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Contrastive Predicates and Conventional Scales

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1. Introduction[i]

This paper addresses how predicates in contrastive prosodic contour or morphological marker show the nature of Contrastive Topic (CT henceforth) and generate scalar propositions that are more than conversational or conventional 'implicatures.' Such a CT induces an alternative contrast set (C-set henceforth) of event descriptions in the speaker's mind, based on the common ground in context. The C-set of event-descriptions is partially ordered on a quantificational (Horn) scale in terms of degree of goal accessibility in event series.

An utterance of a predicate in CT generates a polarity-reversed predicate meaning inversely; if 'CT(p)' is given, then contrastively ('but') 'not q' (q: a higher stronger predicate) is conveyed and if 'CT(not-q)' is given, then contrastively 'p' (a lower weaker predicate) is conveyed. The cross-linguistic conventionality of this mechanism suggests its semantic contribution. Event-denoting predicates, then, share their scalar nature with quantifier expressions in CT situations. Our present treatment of CT sheds new light on why scope inversion occurs and how reversed polarity or event-contrast occur. The notion of CT can thus be extended and modified from non-predicate expressions (Buring 1994) to event-descriptions cross-linguistically, which reveals aspects of interaction between Topic-Focus information structure and scalar event structure.

2. The Phenomenon of Contrastive Topic

A CT is about one particular part in contrast with the rest of the parts partitioned from a potential Topic in the discourse and naturally discussion of the phenomenon has been limited to individual domains, as seen in Krifka (1991), von Fintel (1994), and Buring (1997, 1998) (in his alternative semantics). Roberts (1996), in her discourse model, following Carlson (1983), extends discussion up to spatio-temporal PPs. Let's consider a case of nominal CT first. According to Carlson (1983) and Groenendijk and Stokhof (1984), every proposition answering a super-question about a superset as a Topic sentence indeed answers its sub-question about the subset, but they fail to capture the CT phenomenon that subsumes unanswered parts in answers. Observe:

(1) What did Bill's sisters do? (super-question)
(2) They kicked the boys. (Topic S)
(3) What did his youngest sister do? (sub-question)
(4) What did the other sisters do? (sub-question)
(5) His YOUNGest sistER$_{B,\ L+H*LH\%}$ kicked the boys.(CT S, unuttered part)

It is true that an answer proposition to the sub-question (3) or (4) is answered or entailed by an answer proposition to the super-question (1). If the predicates of the answers to (3) and (4) turn out to be identical (say, *kicked the boys*), the answer propositions are non-contrastively conjunctive and become equivalent to the Topic sentence (2). However, if the predicates are not identical (say, *The other sisters didn't kick the boys*), the answers become contrastive. Therefore, (5), with its conventionalized contrastive contour and unanswered part, is not an appropriate answer to the sub-question (3) itself, which is at most an artifact. (5) is an answer to (1). Using Grice's quantity maxim and Horn scale, we can say that the Topic denotation is stronger than the CT (*his youngest sister*), but the answerer already supplied information about the CT. Then, what can stand in contrast to the given CT turns out to be Topic minus CT denotation. The speaker here conveys in a reversed polarity that the rest of his sisters didn't kick the boys (or because the speaker committed to his epistemic status about the uttered CT S he may convey 'I don't know that the rest of his sisters kicked the boys').

Importantly, Krifka (1999) indicates that differently from *three* and *four* the nouns *fruit* and *apple* are not elements of a Horn scale, arguing that the following sentence does not implicate that Peter didn't eat an apple:

(6) Peter ate a fruit.

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Superficially, nouns, except hierarchical ones such as *an assistant professor*, are different from numerals and quantifiers. Indeed, if (6) is uttered with A accent on *a fruit*, that part is focused and is meant to be conveyed exclusively. So, you cannot get a scalar implicature. Logically and semantically, if someone ate an apple, he necessarily ate a fruit, but not vice versa. In other words, *an apple* is stronger in meaning than *a fruit*. Consider:

(7) Peter ate a fruit $_{L+H*LH\%}$, but not an apple.
(8) Peter ate a fruit $_{L+H*LH\%}$.
(9) ?*Peter ate an apple, but not a fruit.

