TWO TYPES OF STATES IN KOREAN: EXPERIMENTAL L1 EVIDENCE[*]

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Abstract

This paper establishes that there are two classes of states in Korean: pure states vs. so-called inchoative states. We argue that pure states (e.g. *celmta* 'young', *pikonhata* 'tired') describe a homogeneous state without an inherent transition, while inchoative states (e.g. *nulkta* 'old', *cichita* 'tired') describe a state with an inherent transition into that state. Since these two classes of states have different inherent aspectual properties, when combined with the perfect marker *-ess*, they yield different temporal readings. That is, with pure states, *-ess* yields an anterior reading, while with inchoative states, it yields a simultaneous reading with respect to the utterance time. This paper further discusses whether Korean children aged from four to six can assign different temporal readings of *-ess* to pure states and inchoative states.

1. Introduction

In the literature, the most well-known aspectual classification is proposed by Vendler (1967) where four aspectual classes are distinguished: states, activities, accomplishments and achievements (see also Dowty 1979, Smith 1997, Carlson 1994 many others). In the present study, we are particularly interested in the class of states. States (e.g. *know, believe, love, be happy*) describe certain properties or continuous situations which hold all throughout a given period of time. They do not entail any change or transition.

States in Korean have been argued to divide into two sub-classes: pure states vs. so-called inchoative states[1] (cf. Chung 2005, Choi 2015), as given in (1).

(1) a. PS: *celmta* 'young', *pikonhata* 'tired', *pisushata* 'similar', *nalssinhata* 'thin', …etc
b. INS: *nulkta* 'old', *cichita* 'tired', *talmta* 'alike', *maluta* 'thin', …etc.

At first glance, it seems that both classes of predicates appear to describe certain properties or states of individuals or objects. For instance, both the pure state predicate *celmta* 'young' and the inchoative state predicate *nulkta* 'old' describe a property of age.

When combined with a past marker *-essess* (cf. Chung 2005), both pure states and inchoative states yield a typical stative reading, as illustrated in (2a-b).

(2) a. Sue-ka caknyeney/hantongan-unnalssinha-**essess**-ta.[2]
Sue-NOM last.year/for.a.while-TOP thin-PAST-DEC
'Sue was thin last year/for a while.' [pure state]

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[1] Note that inchoative states have been observed in several other languages such as Sḵwx̱wú7mesh (Bar-el 2005), Sənčáθən and Japanese (Kiyota 2008) as well as Spanish reflexive psychological verbs (Marín & McNally 2011).

[2] The following abbreviations are used in this paper: ACC=accusative, DEC=declarative, INCHO=inchoative, NOM=nominative, PAST=past, PFCT=perfect, PRES=present, TOP=topic.

b. Sue-ka caknyeney/hantongan-unmalu-**essess**-ta.
Sue-NOM last.year/for.a.while-TOP thin-PAST-DEC
'Sue was thin last year/for a while.' [inchoative state]

In (2a-b), the pure state predicate *nalssinha* 'thin' and the inchoative state predicate *malu* 'thin' respectively describe that the state of Sue's being thin happened with a temporal duration prior to utterance time and no longer holds at utterance time. As such, they give rise to a past stative reading.

However, when combined with a perfect marker *-ess* (cf. Chung 2005, Choi 2015), pure states and inchoative states crucially yield different temporal readings. With pure states, *-ess* yields a past reading, allowing only modification by past time adverbials such as *cinancuey* 'last week', as shown in (3a). On the contrary, with inchoative states, *-ess* yields an on-going result state reading, allowing only modification by present time adverbials such as *cikum* 'now', as illustrated in (3b).

(3) a. Sue-ka **cinancuey/*cikum** aphu-**ess**-ta.
Sue-NOM last.week/now sick-PFCT-DEC
'Sue was sick last week.' / *'Sue is sick now.' [pure state]
b. Sue-ka **cikum/*cinancuey** hwana-**ss**-ta.
Sue-NOM now/last.week angry-PFCT-DEC
'Sue is angry now.' / *'Sue was angry last week.' [inchoative state]

The fact that pure states and inchoative states do not pattern together with respect to the perfect marker *-ess* suggests that these two classes of states do not have the same temporal structures.

