or rigidly reliant on logic. For instance, textbook definitions of negation aim to present negation as a simple and accessible notion, but in doing so are fairly inexplicit – for instance, the use of the term *typically* in Crystal's (2003:310) dictionary entry on negation indicates that the realm of negation extends beyond the contradiction of sentence meaning:

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[6] Authors who make claims of various strength in relation to this issue include: Dahl (1979:79), Horn (2001:xiii), Forest (1993:59-65), Bybee, Perkins & Pagliuca (1994:39), de Haan (1997:3), Aikhenvald & Dixon (1998:57), Horn & Kato (2000:1) and Miestamo (2005:5), amongst others. Furthermore, in attempting to establish semantic primitives, – the building blocks of language to which all semantic concepts can be reduced – Wierzbicka (1972) proposes that all negatives can be explained in terms of the primitive DISWANT. In later treatments of the topic (e.g. Wierzbicka 1996, she also includes NOT as a semantic primitive, indicating that negation is a difficult concept to deal without in expressing the core features of language.

A process or construction in grammatical and semantic analysis which typically expresses the contradiction of some or all of a sentence meaning.

Whaley (1997:226) provides a simple definition of negation which, rather than referring to *contradiction* employs the notion of denial and *actuality,* highlighting the importance of reality, contrast and that that negatives relate to some salient alternative possibility:

The negative is a grammatical category employed to deny the actuality of an event or some portion thereof.

While these definitions are short and stated in words (a property of good bases in CT), they are less specific than those adopted in typological studies. In typological approaches to negation based on stratified or convenience samples, the definitions tend to be restrictive because they have a very limited domain of application without an independent motivation. To date, this issue has been largely addressed in the typological literature by defining a loose concept known as STANDARD NEGATION. For instance, in his survey of the variety of forms negation can take, Payne (1985:189) defines the concept of 'standard' negation as a helpful starting point from which to compare other, more complex structures:

By 'standard' negation we understand that type of negation that can apply to the most minimal and basic sentences. Such sentences are characteristically main clauses, and consist of a single predicate with as few noun phrases and adverbial modifiers as possible.

While restricting the domain of investigation, Payne's perspective on negation, following discussion of Klima (1964), doesn't provide a cross-linguistically applicable definition; he identifies a morphosyntactic domain (through language specific diagnostics), not a semantic or functional one.

Similarly, Dahl's (1979:79) typology of sentence negation is

restricted to 'simple, indicative sentences with a verbal predicate' in order to delimit his survey. He comments that 'insufficient coverage' in existing descriptions, of other areas of grammar related to negation, such as the interaction of negation and focus, or negation and indefinite pronouns, make it difficult to include these additional aspects of negation comprehensively in a linguistic survey:

> *We thus formulate as a necessary condition for something to be called Neg that it be a means for converting a sentence S1 into another sentence S2 such that S2 is true whenever S1 is false.*

In Dahl's definition, negatives are clearly derived from affirmatives semantically and to the extent that an element called *Neg* is identifiable, perhaps also morphosyntactically.

Dryer (1989) is much more vague about which negative constructions should be considered for a successful comparison across languages. In his study into the position of negative morphemes in relation to other clause level constituents, Dryer (1989:93) only examines morphemes that express 'simple clausal negation'. He defines this concept negatively by listing what it does not include, such as negative quantifiers and derivational affixes:

> *The negative morphemes examined in this paper are those that express simple clausal negation, like 'not' in the English sentence…* John does not see Mary. *Morphemes expressing semantically more complex negative meanings, such as English words* never *and* nobody *and derivational affixes like the English prefix* un-*, are not examined.*

Here, the terms 'simple clausal negation' and 'semantically more complex', themselves need further explicit explanation for his study to be repeatable.

It is clear from the variability in the content of these definitions that in order to draw substantive conclusions regarding the morphosyntactic, semantic and pragmatic behaviour of negative constructions cross-linguistically, a systematic approach to which

constructions should be included within the domain of negation, is favourable. Recently, a resolution to this issue has been attempted by Miestamo (2005:42), who proposes the following definition of standard negation as a cross-linguistic domain:

> *A SN [standard negation] construction is a construction whose function is to modify a verbal declarative main clause expressing a proposition p in such a way that the modified clause expresses the proposition with the opposite truth value to p, i.e. ~p, or the proposition used as the closest equivalent to ~p in case the clause expressing ~p cannot be formed in the language, and that is (one of) the productive and general means the language has for performing this function.*

Miestamo's definition takes into account a number of issues that are relevant to the typological comparison of languages. Firstly, it delimits the properties of a particular domain which may be compared cross-linguistically: negation of propositions. More specifically, the domain of investigation is restricted to main clauses, thus ruling out subordinate clauses, which often exhibit different morphosyntactic properties to main clauses within the same language. Some more contentious issues concerning this definition are highlighted by Miestamo (2005:42-45) himself. For instance, the proposed domain of standard negation is restricted to clauses that are both declarative and verbal. In doing so, standard negation is restricted primarily to unmarked clause types (cf. Dahl's (1979) field of comparison). Secondly, Miestamo's definition characterizes standard negation as being productive and general, criteria which rule out negative constructions that are idiosyncratic of individual or small classes of verbs (i.e. a negation strategy that is not productive across the language in question) or those strategies that are 'productive' yet still secondary to, or less frequently occurring than a more general strategy available to negate the same positive proposition. Since these are not characteristics of LN in a broad sense, such properties are more suited to criteria in the CT approach.

One of the least explicit qualities of Miestamo's definition of SN lies in his characterization of the 'opposite of *p*' which he delimits as

'~*p*, or the proposition used as the closest equivalent *of ~p*'. From this description alone it is not clear how these constructions might be identified. What Miestamo aims to capture here are *asymmetries* between the grammatical distinctions made in affirmative and negative constructions.

