

Morphological directionality and event structure of the psych-alternation: the case of Spanish, Korean and Finnish

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Outline

1. Introduction
 - Experiencers across languages overview
 - Target languages overview phenomena
2. Psych verbs in Spanish
3. Psych verbs in Korean
4. Methodology
 - Semantic diagnostics on event structures
 - Culminativity test
 - Results
5. Beyond Spanish and Korean... Finnish
6. Theta-roles and Discussion
7. Summary
8. References

1. Experiencers across languages

- Psych verbs participate in a well-known alternation between Stimulus (STM) and Experiencer:

- (1) a. *We puzzled over Sue's remarks.*
b. *Sue's remarks puzzled us.*

(Landau, 2010:68)

Morphological structure of experiencer verbs

- (2) transitive EO basis → intransitive ES derivation
asustar 'frighten' *asustar-se* 'frighten-REFL'
(Spanish)
- (3) intransitive ES basis → transitive EO derivation
nollata 'get.surprised' *nolla-key hata* 'get.surprised-ADVR do'
(Korean)
- (4) intransitive ES basis → transitive EO derivation
hävetä 'be.ashamed' *häve-ttää* 'be.ashamed-CAUS'
(Finnish)

1. Experiencers across languages

- Finnish Double Derivation: ABSOLUTE BASE: *kiukku* ‘anger’

ES

↔

EO

INCH.

CAUS.

kiukku-untu-a ‘anger-INCH-INF’

kiuku-tta-a ‘anger-CAUS-INF’

kiuku-st-u-a ‘anger-FCAUS-INCH-INF’

‘get irritated’

‘irritate’

- Languages with a subclass of EO verbs with exceptional syntactic properties: linearization, passivization, binding, extraction, etc. (see Verhoeven, 2010, 2015; Temme & Verhoeven, 2016).

YES

German

Greek

Icelandic

Hungarian

INTRANSITIVIZING LS

No (at least for ACC)

Chinese

Turkish

Yucatec Maya

Korean

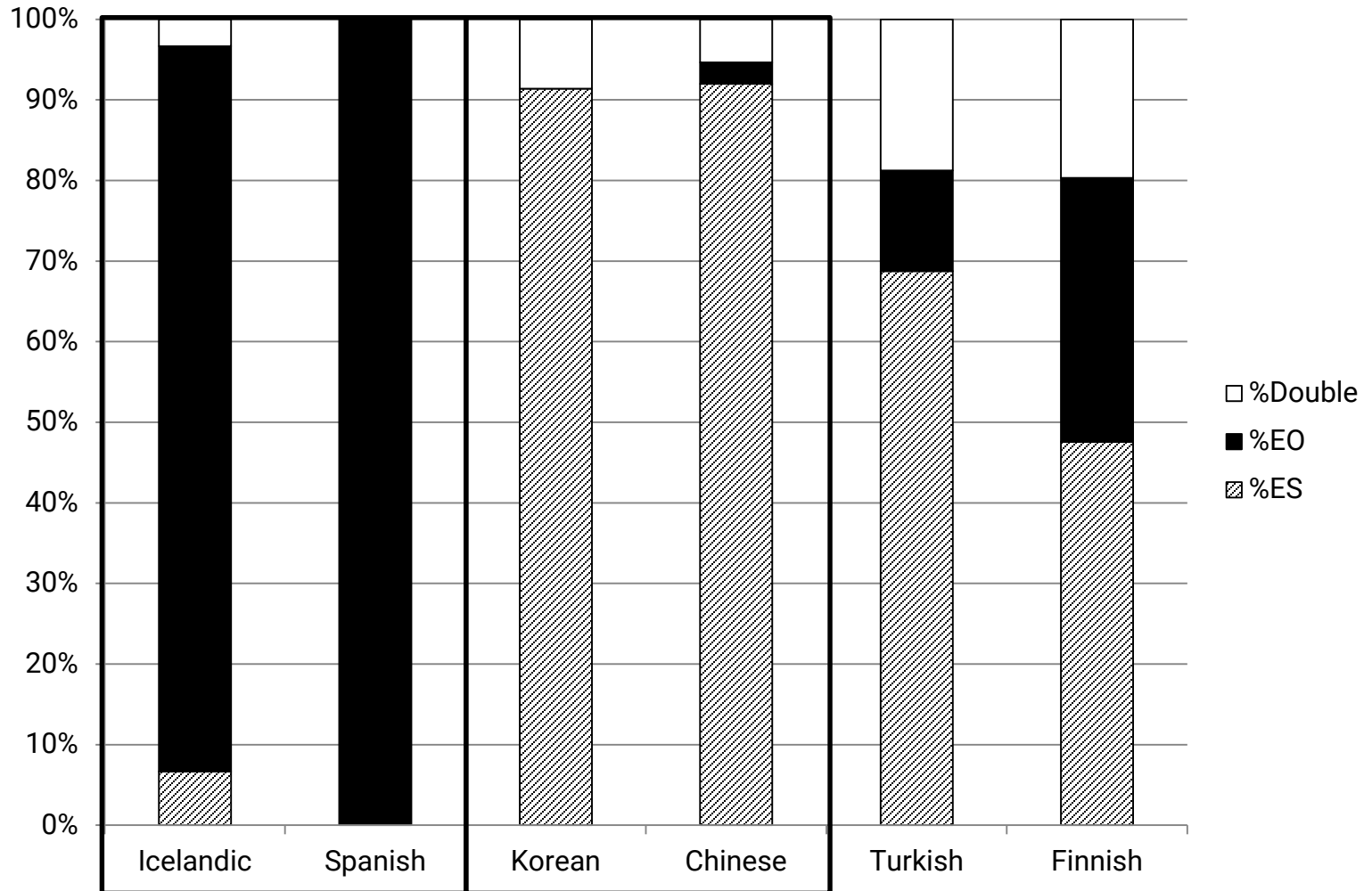
TRANSITIVIZING LS

1. Experiencers across languages-Method

- Items from an inventory of alternating psych verbs.
- Inventory created by a survey for each language featuring the basic emotion domains (i.e. happiness, sadness, anger, fear and disgust).
- Data coded for morphological and syntactic patterns.
- Current database contains around ~1200 items.
- Languages covered so far:
Icelandic, Spanish, Korean, Chinese, Finnish, Turkish, Bété.
- Ongoing languages: Cabécar, Hungarian, Tagalog, Georgian, Tamil, Greek, Romanian, Yucatec Maya, Khoekoegowab
- Goal: 30 languages from 5 macro-areas