This paper aims to establish that inchoative states do not belong to the class of pure states (i.e. typical stative predicates), but rather they constitute a distinct class of predicates that the standard classification does not include. We provide novel experimental evidence from Korean child language for the claim.

This paper is structured as follows. In Section 2, we invoke a set of diagnostics allowing us to distinguish pure states and inchoative states. Based on the results of these diagnostics, we also provide a proposal on the lexical meaning of the two classes of states in Korean. In Section 3, we discuss temporal interpretation of the two classes of states. Reviewing the fact that the perfect marker *-ess* attached to pure states and inchoative states yields different temporal readings, we demonstrate that an anterior (i.e. past) and a simultaneous (i.e. on-going present) readings of the two classes of states are not expressed in the same way. Section 4 deals with the issue of whether Korean children can distinguish the two classes of states in temporal contexts. Specifically, we present an experiment designed to investigate whether children can assign different temporal readings of the perfect marker *-ess* to the two classes of states. Finally, Section 5 summarizes the main points of this paper.

2. Pure states vs. Inchoative states

2.1. Diagnostics distinguishing the two classes of states

Pure states and inchoative states can be distinguished with respect to several diagnostics. In this section, we particularly invoke three diagnostics (cf. Choi 2015 for other diagnostics): (i) the present marker *-nun*/*-Ø*; (ii) the inchoative marker *-e ci*; (iii) the addition of a punctual adverbial clause.

2.1.1. Present marker *-nun*/*-Ø*

First, pure states and inchoative states can be morphologically distinguished with respect to the present marker *-nun*/*-Ø*. It has been traditionally argued that verbal predicates in Korean can be distinguished from adjectival (or non-verbal) predicates in that they take different present morphemes. Verbal predicates take an overt present marker *-nun* (or its allomorph *-n*), while adjectival predicates take a zero morpheme *-Ø* (cf. Soh 1995, Han 1996, Chung 1999 many others). This is illustrated in (4).

(4) a. Minho-nun cikum sakwa-lul mek-**nun/*Ø**-ta.
Minho-TOP now apple-ACC eat-PRES-DEC
'Minho is eating/eats an apple now.' [verbal predicate]
b. Minho-nun cikum haksayng-i-**Ø/*nun**-ta.
Minho-TOP now student-be-PRES-DEC
'Minho is a student now.' [nominal predicate]

As can be seen in (4), the verbal predicate *mek* 'eat' takes the overt present marker *-nun*, while the nominal predicate *haksayng* 'student' does not take it.

Let us now turn to the two classes of states. Consider the examples given in (5).

(5) a. Minho-ka pikonha-**Ø/*nun**-ta.
Minho-NOM tired-PRES-DEC
'Minho is tired.' [pure state]
b. Minho-ka cichi-**n/*Ø**-ta.
Minho-NOM tired-PRES-DEC
'Minho is getting tired.' [inchoative state]

As can be seen in (5a), pure states do not take the overt present marker *-nun*. Specifically, in (5a), the bare form of the pure state predicate *pikonha* 'tired' describes a state of Minho's being tired holding at the utterance time. On the contrary, inchoative states felicitously combine with the overt present marker *-nun* like other verbal predicates, as shown in (5b). The contrast in (5a-b) suggests that inchoative states should be distinguished from pure states since pure states are adjectival predicates, while inchoative states are verbal predicates.

2.1.2. Inchoative marker *-e ci*

Second, the two classes of states show different behavior with respect to the overt inchoative marker *-e ci.* In Korean, the inchoative verb entailing a change-of-state is derived by the addition of the inchoative morpheme *-e ci* (roughly translated as 'BECOME state') (cf. Chung 2005, Joo 2008, Lim 2010). To illustrate, consider the examples given in (6).