Undoubtedly, a well-delimited domain of investigation is desirable for a manageable and comprehensive typological survey that aims to make consistent and valid comparisons across languages. However, the same restrictions that allow consistent comparison of structures across languages may also serve to exclude other interesting facets of negation marking which do not meet pre-defined criteria for inclusion. For example, non-productive negative constructions (eschewed in Miestamo's typological study) may contribute information about an earlier stage in the language in question and contribute to our understanding of diachronic processes in the negation domain.

The definitions outlined above demonstrate that in typological work to date there is no clear choice for a CT base for the study of LN, since most attempts to constrain negation to a 'subtype'. One principle in establishing a base in CT identified here is that the starting point should be broad and maximally inclusive. The working definitions used in previous typological studies have been constrained to be exactly the opposite, i.e. they delimit the domain to a manageable size. Since CT has different mechanisms for restraining domains than conventional typology it permits this seemingly radical broad-based approach. As a 'difficult phenomenon', LN is thus a prime target for the canonical typological methodology because CT permits an approach in which specific formal characteristics associated with a language function can be dealt with independently of the definitional characteristics of the phenomenon.

The empirical reasons for adopting a broad base for negation are clear. There is a great deal of variation in terms of what types of distinction are made within languages in terms of how many negative strategies are employed. Yet despite the wealth of descriptive and theoretical work on negation, there is no explicitly agreed concept of the properties of negation from a typological perspective.

4. A base for linguistic negation

Based on the characterization of LN provided in Bond (2007, 2008, 2009), I propose the following definition of LN, as one that is suitable for use as a base in a CT approach:

> *Negation constructions model a binary contrast between a state of affairs in a grammatically framed alternate reality in relation to the state of affairs in the communicated reality such that some or all of the properties of the alternate reality are excluded from the set of possible properties of the communicated reality.*

In this definition, the COMMUNICATED REALITY is the version of the world that is described by a speaker through the use of a sentence. A communicated reality need not be a faithful representation of the world. It may be deliberately misrepresented, it may be based on (direct or false) perception (and thus considered factual), or it may be based on an (erroneous, unquestioned, or evidence-based) belief. It is simply a version of reality being communicated at a particular time, by a particular person.

Both affirmative and negative constructions can provide a characterisation of reality, but they do so in different ways. Each communicated reality can be thought of as an abstract set of properties, which contains MEMBERS (i.e. elements of meaning) that characterise it. Members can be added to the set through the use of affirmative declaratives; they indicate that their informational component belongs to the set of elements that characterise the communicated reality. Negative declaratives, on the other hand, indicate which elements are excluded from a set of possible characterisations of the communicated reality. The core semantic property of negation is to exclude elements from the membership of a particular set. The elements of information excluded from the set comprise the semantic locus of negation (i.e. that which falls within the scope of negation).

In order for a negative construction to be uttered or interpreted, a

mental conception of an ALTERNATE REALITY must be available, in order to determine which components of information are excluded from the set that characterises the communicated reality. This is not necessary for the interpretation of an affirmative construction. The mental representation of an alternate reality deployed in the interpretation of negative constructions is sometimes called the COUNTERFACTUAL (cf. Fauconnier 1994), or AFFIRMATIVE COUNTERPART. The semantic properties of this counterfactual reality are often consistent with the presuppositions of an interlocutor (Ducrot 1973, Givón 1978, 1979). Because a mental representation of a specific alternate reality is required in order that a negative construction be interpretable, and its presence may have grammatical consequences (e.g. in reference resolution), this alternate reality is described here as GRAMATICALLY FRAMED. Evidence to support the view that negative sentences involve mental representations of an alternate 'counterfactual' reality is discussed by Fauconnier (1994) and Verhagen (2005).

In the view presented here, negation involves a contrast between the properties of two different versions of reality. This contrast is BINARY in that elements of meaning are judged to either belong to the set of elements that characterise a particular communicated reality, or be excluded from that set. However, set-membership itself is determined by the individual interlocutors, often based on subjective judgements, rather than objective 'truth', making set-membership potentially variable across speakers and situations.

A 'strong' approach to the characterisation of LN states that a construction is only a manifestation of negation if the possibility of a 'third way' is excluded; every reality must be exhaustively characterized by the negative or its counterfactual. In conventional accounts of negation in language, this is captured by the LAW OF THE EXCLUDED MIDDLE or LEM using truth-values (see Horn (2001:18-21) for discussion). This law of logic, which dates back to Aristotle, is used to distinguish between contradictory opposites and contrary opposites. Given the broad approach taken here, and the controversy surrounding the relationship between logic and linguistic negation (cf. Ladusaw 1996, Krifka 2007) it does not seem necessary to stipulate this explicitly as a defining characteristic of linguistic

negation, making it a potential source for a criterion associated with the base, rather than part of the base itself.[7]

Negatives remain informative by triggering inferential processes. For instance, the interpretation of a negative imperative like *Don't leave the fridge door open!* indicates that an alternate reality in which the necessary and sufficient properties associated with the addressee leaving the fridge door open are met, is excluded from the set of possible situations that the speaker wishes to be realised. This is likely to trigger the inference that the addressee should close the fridge door, because 'open' and 'closed' are conventionally used as mutually exclusive concepts.

One necessary property of LN is its formal manifestation; negative constructions must be unequivocally indicated by their structural and/or or prosodic characteristics. It is only when a binary contrast is productively and overtly MODELLED that we speak of negative constructions. However, the base used here makes no reference to the exact manner in which negation is manifested or at what level of grammar. It therefore includes (some instances of) 'derivational' morphology, constituent negation, clausal negation and, at the bi-clausal level, conjunctions and counterfactual constructions providing they meet the properties of the base.

