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Aspects of aspect in Korean psych-predicates:

Implications for psych-predicates in general

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1. Introduction

Psych-predicates are distinct from other predicates in their grammatical and semantic features, and so far the grammatical relations or thematic roles of the NPs associated with them have been investigated but their aspect was largely ignored until van Voorst (1992) addressed it[1]. Psych-predicates are manifested either in adjectives or verbs in Korean and English (e.g., *be afraid* vs. *fear*) and it has not been clear whether they are stative, agentive or event-related. Particularly, some Korean psych-verbs can be in the progressive form, whereas English ones cannot. Why they differ in this respect has not been explained.

The present paper adopts similar tests as Dowty (1979) applied in classifying verbs and tries to see how psych-predicates behave and whether they can be regarded as achievement verbs uniformly as van Voorst claims. We take the position that a psych-predicate describes an event or eventuality such that it has the beginning, duration, end and result of a psychological state involved. It is argued that there must be distinctions between emotional verbs, sensory/perceptual verbs, and cognitive verbs, on one hand, and between those verbs and psych-verbs turned accomplishment verbs, on the other. Thus, it takes issue with van Voorst (1992) for failing to recognize those distinctions and treating all of them uniformaly as achievement verbs. Emotion verbs, with no telic end-points in aspect, behaves more like states (with the flavor of process/activity). Psychological achievements are 'resultatives', as states implying previous 'mental' events. Particularly in Korean, the sense of state continuation is becoming stronger even in the case of psychological achievements (cognition), not only emotions/sensations.

When verbs of physical sense get an extended psychological sense, they tend to maintain the original aspectual structure, even though boundaries between temporal stages/points become blurred. As a general priciple, if a verb becomes abstract via metaphor/metonymy, its argument structure gets reduced (Lee 1993). Thus, an intransitive use of *build (up)* becomes possible. The newly developed psychological verbs are largely subject to the existing psych-verb pattern in grammatical behavior, even though there remains some tendency of maintaining the original physical verb case relations, producing a psychological sense in physical terms.

2. Aspectual Behaviors of Different Kinds of Psych-predicates

In Korean there are adjectives of emotion and sense/sensation and their verbal counterparts with the verbalizer *-e ha-ta* attached to the adjective stems. There are also non-derived verbs of perception. Let us first consider the behaviors of adjectives and their corresponding verbs of emotion.

2.1. Adjectives and verbs of emotion

Predicates of emotion co-occur with duration adverbials (e.g., '*for* five hours'), but not with time-span adverbials ('*in* ten minutes') in the sense of accomplishment. However, they can occur with time-span adverbials in the sense of 'after,' or waiting. Consider (1)-(2):

(1) Cholsu -nun Yonghi –ka sahul tongan(*-e) (kesok) miw -oss -ta
-Top -Nom 3 days for in continuously abhorrent Pst Dec

'To Cholsu, Yonghi was abhorrent for/*in three days (continuously).'

(2) Cholsu -nun Yonghi -ka sahul mane tto miw -oss -ta[2]
-Top -Nom 3 days after (in) again abhorrent Pst Dec
'To Cholsu, Yonghi was abhorrent again in (after) 3 days.' [Pst=Past] [Dec(larative)]

With the '*for* five hours' expression, as in (1), the event may be externally and arbitrarily 'bounded,' i.e., with beginning and end, though fuzzily as in all other emotion events. However, it does not have any goal terminal point, which is required in an accomplishment. Its verbalized counterpart, *miw-o ha-ta* 'hate' behaves in the same way as the adjective, only with case relations changed. Consider (3):

(3) Cholsu -nun Yonghi -rul sahul tongan(*-e) (kesok) miw -o hae -ss -ta
-Top -Acc 3 days for in continuously abhorrent do -Pst -Dec
'Cholsu hated Yonghi for/*in three days (continuously).'

We can notice that neither adjectives nor verbs of emotion can occur with the delimited time-span expression *tongan-e* 'in' just like activity and state verbs in general, but that they can occur, to a certain degree, with the time lapse expression *man-e* '(only) in, after,' as in (2)
above, as recurrable events. The latter expression focuses on the beginning time point of a new or recurrent event here, but if it focuses on the end point of an event as in an accomplishment, then it is unnatural with emotion adjectives/verbs, as in (4):

(4) ???Cholsu -nun Yonghi -ka sahul man –e ta miw -oss -ta
-Top -Nom 3 days in exhaustively abhorrent Pst Dec
'To Cholsu, Yonghi was abhorrent exhaustively in three days.'

(5) ??Cholsu -nun Yonghi -rul sahul man -e ta miw-o hae-ss -ta
-Top -Acc 3 days in exhaustively hate Pst Dec
'Cholsu hated Yonghi exhaustively in three days.'

This shows that emotion predicates do not clearly involve a process of reaching the culmination point. In this sense, even though emotion events are protracted and may be externally and loosely 'bounded,' they are contrasted with true accomplishment verbs, which are telic, with a goal or culmination point to reach. Emotions are fuzzily and arbitrarily 'bounded,' if bounded at all. Let us consider example (6) for the behavior of an accomplishment.

(6) Cholsu -nun il pun man -e won -ul ta kuri -oss -ta
-Top l minute in circle -Acc completely draw Pst Dec
'Cholsu drew a circle completely in a minute.'

The above accomplishment verb 'draw a circle' in Korean involves the culmination point of completing a circle after one minute of the circle-drawing activity. In this sense, the lapse of time starts at the beginning of an accomplishment event, differently from the case of sentence (2), where the lapse of time starts at the end of a previous event before a new one. Sentence (6) can also occur with the time-span expression *tongan-e* 'in, within' replacing *man-e* 'after.'

Accomplishment verbs both in Korean and English reveal the so-called 'imperfective paradox,' *i.e.*, the fact that their progressive form does not entail the perfective (Dowty 1979). But the paradox does not apply to the progresssive form of emotion verbs. The progressive form of emotion verbs is common in Korean. The progressive of psychological verbs is rather marginal in the first place in English, as in (7), although some native speakers including Peter Vasquez say it can be used in a special emphatic context of 'temporary' nature. Sentence (7), when used, entails its perfective counterpart sentence 'Mary hated a man.' Note also that sentence (8) in the progressive of an emotion verb entails sentence (9) in its perfective past form in the following:

(7) ?*Mary was hating a man.
(8) Mary-nun namca han saram -ul miw-o ha -ko iss -oss -ta
-Top male one person -Acc hate Prog Pst Dec
'Mary was hating a man.' [Intended]
(9) Mary-nun namca han saram -ul miw-o ha -yoss -ta
-Top male one person-Acc hate Pst Dec
'Mary hated a man.'
(10) Mary was running. → Mary ran.