1. Experiencers across languages-Method

FIGURE 1. VISUAL REPRESENTATION OF BASE DISTRIBUTION OF ACROSS SAMPLE LANGUAGES (N = 465 PAIRS) (ROTT & VERHOEVEN – EXPERIENCER PROJECT)



1. Experiencers across languages-Method

- Typological parameter: Intransitivization in IE languages vs. Transitivity in Asian languages (Nichols, 2004; Cysouw, 2011).
- Icelandic and Spanish are strongly detransitivizing. Both languages show clear psych effects (see e.g. Zaenen et al. 1985, Franco 1990, Landau 2010).
- Korean and Chinese are overwhelmingly transitivity. Their psych domain has been shown to pattern with canonical action predicates (Verhoeven 2010, Temme & Verhoeven 2015).
- Finnish bases are distributed across orientation patterns: ES bases around 1.5 times as frequent as EO bases.
 - Landau (2010) claims non-canonical behavior for psych passives
 - Linearization effects:

- (5) a. *Ystävä-n näkeminen innosta-a nais-ta.*
 friend-GEN seeing:NOM excite-3.SG woman-PTV
 `Seeing the friend excites the woman.'
- b. *Nais-ta innosta-a ystävä-n näkeminen.*
 woman-PTV excite-3.SG friend-GEN seeing:NOM
 `The woman is excited seeing the friend.'

1. Target languages overview phenomena

Directionality has an impact on the semantics:

- Korean:

ES

ADJ./VERB

culkep-ta

'pleased'

INCH.

culkew-e-ci-ta

'become pleased'

EO

CAUS.

culkep-key hata

'make pleased'

nolla-ta

'get surprised'

nolla-key hata

'make get surprised'

2 groups for ES basic items:
(Pure) States & Inchoative States

- Spanish

EO

(NON-)CAUS. VERB

divertir

'entertain'

asustar

'frighten'

ES

REFL.

divertir-se

'be/get entertained'

asustar-se

'get frightened'

INCH./PUNCT

divertir-se

asustar-se

2 groups for ES derived items:
Inchoative States & Punctual States

1. Target languages overview phenomena

Directionality has an impact on the semantics:

- Finnish:

ES

VERB

pelä-tä

'fear'

häve-tä

'be ashamed'

INCH./MOM

pelä-st-y-ä

'get frightened'

ila-htu-a

'get delighted'

hätk-ähtä-ä

'get startled'

EO

CAUS.

pelä-st-y-ttä-ä

'frighten'

häve-ttä-ä

'make be ashamed'

ila-hdu-tta-a

'delight'

hätk-ähdy-ttä-ä

'startle'

3 groups for ES basic items:

(Pure) States,
Inchoative States &
Punctual States

1. Target languages overview phenomena-Research questions

– Verbal aspectual ambiguities of psych verbs:

- **Type of psych verb:**

	PURE STATES	INCHOATIVE STATES	PUNCTUAL STATES
FINNISH	✓	✓	✓
KOREAN	✓	✓	
SPANISH		✓	✓

- **Type of STM**

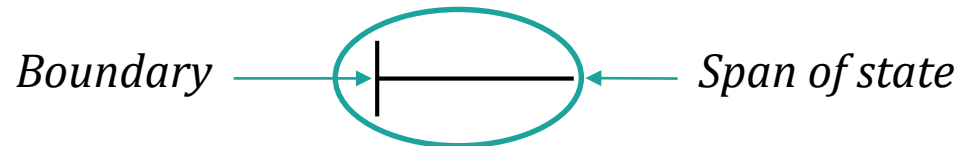
Agent vs. Causer vs. Target /Subject Matter

Considering the properties of the target languages:

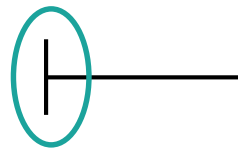
1. Is the event structure of the psych verbs in Spanish, Korean and Finnish similar in both alternants; i.e. ES and EO?
2. Does the morphological realization of psych verbs in Spanish, Korean and Finnish have an impact on their event structure?
3. How far do the thematic structures and (anti-)causativization of psych verbs in Spanish, Korean and Finnish bear on the lexical aspectual properties of transitive & intransitive alternants?

2. Psych verbs in Spanish

- Two types of Spanish Reflexive Psych Verbs (SRPV) (Marín & McNally, 2011):
 - a) INCHOATIVE STATES: include **both** the onset of the state (i.e. *left-boundary*) and part of the state; e.g.: *divertirse* ‘to be/get entertain’



- b) PUNCTUAL STATES: include only the onset of the state; e.g. *asustarse* ‘to be/get frightened’



- Inchoativity **also** has an impact on the transitive alternants of the verbs (Marín, 2011):
 - Initial left-boundary +
 - Causative factor

2. Psych verbs in Spanish

– DAT-ACC Experiencer alternation: *inchoative state reading* and *punctual state reading* in EO verbs

– **DAT constructions**

- Nominative argument ([+/-animate]) = T/SM
- STM = not volitional
- Agentivity restriction (no volitional agents)

(6) * *A María le asustó una vez Juan.*
to María CL.DAT frighten.PRT.3S one time Juan
'Juan frightened María once.'

(Fábregas et al., 2017:33)

– **ACC constructions**

- Animate external argument
- Causer (agent)
- No agentivity restriction

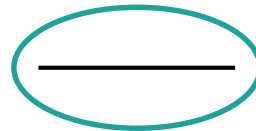
(7) *A María la asustó una vez Juan.*
to María CL.ACC frighten.PRT.3S one time Juan
'Juan frightened María once.'

(Fábregas et al., 2017:33)

3. Psych verbs in Korean

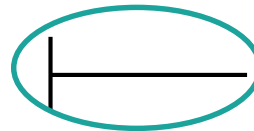
- (PURE) STATES: genuine adjectives (i.e. pure gradable states); e.g. *culkepta* ‘pleased’

(8) *Mina-nun/ka (Minho-lul manna-se) culkew-ess-ta.*
 Mina-TOP/NOM Minho-ACC meet-because pleased-PST-DECL
 ‘Mina was pleased because she met Minho.’



- INCHOATIVE STATES: inherently inchoative (i.e. initial zero-marked BECOME operator); e.g. *nollata* ‘get surprised’

(9) *Mina-nun/ka (Minho ttaymwuney) nolla-ss-ta.*
 Mina-TOP/NOM Minho because surprised-PST-DECL
 ‘Mina got surprised because of Minho.’