(6) a. Ku maktayki-ka kil-ess-ta.
that stick-NOM long-PFCT-DEC
'That stick was long.'
b. Ku maktayki-ka kil-**e ci**-ess-ta.
that stick-NOM long-INCHO-PFCT-DEC
'That stick became long(er).'

(Lim 2010)

The pure state *kil* 'long' in (6a) describes a state of being long without entailing a change-of-state. In (6b), the inchoative marker *-e ci* marking the addition of a BECOME operator to the event structure, affixes to the pure state predicate *kil* 'long' and as such, it gives rise to an inchoative interpretation where a transition from NOT BEING LONG to BEING LONG takes place and the described state starts to hold at the utterance time (i.e. That stick is long at the utterance time).

However, the inchoative marker *-e ci* cannot take inchoative states as its argument, as shown in (7).

(7) a. Sue-ka hwana-ess-ta.
Sue-NOM angry-PFCT-DEC
'Sue got angry.'
b. Sue-ka hwana-***e ci**-ess-ta.
Sue-NOM angry-INCHO-PFCT-DEC

In (7a), the inchoative state *hwana* 'angry' on its own gives rise to an inchoative reading where the transition from NOT BEING ANGRY to BEING ANGRY occurs and the described (resultant) state holds at the utterance time (i.e. Sue is angry at the utterance time). In (7b), the inchoative state cannot felicitously co-occur with *-e ci*, unlike pure states. The ungrammaticality of adding *-e ci* to the inchoative state in (7b) suggests that inchoative states are inherently inchoative, that is, they have an initial zero-marked BECOME operator in their lexical meaning, blocking the addition of another, overt BECOME operator.

2.1.3. Addition of a punctual adverbial clause

Third, pure states and inchoative states do not pattern together with respect to the addition of a punctual adverbial clause. The addition of a punctual adverbial clause can induce three readings according to the aspectual properties of predicates (cf. Bar-el 2005), as given in (8).

(8) a. INCEPTIVE (inchoative) reading: the described eventuality in the main clause begins at the same time as the event described by the punctual adverbial clause

b. MEDIAL (overlapping) reading: the described eventuality takes place simultaneously with the event described by the punctual adverbial clause

c. CULMINATING reading: the described eventuality ends simultaneously with the event described by the punctual adverbial clause

If the inceptive (inchoative) reading is the only available reading, then the matrix predicate contains an initial boundary (i.e. the onset of the described eventuality) in its meaning. Let us first consider what happens with inchoative states.

(9) Juno-nun [ku sosik-ul tul-ess-ul ttay] hwana-ss-ta.
Juno-TOP that news-ACC hear-PFCT-when angry-PFCT-DEC
'Juno was angry when he heard that news.' [inchoative state]
a. ✓Juno was not angry before, but he became angry because of the news.'
b. ×Juno was already angry when he heard the news.'

The sentence (9) contains an inchoative state predicate *hwana* 'angry' in the main clause co-occurring with a punctual clause. The utterance (9) can be accepted only under an inceptive context (9a): at the time where the punctual event occurs, the state described by the predicate in the main clause begins simultaneously. A medial reading (9b) is not available for the sentence. It suggests that inchoative states in Korean refer to the onset of the state they are associated with, as part of their meaning.

However, pure states do not show the same behaviour as inchoative states with respect to this diagnostic. Consider the following example.

(10) Juno-nun [nay-ka cenhwahay-ss-ul ttay] aphu-ess-ta.
Juno-TOP I-NOM call-PFCT-when sick-PFCT-DEC
'Juno was sick when I called him.' [pure state]
a. ✓Juno was already sick when I called him.
b. ×Juno was not sick before, but he got sick when I called him.'