The entailment phenomenon in the English and Korean emotion verb from progressive to perfective (realized in the past) is, therefore, similar to the one in activity verbs in general, as shown in (10) above. But emotion such as 'hating,' 'loving,' and 'fearing' also counts as an event and can occur on different occasions. Consequently, its expression having a plural (or nonspecific singular) number of Themes can occur with time-span adverbials just like accomplishment verbs, as in (l1):

(l1) Cholsu-nun il-nyon tongan-e se saram -i miw -oss -ta /se saram-ul miw-o hae-ss-ta
-Top l year in 3 person -Nom abhorrent Pst 3 person -Acc hate-Pst Dec
'To Cholsu, three persons were abhorrent in a year/Cholsu hated 3 persons in a year.'
(l2) Cholsu-nun ?*(ku) il-nyon tongan-e yoca han saram -ul sarang-hae-ss-ta
-Top that l year in woman 1 person -Acc loved
'Cholsu loved a woman in a year (bad)/in that particular year (OK).'

For (l1) to be appropriate, there must be three different delimited events that began preferably at different times within the time-span 'in a year.' In (l2), reference to 'a woman' is not good enough to evoke the sense of iteration (frequency) or delimited units of events. So, if the sentence occurs with the indefinite and nonspecific time-span 'in a year' it is not acceptable, whereas if it occurs with a definite time-span expression it is acceptable. This is also the case in English, as can be seen in the translation. If this condition of delimited different events is met by some explicit iteration/frequency expression, then a sentence with a singular definite/specific Theme that occurs in the scope of the indefinite iteration (frequency) expression can occur with time-span adverbials. Observe the following example:

(l3) Mary-nun il-nyon tongan-e ku/HAN/otton namca-rul *(se pon) miw-o hae-ss-ta
-Top l year in the/a[spec]/certain male -Acc 3 times hated
'Mary hated the man/a particular man/a certain man *(three times) in a year.'

We must note that (l3) (also in English), without the iteration expression 'three times' in it, is unacceptable, just as the time-span reading *tongan-e* 'in' of (2) above is. Iteration/frequency numerals (including fuzzy ones) make the events bounded/delimited/quantized. In general, indefinite but delimited (or individuated), counted events of emotion can co-occur with time-span 'in' adverbials. In counting the events of emotion, their beginning points but not their end points are important, unlike in counting the events of accomplishment. From the above facts and analysis, we notice that emotion predicates are similar to atelic predicates of state and activity in their aspectual behavior. However, special attention can be drawn to the beginning or ending phase of an emotion event, as seen in such metaphorical expressions as *sarang-i ssak-tu-n-ta* 'Love starts to bloom' and *sarang-i situ-n-ta* 'Love fades.' A full-fledged phase can also be described in expressions like *sarang-i pul-tha-oru-n-ta* 'Love is blazing,' though with no sense of completion or culmination as a goal. So, we can hardly say 'I finished love,' except in in its physical or lapse-of-time sense, either in English or Korean. Verbs like *coh-a-ha-ta* 'like,' *kuriw-o-ha-ta* 'long for,' *ashwiw-o-ha-ta* 'miss' also belong to this class of emotion verbs. These verbs can take the progressive form, describing the duration or continuation of the emotional state involved. Incidentally, the English verb 'long,' though psychological and more common in poetry than in conversation, can occur in the progressive, as in 'I'm longing to meet her,' as opposed to other psychological verbs in English. Some younger people say 'I'm missing her,' (and even 'I'm wanting her') but it is

not generally accepted.

2.2.Adjectives and verbs of sensation

On the other hand, predicates of sensation often represent the instantaneous onset of a sensation event involved, e.g., *ssu-si-ta* 'be prickly,' *ttagap-ta* '(skin) smarts,' *maryop-ta* `want to urinate/defecate,' *maep-ta* 'be hot (in taste),' *cca-ta* 'be salty,' *sikkurop-ta* 'be noisy,' *hyanggirop-ta* 'be fragrant,' *kkolkkurop-ta* 'be bristly to the touch,' *karyop-ta* 'itch,' *kancirop-ta* 'feel a tickle,' *aphu-ta* 'be painful, hurt,' etc. The stimulus of sensation may be repetitive or punctual/short-lived. The intransitive verb in this category cannot take the progressive form, as in ?**ssusi-ko iss-ta* 'feeling prickly,' whereas the progressive of *-o ha-ta* verb form is much better, as in ?*maryow-o ha-ko iss-ta* 'wanting to (urinate/defecate). The momentary onset and short duration of sensation compared with the relatively longer duration of emotion make its progressive form less comfortable (cf. My arm smarts/*is smarting). One interesting phenomenon regarding sensation predicates is that there are some processes by which non-sensation predicates become predicates representing spontaneous sensation or inclination. One such process is the so-called *-o-ci-ta* passivization; transitive verbs such as *manci-ta* 'finger', *nwuru-ta* 'press', *palp-ta* 'step', by this process, become sensation predicates and show subjectification, i.e., become natural in the singular present, if it is in first person only. A test for this is the following kind of third person Topic construction in the present tense that turns out awkward, whereas the first person Topic construction in the present tense does not:

(l4) ?Cholsu-nun sangca sok-uy kwusul-i manci-o-ci-n-ta (or tah-nun-ta)
-Top box n of beads -Nom be touched touch(Vi)
'As for Cholsu, he brushes up against beads in the box by hand. '

English cannot express nonvolitional tactile sensation with a separate single verb. The verb ‘touch’ cannot function as a psych-verb, except in its metaphorical extension to emotion sense, as noted readily.

Another process is descriptive or evaluative adjectives becoming sensation predicates in Topic construction. Such adjectives are *kil-ta* 'be long,' *ccalp-ta* 'be short,' *mac-ta* 'be fitting,' (the intransitive verb *mac-ta* 'fit' is more descriptive), *holkop-ta* 'be loose, big,' *mukop-ta* 'be heavy,' *swip-ta* 'easy,' etc. A Topic sentence with any of these adjectives in the third person present is odd, whereas it is not in the first person. See (15).

(l5) ?Yonghi-nun i os -i holkop-ta
-Top this dress -Nom loose
'As for Yonghi, she feels this dress is too big for her.'

Those adjectives subject to subjectification of sensation can be verbalized by attaching *-o ha-ta* to the adjective stem, e.g., *holgow-o ha-ta* and the psychological verb form can occur in a third person present Topic sentence (e.g., *Yonghi-nun i os-ul holgow-o ha-n-ta* 'Yonghi feels this dress is too big for her', the Theme Nom becoming Acc).