- Two types of change of state (CoS) verbs - inchoativity (Choi, 2015; Choi & Demirdache, 2014).
 - a) Pure States: atelic items.
 - b) Inchoative States: inception of the CoS with no inherent culmination in aspectual meaning.

3. Psych verbs in Korean

– ACC-CAUS constructions:

- Periphrastic structure *-key hata*
- Typically agentive
- Animate STM = volitional acting agent
- Inanimate STM = Causer (Temme & Verhoeven, 2016)

(10) *Mina/soli-nun/ka Minho-lul nolla-key hay-ss-ta.*
 Mina/noise-TOP/NOM Minho-ACC get.surprised-ADVR do-PST-DECL
 ‘Mina/the noise made Minho get surprised.’

– DAT constructions:

- ES double nominative structures (11a). Word order freezing effects: EXP > STM (B-S. Yang, 1994; I-K. Kim, 2008).
- Case alternation between dative and nominative (11b).

(11) a. *Mina-ka/nun paym-i mwusep-ta.*
 Mina-NOM/TOP snake-NOM be.scared-DECL
 ‘Mina is scared of snakes.’

b. *Minho-ka/pam-i Mina-eykey mwusep-ta.*
 Miho-NOM/snake-NOM Mina-DAT be.scared-DECL
 ‘Minho/the snakes are scary to Mina.’

4. Methodology-Semantic Tests

- **Semantic diagnostics on event structures**
- Tests on inchoativity/punctuality, telicity, dynamicity, and stativity (Dowty, 1979; for Spanish, Fábregas & Marín, 2015; Marín & McNally, 2011; for Korean, Beavers & Choi forthc.; Choi 2015; Choi & Demirdache 2014).
- Alternants tested:
 - SPANISH: ES (M&M, 2011) EO
 - KOREAN: ES EO
- All tests were conducted with several native speakers of the languages.

4. Methodology-Semantic Tests

– **Dynamicity**

SPANISH

Compatibility with *stop*: only with dynamic verbs.

(14) ?*Juan/la película ha parado de divertir/asustar a Luisa.*

Juan/the movie has stopped of entertain-INF/frighten-INF to Luisa

'Juan/the movie has stopped entertaining/frightening Luisa.'

KOREAN

Slowly adverbial:

ST: unacceptable (15a); InchS: acceptable: Preliminary circumstance speed reading (15b) (Marín & McNally, 2011; Piñón, 1997; different from Choi, 2015).

(15) a. **Mina-nun cemcem culkew-ess-ta.*

Mina-TOP slowly pleased-PST-DECL

'Mina was slowly pleased.'

b. *Mina-nun cemcem nolla-ss-ta.*

Mina-TOP slowly surprise-PST-DECL

'Mina got slowly surprised.'

4. Methodology-Semantic Tests

– Stativity

- Progressive Tense: with eventive predicates, not with stative ones.

SPANISH

InchS: unacceptable; PuncS: preliminary circumstance reading.

(16) *Juan/la película está divirtiendo/asustando a Luisa*

Juan/the movie is entertaining/frightening to Luisa

¿y ella se va a divertir/asustar.

and she REFL goes to entertain-INF/frighten-INF

'Juan/the movie is entertaining/frightening Luisa and she will get entertained/frightened.'

KOREAN

Progressive *-nun cwung* not compatible with ST or InchS.

(17) **Mina-ka ku sanghwang-ey tayhay culkep/nolla-nun-cwungi-ta.*

Mina-NOM the situation-DAT about pleased/surprise-PROG-DECL

'Mina is getting pleased/surprised about the situation.'

4. Methodology-Semantic Tests

– Inchoativity

SPANISH

Aspectual *still* adverbial: *still* has a denotation that the presupposition must be a singular proposition about a contextually salient event. In (18), it presupposes that the occurring event (now) overlapped a past time too (Ippolito, 2004; cf. Krifka, 1998).

InchS: compositionality of verb allows *still* (18a). The eventuality starts and extends until the utterance time. Not compatible with PuncS (18b).

- (18) a. Juan divirtió a Luisa (ayer), y aún la está divirtiendo.
Juan entertain-PRT.3S to Luisa (yesterday), and still CL.ACC is entertain-GER
'Juan entertained Luisa (yesterday), and he is still entertaining her.'
- b. Juan asustó a Luisa (ayer), #y aún la está asustando.
Juan frighten-PRT.3S to Luisa (yesterday), and still CL.ACC is entertain-GER
'Juan entertained Luisa (yesterday), and still he is entertaining her.'

4. Methodology-Semantic Tests

– Inchoativity

KOREAN

Inchoative marker *-e ci*: OK only with ST.

Punctual adv. 'when': ST: state starts before adverbial. InchS: state starts within adverbial time.

- (19) a. *Mina-ka Minho-eykey cenhwahay-ss-ul ttay, Minho-ka culkew-ess-ta.*
Mina-NOM Minho-DAT call-PST-ACC when Minho-NOM pleased-PST-DECL
'When Mina called Minho, Minho was pleased.'
(MEANING: Minho was already pleased by the time Mina called.)
- b. *Mina-ka Minho-eykey cenhwahay-ss-ul ttay, Minho-ka nolla-ss-ta.*
Mina-NOM Minho-DAT call-PST-ACC when Minho-NOM pleased-PST-DECL
'When Mina called Minho, Minho got surprised.'
(MEANING: Minho was not surprised until Mina called.)

4. Methodology-Semantic Tests Results

Table 1. SUMMARY OF SPANISH VERB INVENTORY PER VERB TYPE

INCHOATIVE ST.	ENG. TRANSLATION	PUNCTUAL ST.	ENG. TRANSLATION
<i>divertir</i>	entertain, amuse	<i>sorprender</i>	surprise
<i>contentar</i>	please, make happy	<i>impresionar</i>	impress
<i>amargar</i>	depress	<i>desalentar</i>	demotivate
<i>deprimir</i>	depress	<i>conmocionar</i>	affect deeply
<i>molestar</i>	bother	<i>alterar</i>	agitate, upset
<i>disgustar</i>	annoy, upset	<i>enloquecer</i>	drive crazy
<i>preocupar</i>	worry	<i>asustar</i>	frighten
<i>inquietar</i>	make uneasy, worry	<i>espantar</i>	scare away
<i>confundir</i>	confuse	<i>ofender</i>	offend
<i>incomodar</i>	disturb	<i>escandalizar</i>	scandalize