Cross-linguistic evidence points to the fact that LN must be constructional (cf. Crystal's definition of negation) and not just associated with individual morphemes. While certain forms are favoured cross-linguistically for expressing 'subtypes' of negation (see for instance Dahl 1979, Payne 1985), LN, as defined in the base proposed above, is not always marked by segmental material. The motivation for a constructional, and not segmental, approach can be seen in examples from Old Tamil and other Southern Dravidian languages in which negation of some predicates may be expressed by the use of a construction that differs from affirmatives only by the

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[7] I am grateful to Bill Croft for drawing my attention to the significance of the LEM to the position taken here. In the Aristotelian approach to contradictory and contrary oppositions, the contrast embodying mutual inconsistency is referred to as the *law of non-contradiction* (LNC) or as *the law of contradiction*. See Horn (1978, 2001).

absence of tense morphemes. For instance, the affirmative clauses in (1) are inflected for tense with the past suffix *-iṇ* and differ segmentally from the negatives only on this basis (see Master (1946), Pederson (1993) and Pilot-Raichoor (1998) for discussion and further examples).[8]

> (1)   Old Tamil (Southern Dravidian, Dravidian; India)
>
>   a. kāṇ-iṇ-āṇ   b. kāṇ-āṇ
>   see-PST-3SG   see-3SG
>   'He saw.'   'He does/did/will not see.'
>   (Pederson 1993:233)

Similarly, in some constructions, in certain languages, the contrast between affirmative and negative is indicated by tone alone, with no structural asymmetry between the affirmative and negative. For instance, in Mbembe, person prefixes with high tone are employed to signal future (2a and 2c), while the same segmental form with a low tone signals negation (2b and 2d).

> (2)   Mbembe (Cross-River, Niger-Congo; Nigeria)
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>   a. mó-cí   b. mò-cí
>   3.FUT-eat   3.NEG-eat
>   'He will eat.'   'He won't eat.'
>   (Barnwell 1969:80)

Although rare in general, negation marked by a tonal contrast is found in West Africa, including Mano, a Mande language of Ivory Coast (Becker-Donner 1965, cited in Dahl 1979: 72), Igbo, an Igboid language of Nigeria (Green and Igwe 1963, discussed in Miestamo 2005:119-20). Data of this kind provide support for the claim that any cross-linguistically useful definition of negation must have a

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[8] Throughout the chapter, all languages used to exemplify points are listed with their genus, family (where different from their genus) and principal location spoken.

semantico-pragmatic basis; the underlying 'negativity' of LN must be identifiable from a construction independently of its formal manifestation – whether segmental or prosodic. This is acutely clear in (2), where the negative construction is no more segmentally marked than the affirmative. Thus an independent semantic explanation of negation, of type provided above, must exist for proposing the first to be affirmative and the second negative (and not vice versa).

Unlike other definitions of negation, the base suggested here does not make explicit reference to the form, scope or logical entailments of negation, as is the norm in theoretical, philosophical and typological work on the subject to date (e.g. Klima 1964, Horn 2001, Miestamo 2005). While undoubtedly controversial for the study of negation in general, this is the most appropriate methodological stance to take within CT. Using a broad definition of LN and confining structural, applicability and semantico-pragmatic properties of negation to criteria does not obliterate or downplay the observations of others who hold a more conservative, Eurocentric or Latinate view of negation, it simply casts their findings in a different light – as properties specific to certain subtypes of negation. For instance Klima (1964) noted the differences between 'standard negation' and 'constituent negation' in English and proposed diagnostics for distinguishing the two. While the empirical observations he made still hold, they must be considered language specific diagnostics for distinguishing sub-types of LN.[9]

5. Canonical negation

The relationship between the base and criteria used in CT to instantiate the canon should be empirically motivated and point to the 'best' and 'clearest' instances of a phenomenon (Corbett 2006:9).

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[9] These diagnostics are not widely adaptable to other languages (although see Frawley (1992:392-95) or de Haan (1997:28-41) for a different view), principally because they rely on the existence of negative conjunctions and certain clausal structures not found in every language.

Here, I propose that identification of canonical properties can be motivated by functional-typological principles that preserve optimum regularity and analytical transparency across a negation system, whilst limiting complexity. In the following three sections, a non-finite set of criteria roughly concerning structural, applicability and semantico-pragmatic properties of canonical negation are proposed, based on empirically observed variation within and across negation systems. The criteria are then summarised in section 5.4.

5.1. Structural properties of canonical negation

Criteria C-1 to C-6 identify those structures that provide the clearest evidence for the structural identification of LN in language. Variation along these parameters is supported by the observations of studies by Dahl (1979) Payne (1985), Dryer (1989) and Miestamo (2005) amongst others:

Structural criteria
C-1: structurally symmetric > structurally asymmetric
C-2: free negator > dependent negator
C-3: segmentable negator > non-segmentable negator
C-4: few negative morphs per strategy > multiple negative
     morphs per strategy
C-5: negative marker close to locus > negative marker
     distant from locus
C-6: negative marker before locus > negative marker after locus

The first criterion (C-1) concerns structural similarity between the negative construction in question and the formal realization of its affirmative counterpart (often it's discourse presupposition). Symmetric negation occurs when there is an analogous relationship between the presence of negation semantics and an associated structural index, usually a negative particle, affix or auxiliary. For instance, Miestamo (2005:52) proposes that the following examples from Ket are in a symmetric relationship, since the only morphosyntactic difference between (3a) and (3b) is the presence of the negative particle *bənʲ* (Miestamo 2005:52):

(3)   Ket (Yeniseian; Russia)

    a. at   bu   (t)-lʲuveruɣavet
       1SG 3SG 1SG-love
       'I love her.'

    b. at   bu   bənʲ (t)-lʲuveruɣavet
       1SG 3SG NEG 1SG-love
       'I don't love her.'
       (Werner 1997:181)

Conversely, Maasai indicative verbal main clauses exhibit instances of ASYMMETRIC NEGATION (Miestamo 2005:86). In (4) the negative construction differs from the affirmative not only by the presence of the negative auxiliary *eitu*, but also in the absence of the past tense suffix *-a*.

(4)   Maasai (Nilotic, Nilo-Saharan; Kenya, Tanzania)

    a. a-inos-a   b. eitu a-inos
       1SG-eat-PST   NEG 1SG-eat
       'I ate.'   'I did not eat.'
       (Mol 1995:60, 70)

All negative constructions are necessarily asymmetric in some sense. For this reason, only structural asymmetries other than the presence of a negative formative are relevant here. For practical reasons, the contribution of non-segmental material to the instantiation of negation is dealt with in C-12. Affirmatives and negatives that differ only in terms of their prosodic features are therefore classified as structurally symmetric.