However, such an intransitive verb as *tah-ta* 'touch,' when used in its sensation sense, must be used in the first person present tense, but not in the progressive or resultative form, as follows:

(l6) na-nun pal -i ttang -e tah -nun (/*ko iss, /?-a iss) -ta
I -Top foot Nom soil on touch Pres Prog Result Dec
'I feel (the touch of) the soil on my feet.' (nonvolitional) [Prog(ressive)]

The resultative form is possible not in its sensation sense but rather in its descriptive or objective sense. An analogous subjectification tendency is also found in Japanese[3]. The case marking of the construction [body-part+Nom --- place+Loc] can alternate with [place+Nom --- body-part+Loc]. The metaphorical expression *maum-e o-a tah-ta* 'come and touch one’s mind' in its emotion sense shows the body-part+Loc case marking and the same subjectivity condition, with the deletable first person Topic and a subject corresponding to 'Leon's sad story'. Then, let's consider the following resultative sentence

in its descriptive sense:

(l7) Mary-nun pal -i ttang-e tah -a iss -ta
-Top foot –Nom soil on touch Result Dec
'As for Mary, her feet touched the soil.' [Result=Resultative]

The above sentence entails its past tense sentence (---*tah-ass-ta* 'touched') but not its present tense sentence (--- *tah-nun-ta* 'feels the touch') in its subjective touching sensation sense. The subjective sensation sense represented by the present form is possible with the first person singular, and the descriptive resultative state in (l7) can occur without Mary's subjective sensing; for instance, Mary's feet could be numb and sense no touch at all and still we can utter (l7) objectively. In its descriptive or objective sense, the verb is an achievement verb. The English verb *touch*, an achievement verb, can also be used in its non-achievement, stative sense in the progressive form, e.g., 'If two things are touching, they are in contact with one other', or in its achievement-like emotion sense, e.g., 'It has touched me deeply to see how these people live'. In English, no subjectivity condition applies and both 'It touches me ---' and 'It touches her ---' are all right unlike in Korean.

The present tense sentence 'It touches me ---' may be argued to entail its perfective counterpart 'It has touched me---'. Then, the important question that arises with regard to aspect is whether those sensation or metaphorical emotion senses in the present tense denote states/activities or achievements. Neither blocks entailment. No 'imperfective paradox' as in accomplishment arises. No activity interpretation is involved in the sensation senses of adjectival forms at least. In the case of metaphorical emotion sense of *touch* or *maum-e tah-ta* ‘touch (my) mind’, the literal physical sense of the verb gives the impression of punctual achievement, whereas the newly created emotion sense denotes a protracted state and change of state with fuzzy boundaries. Because of the latter state nature, the present tense form,which denotes an extended range of time period around the speech time point, is possible with these verbs. Otherwise, some perfective form should apply to show punctuality. In English, the present tense in ‘Mary is dead’ can show its state after dying, but the present in ‘Mary dies’ cannot show it.

2.3. Verbs of perception

Perception verbs such as *see* (and *hear*) are rather reasonably classified as achievement verbs by Vendler (1967). This tradition has been followed by van Voorst (1992). They reveal the ‘beginning of the event’-reading with the *in* time adverbial and the ‘fail to occur’-reading with
the quantifying adverb *almost*.

In Korean, perception verbs such as *po-ta* 'see' and *tut-ta* 'hear' occur in their perception sense with such adverbs as *olphit* 'instantaneously' and *mot* 'not able', or with such forms as the passive and the subordinate conjunctive like *-ca maca* ‘as soon as’. lf those verbs occur, on the other hand, with such prefixes or co-verbs as *chioda* 'up, at', *turioda* 'into', *cikhyo* ‘on, watching’, *salphyo* ‘around,’ *noryo* ‘staring’, or such action-modifying adverbs as *tturojige* 'piercingly,' they become action verbs like *look* (or *listen*) as opposed to *see* (or *hear*), without any change in form in Korean (Lee 1973). In the progressive form, therefore, they only function as action verbs, and in the passive they only function as perception verbs. Hence no passive progressive form is allowed in either sense. Consider (18)-(19).

(18) Joe-nun Sue-rul po -ko iss -ta
-Top -Acc look Prog -Dec
'Joe is looking at (/*seeing) Sue.'
(19) (na -nun) Sue-ka po -i -n -ta (/*po -i -ko iss-ta)
I -Top -Nom see -Pass -Pres -Dec see Pass Prog Dec
'I see Sue (Sue is visible to me).' [Pass(ive)]

Sentence (l8) above describes the progress of the action but not the result of seeing (if some adverb intervenes between *po-ko* and *-iss*, *po-* and *-iss* are independent verbs and *po-* can denote perception). Thus, only action perfection (in the past tense) but not perception perfection (i.e. 'Joe saw Sue') can be entailed by (18). (19), in its passive, shows the

subjectivity constraint (possible only with the first person (not the third person) Experiencer in the present, behaving just like emotion/sensation adjective sentences). If the context permits, the active form can show its perception sense, as in (20a,b).

(20) (a) no panggum pongae-pul po -ass -ni?
you a minute ago lightning see Past Q
'Did you see the lightning a minute ago?'
(b) ani, mot po -ass -o
no not able see Past Dec
'No, I didn't/couldn't see it.'

As can be observed in (20b), the perception sense of the verb occurs only with the adverb negating ability or circumstances, *mot*, but not with the simple negation adverb *an* 'not.' The action sense occurs with this simple negation. The speaker didn't take a look on purpose in this sense with the simple negation. Thus, *ilburo* 'on purpose' cannot co-occur with (20b) (**ilburo mot po-ass-o* 'I didn't see it on purpose'). The same contrast occurs in the verb *tut-ta* 'hear' between *mot tur-oss-o* 'I didn't hear it ' and *an tur-oss-o* 'I didn't listen to it'.

Another point about the Korean verb *po-ta* 'see, look' is that it cannot take a full sentential complement as an object, as a propositional attitude verb. The verb in the following example is used as a visual perception verb having a non-finite complement clause but not as a cognitive verb:

(21) [na-nun [Mary-ka ttui-nun kos -ul] po -ass-ta]
I -Top -Nom run Prenom DependN -Acc see Pst Dec
'I saw Mary running'. [Prenom=Prenominalizer=Relativizer]

This is different from the English counterpart *see*, which is used as a cognitive verb having a finite sentential complement, as in *I saw that Mary won the game* (see Barwise and Perry 1982 for its meaning in distinction to *I saw Mary running*).

Let us then observe what happens when such perception verbs as *po-ta* 'see', etc. occur with a time adverb. With the duration adverb *tongan* 'for', such verbs tend to get the action sense. Witness:

(22) na-nun ku mulkogi-rul sam pun tongan po -ass -ta
I –Top the fish -Acc 3 minute for look Past Dec
'I looked at the fish for three minutes.'
(23) ku mulkogi-ka sampun tongan po-i-taka saraji -oss -ta
the fish -Nom 3 mninute for seen after disappear Past Dec
'The fish, after being seen for three minutes, disappeared.'

In (22), the action involved is the speaker's main concern and can be homogeneous. The perception alone is excluded; notice that perception can be on and off for periods of time. In (23), on the other hand, in its passive, the presence of the fish is salient and stays homogeneous for three minutes, rather than the speaker's perception only. The speaker's perception appears to persist in a pragmatic interpretation via the object's persistent presence. The perception of seeing or hearing cannot be guaranteed to persist for any conceivable period of time at one stretch, and, therefore, its expression does not normally co-occur with any durational time adverb except in a vague, pragmatic (visibility/audibility or object/event's presence) sense. In English, too, neither the progressive nor the imperative/suggestive can occur with *see/hear*. 0bserve:

(24) (a) *Why not see the tree!
(b) *Why not hear the music' (Lee 1973)
(25) na -to com po -ca
I -also please look Propositive
'Let me take a look!' [Propositive=a speech act of *let's*, used as an indirect request]

The Korean suggestion sentence (25) is possible only when the verb *po-ta* 'see/look' is used in its action sense, not in its perception sense.