4. Methodology-Semantic Tests Results

Table 2. SUMMARY OF KOREAN VERB INVENTORY PER VERB TYPE

(PURE) STATES	ENG. TRANSLATION	INCHOATIVE STATES	ENG. TRANSLATION
<i>kipputa</i>	happy	<i>nollata</i>	get surprised
<i>culkepta</i>	pleased	<i>sinnata</i>	get excited
<i>koylopta</i>	painful to	<i>selleyta</i>	get fluttered
<i>sulphuta</i>	sad	<i>hungi nata</i>	get pleased
<i>wenmangsulepta</i>	resentful	<i>michita</i>	drive crazy
<i>himtulta</i>	hard to	<i>ccacungi nata</i>	get irritated
<i>twulyepta</i>	afraid	<i>hwanata</i>	get angry
<i>mwusepta</i>	scared	<i>sosulachita</i>	get frightened
<i>anthakkapta</i>	pitiful to	<i>kepi nata</i>	get scared
<i>honlansulepta</i>	confused	<i>cichita</i>	get tired

4. Methodology-What about Korean EO causative items?



Table 3. KOREAN CAUSATIVE ALTERNANTS SEMANTIC TESTS SUMMARY

TESTS	(PURE) STATES	INCHOATIVE STATES
TELICITY		
IN-ADV	<i>after reading</i>	<i>after reading</i>
FOR-ADV	Typical reading	Typical reading
DYNAMICITY		
SLOWLY	Y	Y
STATIVITY		
PROG. TENSE	Y	Y
INCHOATIVITY		
WHENEVER	Onset = time adv.	Onset = time adv.

4. Methodology-What about Korean EO causative items?

- *-key hata* alters the aspectual nature of the base predicate.
- Korean causative complex structure: causative event and a result state (J. Lee, 2014).
- What is the scope of the semantic tests in the causativized structures?
- *Again*-adverbial test on *pure & inchoative states* (Alexiadou & Iordăchioaia, 2014; Stechow von, 1996): projection of semantic tests over causative event? Result state?

(20) *Mina-ka Minho-lul hanpen te culkep-key/nolla-key hay-ess-ta.*
Mina-NOM Minho-ACC again pleased-ADV/get.surprised-ADV do-PST-DECL
'Mina made Minho pleased/get surprised again.'

MEANING: **REPETITIVE:** Mina made Minho pleased/surprised again, and
RESTITUTIVE: Minho was pleased/surprised again.

4. Methodology-Culminativity Test

- Based on the ACH (Demirdache & Martin, 2015):
 - Agentive external argument allow a *non-culmination* (NC) reading in CoS verbs (i.e. *intentional agent*).
 - Inanimate Causers force a *culmination* (CoS) reading.

(for Mandarin: Lin, 2004; Demirdache et al., 2017; Korean: Beavers & Lee, in prep; Choi & Demirdache, 2014; German: Martin & Schäfer, 2017; among others).

- In the psych domain: default interpretation = culmination & **atelic** verbs.

(21) a. The teacher annoyed Anne, but she didn't notice it.

b. The report annoyed Anne, #but she didn't notice it.

- Semantics of the verb have an impact on the CoS:
 - Punctuality refers to a non-gradable (binary) scale (Beavers & Lee, in prep.).
 - Non-punctuals correlates with changes along a gradable scale.

4. Methodology-Culminativity Test

- In the psych domain:
 - INCHOATIVE/PURE STATES:
 - Gradable scale: various possible states the Experiencer could end up in.
 - Gradable scale allows a cancelation of the CoS.
 - PUNCTUAL STATES:
 - Binary scale: just two states $\neg\emptyset$ and \emptyset .
 - Causation and the CoS cannot be separated. Negating the CoS generates a contradiction.
- SPANISH
 - INCHOATIVE STATES: agenthood of STM relevant for the NC of the CoS.
 - PUNCTUAL STATES: agenthood of STM not relevant factor for the NC of the CoS. Aspect of the lexical item cancels NC.
- KOREAN
 - STATES/INCHOATIVE STATES: agenthood of STM relevant for the NC of the CoS.

4. Methodology-Culminativity Test

- Based on the ACH (Demirdache & Martin, 2015): parallel experimental design on Spanish and Korean to identify:
 - CoS in the EO
 - Availability of an agentive interpretation of the STM:
 - *Agentive* subjects allow for a *non-culmination reading*.
 - *(Inanimate) Causers* allow a *culmination reading*.
- EXPECTATIONS:
 - Spanish: InSt + [+animate] = NC ; InSt + [-animate] = C
PuncSt + [+/-animate] = C
 - Korean: St/InSt + [+animate] = NC ; St/InSt + [-animate] = C
- 40 sentences:
 - Dependent variable
 - CULMINATIVITY: Culmination reading (CR) vs. Non-culmination reading (NCR)
 - Fixed factors
 - STIMULUS: animate (agentive) vs. inanimate (causer)
 - VERBAL ASPECT:
 - SPANISH: Inchoative state vs. Punctual state
 - KOREAN: Pure state vs. Inchoative state
- 10 verbs: VERBAL ASPECT factor.
 - 20 Spanish & 20 Korean items.
 - Each appeared twice (STIMULUS factor).
 - No fillers included.

4. Methodology-Culminativity Test

- Spanish: n. 27 (6 f., 21 m.; age $M = 34,02$)
- Korean: n. 28 (13 f., 15 m.; age $M = 35$)
- *Sample of sentences:*

SPANISH

(22) *Juan/la película sorprendió a María, #pero ella no se dio cuenta y siguió indiferente.*
 John/the movie surprise-PRT.3S to Mary but she not REFL gave account
 and remained indifferent
 ‘John/the movie surprised Mary, but she didn’t realize it and remained indifferent.’

KOREAN

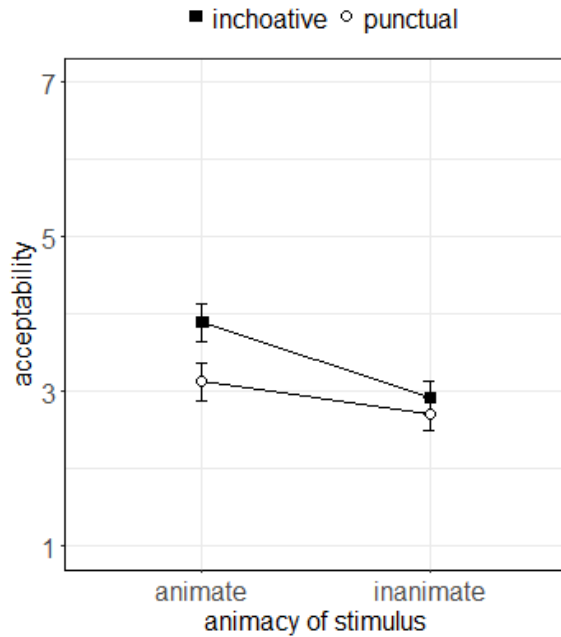
(23) *Minho/ku yenghwa-ka Mina-lul nolla-key hay-ess-ciman,*
 Minho/the movie-NOM Mina-ACC get.surprised-ADVR do-PST-but
 #ku-nye-nun ku-kes-ul alachay-ci mos-hay-ss-ta.
 that-girl-TOP that thing-ACC realize-NEG cannot-do-PST-DECL
 ‘Minho/the movie made Mina get surprised, but she didn’t realize it.’