Symmetric negation is more canonical that asymmetric negation since it preserves an analogous, and thus iconic one-to-one relationship between meaning and form (c.f. Miestamo 2005).

Typological studies into the form of negative morphemes

consistently report that invariant particles are the most common indication of negation in declarative verbal main clauses (Dahl 1979, Payne 1985, Dryer 1989, Miestamo 2005). Negative particles are the paramount example of free negators because of the syntagmatic isomorphism they exhibit. Free negators are taken to be canonical because they are closer to maintaining this iconic ideal than dependent negators (C-2).

Several examples of lexically free negators have been given above, namely in the examples from Ket (3) and Maasai (4). A further example of a (segmentable) free negator is provided in (5) from Semelai. While the negator *daʔ* exhibits a fixed position, it is not lexically dependant on any item in the construction.

(5)   Semelai (Aslian, Austro-Asiatic; Malaysia)

daʔ ʔyot kəhn ke
NEG return 3S   that
'He didn't return.'
(Kruspe 2004:316)

Negators that are dependent on (and necessarily bound to) some other lexical element are taken to be less canonical than free ones, which may also be dependent in some sense but at a higher level of syntax or phonology. For the purposes of this study, dependency is judged to include stem level processes such as reduplication and affixation and indeed suppletion, but not phrase or clause level phenomena. For this reason, invariant particles, phrase and sentence level clitics and auxiliaries (inflecting or otherwise) are judged to be lexically free. Morphological dependency is a property of a negative morpheme, not a whole negative strategy, since a strategy may be characterized by the presence of multiple negative formatives of different lexical dependency.

Negative formatives may be clearly segmentable, as is the case with agglutinating morphpology, or non-segmentable, in which case they are part of a portmanteau formative or some other constructional property. Examples of both segmentable and non-segmentable dependent negators are provided in (6) from Yamphu. In both

examples the segmetable negator *mæn* is prefixed to a lexical verb (its exact shape subject to general phonological processes), with person, number, aspect and factitive markers occurring as suffixes.

(6)   Yamphu (Bodic, Sino-Tibetan; Nepal)

a. mo.ba   hago   khim.bet.tu.ran.so   imaŋ.so
that.ELA   now   house.LOC.UPW.MED.too   what.too

mæy.yaŋ.ʔuʔ.itt.iŋ.m.æ
NEG.carry.bring_down.PRF.EXPS.12NS.FCT

'We hadn't brought down anything from home.'

b. das   mæŋ.gaˑ.diˑʔ.ye   læˑ.   iskul
das<ten>   NEG.cry.NPRF.FCT   NW   school

laˑg.ba   mæl.luˑ.diˑʔ.ye
lāgnu.NOM<be.the.case>   NEG.be.NPRF.FCT

'It hadn't yet struck ten. School hadn't started yet.'
(Rutgers 1998:223-4)

In (6a) the verb stem is marked with the Simple Perfect suffix -*ʔitta ~ -ʔitt ~ -ʔit,* with the surface form *–itt,* while in (6b) the verb stem is marked by the Negative Perfect tense marker *-tiˑtt ~ -tiˑt* -with the surface form *-diˑʔ.* The use of the Simple Perfect suffix in a negative construction like (6a) indicates that an event has not taken place. The only structural indication of negation here is the segmentable negator *mæn*. In (6b), the two negative clauses are characterized by both the segmentable negator *mæn* and the nonsegmentable Negative Perfect morpheme. This strategy is used to indicate an event that has not taken place but that is still expected to take place in the future. Segmentable negators are more canonical than nonsegmentable negators in that they respect an isomorphic ideal (C-3). The segmentable negator *mæn* is thus more canonical than the non-segmentable negator *-tiˑtt ~ -tiˑt* in that it can form part of a symmetric strategy (Rutgers 1998:110).

Given that symmetric negation with a free negator is taken to be

canonical, it is possible to further restrict the clearest examples of negation to strategies that only include a single negative morph(eme), and not multiple morph(eme)s marking negation, thus making such constructions less asymmetrical than those with multiple exponents of negation (C-4). This canonical property is motivated by syntagmatic iconicity. One could further argue that this position falls out from canonical morphology, in that we would expect concatenation and a single exponent for the inflectional ideal (cf. Corbett 2005). The symmetrical Ket example in (3b) exhibits this canonical property.

Negation strategies involving more than one negative formative are widely attested across the world's languages. Negation with multiple morphological exponence is sometimes referred to as either double negation (or even triple negation, depending on the number of morphological exponents) or bipartite (and tripartite etc.) negation. In this study, I avoid the term 'double negation' (and its corollaries) because it is often used to describe a situation in which the use of two negative forms within the same negative construction results in the logical reversal of the truth value of the negator with the highest scope negation (neutralizing the negative interpretation of the lower scoped item).

Bi-partite negation, where two separate exponents characterize the negative strategy is fairly common and in some regions of the world (e.g. South America) it seems to be quite normal to encounter a language with split inflection marking negation. For instance, in Wayampi, negation is expressed using an obligatory nasal prefix *n-* and a suffix *-i* attached to an inflected verb (7).

(7)   Wayampi (Tupi-Guarani, Tupian; Brazil)

    a. N-a-ʼu-i   b. N-o-juka-i

       NEG-1SGA-eat-NEG   NEG-3A-kill-NEG

       'I didn't eat it.'   'He didn't kill it.'

       (Jensen 1994:344-5)

A similar situation holds in certain negative constructions in Maricopa, in which the verb has a negative proclitic *aly=* and a

negative suffix *-ma,* which lies closer to the stem than the realis suffix *-k.*

(8)   Maricopa (Yuman, Hokan; USA)

chii-sh   ha＝han-ly   aly＝dik-ma-k
fish-SUBJ   river-in   NEG=lie-NEG-REAL
'There aren't any fish in the river.'
(lit. 'The fish aren't lying in the river.')
(Gordon 1986:72)

In other languages with indices of negation distributed throughout the clause, such as Dhaasanac, special verb forms employed only in negative constructions may accompany a more segmentable marker of negation. For instance, in B's response to A's question in (9), the negative particle *ma* precedes *ʔárgiɲ* the negative form of the verb 'see'. This contrasts with the form of the verb in A's question, namely *ʔargiyyu,* which occurs in the verb-form Tosco labels as DEP.B.