The sentence (10) containing a pure state predicate *aphu* 'sick' can be accepted only under a medial context (10a). It does not describe a change-of-state from NOT BEING SICK to BEING SICK as in (10b). The unavailability of an inceptive reading for the sentence (10) suggests that, unlike inchoative states, pure states in Korean describe a state without referring to the onset (i.e. an initial transition) of the state they are associated with.

2.2. Proposal on the lexical meaning of the two classes of states

Based on the results of the diagnostics discussed so far, we claim that pure states describe a homogeneous state without involving an inherent transition or a change, while inchoative states describe a state with an inherent transition (i.e. BECOME) into that state. Specifically, the transition entailed in inchoative states is represented as the ONSET of the state that they are associated with (following Bar-el 2005). Consequently, pure states and inchoative states do not have the same event representation, as provided in (11).

(11) a. (pure) States: $\lambda e.P(e)$ (cf. Dowty 1979, Rothstein 2004)
b. Inchoative states: $\lambda e.\exists e_1 \exists e_2[e =^{S} (e_1 \sqcup e_2) \wedge (\text{BECOME}(P))(e_1) \wedge P(e_2)]$ (cf. Bar-el 2005)

In (11a), pure states have a simplex event structure in that they contain only a state (e), which is durative. On the other hand, in (11b), inchoative states have a complex event structure in that they contain an initial BECOME sub-event (e_1) followed by a (resultant) state (e_2) which is durative. As such, pure states yield a state meaning, while inchoative states yield an inchoative meaning.

With the proposal in mind, let us now review the temporal readings of the perfect marker *-ess* that we briefly observed in Section 1.

3.2. Temporal readings of the perfect marker *-ess*

As we saw in (3a-b) discussed in Section 1, pure states and inchoative states crucially yield the different temporal readings. Assuming that the suffix *-ess* is a perfect marker (cf. Lee 1991, Han 1996, Chung 2005) yielding an anterior (i.e. past) reading or a simultaneous (i.e. on-going result state) reading with respect to utterance time (i.e. reference time in simple clauses), we argue that the distribution of the temporal readings of *-ess* is determined by the event structure of predicates with which it occurs (cf. Choi 2010).

With pure states (PS), *-ess* yields an anterior (ANT) reading, allowing only modification by past time adverbials as shown in (3a) which is repeated in (12a) below. Note that, as illustrated in (5a) and (12b) above, a simultaneous reading (SIM) of pure states is expressed by the null present marker *-Ø*.

(12) a. Sue-ka **cinancuey/*cikum** aphu-**ess/essess**[3]-ta.
Sue-NOM last.week/now sick-PFCT/PAST-DEC
'Sue was sick last week.' / *'Sue is sick now.' [PS+*-ess/essess*: ANT reading]

b. Sue-ka **cikum/*cinancuey** aphu-**Ø**-ta.
Sue-NOM now/last.week sick-PRES-DEC
'Sue is sick now.' / *'Sue was sick last week.' [PS+*-Ø*: SIM reading]

With inchoative states (INS), *-ess* yields a simultaneous reading, allowing only modification by present time adverbials as shown in (3b) which is repeated in (13a) below. Note that, as illustrated in (13b), an anterior reading of inchoative states is expressed by the real past marker *-essess* (cf. Chung 2005).

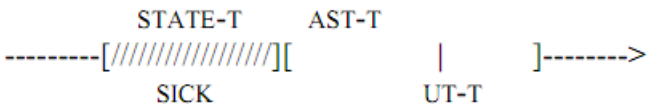
(13) a. Sue-ka **cikum/*cinancuey** hwana-**ss**-ta.
Sue-NOM now/last.week angry-PFCT-DEC
'Sue is angry now.' / *'Sue was angry last week.' [INS+*-ess*: SIM reading]

b. Sue-ka **cinancuey/*cikum** hwana-**ssess**-ta.
Sue-NOM last.week/now angry-PAST-DEC
'Sue was angry last week.' / *'Sue is angry now.' [INS+*-essess*: ANT reading]