- Likert Scale sentence evaluation: 1 (very bad) to 7 (very good).
- Survey implemented on OnExp (CRC Text Structures at the Georg-August University Göttingen).

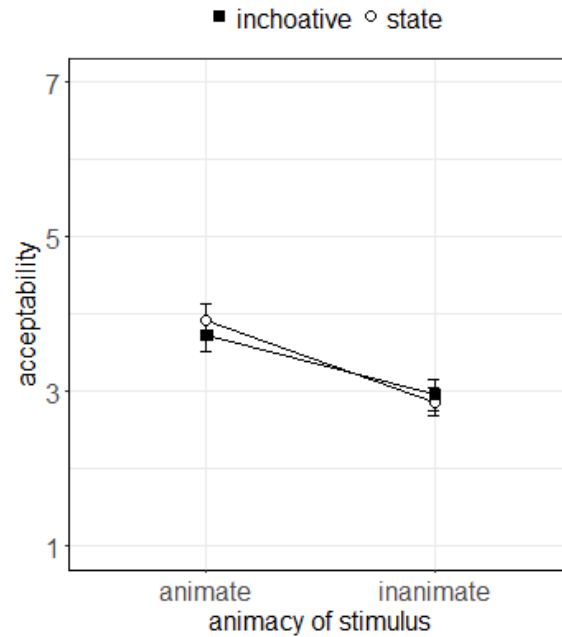
4. Results Culminativity Test

Figure 2: EFFECTS OF 'VERBAL ASPECT' AND 'ANIMACY' OF THE STIMULUS ON 'CULMINATIVITY'

(a) SPANISH



(b) KOREAN



4. Results Culminativity Test

Table 4: LINEAR MODEL FIT ON 'CULMINATIVITY' IN KOREAN (RANDOM FACTORS: 'SPEAKERS' 'VERBS')

effect	estimate	st. error	t-test		model comparison (LogLikelihood)	
			t-value	p	χ^2	p
INTERCEPT	3.7	.2	17.8	< .001		
ASPECT (state)	.2	.1	1.5	.1	.2	.6
STIMULUS (inanimate)	-.8	.1	-6.2	< .001	100.5	< .001
ASPECT^STIMULUS	-.3	.2	-1.6	.1	2.5	.1

Table 5: LINEAR MODEL FIT ON 'CULMINATIVITY' IN SPANISH (RANDOM FACTORS: 'SPEAKERS' 'VERBS')

effect	estimate	st. error	t-test		model comparison (LogLikelihood)	
			t-value	p	χ^2	p
INTERCEPT	3.0	.2	15.9	< .001		
ASPECT (state)	-.8	.1	-5.6	< .001		
STIMULUS (inanimate)	-.9	.1	-7.2	< .001		
ASPECT^STIMULUS	.6	.2	2.9	< .01	8.4	< .01

- Statistic inferences based on generalized linear mixed-effects models. Random factors: SUBJECTS and ITEMS.
- Significance of fixed effects estimated with a log-likelihood test on model comparison.

4. Results Culminativity Test

STIMULUS:

- Both languages:
 - Agenthood of subject make a NCR possible.
 - Inanimate causer cannot cancel causation and CoS.
- In line with ACH Hypothesis (cf):

(24) a. *Juan divirtió a María, pero ella no se dio cuenta y siguió indiferente.*

‘John entertained Mary, but she didn’t realize it and remained indifferent.’

b. *La película divirtió a María, #pero ella no se dio cuenta y siguió indiferente.*

‘The movie entertained Mary, but she didn’t realize it and remained indifferent.’

(24a): Entertaining *y* does not necessarily imply that *y* gets entertained (to a positive degree $d < 1$). No contradiction.

(24b): Inanimate STM causation yields the CoS almost instantaneously = Contradiction (Demirdache & Martin, 2015; Martin & Schäfer, 2017).

4. Results Culminativity Test

ASPECT:

- Spanish:
 - Punctuality overrules the ACH .
 - PuncSt: binary scale (CoS from $\neg\emptyset$ to \emptyset) (Beavers & Lee, in prep.).
 - Initial left-boundary: instantaneous CoS.

– Korean:

- Agentivity of the subject **strongly** correlated with intentionality:

“In Korean, there seems to be a strong grammatical constraint that the intentions must be associated with the intuitive referent of the grammatical subject” (Beavers & Lee, in prep.: 25).

- *-Key hata* ambiguous: (a) Resultative reading, (b) Purposive reading (Lee, 2014).
- Cancellation of CoS is allowed.

STIMULUS^ASPECT:

- The type of verb plays a role only with potential agents and not so with causers.
- ASPECT is not just cumulated to the effect STIMULUS, but it only applied in the level of ‘animate’ of the factor STIMULUS.
- This is the source of the interaction effect for Spanish.

5. Beyond Spanish & Korean... Finnish-Morphology intro

- Non-causative ES verbs → ES inchoative & EO causative items (Pylkkänen, 2000).
- **CAUSATIVIZATION:** marker *-ttA*.

(25) *häve-tä* 'shame-INF' → *häve-ttä-ä* 'shame-CAUS-INF'

- **Factitive-Causative** (FCAUS) marker *-st* attached to nouns to form denominal verbs (i.e. verbalizer, cf. English **em**-power), meaning 'make so' 'be/have sth.'
- Mainly with EO basic items:

(26) EO	→	ES	→	EO
FCAUS		FCAUS+INCH		FCAUS+INCH+CAUS
<i>inno-sta-a</i>		<i>inno-st-u-a</i>		<i>inno-st-u-tt-a</i>
'fascinate'		'get fascinated'		'make fascinated' (make get fascinated)

- **INCHOATIVIZATION:** marker *-u*, added to bases to form ES verbs:

(27) *pelä-tä* 'fear-INF' → *pelä-st-y-ä* 'fear-FCAUS-INCH-INF'

5. Beyond Spanish & Korean... Finnish-Morphology intro



- **MOMENTANE (MOM) & FREQUENTATIVE (FREQ):** markers *-Ahta-* (meaning 'sudden feeling/action') (28) & *-il-* (meaning 'continuously repeated feeling/action') (29), respectively.