With a contrastive contour, (7) is fine, as opposed to (9), which is contradictory. In (7) and (8), the contrastive contour sentences are concessively admitted, so some poorer kind of fruit (say, *quince*) than an apple should be in contrast. In the same context, (8) is also fine as a CT sentence. CT is still denotational and distinct from a metalinguistic negation situation, where negation applies only to linguistic forms (C. Lee 1999a). Consider further example situations. Suppose someone asks question (10)/(12) and his/her interlocutor says (11)/(13).

(10) Did you eat (a meal)? (at lunchtime)
(11) Yes, I ate (a meal), but not lunch/not now/in the morning.
(12) Have you been to Pyongyang?
(13) I have been to North Korea, but not Pyongyang.

Here, *lunch* or *a meal at lunchtime* is stronger than *a meal* and *Pyongyang* stronger than *North Korea*. It is, therefore, my claim that meaning strength hierarchy itself, with a CT device, generates a Horn scale in general. A Horn scale is not additionally needed as claimed by Krifka (1999). They cannot be separate. A partial CT is weaker than its (super-) Topic and denial of the Topic leaves denial of the Topic minus the partial CT mentioned.

The present paper claims that a CT is also based on event domains and shows that predicates denoting events can also be both topical and focal, constituting CTs, which will become clearer shortly. Predicates are characterized by the same contrastive intonation contour as in object/individual-contrasts largely denoted by nominals.

CT is prosodically marked roughly by a fall-rise B accent (Bolinger 1965, Jackendoff 1972) or L+H*LH% in English (Pierrehumbert & Hirschberg (1990) and L*H(H%) in German (Fery 1993), forming an independent intonational phrase (IntP) when in S initial position, as in (14):

(14) [The gIRL$_{[IntP]}$ left the room]$_{[IntP]}$

On the other hand, in Ngwo, a Bantu language, an utterance initial rising tone occurs for a CT, although the contrasted element (ηε^m 'meat') is located at the end. This shows that in our mind the contrast is pre-planned. Observe:

(15) ma/ nde¯ ηε^m
rise from middle
'I ate meat [CT]' (but not vegetables)

CT is marked by a similar high tone on the CT marker in Korean (*-nun*), Japanese (*-wa*) and a bit weakly in Chinese (*shi*). In these morphologically CT-marked languages, the accompanying high tone is not so distinctively recognized by some speakers, since the morphological markers primarily show the function, equally being applied to a verb/adjective in the predicate.

An event CT is concessive admission of the expressed event and its unexpressed conveyed event meaning in contrast is based on a hierarchical scale of informational strength. It is topical, talked about in the previous question or discourse, and is focal, supplying choice information. This principle also applies to contrastive predicate meanings.

3. Contrastive Predicates, Scalar Structure and Argumentation

How does CT occur in predicates? Suppose someone asks (16) or (17). (17) can be understood via accommodation from context as a preliminary question to ask about the ultimate goal-directed question such as (16). So, asking one of the questions may be asking a super-question that combines (17) and (16). It has a potential predicate Topic, in other words. Then the answer can be (18), with the

relevant predicate meanings from the contextually salient scalar C-set. Consider:

(16) Did she go on the stage?
(17) Did she arrive yet?
(18) She aRRIVED. [L+H*LH%] (*or* Arrive she dID.)
(19) C-set on the scale: {*arrive, go on the stage*}
(20) Conveyed meaning: (*But* she did *not* go on the stage.)

In (18), the proposition *she arrived* is concessively admitted and is not complete as an answer to the super-question that is a potential predicate Topic. Therefore, the speaker's real intent in uttering (18), a predicate CT, is to convey a more assertorial proposition of *but she did not go on the stage* from the viewpoint of argumentation logic (see Hamblin 1970, Krabbe 1999). The uttered part is nothing but a concessive commitment. It is somewhat like axiomatically given, premises, assumptions, suppositions, hypotheses and presuppositions in argumentation and what is important is what follows from these as a concluding assertion. In 'one step back, two steps forward,' 'two steps forward' gains more weight than the retraction. The following part, unuttered in CT, is more important. If one utters (18) with the contrastive contour and continues with --- *and she went on the stage*, it sounds contradictory. Without the contour it is all right. In this sense, characterization of the phenomenon as a 'conversational scalar implicature' is not tenable. The phenomenon should originate from it. But it has a conventional linguistic CT contour or morphological marker. 'Conventional implicature' is still weak. Bach (1999) shows a similar objection to the 'conventional implicature' treatment of particles such as *even*, but he does not treat such a prosodically distinct phenomenon as CT that has an unuttered part. C-set is computed in such a way: if any right side element entails its left side element in a relevant dimension, then it constitutes a scalar C-set. If *arrive* temporally precedes and is necessitated by *go on the stage*, *Joe went on the stage* entails *Joe arrived*.