(9)   Dhaasanac (Eastern Cushitic, Afro-Asiatic; Ethiopia)

A: kúo   kíð   ʔargiyyu
2SG.SUBJ   enemy   see.DEP.B
'Do you see the enemy?'

B: yáa   kíð   ma   ʔárgiɲ   ʰa   yú   maali
1SG.SUBJ   enemy   NEG   see.NEG   FOC I   hear.IMFV.A
'I didn't see the enemy, I (just) heard (him).'
(Tosco 2001:268)

Cleraly there is something different about the multiple exponence of negation in Dhaasanac, Maricopa and Wayampi, yet in each example, negation is formally manifested twice. Much like counting asymmetries between negative constructions and their semantic affirmative counterparts (if they exist), counting the number of

morphemes that contribute to the expression of negation in a single clause is problematic for a number of methodological and theoretical reasons. Furthermore, if exact quantification of negative formatives per strategy is taken to be important, it remains unclear if different manifestations of negation should each be attributed the same import.

In establishing the number of exponents of negation in a strategy, it seems reasonable to claim that those items that are obligatory in a particular construction yet never occur outside of negative contexts are negators. For instance, negative polarity items such as *yet* in English, which is required in certain negative contexts such as (10a), is not considered to be a negator by this criterion given that it is also permissible outside of negative constructions (Haspelmath 1997), such as in questions (10b).

(10) a. I haven't finished writing the book yet.
     b. Have you finished writing your book yet?

C-5 and C-6 are concerned with placement of negative morphemes in relation to structural elements within the clause, as studied by Dryer (1989). In the clearest examples of negation, the scope of negation is associated with the clause in which the formal manifestation of the strategy is located; it is structurally close to the constituent within the scope of negation. This has been called DIRECT NEGATION by Haspelmath (1997). However, there are several possibilities concerning the location of the negator. One well known instance of this occurs when negation of a subordinate clause is indicated through the negation of a the matrix clause containing a psych verb. This is commonly known as NEG-RAISING (Horn 1978, 2001) or ATTRACTION OF THE NEGATIVE (Jespersen 1917, Moscati 2006) on the basis that the negative of the subordinate clause, as in (11a) is 'attracted', i.e. 'raised' to a position in the matrix clause as in (11b).

(11) a. I think he hasn't come.
     b. I don't think he has come.

This is referred to as SUPERORDINATE NEGATION by Haspelmath

(1997:32) because the negation in the superordinate clause (i.e. matrix clause), as in (11) logically belongs to the subordinate (i.e. embedded clause). The proximity of a negator or negators to whatever falls within the scope of negation is included within the critria because there is a cross-linguistic preference (at least in indicative verbal main clauses) for formatives marking negation to occur close to the semantic locus of negation (C-5). This criterion assumes an analogy between conceptual distance and structural distance.

Another important property of negative strategies is the linear order of the negation and semantic locus of negation, with a pre-locus position taken to be canonical (C-6), because the early communicative intent of negation would (at least theoretically) aid the efficiency of information exchange. The term locus is used here to ensure that a distinction is made between the position of the negator in relation to the clause, predicate, and elements within the predicate, in particular the head of the predicate and dependents. The following sentences from Hungarian clearly exemplify a negator occurring before and close to the semantic locus (indicated in square brackets). If the verbal predicate falls within the scope of negation, the negative particle *nem* occurs immediately before the verb stem of the VP as in (12a). Yet when only a subpart of the predicate is in the scope of negation, *nem* occurs in front of the element to negated, which itself occurs in a position preceding the verb, as in (12b-c).

(12)   Hungarian (Ugric, Uralic; Hungary)

a. Nem [kap-t-am   a   pénz-t]
   NEG   receive-PST-1SG   the   money-ACC
   'I did not get the money.'

b. Gábor [nem úsz-ni] akar
   Gábor   NEG   swim-INF   want
   'It is not swimming that Gábor wants.'

c. [Nem Ildikó-val] találkoz-t-am
   NEG Ildikó-COM   meet-PST-1SG
   'It was not Ildikó whom I met.'
   (Groot 1994:146, 150)

Proximity of the negator to the content within the scope of negation has also been shown to be the typologically most common configuration for negation of declarative verbal main clauses, where the negators of predicates have a strong preference to be structurally close to the verb (Dryer 1989). In less canonical instances of negation, the negator is not in structural proximity to the content within its scope. This is the case whereby negation is marked by an (optional) clause initial particle and an obligatory clause final particle, as in (13).

(13)   Mupun (West Chadic, Afro-Asiatic; Nigeria)

(ba) kə̀ n-se   lua nyer kas
NEG PFV 1SG-eat meat bird NEG
'I did not eat the bird meat.'
(Frajzyngier 1993:353)

In this example, the obligatory clause final particle is separated from the head of the predicate by a nominal object, and is thus neither structurally close to the verb, nor before the semantic locus of negation. Mupun constructions in which the 'optional' clause initial particle is absent are thus non-canonical in relation to both C-5 and C-6.[10]

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[10] Following Dryer's (1989) observations regarding the position of negative formatives in relation to basic word order, one may wish to consider a further constraint, positing that in canonical negation, negative formatives do not interrupt the constituent formed by the verb and object. However, this is presumably not an important property of negation itself, but rather one of constituent structure and therefore, it does not help identify the examples that best represent the base definition. Nor can it be easily justified using functional-typological motivations.