The English verb *notice* also shows the characteristics of a perception verb like *see* but it reveals a process-like meaning unlike *see*. Witness (26)-(28).

(26) Mary began to notice me and noticed me partly. (B. Tesar, p.c.)
(27) Mary noticed the building getting taller.
(28) a.?What she did was notice me.
b.*What she did was hear the fire-alarm go off. (van Voorst 1992)
(29) That foul smell was not noticed by the attendants.

The same verb form (*po*- 'see'-'look', *tut*- 'hear'-'listen') can denote either perception or its corresponding action, depending on linguistic or non-linguistic contexts in Korean, and, therefore, it can be represented as underspecified with respect to perception and action. In English, a perception verb and its corresponding action verb are lexically distinct. The perception reading or verb can be a punctual achievement, whereas its action/activity counterpart is a durational activity. In the latter case, the verb can be modified by a durational time adverb *tongan* or *for* and its object is not affected or quantized. The tactile sense is more variously expressed in Korean than in English.

2.4.Verbs of cognition (propositional attitude)

Let us turn to the verbs of cognition such as *al-ta* 'know', *ic-ta* 'forget', *kkaedat-ta* 'realize', *mit-ta* 'believe', or *saenggakha-ta* 'think.'

2.4.1. First consider different tense/aspect forms applied to different contextual uses of *al-ta* 'know.' In the case of (30) below, the superficial progressive form of the same verb has been used to imply that the speaker already came to know it before and that he is in the state of knowing it. Originally, it represents the continuation of a result state. In other words, there has been a change of state such as COMING TO KNOW before the speech time, resulting in a complex resultative construction. Therefore, an adverb like *kamanhi* 'silently' can in principle intervene between *-ko* and *iss-*. However, insertion of such a word is impossible in process progressive (*ttwi-ko iss-ta* 'be running' vs. **ttwi-ko cal* 'well' *iss-ta* vs. *cal ttwi-ko iss-ta* 'be running well'). It is well known in Korean linguistics that the same form *-ko iss-* can be interpreted either as a progressive or as a resultative (perfective) with certain transitive verbs of wearing such as *ssu-* 'wear (a hat)'. It depends on whether we pay more attention to the process or to the result state. Consider the progressive/resultative form occurring with *al-ta* 'know' in a dialogue between A and B in the following:

(30) A: hankuk -i iki -oss -tae
Korea -Nom win Pst Quote
'Korea is said to have won it.'
B: al -ko iss -o
know -Prog SE
. lit. 'I am knowing it'. 'I already know that'.

Since the form is used more frequently in the sense of a progressive and since there is a sense of continuity in the form with cognitive verbs in particular, people usually take it to come as a progressive. There is a shared sense of continuity in both process progressive and psych-verb resultative (or perfective in a sense). The latter takes the same progressive form in the surface in Korean. As a consequence, the form here reveals 'temporariness' like a process progressive. In this case, the continuity sense is more salient than the perfective-resultative sense. The corresponding Japanese expression *shi-te iru* and Hindi expression *hai jaani* show an analogous consequence. In Mongolian, both progressive (*med-ej bai-na* 'be knowing') and perfective (*med-eed bai-na* 'be having known' (intended)) exist only with subtle meaning differences. In Korean, the state continuation sense is so salient that its achievement end-point is not really felt. This is particularly clear when we consider the verb *moru-ta* 'not know, be ignorant', the semantic opposite of *al-ta* 'know.' Consider:

(31) Mary-nun [Sue -ka o -n kos -ul]$_{CompS}$ moru -ko iss -ta
-Top -Nom come-Past Comp-Acc not know -Progr -Dec
'Mary does not know (is in the state of not knowing) that Sue came.'

Here, *moru-ko* cannot denote any process progressive of *moru-ta* 'not know,' as an inherent state of the negated verb. Since the negation is not an independent lexeme but came as part of the lexical features of the verb (even though the verb originally comes from the two separate morphemes *mos* 'not' and *al-* 'know'), we can hardly say that the scope of negation is over the progressive of the affirmative verb *al-* 'know'. We, therefore, cannot say that there is an achievement such as 'not knowing'. However, adverbials like *kunyang* 'just like that' can be inserted before *iss-ta* 'be, exist' and *-ko iss* can hardly be called 'progressive.' If it is neither an achievement nor a state continuity, then, is *-ko* simply a conjunction marker? Its conjunction sense and the lexical meaning of *iss-ta* have come to be weakened and the two items *-ko* and *iss-* together have been grammaticalized to become a unitary complex form, not quite as much, though, as in the process progressive. If an adverbial intervenes between *-ko* and *iss-*, *iss-* 'exist, be' tends to become an independent verb.

On the other hand, the verb *ic-ta* 'forget' clearly behaves as an achievement verb. Thus, if the form *ko iss-* is attached as *ic-ko iss-*, its reading is result state, not process progressive (the reinforcer *-so*, which is incompatible with process progressive, can be attached to the resultative *ic-ko*). Its resultative can replace the main verb resultative in (31). The resultative *-ko iss* construction can be modified by the adverb *acikto* 'still' but the perfective past construction like *ic-oss-ta* cannot. The latter, though, can be modified by *polsso* 'already.' The adverb *polsso*, as a PPI/API (positive polarity item) cannot modify the past of the inherently negative verb *mol-ass-ta* 'didn't know.' Instead, its dual *acik* 'yet' can modify it, functioning as an NPI. If the same dual modifies (31) before the main verb, Mary is in the state of not knowing the fact 'yet' at the moment. Incidentally, the adverb *acikto* 'still' is a good test for distinguishing between the resultative and the perfective past (*acikto ip*'wear'*-ko iss-ta* vs. **acikto ip-oss-ta*) as in many other languages. The realization of 'forgetting' (or 'not remembering') is punctual and the verb usually occurs with the perfective past (*ic-oss-ta*), if the subject is not in the first person (in English, we hear a stative expression like 'I forget his name'). The past of the negative verb *mol-ass-ta* 'didn't know,' 'was ignorant,' however, hardly shows any perfective sense; it is denial of a state at a certain point of time in the past rather than reporting occurrence of an event. The continuity sense of *iss-* in the resultative *ic-ko iss-ta* is shown by negating the construction (the Neg is attached to the main verb *ic-* 'forget'). Then, at the same time, the negation, with wide scope, licenses an NPI in the object of the main verb *ic-* 'forget' (e.g., *Mary-nun ku il -e kwanhae amu ket-to ic-ci anh-ko iss-ta* 'Mary is in the state of not forgetting ANYTHING about it.'). Its semantically opposite lexical item *kiokha-ta* 'remember' can take the same complex resultative construction but the same form cannot be in the agentive process progressive reading. A synonymous verb *oewu-ta* 'keep in memory, memorize' can take both resultative and progressive readings. But it can only take nominal objects such as lines of a poem, but not a propositional content, since it does not constitute a propositional attitude verb (see Kim 1993 for the ambiguity distinction of this verb but her 'resultative progressive' is not clear, however). Basically, it is an action verb and selects a nominal object, and its progressive reading, which is more frequent with the form, has to do with the action part, but the purpose of the action is 'having something in memory'. Thus, its result state is a cognitive state and that is why it can get a (cognitive) resultative reading. The verb *kkaedad-ta* 'realize,' however, hardly constitutes such a complex result state construction with the same form ($^{???}$*kkaedad-ko iss-*), even though it otherwise behaves as an achievement verb in general. This way, we can see word-specific characteristics of similar verbs within the same aspectual class of verbs. The resultative reading of *-ko iss-* in transitive verb is analogous to that in *-o iss-* in intransitive verbs. This is a separate form from *-ko iss-*, which is used exclusively for the process progressive reading in intransitive verbs.