To account for the different temporal readings of the perfect marker *-ess*, I adopt Demirdache & Uribe-Etxebarria (2007)'s temporal syntax where Tense/T° and Aspect/Asp° are spatiotemporal ordering predicates projecting their time denoting arguments in the syntax: (i) T° orders its external argument (utterance time (UT-T) in matrix clause) relative to its internal argument (assertion time (AST-T); Klein 1994); (ii) Asp° orders its external argument (AST-T) relative to its internal argument (event time[4] (EV-T)). D & U-E argue that the perfect is a spatio-temporal predicate with the meaning of after. More specifically, *present* orders the UT-T **within** the AST-T and then, *perfect* orders the AST-T **after** the EV-T.

Adopting D & U-E's account, we propose that the perfect marker *-ess* orders ***immediately after*** the time interval in its immediate scope, i.e. the EV-T (or STATE-T). First, as we claimed, pure states have a simplex event structure (cf. (11a)). When attached to a pure state predicate, *-ess* orders the AST-T immediately after the STATE-T and as such, an anterior reading is generated (i.e. the STATE-T is construed as past-shifted relative to the UT-T). This is illustrated in (14).

(14) Sue sick+*-ess*. → Sue was sick. [pure state]

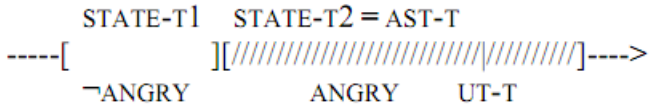


[3] Notice that the double form *-essess* affixed to pure states patterns with the perfect marker *-ess* in yielding an anterior interpretation.

[4] The internal argument of Asp° (i.e. VP) can be assigned either a simplex event structure (EV-T), or a complex event structure consisting of two sub-events (e.g. process and result state for telic predicates) according to the predicate type under consideration. Each sub-event projects the time argument defining its running time (e.g. process-time (EV-T1) and result state-time (EV-T2)). See D & U-E (2007) for the details.

Inchoative states have a complex event structure of consisting of two sub-events (cf. (11b)). When attached to an inchoative state predicate, *-ess* orders the AST-T immediately after the interval defining the STATE-T1 of the inchoative state, thus focusing the time defining the result state (STATE-T2) and as such, a simultaneous reading is generated. This is illustrated in (15).

(15) Sue angry+*-ess*. → Sue is angry. [inchoative state]



Thus, the simultaneous reading of inchoative states suffixed by *-ess* is further evidence for the presence of a complex event structure of inchoative states (compared to that of pure states) in Korean.

Now, we ask ourselves an acquisition question of whether Korean children are aware of the fact that the combination between the perfect marker *-ess* and the two classes of states yields different temporal readings. We explore this question by an experiment to which the next section is devoted.

4. Experiment

4.1. Participants

The study involved thirty Korean children in total (ten 4-year-olds (from 4;3 to 4;8 with a mean of 4;7), ten 5-year-olds (from 5;0 to 5;7 with a mean of 5;3) and ten 6-year-olds (from 6;0 to 6;11 with a mean of 6;4)) and twenty Korean adults as the control group. All children and adults who participated in the task were native Korean speakers.

4.2. Design

A truth-value judgment task (TVJT; cf. Crain & Thornton 1998 many others) was carried out to investigate whether Korean children can distinguish the two classes of states in the anterior and the simultaneous temporal contexts. Four experimental conditions were constructed in a 2x2 design with predicate type (PS vs. INS) and context type (ANT vs. SIM) as factors. In the ANT context where the target state occurred prior to utterance time and is no longer true at utterance time, both PS and INS were proposed. Likewise, in the SIM context where the target state holds at utterance time, the same two types of states were proposed.