Furthermore, meaning strength scale, polarity-reversal, and inverse relation are all semantically-motivated. The only part pragmatics of context intervenes in is selecting the relevant alternative elements on the scale. The contrastive conjunction *but* and the polarity reversal negation *not* are semantically or conventionally determined. Event/subevent descriptions are ordered on the scale based on degree of accessibility to the ultimate goal in the relevant series of events. The predicate meaning *go on the stage* entails the predicate meaning *arrive*. In other words, *go on the stage* is stronger than *arrive* in meaning in the relevant series of events for the planned goal.

Likewise, for accomplishment verbs, goal-oriented series of sub-event descriptions are represented on the C-set scale, *e.g.*, if I say (21) with the contrastive contour, it by default contrastively conveys (22). Observe:

(21) *I peeled an apple.* [L+H*LH%]

(22) *But I didn't eat it.*

The goal of doing subevents about fruits may be eating them for nutrition. Natural kinds have their *raison d'etre* and artifacts have their purposes or functions (see Pustejovsky 1995). There is a temporal sequence of events such as *grow the tree, pick, wash, peel,* and *eat* (*an apple*). If *wash* is CTed, then ¬*peel* is conveyed and if *peel* is CTed, ¬*eat* is conveyed. A semantically adjacent element seems to be preferred here. See further examples. (23) conveys (24).

(23). *I pUSHED hIm.* [L+H*LH%]
(24) *But I didn't hurt/kill him.*

If the extreme on the scale is taken in the same contour (25), what happens?

(25) ???*I kILLED hIm* [L+H*LH%]

Either some more extreme case must be accommodated to be appropriately interpreted, as in (26), or some meta-action rationalization may follow, as in (27).

(26) *But I didn't decapitate/dismember him.*
(27) *He deserves it.*

Otherwise, a big puzzle arises. Note that no such contrastive predicate meanings are generated without CT marking in general.

A negative CT naturally conveys its polarity-reversed affirmative predicate meaning but in the direction of the weaker inversely. Consider (28) and (29).

(28) *I didn't kILL hiM.*
(29) *But I beat him.*
(30) Scalar C-set: {*touch, push, beat, kill*}.

In the contrastive contour/marking, (28) conveys (29), selecting the adjacent weaker element from (30).

For activities, the degree of efficiency typically lies on the C-set scale. Look:

(31) *I rAN.* [LH*LH%]
(32) *But I ran not far enough/I didn't break the record*..

For gradable acts like *widen*, the degree of attaining a certain purpose or goal is typically associated. (33) conveys (34). C-set (35) generates aspectual CTs. .

(33) *We wIDened the road.* [L+H*LH%]
(34) *But not enough for cars to go through*.
(35) He started it. [L+H*LH%]

(36) But he didn't continue/finish it.
(37) C-set: {start, continue, finish}

If (35) is without the contrastive contour and with A accent, people expect monotone-increasing stronger predicates, *continued* and *finished* to follow. This prototypical expectation is blocked by CT and a polarity reversed proposition with a stronger predicate such as (36) steps in.

Examples of event contrast in English include a sentence in which a focal (emphatic) auxiliary appears such as: 'We DID receive your fAX, but unfortunately it didn't come out right.' This serves as a CT. Aspects and modals also can get CT-marking: [Aspect] *tali-ko-NUN iss-ta* (Korean) '(He) IS runnING, (but I am not sure whether he can *finish* the race). Progressive and perfective (*finish*) are on the same scale). [Modal] *ka-to toe-ki-NUN ha-ciman kkok ka-ya ha-na?* 'I MAy gO, but must I go?/I don't have to go.' Permission and obligation (deontic) modals are on a scale; [Tense] *cal ha-ki-NUN hae-ss-ciman/??cal hae-ss-ki-NUN ha-ciman aphuro-ka munce-i-ya* '(You) DID wELL but the future is a problem' (not easy to get a tense contrast in Korean---rather time adverbial is contrasted: *ceon-e*'before'*-NUN cal hae-ss-ciman*---'--- did well BEFORE but---.' Contrast by *–NUN* (focal) can be associated with the specific aspect (progressive), modal (permission), and tense (past).