5.2 Applicability constraints on canonical negation

When identifying negation strategies within a system of negation, the clearest instances of negation are those in which the manifestation of negation is obligatory (C-7), generally applicable (C-8) and productive in that they may be used easily in contemporary, non-formulaic speech and with new lexical items (C-9):

Applicability criteria
C-7: obligatory > optional
C-8: general > restricted
C-9: productive > non-productive
C-10: multiple negative functions > restricted negative functions

In the most canonical negation strategies, the negative formatives that contribute to the negative sense of the strategy are all always obligatory. This is most clearly seen in a symmetric system in which negation is marked by a single particle, as in the Ket example in (3), since if the negative particle were not obligatory, then this could not be the only indicator of negator in the clause. Negators that are 'optional' never have the complete functional load of negation and therefore always occur in strategies where one or more other elements contribute to the negative meaning. Such is the case in (13) from Mupun, where the clause initial negator is 'optional' and the clause final negator obligatory. Similarly, Kresh has an 'optional' clause initial negator *bãá*, as in (14). Brown (1994:165) proposes that this negator can be used to presage negation in contexts where a negative utterance might not be expected, suggesting that the clause initial particle might actually be used to flag the informational status of the utterance.

As such it does not have a sustainable place in the set of canonical constraints included here.

(14)   Kresh (Kresh, Nilo-Saharan; Sudan)

(Bãá) Kôkó ãmbá Gõkó ꞌdĩ
NEG   Koko   he-hit   Goko   NEG

'Koko didn't hit Goko.'

(Brown 1994:165)

Since canonical properties are idealised, and the base definition of negation concerns the formal manifestation of LN, it follows that (in negative constructions) obligatoriness is a canonical property of a negative morph(eme).

Generality (C-8) and productivity (C-9) of a negative formative are often linked together in that the productivity of a strategy or formative (i.e. its availability for a speaker to use with new lexical items or morphosyntactic domains) is a precursor for (morphosyntactic) generality (i.e. the extent to which a strategy or formative can be used in a variety of morphosyntactic and lexical domains).[11] The best examples of non-productive negatives are fossilized negative forms. The best examples of non-general forms are lexical (i.e. suppletive) negatives. Languages in which certain negative verbs lexicalise high frequency negative concepts are fairly common. This is arguably the case with English *dunno* (a contraction of 'do not know'). Similar candidates for non-general lexical negators include Mam (Mayan; Guatemala) *kyꞌe* 'not want' (Collins 1994:379) and Tuyuca (Tucanoan; Colombia, Brazil) *mõõ* 'not have' (Barnes 1994:337). As strategies that are low in generality increase their domain of use, they become more general. This is the case with non-standard English *ain't*, most convincingly argued to originate from either a contraction of 'am not' or 'are not' but now used much more pervasively as a negative copula in some varieties and genres of British and American English (Stevens 1954).

The clearest instances of negation also have multiple functions, since the more functions a negative strategy has, the broader domain

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[11] While a strategy may be very general, in that it occurs with many different items, this does not necessarily mean they are productive as new items may conceivably automatically be negated by a restricted but productive strategy.

of negation it covers (C-10). For instance, in Khwe, the clause final negative particle *vé* may be used to convey a number of different negative functions including to indicate the non-occurrence of an event (15a), non-equation between entities (15b), and the non-possession of an entity (15c). It is also reported to be possible (although not the only possibility) as the negator in prohibitions and expressions of non-existence (Kilian Hatz 2008:127-8, 253).

(15)   Khwe (Central Khoisan, Khoisan; Namibia)

a. Xà-ná   cácà   à kx'áà-à-ǁò   vé
   DEM-3PL.C alcohol O drink-I-HAB   NEG
   'They are not used to drinking alcohol.'

b. Xà-má   Góává-mà   vé
   DEM-3SG.M   Mbukushu-3SG.M NEG
   'He is not a Mbukushu (man).

c. Tí ki t̀ìi   vé |'áò   à
   1SG LOC stand NEG money FOC
   'I have no money/I don't have money.'
   (Kilian-Hatz 2008:256, 253, 264)

In contrast, the post-verbal particle *tí* has much more restricted contexts of use – *tí* cannot be used beyond prohibitive functions (i.e. it is restricted to negative imperative and negative hortative/jussive constructions). Multi-functional *vé* can be used in all prohibitive functions in addition to those exemplified in (15), making it less restricted in function than *tí*. Functionality is different from generality in that generality involves language specific morphosyntactic environments, while functionality involves empirically motivated distinctions between functions that receive different formal manifestations cross-linguistically.

5.3 Semantico-pragmatic properties of canonical negation

The exact scope of negation may vary greatly, with differences in scope discernable either from the position or form of the negators used or in some cases, only through the discourse context:

Semantico-pragmatic criteria
C-11: wide scope > narrow scope
C-12: scope structurally unambiguous > scope structurally
        ambiguous
C-13: suprasegmental features contributive > suprasegmental
        features not contributive
C-14: informative > elaborated
C-15: focus on binary contrast > focus on additional parameter
C-16: unmediated > mediated
C-17: given referent, new predicate > given predicate, new
        referent
C-18: presuppositions do not condition form of negator >
        presuppositions condition form of negator

In line with the observations of Whaley (1997) and Crystal (2003) in their broad definitions of negation discussed in section 3, an adequate base must allow for either the entire predicate or a portion thereof to fall within the scope of negation. Wide scope of negation is taken to be canonical (C-11). Differences between wide and narrow scope of negation can be seen in the form of the English negative elements in (16), where the narrow scope negator *no* takes the NP constituent *reason to wake her* within its scope, while the wide scope negator *n't* takes the whole predicate within its scope. Examples of this kind also demonstrate how CT is sensitive to typologising different constructions within languages, and not just language themselves.

(16) a. I didn't see a reason to wake the patient. [WIDE SCOPE]
        b. I saw no reason to wake the patient. [NARROW SCOPE]

Both examples contrast the communicated reality with an alternate

reality in which a reason to wake the patient is perceived by the subject referent yet the conventions of their use are different. The wide scope example communicates a reality in which a reason to wake the patient was not percieved, while the narrow scope reading communicates a reality in which reasons to wake her were judged not to exist. In the clearest instances of negation the scope is structurally unambiguous (C-12) and also identifiable on the basis of suprasegmental information (C-13). These properties are considered to be canonical because they help to identify the status of an utterance as negative, and the exact type of meaning it expresses.