Turning back to the verb *al-ta* 'know,' it is interesting that it can occur with the past form in the following context:

(32) A: ppalli sum-o
quickly hide SE (Familiar, Imperative)
'Hide yourself quickly.'
B: al -ass -eo
know -Pst -SE (Familiar, Declarative)
'I got it.' [SE = Sentence Ending]

The past form reveals its perfective reading in (32B). The new change of state in cognition occurred as soon as B heard A's utterance and the result state of the change remains relevant at the time of utterance. The past form of *al-ta* 'know' in (32B) shows the speaker's sudden, immediate realization of the informed situation at the end-point of the whole event of coming to know. This way of reaching an end-point, though psychological, amounts to an achievement in the past tense and its result state of the immediate past still continues to be salient. The same is true of the colloquial use of 'get' in English, as shown in the translation of (32B), as a result of metaphoric extension from physical to cognitive of 'get.' In Japanese, *wakarimashita* 'understood' would be used in this case. The achievement sense of Korean *al-ta* 'know' is originally related to its reading in (30B) (historically resultative became perfective past), though the sense of state continuity associated with the progressive form became more salient. The past of the verb *ic-ta* 'forget,' which is *ic-oss-ta*, on the other hand, cannot be appropriately applied to the first person because of the subjectivity constraint, with a non-*wh*-complement S, as in (33):

(33) ?*na -nun [Mary -ka o -n kos -ul]$_{CompS}$ ic -oss -o
I -Top -Nom come Past Comp -Acc forget Pst Dec
lit. 'I forgot (in the sense 'I forget') that Mary came.'

With respect to the above string, it would be contradictory to say that I ceased to remember that Mary came and that I still do not remember it, mentioning the fact at the speech time. A similar contradiction arises with the resultative --- *ic-ko iss-o* '(I) am in the state after forgetting ---', as with the perfective past, shown in (33). However, the past of the resultative, *ic-ko iss-oss-o* '(I) was in the state after forgetting---' is all right, since we can recall what we forgot. To admit that the fact already occurred to the speaker (Experiencer) at the moment of speech after forgetting it for a certain while in the past, the double past form *-oss-oss-* must be used alternatively, like *ic-oss-oss-o* '(I) experienced forgetting ---' after the complement S in (33). The same simple perfective past form, which is not compatible with the first person, can be applied to the third person and the second person optimally, and it can be used all the same with *wh*-words and embedded indirect questions, as a *wh*- inducing verb, for any person including the first person. The speaker can be in the state of not recalling the relevant *wh*- information after forgetting it, with the first person subject sentence.

Let us then consider the present form associated with *al-ta* 'know,' as in (34).

(34) A: haengsung -un modu ahop kae-i -ya
planet -Top in all 9 Cl be SE
'The number of planets is 9 in total.'
B: al -a
know SE
'I know.'

Speaker A intended to inform B, but B responds saying that he already knows the fact in the present form of the verb. It should be the description of a certain cognitive mental state, not the description of a process-related habitual aspect. However, the same verb is used to describe the aspect of reaching the culmination point, as witnessed in its past use (31B). Therefore, the present tense utterance of the verb *al-ta* 'know' (33B) implies that there was such a culmination point of coming to know (change of cognitive state) before the time of utterance and, in this context, that the information is not new to speaker B. This kind of

implicature also applies to the present tense of *know* in English in the same context. One can also cease to know ('forget'). In other words, 'state' can be described as a(n) (prolonged) aspect in the whole range of subevents of a complex event. The present tense is used to denote a more permanent, persistent, or, rather competence-related sort of knowledge, which can be compared with the continuity (progressive or resultative) form. Thus, for 'know French' in the individual-level, the following contrast arises in Korean: *French-rul al-a* 'I know French' <present> vs. ?**French-rul al-ko iss -o* lit. 'I am knowing French' <progressive or resultative>.

The verb *al-ta* forms various complex verbs of perception, cognitive action, by being followed by auxiliary verbs. The complex verb *al-a po-ta*, with the auxiliary *-po-* 'see, try', is used either in the perception achievement interpretation of 'recognize' or in the agentive sense of 'try to find out, investigate.'[4] Therefore, the representation for the verb *al-* may be underspecified as to pychological/agentive. The complex verb *al-a tut-ta* 'hear and understand', with the auxiliary *-tut-* 'hear', is used for cognition. The complex verb *al-a chari-ta* 'realize ', with the auxiliary *-chari-* 'be attentive', is used for cognition. Another complex verb *al-a nae-ta* 'find out', with the auxiliary verb *-nae-* 'produce, let out,' comes to have an agentive reading. Still another example *al-a cu-ta* 'appreciate', with the auxiliary verb *-cu-* 'give', forms a cognitive agentive verb. In other words, the agentivity/stativity distinction of the *al* + Aux combination largely depends on whether the Aux is agentive or not, or, alternatively, is underspecified and interpreted either way in the context. However, if the Aux simply denotes some aspectual sense such as completion (in the case of the verb *ic-* 'forget' the completive or perfective Aux *-pori-* is almost automatically attached to it), the interpretation of the complex verb tends to depend on whether the main verb *al-* becomes agentive or not in the context, which is underlyingly represented as underspecified. A process can be either dynamic (agentive) or stative (as in state-change like *realize* or we can posit 'mental or cognitive action') and can influence the aspectual structure.

The verb *al-ta* 'know' and related verbs select also embedded questions. A nominal object of 'know' such as 'his name' is equivalent to the complement S 'what his name is'. The psychological adjective *kunggumha-ta* 'wonder, want to know' selects an indirect question S as a complement (e.g., *na-nun ku ai-uy kohyang -i.odi -i-n-ci-ka kunggumha-ta* 'I wonder where that child's hometown is'). Its complement is an open *wh*-proposition, whereas the complement proposition of *al-ta* 'know' contains a *wh*-variable which the speaker can specify as an indefinite specific proposition. In the case of a factive complement, it is a definite ('quantized') proposition.