As we have seen so far, all kinds of event structure-related aspectual classes of verbs and aspectual verbs, and auxiliaries of aspect, modal and tense can constitute meaning strength scales and CT constructions. .

4. Contrastive Predicates and Polarity

CT is based on scalar structure for concessive admission and polarity reversal in conveyance of meaning. Negative polarity is based on concession and concession generates scales (C. Lee 1999b). It is not limited to Determiners, DPs, and adverbs. Strong negative polarity predicates such as *lift a finger* are scalar and can occur in contrastive contour to become weak existential NPIs, generating a contrastive negative proposition. Observe:

(38) He lifted a fINGeR (to help her). [L+H*LH%]
(39) But he wasn't active enough to be very helpful.

The predicate *lift a finger* is the lowest bound in the concession scale. Exactly the same kind of scalar C-set is employed showing a degree of bigger motions for being substantially helpful to someone. Going down to a lower bound is making concession. Admission contexts such as CT, conditional, rhetorical question (40), etc. license weak existential NPIs, denying a stronger alternative. Strongly negative contexts such as overt negation and *before* clause license strong NPIs (40-41), negating the lowest element. Observe the strong and weak NPI cases.

(40) Sam didn't (even) lift a finger.

(41) Before Sam (even) lifted a finger, everything had been finished.
(42) Would he (even) lift a finger?

Then, we can say that an affirmative CT is a weak NPI context that is followed by conveyance of a denied stronger predicate meaning. Therefore, (18) above, i.e., *She arrived* [L+H*LH%] (or *Arrive she dID.*) is also a (potential) weak existential NPI. A weaker predicate is easier to access or more likely than a stronger one on the same scale. On the other hand, if a weaker easier one is negated (not the case), then, its locally associated stronger one is negated by entailment. Then the next stronger one is negated and so on exhaustively, if not limited by context. E.g., *not even lift a finger*→ *not be active (for help)*; *not move*→ *not swim*; *not even one person*→ *not two persons* --- → ∀¬≡¬∃. Hence comes the universal negation interpretation for a strong NPI. Naturally, the lowest natural number *one* and any minimizers such as *budge* (*an inch*), *spend a red cent*, together with the concession marker *even*, constitute a quantity scale NPI. These scales are upward open-ended or their elements are 'partial' predicates as opposed to 'total' (Yoon 1996). Typical NPIs such as *any*, *amu-(ra-)to* (in Korean), and *wh*-form-based NPIs in many languages are based on quality and arbitrary choice. Degree of arbitrariness in choice or some multi-dimensional scales can be set up for these NPIs. If arbitrariness regarding choice of quality is exceedingly emphasized, associated with a lower bound quality that is easy to access, this type of NPIs involved develops into derogatory ones ('*just* any') or universal quantifier-like ones (e.g., *da′re-mo* in Japanese).

CT itself may not be monotone-decreasing but it licenses weak NPIs. Licensing contexts are devoid of conversational implicatures. Compare in Korean:

(43) Mary-nun pae -na sakwa –rul mek –ess –ta
-TOP pear or apple –ACC eat –PAST-DEC
'Mary ate a pear or an apple.'
(44) But not both. (implicature)
(45) Mary-nun pae -na sakwa –NUN mek –ess –ta
-TOP pear or apple –CT eat –PAST-DEC
'Mary ate a pear or an apple.' [contrastive contour]

If a disjoined DP is used with the ACC marker, as in (43), the disjunctive DP sentence has (44) as a scalar implicature but if the same sentence has the CT marker/contour, as in (45), it does not have (44) as an implicature any longer. Rather, an associated (or conjoined) category of pear and apple on one hand must be contrasted with a stronger element (say, *pineapple*) to be denied on the scale on the other. In Korean scalar CT *–NUN* marking with high pitch is possible in a question but in English scalar contrastive contour is impossible in a question. In English the object position of a relative clause cannot get CT contour, whereas it is quite possible in Korean. Horn (1989) indicates that the computation of scalar

implicatures appears to be inhibited not only by negation but also generally in 'negation like' monotone-decreasing contexts such as *doubt*. Chierchia (2000) further points out that any *any*-licensing contexts can suspend implicatures, with (46).