(28) *hätk-ähtä-ä* 'startle-MOM-INF' (get startled) →
hätk-ähty-ttä-ä 'startle-MOM-CAUS-INF' (startle)

(29) *epä-il-lä* 'doubt-FREQ-INF' (suspect) →
epä-il-yttä-ä 'doubt-FREQ-CAUS-INF' (make suspicious)

5. Beyond Spanish & Korean... Finnish psych verbs

- (PURE) STATES: simplest items (mainly denominal); e.g. *hävetä* ‘be ashamed’

(30) *Tyttö häpeä-ä (lelu-n kadottamis-ta).*
girl:NOM be.ashamed-3S (toy-GEN loss-PTV)
‘The girl is ashamed of the loss of the toy.’

- INCHOATIVE STATES: verbs that include the INCH/FREQ morphemes; e.g. *ilahtua* ‘get delighted’

(31) *Mies ila-htu-u (sadu-sta).*
man:NOM delight-INCH-3S (fairy.tale-ELA)
‘The man gets delighted with the fairy tale.’

- PUNCTUAL STATES: verbs that include the MOM morpheme. e.g. *hätkähtää* ‘get startled’

(32) *Mies hätk-ähtä-ä (ään-tä).*
man:NOM get.startled-MOM-3S (noise-PTV)
‘The man gets made startled by the noise.’

5. Beyond Spanish & Korean... Finnish psych verbs

- While ES constructions diverge among different cases when adding the stimulus:

(PURE) STATES	INCHOATIVE STATES	PUNCTUAL STATES
ELA (ELATIVE: 'out of') PTV (PARTITIVE)	ELA, PTV ALL (ALLATIVE: 'at, towards') ILL (ILLATIVE: 'into')	PTV, ALL

- EO constructions take mainly the PTV & ACC cases (Pylkkänen, 2000).

(33) *Lelu-n kadottaminen häve-ttä-ä tyttö-ä.*
 toy-GEN loss:NOM be.ashamed-CAUS-3S girl-PTV
 'The loss of the toy makes the girl ashamed.'

(34) *Ääni hätk-ähdy-ttä-ä mieh-en.*
 noise:NOM get.startled-MOM-CAUS-3S man-ACC
 'The noise makes the man get (completely) startled.'

5. Beyond Spanish & Korean... Finnish psych verbs

– Telicity

In-adv.: ST, InchS & PuncS = Accumulative reading (35). **For-adv.:** ST = typical (36a); InchS & PuncS = onset+state (36b).

(35) *Pekka häpes-i/ ila-htu-i/ hätk-äht-i tunni-ssa.*
 Pekka be.ashamed-PST.3S/delight-INCH-PST.3S/get.startled-MOM-PST.3S hour-INESS
 ‘Pekka was ashamed/got delighted/got startled in an hour.’

(36) a. *Pekka häpes-i tunni-n aja-n.*
 Pekka be.ashamed-PST.3S hour-ACC time-GEN
 ‘Pekka was ashamed for an hour.’

b. *Pekka ila-htu-i/ hätk-äht-i tunni-ksi.*
 Pekka delight-INCH-PST.3S/get.startled-MOM-PST.3S hour-TRA
 ‘Pekka got delighted/got startled for an hour.’

FINNISH: *tunnin ajan* also possible only with InchS (iterative)

5. Beyond Spanish & Korean... Finnish psych verbs

– Dynamicity

Slowly adverbial: ST & PuncS (37a) = unacceptable. InchS (37b) = Preliminary Circumstance Speed.

- (37) a. **Pekka häpes-i/* *hätk-äht-i* *hitaasti.*
 Pekka be.ashamed-PST.3S/get.startled-MOM-PST.3S slowly
 ‘Pekka was ashamed/got startled slowly.’
- b. *Pekka ila-htu-i* *hitaasti.*
 Pekka delight-INCH-PST.3S slowly
 ‘Pekka got delighted slowly.’

– Stativity

All verbs showed to be stative (in line with Pylkkänen, 2000).

- (38) a. **Pekka on häpeä-mä-ssä* *juuri nyt.*
 Pekka is be.ashamed-INF-INESS right now
 ‘Pekka is being ashamed right now.’ [(PURE) STATES]
- b. **Pekka on ila-htu-ma-ssa* *juuri nyt.*
 Pekka is delight-INCH-INF-INESS right now
 ‘Pekka is getting delighted right now.’ [INCHOATIVE STATES]
- c. **Pekka on hätk-ähtä-mä-ssä* *juuri nyt.*
 Pekka is get.startled-MOM-INF-INESS right now
 ‘Pekka is getting startled right now.’ [PUNCTUAL STATES]

5. Beyond Spanish & Korean... Finnish psych verbs

– Inchoativity

'Whenever' adv.: ST: state starts before adverbial (39a). InchS & PuncS: state starts within adverbial time (39b).

(39) a. *Kun soita-n häne-lle, Hanna häpeä-ä.*

when call-1SG 3SG-ALL Hanna be.ashamed-3SG

'Whenever I call her, Hanna is ashamed.'

b. *Kun soita-n häne-lle, Hanna ila-htu-u/hätk-ähtä-ä.*

when call-1SG 3SG-ALL Hanna delight-INCH-3SG/get.startled-MOM-3SG

'Whenever I call her, Hanna gets delighted/get startled.'

(State starts within reference time adverbial)

Aspectual still adverbial: Acceptability with InchS (40a), non-acceptability with PuncS (40b).

(40)a. *Hanna ila-htu-i, ja hän on edelleen ila-htu-nut.*

Hanna delight-INCH-PST.3SG and she is still delight-INCH-PTCP

'Hanna got delighted, and she is still getting delighted.'

b. **Hanna hätk-äht-i, ja hän on vielä hätk-ähtä-nyt.*

Hanna get.startled-MOM-PST.3SG and she is still get.startled-MOM-PTCP

'Hanna got startled and she is still getting startled.'