2.4.2 If we try to form the pre-nominal or relativized forms of the verb under consideration to put before the noun *sangthae* 'state,' we can easily check if it is state-salient in the present tense or it comes as a result via achievement in the past tense. In Korean there is a distinction between the present pre-nominal form (*-nun*) and the past pre-nominal form (*-n*). Observe:

(34) a. kukos-ul al -nun / ??-n sangthae
it Acc know Prenom[Pres] Prenom[Past] state
'the state of knowing/ ??having known it' (intended)
b. kukos-ul ic ???-nun /-un sangthae
forget Pren[Pres] Pren [Past] state
'the state of ???forgetting/having forgotten it' (intended)
c. kukos-ul kkaedad ???-nun /-un sangthae
Pren[Pres]/Pren [Past]
'the state of ???realizing/having realized it' (intended)

The verb corresponding to 'know' takes the present pre-nominal (relative) form, whereas the verb corresponding to 'forget' takes the past one. The verb corresponding to 'realize,' i.e., *kkaedat-ta*, behaves like the latter. The latter two verbs mark the achievement end-point with the past form even before the noun 'state.' If we replace the head noun *sangthae* 'state' by *kwacong* 'process', the latter two verbs (b and c) become compatible with the present form, and the first verb (a) is a little less compatible with it. All the verbs are slightly less compatible with the past pre-nominal form before the head noun 'process'.

On the other hand, the verbs corresponding to ‘know,’ ‘not-know’ and ‘forget’ can take the complex prog(ressive)/result(ative) form *-ko iss-* before the noun ‘state’, but the verb 'realize' cannot, as in (35):

(35) a. al 'know' -ko iss [prog/result] -nun [Prenom] sangthae 'state'
b. moru 'not know' -ko iss [prog/result] -nun [Prenom] sangthae 'state'
c. ic 'forget' -ko iss [prog/result] -nun [Prenom] sangthae 'state'
d. ??kkaedad 'realize' -ko iss [prog/result] -nun [Prenom] sangthae 'state'
'a state in which (one) knows/not know/forgets/realizes[prog/result] (something)'

Propositional attitude verbs like *mit-ta* 'believe' and *saenggakha-ta* 'think' take the complex prog/result form as well as the present form when they have complement clauses, but their corresponding verbs in Japanese do not take the present form normally. Consider:

(36) saram-tul-un [ciku –ka tungul-ta -ko] saengkakha -ko iss-ta/saengkakha -n -ta
people -Top Earth-Nom round-Dec-Comp think Prog/ think Pres
(37) hito-tachi -wa [tikyu-ga marui to]omot -te -iru / *omo -u (Japanese)
people -Top Earth-Nom round Comp think Prog Pres think Pres
'People think[Prog]/think that the Earth is round'. (Gunji, p.c.)

In Japanese, the state continuation/duration sense of the progressive form of the verbs remains to be used in general, by which the situation is viewed as largely episodic (cf. *Watashi-wa so omoi-masu* [Pres] ‘I think so'). But in Korean, both the progressive and present forms are used in the state continuation sense and slightly different uses of the different forms have developed: the progressive form for temporarity/vividness or a limited situation and the present form for generality or a permanent situation, as already discussed. So, the present form is preferred for (36) in Korean. It is clear that the progressive form is used as progressive rather than as achievement perfective at least for these verbs. In this sense, the process progressive (process continuation) in English and other Indo-European languages and the state progressive (temporary state continuation).

. This use of the progressive form as state continuation, however, can be distinguished from the process progressive form that denotes some action in progress and that is applied only to action verbs, i.e., *-ko iss-nun cung-i-ta* ‘in the midst of.’ This form cannot replace the more commonly used progressive form in (36) in Korean. This fact is true of all kinds of propositional attitude verbs that take a complement clause including *al-ta* ‘know.’ However, mental activity verbs like ‘consider’ (*koryoha-ta, komthoha-ta*) and ‘think’ (in its activity sense) can take the form. The progressive form is also possible with verbs of this category in English. Both in English and Korean, these verbs tend to take ‘about--- ’/---*e taehae* with the verb rather than a direct object. We can here see the unique status of propositional attitude verbs in taking complement clauses as their contents.

There is another class of psychological verbs which are associated with propositional contents or events and behave as intransitive verbs rather than transitive verbs. Consider:

(38) Mary -nun [Park -i iki-oss -ta] -nun sasil - i saengkak-na-ass-ta
-Top -Nom win Pst Dec Comp fact -Nom occurred
'To Mary, it occurred that Park had won.’

(39) Mary -nun ku-i -rul manna -nun il -i (maum-e) naekhi -ci anh -ass -ta
-Top he -Acc meet -Comp event-Nom mind to inclined to not
'Mary was not inclined (had no appetite) to meet him.'
(40) Mary-nun sakwa-rul/-ka mok -ko siph -oss -ta
-Top apple-Acc/Nom eat Comp want Pst Dec
'Mary wanted to eat apples.’

The verb *saengkak-na-ta* ‘(lit.) memory comes out, (something) occurs, comes to mind’ takes a factive proposition as its subject and an Experiencer as Topic, showing the typical psychological construction pattern, in (38). Verbs such as *kiok-na-ta* ‘occur, come to

memory' and *tto-oru-ta* 'arise, occur' also behave likewise. The propositional content involved in here is factive because some fact saved in memory in the past comes out spontaneously to an Experiencer. These verbs are punctual achievement verbs and not allow the progressive form. The verb in (39), on the other hand, takes an event as Theme (Kuno regards this kind of NP in Japanese psych-verbs/adjectives as object, which is not well justified) in which the Agent subject is coreferential with the Experiencer Topic (the Experiencer-Null Agent Coreferentiality Constraint for the verb, with the Experiencer as controller). In (40), the main clause adjective takes an embedded complement clause in which the null Agent is coreferential with the matrix S Experiencer (again the Coreferentiality Constraint) and the object (or locative Goal) is raised to get the Nom marker in the matrix S. If not raised, the object (or the locative Goal) takes Acc (or the locative Goal marker). When the Theme is raised to get Nom, the output pattern becomes the typical psych-predicate construction [Experiencer-Top Theme-Nom Psych-Pred]. All these verbs/adjectives are subject to the Subjectification Constraint (unnatural with the non-first persons in the Present tense).

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3. Psych-verbs via Metaphor/Metonymy

Certain verbs of concrete motion and action, accomplishment and achievement can function as psychological verbs via metaphorical or metonymic sense extension. Then, the verbs used as new psychological ones tend to behave like real psychological verbs, for instance, being subject to Subjectification Constraint, i.e., not used with any non-first person Experiencer in Present. But certain such verbs maintain the same case manifestations as concrete action verbs. Let us consider activity verbs first:

(41) kincang-kam -i kamtol -ko iss -ta
tension feeling -Nom whirl round Prog Dec
'Tension is whirling round.'