Each participant was presented with sixteen target items (four items per condition) interspersed with sixteen distractors and control items, for a total of thirty-two items. Children watched stories acted out by means of an animated PowerPoint slide show on a laptop screen. At the end of each story, a puppet made a statement in answer to the lead-in question asked by the experimenter. The participants' task was to judge whether the puppet's statement was true or false in the given context. They were also asked to volunteer a target sentence to describe the given context. This follow-up production task was done to ascertain whether they accepted or rejected the test sentences for the expected reasons. (16)-(19) give examples of the experimental stimuli translated into English.

(16) **Condition 1: PS+*-ess* in the ANT context**

Scenario: Sue caught a cold. Sue is very sick with fever and her mother worries about Sue. So, she takes Sue to hospital to see the doctor. In the hospital, Sue got an injection and took medicine. The next morning, Sue got over her cold and she is feeling well.

Lead-in question: How was Sue?
Test sentence: Sue-ka aphu-**ess**-eyo.
Sue-NOM sick-PFCT-DEC
'Sue was sick.'
Expected answer: Yes

(17) **Condition 2: INS+-*ess* in the ANT context**
Scenario: Ppororo is very angry. What could we do to calm down Ppororo? Look! Eddy who is Ppororo's best friend came to play with Ppororo. Eddy says: "Hey, Ppororo! Why are you so angry? Calm down and let's play a game with me." Now, Ppororo is fine. And this is thanks to Eddy!
Lead-in question: How was Ppororo?
Test sentence: Ppororo-ka hwana-**ss**-eyo.
Ppororo-NOM angry-PFCT-DEC
'Ppororo is angry.'
Expected answer: No

(18) **Condition 3: PS+-*ess* in the SIM context**
Scenario: Juno likes to play with his friends, painting with his hands. Juno has paint on his hands and makes handprint on a paper. Juno wants to show the handprint paper to his mom. But, look! His hands are too dirty. Juno goes to the bathroom and washes his hands with soap and water. Now, his hands are clean.
Lead-in question: How are Juno's hands?
Test sentence: Juno-uy son-i kkaykkuha-**ess**-eyo.
Juno-GEN hand-NOM clean-PFCT-DEC
'Juno's hands were clean.'
Expected answer: No

(19) **Condition 4: INS+-*ess* in the SIM context**
Scenario: The weather is very nice today. Piglet who likes sunlight goes out and takes a walk. Suddenly, the sky is filled with rain clouds. It is raining! Piglet didn't bring his umbrella. So, he gets all wet in the rain.
Lead-in question: How is Piglet?
Test sentence: Akitoeci-ka phi-ey cec-**ess**-eyo.
Piglet-NOM rain-in wet-PFCT-DEC
'Piglet is wet in the rain.'
Expected answer: Yes

4.3. Results
4.3.1. Overall results

Table 1 below presents the overall results of the control group and children.

Table 1. TVJT: overall results of adults vs. children (% of acceptance)

	ANT context		SIM context	
	PS	INS	PS	INS
Adults (n=20)	100	15	1.25	97.5
Children (n=30)	99.17	67.5	49.17	100

First of all, Korean adults, the control group, correctly assigned the ANT reading to PS and the SIM reading to INS: they correctly accepted PS (100% of acceptance), but rejected INS (15% of acceptance) in the ANT context. Likewise, they correctly accepted INS (97.5% of acceptance), but rejected PS (1.25% of acceptance) in the SIM context. Paired-samples t-tests revealed that the control group significantly distinguished INS from PS in both the ANT context ($t(19) = 12.350$, $p < .001$) and the SIM context ($t(19) = -35.184$, $p < .001$).

Overall, children accepted PS in the ANT context (99.17% of acceptance) and INS in the SIM context (100% of acceptance). However, their rejection rate of PS in the SIM context (50.83%) and that of INS in the ANT context (32.50%) do not seem to be enough to conclude that they assigned different temporal readings of *-ess* to each of the two classes of states.

In what follows, we break down the results by age groups to examine whether there is variation in adult-like and non-adult-like behavior across age groups.

4.3.2. Results by age groups

Table 2 below presents the results of children by age groups.