5. Beyond Spanish & Korean... Finnish psych verbs



Table 6. SUMMARY OF FINNISH VERB INVENTORY PER VERB TYPE

PURE ST.	ENG. TRAN.	INCH. ST.	ENG. TRAN.	PUNCT. ST.	ENG. TRAN.
<i>hävetä</i>	be ashamed	<i>ilahtua</i>	get delighted	<i>suutahtaa</i>	burst out with anger
<i>sääliä</i>	pity	<i>häkeltyä</i>	get overwhelmed	<i>möksähtää</i>	become sulky
<i>surra</i>	mourn	<i>ikävystyä</i>	get bored	<i>säikähtää</i>	get suddenly scared
<i>pelätä</i>	fear	<i>suuttua</i>	get angry	<i>hätkähtää</i>	get startled
<i>ikävöidä</i>	long for	<i>turhautua</i>	get frustrated		
		<i>hätäntyä</i>	get alarmed		
		<i>epäillä</i>	suspect		

5. Finnish psych verbs-What about Finnish EO causative items?



Table 7. FINNISH CAUSATIVE ALTERNANTS SEMANTIC TESTS SUMMARY

TESTS	(PURE) STATES	INCHOATIVE STATES	PUNCTUAL STATES
TELICITY			
IN-ADV	Accumulative	Accumulative	X
FOR-ADV	Typical	Onset+state/ite.(a)	Onset+state
DYNAMICITY			
SLOWLY	X	After Circum. Speed	X
STATIVITY			
PROG.	X	X	X
INCHOATIVITY			
STILL	Onset = adv.	Continuous reading	X

(a) -n ajan = iterative/-ksi = onset+state

6. Theta-roles and Discussion

- **FINNISH:** psych predicates are atelic (Pylkkänen, 2000).
- Telicity = case marking on STM and EXP:
 - Inherently atelic pred.: partitive case
 - Telic pred.: accusative case
- Our data: several patterns.

(41) a. *Tyttö häpeä-ä (lelu-n kadottamis-ta).* [(PURE) STATES]

girl:NOM be.ashamed-3SG (toy-GEN loss-PTV)

‘The girl is ashamed of the loss of the toy.’

b. *Lelu-n kadottaminen häve-ttä-ä tyttö-ä.*

toy-GEN loss:NOM be.ashamed-CAUS-3SG girl-PTV

‘The loss of the toy makes the girl ashamed.’

(42) a. *Mies ila-htu-u (sadu-sta/ystävi-stä).* [INCHOATIVE STATES]

man:NOM delight-INCH-3SG (fairy.tale-ELA/friends-ELA)

‘The man gets delighted with the fairy tale/his friends.’

b. *Satu/ystävä ila-hdu-tta-a mies-tä.*

fairy.tale/friend:NOM delight-INCH-CAUS-3SG man-PTV

‘The fairy tale/his friend delights the man.’

6. Theta-roles and Discussion

(43) a. *Mies hätk-ähtä-ä (ään-tä).*
man:NOM get.startled-MOM-3SG (noise-PTV)
‘The man gets made startled by the noise’

[PUNCTUAL STATES]

b. *Ääni hätk-ähdy-ttä-ä mieh-en.*
noise-NOM get.startled:MOM-CAUS-3SG man-ACC
‘The noise makes the man get completely startled.’

- EO *punctual states* achievements?
- Incompatibility with *in, for*-adv. and *finish* tests: thus atelic.
- Acceptability of ACC case: onset of the state (i.e. left-boundary) (Marín & McNally, 2011; cf. Rozwadowska, 2012 Polish constructions).

6. Theta-roles and Discussion

- **ALMOST TEST**

- EO *inchoative states* also felicitous in ACC constructions:

(44) *Auto-n toimiminen ila-hdu-tta-a nais-en.*
 car-GEN functioning:NOM delight-INCH-CAUS-3SG woman-ACC
 ‘The car’s functioning delights the woman.’

- Causative partitive structures ambiguous between (Pylkkänen, 2000):

- a) Causative event almost occurred
- b) Mental state almost held

- InchS pattern:

(45) *Pekka melkein ila-hdu-tti Hanna-a/Hanna-n.*
 Pekka almost delight-INCH-CAUS.PST.3SG Hanna-PTV/Hanna-ACC
 ‘Pekka almost delighted Hanna.’

- PTV = (a) reading ACC = (b) reading **not ambiguous**

- PuncS = **ambiguous**

(46) *Pekka melkein hätk-ähdy-tti Hanna-n.*
 Pekka almost get.startled-MOM-CAUS.PST.3SG Hanna-ACC
 ‘Pekka almost made Hanna get startled.’

6. Theta-roles and Discussion

- Why this ambiguity? (Pylkkänen, 2000)
 - Causative suffix encodes a causing eventuality and makes the predicate episodic.
 - Mental state holds as long as the perception does (*stage-level*)
 - Possible explanation for PuncS, but not for InchS.
- **SPANISH:** PuncS = *stage-level*, InchS = *individual-level* (Marín & McNally, 2011)
- STM theta-role.
- Subject of causative psych pred. = Causer (Pesetsky, 1995).
- Also Fábregas et al. (2017) for Spanish:
 - ACC structures: external argument = Causer
 - DAT structures: SM
- Finnish supporting Spanish EO ACC PuncS readings.
- Spanish PuncS considered more agentive, hence appearing in ACC structures more frequently (as Finnish).

6. Theta-roles and Discussion

- InchS participate more frequently in:
 - SPANISH: DAT-ACC alternation
 - FINNISH: PTV-ACC alternation
- STM & case in causative constructions for Finnish InchS (Nelson, 1999):
 - [+animate] [+human] STM = delimited predicates (ACC)
 - [-animate] or non-overt STM = non-delimited predicates (PTV)
- In line with our observations. In addition, in Finnish:
 - ST disallow ACC EXP
 - PuncS disallow PTV EXP
- Finnish stative psych verbs & inchoative non-delimited psych causatives = fail to license an external argument (Nelson, 1999).
- Finnish delimited-events (achievement/accomplishment) = external argument Initiator (*causer*) in a higher functional projection (Nelson, 1999; in line with Pesetsky, 1995 & Fábregas et al., 2017).
- Finnish PTV constructions = EXP base-generated higher than the STM (38b).

6. Theta-roles and Discussion

- ANIMACY CONSTRAINT (Siirainen, 1998):
 - STM subject in stative constructions: [-animate] [-human]
- This is generally the case for ST in Finnish, but not for InchS and PuncS.
- Some verbs are more restricted than others.

(47) a. #*Hanna häve-ttä-ä tyttö-ä.*

Hanna:NOM be.ashamed-CAUS-3S girl-PTV

‘Hanna makes the girl be ashamed.’

b. *Lelu-n kadottaminen häve-ttä-ä tyttö-ä.*

toy-GEN loss:NOM be.ashamed-CAUS-3SG girl-PTV

‘The loss of the toy makes the girl ashamed.’