(46) Every student who takes a written test or makes an oral presentation will pass.
(47) Expectation: a student that does both passes. (suspension of exclusion implicature).

However, this particular context is anti-additive and (46) entails this: *Every student who takes a written test will pass and every student who makes an oral presentation will pass.* Here we can get an intersection easily and the potential implicature 'not both A and B' is suspended. Alternatively, we can conceive the situation as one in which the denial (negation) of a stronger value is cancelled by the 'negative' force of monotone-decreasing or non-veridical contexts. We can see this in more weak NPI contexts such as:

(48) If most students come in, I will start the class. ('*not all*' suspended)
(49) Did most students come in? (Yes, all of them.)
(50) I am glad you got most tickets.
Yes, (actually) I got all of them.

Uncertainty contexts such as conditional (48), question (49) and emotive factive predicate (49) are contexts that license weak existential *any* and its equivalent in various languages. I pointed out that a CT context is an additional suspension context, although (38) does not license *any*. But its corresponding CT sentence licenses an existential weak NPI. Any contexts that are non-veridical, in its extended sense, suspend scalar implicatures.

In Korean, the typical weak NPI form is *amu* N-*i*-*ra*-*to* in nominals. Korean has an interesting predicate NPI *amu*-*reh*-*ci*-*to* '(not) in any (adversative) state' based on its indefinite adjective *amureh*- '(Indef) what,' which is a big variable for all sorts of properties (C. Lee 1999b). The origin of all determiner-like NPIs such as *any*, *amu* N -*to*, *etten*(indef what) N -*to* is such an indefinite adjective.

(51) na –nun amu-reh -ci -to anh-ta
-TOP any-of.property-CONN –CONC not-DEC
'I am not in any (adversative) state; I am all right.' (CONN-Connector)
(52) amu-reh -myen ettaeh?
any-of.property-COND how (COND=Conditional)
'Whatever state it may be in, would it matter?'
(53) amu-reh -hae-to coh-a
any-of.property -CONC all right (CONC=Concessive)
'Whatever state it may be in, it is all right'

Minimizing idiomatic polarity predicates like *lift a finger* show the weak (existential) concessive form *–ra-to* (hypothetical) in weak contexts like a CT-marked case, as in (54), equivalent to (38), and the strong concessive form *–to* in strong negative contexts in Korean. Consider:

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(54) Joe-ka sonkkarak hana -ra-to kkattak-ha-ki –NUN hae –ss –ta
-NOM finger one-DEC–CONC move-do-Nmn-CT do-PAST-DEC
'He lifted a finger-CT.'

(55) Joe-ka sonkkarak hana –ra -to kkattak-hae-ss –umyen co -kess –ta
-NOM finger one DEC-CONC move -DESIDERATIVE -DEC
'I wish he would lift a finger.'

(56) Joe-ka sonkkarak hana -ra-to kkattak-ha-n kes -un nollap-ta
-NOM hand one CONC move REL(PAST) -TOP surprising
'It is surprising that he lifted a finger.'

(57) Joe-nun sonkkarak hana -TO kkattak-ha-ci anh –ass –ta
-TOP finger one-CONC move not -PAST-DEC
'He didn't even lift a finger.'

(58) Joe-ka sonkkarak hana –TO kkattak-ha-ki cen-e il-i kkut-na-ass-ta
-TOP finger one –CONC move -before work-NOM ended
'Before Joe even lifted a finger, the work had been finished.'

In weak contexts such as CT (54), desiderative (55), and emotive factive (56), the weak form *–ra-to* is used and in the strong contexts such as overt negation (57) and *before* clause (58), equivalent to (41), the strong form *–to* is used. Similar expressions in CT include: *kkomccak-ira-to ha-ki-N hae-ss-ta* '(He) budged an inch' [CT contour]. The lowest on the scale is concessively denied with the strong form *–to* for forming an NPI and then the universal negative interpretation arises with negation or *before*. With the weaker form *–ra-to*, in a begging type of concession, existential interpretation is obtained but because of the CT marking in (54) again the same kind of negative proposition as (39) is conveyed.