(42) a. na -nun Mary -eke hokam -i ka -n -ta / ??ka-ko iss -ta
I -Top -to liking -Nom go Pres Dec go Prog
'I am inclined to like Mary.' ('As for me, liking goes (/??is going) to Mary.' lit.)

b. (na -nun) Mary -ka hokam -i ka -n -ta
I -Top -Nom liking -Nom go -Pres -Dec
'I am inclined to like Mary.' (?s for me, liking goes to Mary.')

c. Joe-nun Mary -eke/-ka hokam -i ka -ss/??-n -ta
-Top -to -Nom liking -Nom go Pst Pres Dec
'Joe was inclined to like Mary.' (?s for Joe, liking went to Mary)

d. Mary-eke/*-ka Joe -ka ka -ss -ta
-to -Nom -Nom go Pst Dec
'Joe went to Mary.'

The verb of (41) is originally for the moving of concrete things like water, but now it is rarely used in the concrete sense. In the concrete sense, it used to have an object when necessary, but it is now predominently used in the abstract sense such as 'hang over' as in *han-pando -e cenwun -i kamtol -n -ta* 'War clouds hang over the Korean Peninsula' and in the psychological sense as in (41), as an intransitive verb. The commonly used locomotive verb *ka-ta* 'go' as in (42) can be used in its psychological sense, either maintaining the dative marker (42a) or getting the Nom maker (42b). If your good feeling goes to someone, you are inclined to like her, and the one to whom the good feeling goes becomes Theme rather than remaining as Goal, and in Korean, Theme takes a Nom marker, Experiencer a Top marker. In its concrete sense, Goal must take a Goal/dative marker, not a Nom marker as in (42d). Even though the psychological sense of the expression is obvious in (42c) and thus the Nom marker is possible for Mary the new Theme, still the Goal/dative marker instead of the Nom marker for it can appear because of the original locomotive verb *ka-ta* 'go.' The verb in its psychological sense appears only with the first person but not in the third/second in Present (42c) because of the subjectification constraint. This kind of Experiencer-psychological sense of the verb cannot be in progressive (42a). Such psychological nouns as *tongceng* 'sympathy' can also form a psychological predicate with the verb .

Let us consider some English facts of psychological verbs turned action verbs to find out common principles. Observe:

(43) Mary's presence is building (up) tension among the other faculty.
(44) Tension is building (up).

The accomplishment verb *build* is used as a causative psychological verb in (43) and as a middle voice intransitive verb in (44). The relation between the two, therefore, can be likened to that between the causative and inchoative/unaccusative senses of the verb *break* or *sink*. One important thing to notice here, however, is the change from accomplishment to non-accomplishment in (43) and all the similar cases of change to abstract/psychological senses. The expression *building tension*, differently from *building a house*, does not have an end-point and thus is not 'quantized' in Krifka's (1997) sense. Modification by 'completely' is not appropriate both in English and Korean. Such a psychological state noun as 'tension' seems to be a sort of mass noun like 'pressure,' even though it is 'cumulative' in this context and brings about a gradual change of mental state. 'Mary's presence'1024 is an event NP and the causation involved here is a non-agentive and non-dynamic abstract process. The middle voice in (44) is only possible with nouns of mass or abstract/psychological (i.e., 'Non-quantized') things as subject. Furthermore, Expeiencers of tension are general people rather than a definite person. In the case of non-psychological concrete verb, the middle voice expression 'A house is building' is impossible.

On the other hand, typical accomplishment verbs such as *break* and *destroy* are argued by van Voorst to be still accomplishment verbs even in their psychological reading. Consider:

(45) These pictures broke his resistence (in five minutes).
(46) His remarks destroyed my happy mood (in an hour).

However, the reason given, namely, 'inclinations' (Ryle 1949) are object-like and can undergo a change of state or be manipulated seems inadequate. Unlike van Voorst, I would argue that the reason is that differently from *build (up)*, these and other removal or annihilation verbs such as *dispel* may show a clearer culmination point regardless of whether the direct object is physical or psychological. Observe:

(47) His laughter dispelled tension and fear.

Those psychological state nouns like 'happy mood,' 'tension,' and 'fear' can hardly be said to be 'permanent inclinations' but examples (45)-(47) tend to maintain the characterisitcs of accomplishment verbs. The contextually delimited toatal quantity is affected and disappears as a consequence. As van Voorst himself claims, agentivity may not play any significant role in the aspectual structure, but it serves as a good sign of process, and the above examples, involving event subjects, can have agentive subjects, though there may not be any beginning point or process as clear as in typical concrete accomplishments. Therefore, when we apply the adverb 'almost', in its 'failed-to' interpretation, or its Korean equivalent -(*u*)*l ppon ha-ta* to such sentences, it appears that the end point fails to occur (with no beginning point felt) in the relevant events. In other words, psychological accomplishments (via metaphor) sound like achievements.

Let us consider analogous Korean examples that behave as accomplishment verbs in their psychological reading:

(48) Mary-ka kuron mal -lo nae kibun -ul capchi -oss -ta
-Nom such word with my mood -Acc destroy Pst Dec
'Mary destroyed my mood with such remarks.'
(49) kuron nongdam -i punwiki -rul kkaetturi -o
such joke -Nom atmosphere-Acc break
'That kind of joke breaks the atmosphere.'

(50) cosakwan-i sajin-ul po-i -o siwija -uy cohangsim -ul kkokk-oss-ta
investigator-Nom photo-Acc show by demonstrator of resistance -Acc broke
'The investigator broke the demonstrator's resistance by showing a photo.'

Such accomplishment verbs are used in their psychological reading with the same argument and aspectual structure as in their physical sense in Korean as well, even though they tend to become achievement-like because of no clear beginning points in their events. In (47), the verb can be modified by such expressions as 'in ten minutes' and 'halfway'/'completely' .

Quite a few activity/achievement verbs such as *tto-oru-ta* 'arise' becomes psychological verbs as achievement verbs meanming 'come to mind,' etc. as in (38), via metaphorical processes. Such activity verbs as *strike/hit* in English also show metaphorical extensions.

Consider:

(51) The behavior of those people strikes/hits me as odd.
(52) ??The behavior of those people is striking/hitting me as odd.

Example (51) denotes a transition in mental states as a new achievement verb. The change of mental state in the Experiencer 'me' should be punctual but its result state remains as to be reflected in the Present form of the verb. The Progressive aspect is impossible as with most achievement verbs but van Voorst is a bit contradictory in treating a progressive sentence like (52) both as fully grammatical and as an achievement verb sentence (?? is mine, reflecting the intuition of several native speakers including R. Campbell). An informal expression in Korean shows a similar change from physical to psychological, i.e., *kol ttaeri-ne* '---strikes me on the brain' = > 'strikes me as absurd'.