Table 2. TVJT: results of children by age groups (% of acceptance)

	ANT context		SIM context	
	PS	INS	PS	INS
4-year-olds (n=10)	100	97.5	77.5	100
5-year-olds (n=10)	97.5	72.5	57.5	100
6-year-olds (n=10)	100	32.5	12.5	100

First, as shown in Table 2 above, 4-year-olds did not show the expected performance in that they accepted both PS and INS in both the ANT context (100% of acceptance for PS, 97.5% of acceptance for INS) and the SIM context (77.5% of acceptance for PS, 100% of acceptance for INS). These high acceptance rates suggest that 4-year-olds were not sensitive to different temporal readings of *-ess* on PS and INS. In other words, they did not make a significant distinction between PS and INS in both the ANT context ($t(9) = 1.000$, $p = .343$) and the SIM context ($t(9) = -2.077$, $p = .068$).

5-year-olds performed better than 4-year-olds, but still did not show the expected target performance. Like the control group, 5-year-olds accepted PS in the ANT context (97.5% of acceptance) and INS in the SIM context (100% of acceptance). However, unlike the control group, they also accepted PS in the SIM context (57.5% of acceptance) and INS in the ANT context (72.5% of acceptance). Note that their unexpected acceptance rate of PS in the SIM (57.5%) is lower than that of 4-year-olds (77.5%). This relatively lower acceptance indicates that, unlike 4-year-olds, 5-year-olds distinguish PS from INS in the SIM context ($t(9) = -3.157$, $p = .012$). Likewise, 5-year-olds' unexpected acceptance rate of INS in the ANT context (72.5%) is lower than that of 4-year-olds (97.5%), but this acceptance rate per se is still high. In other words, 5-year-olds tended to accept both PS and INS in the ANT context, suggesting that they did not significantly distinguish the two classes of states in this context ($t(9) = 2.236$, $p = .052$). Thus, 5-year-olds' behavior can be summarized as follows: they distinguish the two classes of states at least in the SIM context, but not in the ANT context.

Let us now turn to 6-year-olds, who patterned with the adults control group. They correctly accepted PS in the ANT context (100% of acceptance) and INS in the SIM context (100% of acceptance). On the other hand, they mostly rejected INS in the ANT context (32.5% of acceptance) and PS in the SIM context (12.5% of acceptance), as expected. As such, 6-

year-olds significantly distinguished PS from INS in both the ANT context ($t(9) = 4.521$, $p = .001$) and the SIM context ($t(9) = -8.720$, $p < .001$), like adults.

The question arises as to why 5-year-olds distinguished the two classes of states in the simultaneous context, but not in the anterior context?

4.3.3. Children's patterns

Following their *yes/no* answers to the puppet's statements, children were asked to describe *what happened in the story?*. In order to achieve a better understanding of Korean children's knowledge of the distinction between the two classes of states, we considered children's production data in relation to the comprehension results. According to their behavior, we divided the children into three groups. The first group includes children who correctly assigned the relevant temporal reading of *-ess* to the two classes of states, as shown in (20).

(20) **Target-like pattern (overall: 30% of children)**

Context:	ANT		SIM	
	PS	INS	PS	INS
Comprehension:	yes	no	no	yes
Production:	*-ess*	*-essess*	*-Ø*	*-ess*

These children have perfectly acquired temporal interpretation of both pure states and inchoative states. That is, they have plausibly acquired the target-like semantics of the relevant tense/aspect markers (i.e. *-ess* vs. *-essess* vs. *-Ø*). As a result, they distinguish the two types of states in both the anterior context and the simultaneous context respectively.

The second group includes children who totally failed to assign the relevant temporal reading of *-ess* to the two classes of states, as illustrated in (21).