However, not all languages use the position of the negator(s) to indicate the scope of negation. In Arizona Tewa, the position or form of the negator does not determine what is in the scope of negation and neither do prosodic properties of the sentence, making this strategy non-canonical in terms of both C-12 and C-13:

> *Arizona Tewa possesses no segmental means of constituent negation and no suprasegmental devices, such as stress placement, to permit greater semantic precision. The scope of an Arizona Tewa negative, unlike that of Isletan Tiwa, is thus structurally indeterminate. In vacuo, one cannot distinguish in the case of a negated transitive verb, whether the agent, the patient or the predicate itself is being negated. All three semantic possibilities are realized in identical morphosyntactic form. (Kroskrity 1984:100)*

Where the preceding discourse fails to disambiguate the scope of negation, negative constructions are habitually embedded as subordinate clauses, within an affirmative matrix clause. In other words, the negative construction is ELABORATED by additional material clarifying the scope. In (17) the negative clause (indicated by square brackets) is embedded within a matrix clause with the same verb *ku:p'e* 'sell', indicating that it is the object of the verb that falls within the scope of negation, not the whole predicate.

(17)   Arizona Tewa (Kiowa-Tanoan; USA)

[sɛ'éwe   we-dó-ku:p'e-wan-dí-dí]   t'ummele

pottery   NEG-1/3:AC-sell-COMPL-NEG-SUB   plaque

dó-ku:p'e-wan

1/3:AC-sell-COMPL

'I didn't sell pottery, I sold a (wicker) plaque'.

(Kroskrity 1984:100)

Elaborated negative strategies are considered to be non-canonical because the context independent negative clause lacks explicit unambiguous formal encoding of the exact meaning it conveys (C-14).

The semantic focus of a negative construction may be more than the binary contrast between mutually exclusive versions of reality (C-15). For instance, in Kayardild, one of the negators, *-nangarra,* has an additional semantic focus in that it indicates that an event almost happened: '*-nangarra…* is used with actions that almost happened at some point in the past. These are usually undesirable… the essential thing is that the event was expected to happen, but didn't.' (Evans 1995:261):

(18)   Kayardild (Tangkic; Australian; Australia)

bulkurdudu ngijin-jina   baa-nangarra kurthurr-ina

crocodile.NOM 1SG.POSS-MABL bite-ALMOST   shin-MABL

'A crocodile almost bit me on the leg.'

(Evans 1995:261)

Such negatives are non-canonical on the grounds that they make reference to additional temporal/aspectual focal points/periods. Consequently a strictly binary characterisation of negation in terms of mutually exclusive sets is no longer sufficient as an explanation of a construction's meaning, and the syntagmatic isomorphism of negation is lost. Alternative strategies are used when the semantic focus of the negation concerns a binary contrast between the occurrence and non-occurrence of an event, as illustrated by the

Kayardild Negative Actual construction in (20a). Selection of a negation strategy may be further influenced by the way in which information is presented. Canonical negation is UNMEDIATED in the sense that the commitment of the speaker to an evaluation presented as a negative construction is not a necessary part of its semantics (C-16). Unmediated negatives occur when there is a lack of a more specific modality opposing alternate realities; they essentially correspond to what Timberlake (2007:328) characterises as indicatives. Mediated negatives, on the other hand, have modal characteristics in that they involve mediation between alternate realities before negation applies. Thus, mediated negatives are non-canonical on the grounds of their greater semantic complexity (i.e. their reference to additional alternate realities). In some languages, such as Evenki, inherently negative modal verbs are employed when a negative is mediated. The verb *alba* 'not want, not be able, cannot' implies that the action denoted by the converb was (unsuccessfully) attempted, as in (19a). Negative modals in Evenki require a second conditional temporal converb marked with the suffix *-mi*, here *ichet* 'watch'. In contrast, recent past situation that are unmediated are encoded with the non-future affix *-si* and negated with the inflected negative auxiliary *e* as in (19b).

(19)   Evenki (Tungusic, Altaic; Russia)

   a. Bi   alba-m   ichet-che-mi
      I   MOD.NONFUT-1SG   watch-IMFV-COND.CONV
      'I could not watch it (because my eyes ached).'

   b. Si   ē-va:da   e-si-nni   duku-ra
      you anything-ACC:ENCL NEG-NONFUT-2SG   write-FFNLV
      'You have not written anything (just now).'
      (Nedyalkov 1994:33, 17)

Whether information is discourse old or new is also relevant to the encoding of negation (C-17). For instance, in Kayardild, the verbal suffix *-THarri* is used to signal negation when (i) the speaker knows the action in the predicate is not taking place or has not taken

place and (ii) the negated predicate is about a given referent, as in (20a). However, a construction involving the privative suffix *-warri* on a nominalised verb may be employed where the predicate is (discourse) given and the subject is offered as a new entity of which the negative predicate is true, as in (20b):

(20)   Kayardild (Tangkic, Australian; Australia)
   a. ngada   raa-jarri   banga-y   maarra
      1SG.NOM   spear-NEG.ACT   turtle-MLOC   all
      bijarrba-ya   raa-j
      dugong-MLOC   spear-ACT
      'I didn't spear any turtle, I only speared dugong.'

   b. ngada   raa-n-marri banga-y   ngijin-da   thabuju
      1SG.NOM spear-N-PRIV turtle-MLOC my-NOM   EB(NOM)
      raa-j
      spear-ACT
      'I didn't spear the turtle, my brother speared (it).'
      (Evans 1995:374)

For canonical negation, I assume that the best instances of negation will satisfy the general principles of information structure (Lambrecht 1994, Erteschik-Shir 2007), with new information typically occurring in the predicate.