Many psychological state nouns both in Korean and in English occur with ordinary aspectual verbs and the verbs get metaphorically extended senses to be associated with psych-nouns. Observe:

(53) John-un Mary-wa sarang -e ppaji -oss -ta / chwiha-yo iss -ta
-Top -with love in fall Pst Dec indulged is Dec
'John fell/indulged in love with Mary.'
(54) Mary-nun Bill -e taehan cungosim-uro/-e/-i pultha -ass -ta
-Top -against hatred with/to blaze Pst Dec
'Mary(' mind) blazed with hatred to Bill.'
(55) sarang -i colcong -e talhae -ss ta/ kkut -na -ass -ta
love -Nom culmination -at reached ended
'The love reached the climax/ended.'

In (53), the verb *ppaji-ta* 'fall in', which is an achievement, unaccusative verb, becomes psychological by metaphor when the locative Goal is a psych-noun like 'love.' Even without the psych-noun, the verb can be metaphorically extended to mean 'indulge in,' as in *John-un Mary-eke ppajio iss-ta* '(lit.) John fell into Mary and is in that state.' The verb *chwiha-ta* 'get drunk' is similar. The former verb *ppaji-ta* pays a little more attention to the inchoative part of the whole event of 'fall in love' than the latter verb. Both verbs, however, show the result state involved; the former by the Perfective in the past marker and the latter by the complex result expression ('exist by being indulged'). The 'resultative' can be modified by the adverb *acikto* 'still,' the state being salient (*acikto pajio iss-ta/chwihae-iss-ta*), but not the Perfective past (?**acikto paji-oss-ta*), as previously discussed. Thus we can feel and express the beginning part of the emotional state and, furthermore, its continuation by the Progressive (in Korean and Japanese) or Present. (54) shows the process-like part of an emotion. (55) also shows the process-like part and the ending part. The verb *sarangha-ta* 'love' in particular can almost take even the process-Progessive form *-V-ko iss -nun cung-i-ta*, though a little awkward. The Sino-Korean word for 'love', i.e., *yonae*, however, can take the process-progressive morpheme *-cung*, formimg *yonae-cung-i-ta* or *yonae-ha-ko iss-nun-cung-i-ta* 'having a love affair'. It can also be modified by *yolyolhi* 'vehemently' without becoming a verb of

physical love. It is felt to be a process, even though it may be basically a mental or emotional activity in Korean. Likewise, aspectual behavior is sometimes lexically determined.

In first language acquisition studies, the predominent portion (more than 90%) of initial past forms acquired in different languages (Antinucci and Miller 1976 in Italian, Shirai 1996 and Shirai and Anderson 1995 in English and Japanese, Lee 1997 in Korean) turned out to be achievement (and accomplishment) verbs. In other words, telic verbs are associated with perfective past in child acquisition. Psychological predicates are more frequently associated with present in Korean. Very early words in Korean include sensation adjectives such as *a tto!* 'ah, hot', *apho* 'It hurts' in the Present and early achievement verbs in the Past are dynamic ones (Lee 1993).

4. Conclusion

Psych-predicates in general have been argued to denote events (or at least eventualities) involving changes and/or end-points. However, there is a distinction between emotion verbs and perception/cognition verbs. The former largely behaves more like states (with the flavor of process/activity), whereas the latter largely behaves like achievements, with no process marked leading up to the culmination point in the 'in X minutes' test. Van Voorst failed to make this distinction and failed to provide any evidence to show that emotion verbs, which have no telic end-points, though denoting loosly 'bounded' events, are also achievement verbs. We have also shown how achievement psych-verbs manifest their result states either by the Past marker in the sense of Perfective relevant to the Present or by the complex result state expression (analogous to BE+PP). If we interpret even emotion/sensation predicates as denoting states that resulted from the previously initiated or ended achievements, then we may be able to generalize all the psych-predicates as achievements, as van Voorst claims, but this claim is not well supported or accepted; the initiation point of some emotional or sensational state does not seem to form a well-defined or linguistically inherent end-point of an achievement event. Psychological achievements are 'resultatives' (if they occur with *-ko iss-ta* 'be in the state of') in the sense of Nedjalkov and Jaxontov (1988), as states implying previous 'mental' events. Particularly in Korean, the sense of state continuation is becoming stronger even in the case of psychological achievements (cognition), not only emotions/sensations.

This paper has also shown how verbs of physical sense including activity, accomplishment and achievement are turned to verbs of psychological sense via the processes of metaphor and metonymy. When verbs get an extended psychological sense, they tend to maintain the original aspectual structure, even though boundaries between temporal stages/points become blurred. As a general priciple, if a verb becomes abstract via metaphor/metonymy, its argument structure gets reduced (Lee 1993). Thus, an intransitive use of *build (up)* becomes possible. The newly developed psychological verbs are largely subject to the existing psych-verb pattern in grammatical behavior, even though there remains some tendency of maintaining the original physical verb case relations, producing a psychological sense in physical terms.

Psychological verbs/adjectives except verbs such as 'know' or *al-ta* 'know' behave as stage-level predicates in general (see footnote 4). However, the impacts of psychological processes are rather prolonged and the thematic role of Experiencer normally becomes Topic, differently from physical stage-level predicates, in Korean.

Psychological predicates reveal diverse grammatical behaviors as either states(/processes) or achievements or even as accomplishments (metaphorical) aspectually and it is clear that they do not behave uniformly as states or uniformly as achievements. Further investigations are required to better understand the relations between mental states/activities/events and their grammatical behaviors in different languages for general or universal properties of psych-predicates.

Endnotes

1. At the initial stage of the paper, I benefited from my discussion of the subject with Ik-Hwan Lee and Bruce Tesar in 1994. A. Herskovits' draft of a paper on motion predicates (1997) was also helpful. I am also grateful to Lenja Kulikov, who has been so

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2. The sentence becomes more natural if the adjective has the inchoative *-ci* 'become,' as in *miw-o-ci-oss-ta* 'became abhorrent.' This is because emotion involves a slow and gradual process.

3. A sentence corresponding to (16) in Japanese has the same sensation sense and a third person cannot replace the first person without creating oddity, according to Noma Hideki. And the sentence in Japanese, if in the progressive form (no separate resultative form possible in Japanese), becomes descriptive. The subjectification of descriptive adjectives such as 'long,' 'short,' and 'fitting' is similarly found in Japanese, according to him.

4. Kratzer (1990), as van Voorst (1992) indicates, distinguishes between two different predicates for the verb *know* (assigning a 'stage-level predicate' to *know* in c) to explain the following dichotomy in grammaticality:

a. *When Mary knows French, she speaks it well.
b. When Mary speaks French, she speaks it well.
c. When a Moroccan knows French, she knows it really well.

However, in (a) 'Mary' is definite and 'know' is an individual-level predicate. Therefore, 'when' cannot be conditional. Some 'reason' instead must be presented here. On the contrary, in (c) 'a Moroccan' is indefinite and forms a choice function and a conditional easily. Then, *know* is, I would say, still an individual-level predicate in (c).

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