Inherently negative predicates without overt negation behave just like predicates with overt negation in CT contexts. There are positive vs. negative pairs of gradable adjectives such as (59) (See Kennedy 1997 for the class).

(59) a. *nelp-ta* 'wide' vs. *cop-ta* 'narrow'
b. *nelp-hi-ta* 'widen' vs. *cop-hi-ta* 'narrow (v)'

(60) a. *palk-ta* 'bright' vs. *etup-ta* 'dark'
b. *palk-hi-ta* 'brighten'

(61) a. *khu-ta* 'big' vs. *cak-ta* 'small'
b. *kil-ta* 'long' vs. *ccalp-ta* 'short'

(62) *puyu-ha-ta* 'rich' vs. *kanan-ha-ta* 'poor'

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A CT-marked negative adjective utterance conveys some associated positive

thing and conversely its antonymous positive adjective conveys a negative stronger predicate for a certain goal. Consider:

(63) a. kil –i cop -ki -NUN hae
road-NOM narrow -NM -CT do-DEC
'The road is narrow CT.'
b. 'But two cars can go through.'
(64) a. kil –i nelp 'wide' -ki - NUN hae
'The road is wide-CT.'
b. 'But not enough for trucks to go through.'
(65) a. kanan-ha -ki - NUN hae
poor-do -NM –TOP do-DEC
'(She/He) is poor-CT.'
b. 'But (s/he) is honest (and good for the job).'
c. *But s/he does not beg and wouldn't bother you.*

This positive-negative converse relation in adjective CTs again shows that the phenomenon is semantically-based by default. However, special contexts make the relation a bit deviated. For instance, in a context where 'being poor' is regarded as a specially valued positive virtue (say, for being selected as a Congressman), its CT can generate a negative proposition (e.g., '*but not* intelligent') to be conveyed. Likewise, events including state eventualities expressed by gradable adjectives and change of state verbs (e.g., *widen*) are quantificationally partially ordered and trigger a CT phenomenon. But change of state causative verbs derived from gradable adjectives (e.g., *narrow* or its equivalent *cop-hi-ta* 'narrow') can be associated with an agentive process that has a positive purpose and behave as a positive value in CT. Negative-positive pair adjectives themselves in CT are on the pole and seek an opposite value from some other associated dimension than the uttered adjectives (e.g., *poor* CT (*but* honest)). If a degree is specified adverbially, then its CT conveyance can remain on the same dimension indicated by the adjective (e.g., *not that poor* CT (*but* a little *poor*), degrees being contrastively conveyed. Such a dichotomous adjective pair as *dead* and *alive* is different and rarely shows a degree contrast.

The distinction between total and partial predicates (Yoon 1996) is rather clear in monotone-decreasing contexts, revealing polarity reversal. The total predicate *clean* gets a strong reading and the weak predicate *dirty* a weak reading and they interact with negation. Consider:

(66) The glasses are not clean.
(67) The glasses are not dirty.
(68) can-tul-i ta kkaekkut-ha-ci-NUN anh-ta
glass-PL-NOM all clean -TOP not-DEC
'The glasses are not all clean.'
(69) can-tul-i hana-TO 'at all' terep-ci 'dirty' anh-ta

'The glasses are not dirty at all.'

(70) The glasses are dirty.

(71) The glasses are clean.