   In some languages, the choice of a particular negation strategy hinges not on information structure in discourse, but on whether any expectations exist about the occurrence of a particular state of affairs (C-18). For instance, Samoan has two prenuclear negative particles *lē* and *le'i* (Mosel and Hovdhaugen 1992:142) which are distinguished semantically and pragmatically by functions sensitive to presuppositions. While the primary function of *lē* is indicated the non-occurrence of a state of affairs (21a), *le'i* is employed in cases where an event or state has not been actualised at the reference time, but is expected to be so (21b), and in similar cases where it is made known that an event that was expected to happen, or that was thought

to have happened, did not occur (21c).

(21)   Samoan (Oceanic, Austronesian; Samoa)

a. Sa   na   lē   iloa   foliga   o   le   alii
   PST 3SG not know feature(SP, PL) POSS ART   ali'i

   Amerika   ua   la   nonofo
   America   PRF   3.DU   stay(PL)

   'She did not know the face [because she was blind] of
   the American man she was married to.'

b. O   le   tasi   po,   na   ou   faalogo   ai   i
   PRES ART   one   night PST 1SG listen   ANAPH   LD

   le   tala   a   l=o='u   tama   e   uiga   i
   ART   story   POSS   ART=POSS=1SG   father   GENR   concern LD

   pagota   e   toa=tolu   ua   lima   tausaga
   prisoner(SP.PL) GENR   HUM=three   PRF   five   year(SP.PL)

   o   sue   e   leoleo   e   lei   maua.
   PROG   search   ERG   police(SP.PL)   GENR   not.yet   find

   'One night I listened to a story by my father about three
   prisoners for whom the police had been searching for
   five years but (they) had not yet found them.'

c. Ta   te   lei   manatu   e   oo   mai   i   inei.
   1SG(EM)   GENR   not.yet   think   GENR   reach   DIR   LD   here

   Ou   te   lei   manatu   lava   tou   te
   1SG   GENR   not.yet   think   EMPH   2PL   GENR

   malaga   mai   i   nei   aso
   travel   DIR   LD   these   day(SP.PL)

   'I didn't think that [you] would come here today.
   Really. I didn't think you would visit me these days.'
   (Mosel and Hovdhaugen 1992:477, 479. 480)

These examples demonstrate that the importance of expectations
or presuppositions to the interpretation of a negative construction can

be explicitly encoded in the form of the negator. What remains unclear in cases like these is whether the expectations that are not met are those of the speaker, the hearer, both, or neither.

5.4. Finding a canonical instance of negation

The criteria proposed here can be summarised in the following description:

> *The canonical negation strategy is structurally symmetric with its counterpart possibility, and indicated by suprasegmental information and a single obligatory, general and productive, invariant, mono-morphemic, negative particle, that immediately precedes the locus of negation. The negative strategy has unambiguous wide scope, and focuses on a binary contrast. The canonical negation strategy has wide range of negative functions. The canonical negative clause is unmediated and informative. Presuppositions do not condition the form of the negation strategy.*

In CT, the criteria devised indicate the properties of a canon that (in theory) could exist. A more incidental concern resulting from this enterprise is whether a real life example of CN is attested. Of the 50 or so languages examined for the purposes of this enterprise, no clear candidate for an example of CN appeared. This is presumably because as the generality of a negator increases, frequency effects combined with the morphosyntactic and prosodic properties of the new environments of use motivate changes in the form and dependency of negative formatives.

6. Conclusion

Base definitions or *bases* in Canonical Typology are minimal: they do not contain more detail than to establish the necessary conditions for a construction to be considered relevant to a domain of study. They do not make specific reference to form, only variation in form.

They must not rely on semantic formulae that cannot be easily applied cross-linguistically. If possible, restrictions on the extent of a base should be supported by some sort of additional independent evidence from acquisition or psycholinguistics.

Rather than adopting an approach to cross-linguistic variation in which the definition of a phenomenon is randomly delimited at the outset, CT allows a broad approach. The base proposed here for LN takes into account how powerful criteria and the notion of the canon are at establishing methodological infrastructure for cross-linguistic comparison. By placing problematic aspects of defining negation into the criteria surrounding a base, those 'subtypes' of negation that are problematic or excluded in typological accounts of negation to date can be recognized as non-canonical along a principled set of parameters. I have shown that for LN, the base used does not make reference to formal characteristics of expression, nor does it make reference to logic – two core properties of previous studies. Rather, it concentrates on the semantic contrast that must exist for negation to be manifested and how this expression can exist independently of assessments.

A canonical approach to typology allows for the integration of different aspects of language use (e.g. pragmatics/information structure, morphosyntax, semantics, frequency, etc.) into a single approach and does not advocate the primacy of one over another in accounting for the properties of linguistic phenomena.

Although distinguishing subtypes of negation will be ultimately important, what seems more fundamental initially is distinguishing between negation and other types of linguistic mechanism for comparing possible realities, namely modality. This is what the base for LN in canonical typology attempts to establish.

Once a base has been established and a canon instantiated by criteria, the base is no longer so important to the calibration of variation. This is because deviation from the canon – and why this occurs or is not permitted – becomes the primary goal of the methodology.

Appendix: Criteria for Canonical Negation

Structural criteria
C-1: structurally symmetric > structurally asymmetric
C-2: free negator > dependent negator
C-3: segmentable negator > non-segmentable negator
C-4: few negative morphs per strategy > multiple negative morphs
  per strategy
C-5: negative marker close to locus > negative marker
  distant from locus
C-6: negative marker before locus > negative marker after locus

Applicability criteria
C-7: obligatory > optional
C-8: general > restricted
C-9: productive > non-productive
C-10: multiple negative functions > restricted negative functions

Semantico-pragmatic criteria
C-11: wide scope > narrow scope
C-12: scope structurally unambiguous > scope structurally
  ambiguous
C-13: suprasegmental features contributive > suprasegmental
  features not contributive
C-14: informative > elaborated
C-15: focus on binary contrast > focus on additional parameter
C-16: unmediated > mediated
C-17: given referent, new predicate > given predicate, new referent
C-18: presuppositions do not condition form of negator >
  presuppositions condition form of negator

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