(21) **Non-target-like pattern (overall: 16.67% of children)**

Context:	ANT		SIM	
	PS	INS	PS	INS
Comprehension:	yes	yes	yes	yes
Production:	*-ess*	*-ess*	*-ess*	*-ess*

These children have not acquired temporal interpretation of both pure states and inchoative states, yet. They are unable to distinguish the two types of states in both the anterior context and the simultaneous context. Crucially, their knowledge of *-ess* is not adult-like because it seems to be specified as having either an anterior or a simultaneous reading regardless of the type of predicate.

The third group includes children who were accurate with pure states, but were inaccurate with inchoative states, as shown in (22). We refer the children of this group as 'partially target-like children'.

(22) **Partially target-like pattern (overall: 53.33% of children)**

Context:	ANT		SIM	
	PS	INS	PS	INS
Comprehension:	yes	yes	no	yes
Production:	*-ess*	*-ess*	*-Ø*	*-ess*

These children have fully acquired temporal interpretation of pure states. That is, they have acquired the target-like semantics of *-ess* and *-Ø* (i.e. *-ess* is specified as yielding an anterior reading, and *-Ø* is specified as yielding a simultaneous reading of pure states). However, they seem to have some problem with inchoative states because they accepted inchoative states combined with *-ess* in both the anterior and the simultaneous contexts. This leads them to make a distinction between pure states and inchoative states at least in the simultaneous context, but not in the anterior context.

Overall, 30% of the child participants showed target-like pattern, 16.67% of children non-target-like pattern, and 53.33% of children partially target-like pattern.

4.4. Discussion

In the previous section, the overall results of the TVJT showed that Korean children have some difficulties with the temporal readings of the perfect marker *-ess* on pure states and inchoative states. This seemed to be the case for 4-year-olds who seem to make no significant distinction between the two classes of states in both the anterior and the simultaneous context. It also seemed to be the case for 5-year-olds who made a significant difference between the two classes of states in the simultaneous context, but not in the anterior context. 6-year-olds, however, behaved like adults. Then, the question arose as to why some children distinguished the two classes of states in the simultaneous context, but not in the anterior context? In other words, why did children incorrectly accept inchoative states combined with *-ess* in the anterior context?

On the basis of the children's patterns that we found in light of the follow-up production data and the breakdown comprehension results, we argue that the children who showed the partially target-like pattern (cf. (22)) did not acquire the real past marker *-essess* which is the only possible form for an anterior interpretation of inchoative states. Due to the lack of *-essess*, these children are likely to generalize inchoative states combined with *-ess* for both an anterior and a simultaneous temporal interpretations.

Another question that arises as to why some younger children (i.e. non-target-like children) incorrectly accepted both pure states and inchoative states in both the anterior context and the simultaneous context. It could be either because they have a problem with the meaning of the perfect marker *-ess*, or because they have a problem with the distinction between pure states and inchoative states. To seek a plausible answer to this question, however, further experimental investigation is needed (*in progress*).

5. Conclusion

In this paper, we have distinguished the two classes of states in Korean, i.e. pure states and inchoative states. We argued that a pure state describes a property without referring to an inherent transition or change (i.e. typical stative predicates), while an inchoative state describes a property as well as the inherent transition (i.e. BECOME sub-event) into the described property. Since these two classes of states do not have the same properties, when

they are combined with the perfect marker *-ess*, they do not show the same behavior. With pure states that have a simplex event structure, *-ess* yields an anterior reading, while with inchoative states that have a complex event structure, *-ess* yields a simultaneous reading. Then, we provided novel experimental evidence from Korean child language for the distinction between pure states and inchoative states in temporal contexts. Our L1 acquisition results revealed that, overall, the distinction between the two classes of states seems to be acquired by children at the age of five and six. In particular, we found that 5-year-olds distinguished the two classes of states at least in the simultaneous context. We suggest that the reason why they did not make such distinction in the anterior context is related to the lack of the past marker *-essess* in their grammar. Thus, the results illustrate that pure states are acquired earlier than inchoative states in child language. This is not so surprising since pure states correspond to typical stative predicates that most languages have, while inchoative states correspond to a particular class of predicates that some languages have.

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