The total predicate 'clean' is universal and its negation takes wide scope in (66), becoming equivalent to (68) in Korean. (68) is a negative CT expression (with *–NUN*) with a universal modifier ($\neg\forall$), What is conveyed is 'Some of them are dirty' and because the partial predicate 'dirty' is existential (66) becomes equivalent to (70). The opposite holds for the sentences with *dirty*: (67), (69) ($\neg\exists \equiv \forall\neg$)and (71). A minimizer with the concessive marker *–to* 'even' generates a universal negation reading. This relation holds not only for a plural subject but also for a mass subject, in which case universal and existential apply to the parts of the mass or totality. Therefore, we can postulate $\forall$ and $\exists$ before a total and partial predicate, respectively in the lexicon for interpretation. Vagueness must be responsible for any possible minor exceptions to this generalization. Pairs of total and partial predicates in that order include *healthy-sick, closed-open, dry-wet, transparent-opaque, same-different, close-far, turn on-turn off, out of-into, naked-dressed,* and *parallel-disjoint* This distinction must be refined by introduction of the distinction between 'homogeneous' and 'heterogeneous' (e.g., *different, far, disjoint* are heterogeneous)(Moltmann 1997)(the latter preferring group subjects), monotonicity (and anti-additivity)(e.g., *turn off, different, far* are monotone-decreasing, i.e., 'They are different/far from music or TV' entails 'They are different/far from music and they are different/far from TV,' and telicity (e.g., processes/states associated with total predicates are telic and can be used with *almost* and *already*, whereas mostly atelic partial ones can be modified by *still*). Annihilation verbs such as *destroy, delete, erase, kill, eliminate, wipe out* are total and 'negative' and their equivalents in Korean and Japanese can have emphatic *-ra-to* (K) and *-de-mo* (J) polarity sensitive expressions and negatively-oriented universal force modifiers such as *indiscriminately, takchi-nun-taero* 'whenever encountered,' *muchapiel* (K)/ *musabetu-ni* (J) 'indiscriminately' and *mocori* (K)/*kotokotoku* (J)'all-derogatory.' Observe:

(72) cek-un etten toshi –ra-to phakoe-hae-ss-ta /*kensel-hae-ss-ta
enemy-TOP any city-CONC destroy –PAST-DEC build –PAST-DEC
'The enemies destroyed/*built whatever cities.'

(73) cek-un toshi-tul-ul takchi-nun-taero phakoe-hae-ss-ta
enemy-TOP city-PL-ACC indiscriminately destroy –PAST-DEC
/ *kensel-hae-ss-ta
build –PAST-DEC
'The enemies destroyed/*built cities indiscriminately.'

This way, we can isolate negatively-oriented predicates and characterize their

polarity sensitivity on more solid semantic grounds.

5. Semantic Strength and Quantificational Scale

Let us see how semantic strength scales and quantificational (Horn) scales are correlated and not actually distinct. Observe the infelicities arising from CT-marking universal quantifier expressions in different languages. If the topically chosen domain is universally quantified and CTed, then there is nothing left to be contrasted with in the domain. That's why they are infelicitous. In the same string in (75), with the predicate CTed, there can be a stronger predicate *volunteered* on the scale and its denial can be felicitously conveyed. Consider:

(74) a. *'*All*[L+H*LH%] *came*'
b. *motu-NUN o –ass –e (Korean)
c. *minna –WA kita (Japanese)
(a, b. c) 'All-CT came.'
(75) All cAmE[L+H*LH%] but no one volunteered.
(76) aLL[L+H*LH%] didn't come.

Differently from (75-76), sentences in (74) have a universal quantifier expression in CT, followed by an affirmative predicate. If a universal quantifier expression in CT is followed by a negative predicate, as in (76), negation-wide scope reading is generated and what is conveyed is a weaker quantifying expression (say, *most* or *some*) associated with a positive predicate meaning *came*. (78), below, is equivalent to the CTed negative sentence (76) in Korean. Observe:

(77) motu(-ka) o-ki-NUN haess -ciman amu-to naseo-ci anh -ass -ta
all come-CT did -but anyone-C volunteer not -Past-Dec
'All came but no one volunteered.'

(78) motu-NUN o -ci anh-ass-ta
all -TOP come-CONN not –PAST-DEC
'Not all came.'

If we assign a contrastive contour or CT marker to a negative universal quantifier sentence, the sentence has a unique reading. By now it is clear that such a CT-ed quantifier sentence is a topical sentence and that it is distinct from a non-topical sentence. Therefore, there is no scope ambiguity problem regarding universal quantifier and negation, as soon as we isolate and respect the CT phenomenon.