- Even when accepted, the STM in (47a) ‘Hanna’ does not act on purpose towards the EXP and behaves as a SM.

6. Theta-roles and Discussion

- ANIMACY CONSTRAINT - KOREAN (Nam, 2015):
- 2 groups psych verbs according to their sub-event structures:
 - *Agentive Experiencer Predicates* (AEP): alternates EXP between NOM and DAT
 - *Patientive Experiencer Predicates* (PEP): alternates STM between NOM and DAT
- Nam's classification relevant in relation to aspectuality of verbs:
 - *Pure states* behave as AEP
 - *Inchoative states* behave as PEP
- **Pure states (AEP)**: Unmarked word order: STM(NOM) > EXP(DAT)

(48) a. *Mina-ka kongpho yenghwa-ka mwusew-ess-ta.*

Mina-NOM horror movie-NOM be.scary-PST-DECL

'Mina was scared of horror movies.'

b. *Kongpho yenghwa-ka/#Mina-ka Minho-eykey mwusew-ess-ta.*

horror movie-NOM/Mina-NOM Minho-DAT scary-PST-DECL

'The horror movie/Mina was scary to Minho.'

6. Theta-roles and Discussion

- **Inchoative states (PEP):** Unmarked word order: EXP(NOM) > STM(DAT)

(49) a. *Mina-ka Minho-ka hwana-ss-ta.*

Mina-NOM Minho-NOM get.angry-PST-DECL

‘Mina got angry at Minho.’

b. *Mina-ka Minho-eykey/#khun soli-ey hwana-ss-ta.*

Mina-NOM Minho-DAT/big noise-DAT get.angry-PST-DECL

‘Mina got angry at Minho/the big noise.’

7. Summary

– ACH

STM

[+animate]



Non-Culmination Reading

[-animate]



Culmination Reading

– Psych domain: aspect of verbs (i.e. inchoativity) seem to play a role on culminativity. This turns to be language specific:

SPANISH			KOREAN		
INCHOATIVE ST.	[+animate]	+/- NC	INCHOATIVE ST.	[+animate]	+/- NC
	[-animate]	- NC		[-animate]	- NC
PUNCTUAL ST.	[+animate]	- NC	STATES	[+animate]	+/- NC
				[-animate]	- NC

7. Summary

- Eventuality structure of psych verbs in terms of inchoativity leading to a more adequate description of the psych verb domain.
- Event structure of psych verbs in Spanish and Finnish similar:
 - Spanish ES *inchoative* & *punctual states* present same structure as their EO alternants
 - Finnish ES *pure, inchoative* & *punctual states* present same structure as their EO alternant.
 - Not for Korean.
- **Korean Causativization:**
 - *-key hata* alters the aspectual nature of the base predicate. Scope goes on the light verb *hata*, where the layer for the causative events gets modified and not the resultative state layer.
- Pylkkänen (2000) & Nelson (1999), inchoative psych verbs are accomplishment/achievements. But no, they are *inchoative states*.

7. Summary

- *Inchoative states* do not have a right boundary, thus failing telicity tests in our sample. Both *inchoative* & *punctual states* allow ACC case marking due to the left-boundary feature (onset of the state).
- Spanish *punctual states* more agentive, hence appearing in ACC structures more frequently, as Finnish.
- *Inchoative states* participate more frequently in
 - Spanish: DAT-ACC alternation
 - Finnish: PTV-ACC alternation
- *Animacy Constraint* appears for Finnish and Korean *pure states*, where the STM is frequently [-animate] (for Finnish: Siirinen, 1998; for Korean: Nam, 2015).
- More languages to be added.
- To be continued...

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Appendix

Table 8: AVERAGES OF THE INDIVIDUAL VERBS IN KOREAN



Aspect	Verb	Animate	Inanimate
Inchoative	make get frightened – <i>sosulachita</i>	3.11	2.75
	make get tired - <i>cichita</i>	3.93	2.96
	drive crazy - <i>michita</i>	4.04	2.32
	make excited - <i>sinnata</i>	3.57	3.07
	make get fluttered - <i>selleyta</i>	4.00	3.61
	make get angry - <i>hwanata</i>	3.96	3.29
	make get scared – <i>kepi nata</i>	3.39	2.75
	make get irritated – <i>ccacungi nata</i>	3.75	3.11
	make get pleased – <i>hungi nata</i>	3.61	3.21
	make get surprised - <i>nollata</i>	3.89	2.54
	(Pure) State	make afraid - <i>twulyepta</i>	4.11
make confused - <i>honlansulepta</i>		4.57	3.18
make happy - <i>kipputa</i>		3.71	2.64
make hard - <i>himtulta</i>		3.79	2.50
make painful - <i>koylopta</i>		3.89	3.00
make pitiful - <i>anthakkapta</i>		3.61	2.89
make pleased - <i>culkepta</i>		4.21	3.18
make resentful - <i>wenmangsulepta</i>		3.50	2.36
make sad - <i>sulphuta</i>		4.11	3.07
make scared - <i>mwusepta</i>		3.61	2.89

Appendix

Table 9: AVERAGES OF THE INDIVIDUAL VERBS IN SPANISH



Aspect	Verb	Animate	Inanimate
Inchoative	depress - <i>amargar</i>	3.33	2.89
	confuse - <i>confundir</i>	4.63	3.63
	please - <i>contentar</i>	3.89	2.93
	depress - <i>deprimir</i>	3.52	3.04
	annoy - <i>disgustar</i>	3.70	2.41
	entertain - <i>divertir</i>	3.93	3.07
	disturb - <i>incomodar</i>	3.93	2.81
	worry - <i>inquietar</i>	4.11	3.19
	bother - <i>molestar</i>	4.22	2.63
	worry - <i>preocupar</i>	3.67	2.59
	Punctual	upset - <i>alterar</i>	2.93
frighten - <i>asustar</i>		2.93	2.56
affect deeply - <i>conmocionar</i>		2.70	2.81
demotivate - <i>desalentar</i>		3.81	2.78
drive crazy - <i>enloquecer</i>		2.52	2.56
scandalize - <i>escandalizar</i>		2.96	3.07
scare away - <i>espantar</i>		2.93	2.26
impress - <i>impresionar</i>		3.41	2.59
offend - <i>offender</i>		3.81	2.81
surprise - <i>soprender</i>	3.33	3.15	