We can see a parallel between the anomaly of (74) and that of (25), a further parallel between (76) and (28) as well. The verb *kill* happens to be total and telic and is easy to appear as a stronger or strongest element on a semantic strength scale, as we have seen in (30), the scalar C-set. In (28) *kill* corresponds to a universal concept and because of the negation wide scope interpretation, as in (76), an existential concept of less affected act having been committed is

conveyed.

An interesting scalar construction that combines CT and negative polarity is an idiomatized negative polarity construction like (79):

(79) I didn't even push/hurt him, let alone kill him.
(80) cunpi-NUN khenyeng/kosahako tochak-TO an hae -ss –e
prepared –CT let alone arrive -either not do-Past-Dec
'Let alone preparing it, she didn't even arrive.' (H. Torrence p.c.)
(81) Let alone kicking four guys, I didn't even kick two guys.
(82) Let alone eating an apple, I didn't eat any fruit.

In both languages basically VPs are involved in the construction and the higher predicate *kill him* in (79) is topical. In (80), the higher predicate 'prepare' has the CT marker, and the negated lower predicate 'arrive' has the concession marker *–to* 'even.' All the higher predicates emphatically denied in the 'let alone ---' and its equivalent constructions in (79-82) are topical. In (80 translation), *prepare it* is a goal to achieve, universally quantifiable, and *arrive* is a lower bound, existentially quantifiable, temporally/causally subordinated to the goal, on the generated scale. All the temporally/causally ordered relevant aspectual stages and subordinate acts are POSET and they are not different from other quantificational values of the same POSET. The final stage of *kill* is also analogous to the universal quantifier. That is why CT expressions of (74) and (25) are all bad with no higher scalar value in context. There is no distinction between a scale of numeral quantification in (81) and the rest. The emphatically denied topical predicates in 'let alone ---' and the lower predicates in the negative polarity part, no matter whether they come from numeral/quantificational expressions or semantic strength hierarchies, constitute identical scales.

Indeed quantifying expressions such as *every*, *most* and numerals are inherently quantificationally scalar. However, all the predicate meanings and even nominal meanings turn out to be scalar in the particular construction of CT. As early Generative Semantics viewed, quantifying expressions are of predicational nature. Or alternatively, we can say all the predicate meanings are potentially quantificational and therefore scalar.

6. Concluding Remarks

Contrastive Topic is a cross-linguistically pervasive construction. In English, only prosody makes it tangible and it is easy to ignore its semantic consequences. Other languages, on the other hand, show distinct morphological forms and accompanying prosodic features. Consider:

(83) ku yeca o -ki -NUN hae-ss-e. (Korean)
the woman come -NM -CT do-PAST-DEC
(84) kanozo-wa ki -WA shi-ta (Japanese)
she -TOP come-CT do-PAST

(85) ta lai shi lai le (Chinese)
s/he come CT come PERF
(81-83) 'The woman aRRIVED.'

In (83), the verb *–o* 'come' has been nominalized (with exceptions such as *puciren* 'diligent'-*UN ha-ta*) before the CT marker and a light verb *ha-* 'do' is followed in Korean. In Japanese, as in (84), the CT marker is attached to the verb stem, without nominalization, and then a light verb follows. In Chinese, as in (85), a CT marker comes after the verb and then the same verb is repeated. Verb repetition is also possible in Korean (e.g., *o-ki-NUN o-ass-ta*). In English, CT is possible in predicates *in-situ* or sometimes in VP preposing constructions (Ward 1985). The verb *arrive*-CT in the answer is not new and is topical in the answer, in an otherwise default (wide) focus *in-situ* position (so no further focus), without nominalization, forming Topic within the nuclear scope Focus zone as [[VP]t]f, or in preposed/'topicalized' position. It is so focal that it cannot be scrambled to a VP-external position in Korean, Japanese and Chinese. It cannot become a typical Topic. A preposed VP in English cannot become one, either. Beghelli & Stowell (1995) posit various structural positions for different categories but not for prosodically-determined CTs. NEG-wide reading in NEG-quantifier interaction is a CT.

CT reveals that a semantic strength scale in it generates what is significantly conveyed as a polarity-reversed proposition, which lacks any surface syntactic form. Rooth's (1996) Focus only theory and Buring's (1994) similar theory, relying on conversational scalar implicature, must be modified to accommodate CTs of event-descriptions/predicate-meanings and CTs in general.

Notes

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