

# An Investigation into the Lexico-grammatical Features of the Behavioural Process

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# Outline

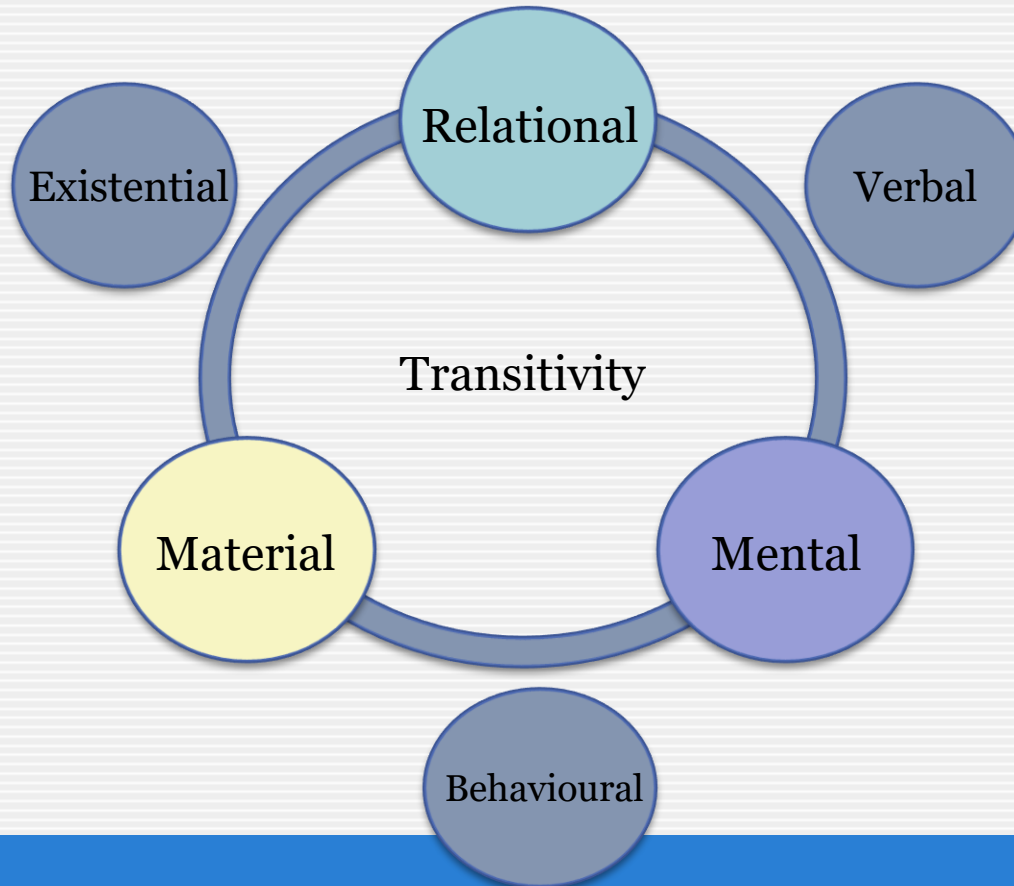
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- Overview of Systemic Functional Linguistics (Halliday 1994) and the Behavioural process
- Aims
- Methods
- Results
- Summary and future research

# Transitivity within SFL

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- Systemic Functional Linguistics (SFL; Halliday 1994) concerns how language conveys meaning.



# Behavioural Process

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- “construe an external (‘material’) perspective on processes of consciousness” (Davidse 2017:81)
- “processes of (typically human) physiological and psychological behaviour” (Halliday and Matthiessen 2014:301)
- Eg. Listening, laughing, coughing, crying

# Typical criteria for Behavioural processes

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- Intransitive (although some transitive)
- Unmarked progressive aspect (present-in-present and sometimes present)
- Animate subject
- Cannot project ( *-that* complement)

**Table: Summary of three process types**

Process Type	Example
Material	John hit the ball / John is running
Mental	John likes Jane / John believes that cricket is the best sport
Behavioural	John laughed a hoarse laugh/ John is shaking

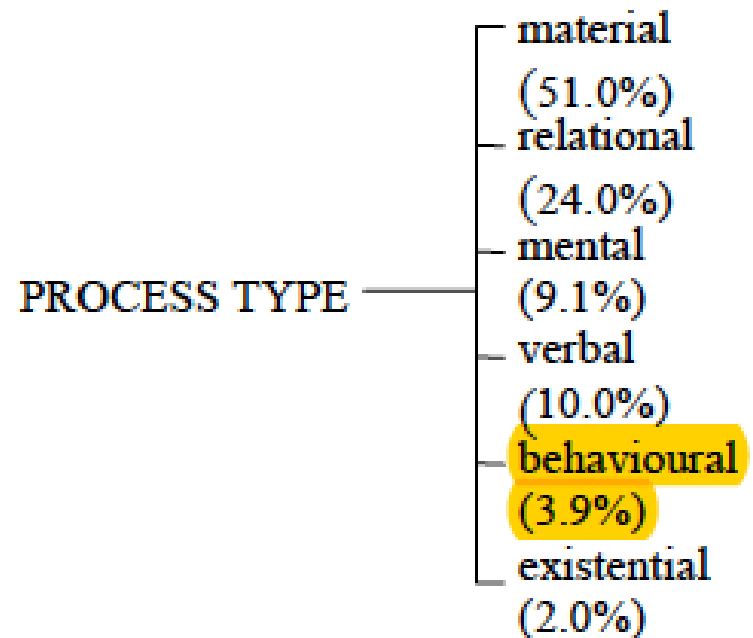
# Relatively Low Frequencies

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## Frequency of Intransitive constructions:

- 7173 total
  - **31.2%** (2241) intransitive (26.2% (1878) bare intransitives)
  - 68.8% (4932) transitive

XTAG Research Group (1998)



Matthiessen's (1999) probabilities for the system of process type

# Challenge of the Behavioural Process

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- Least clear cut – “No clearly defined characteristics” (Halliday 1994, p.139)
- Intransitive although sometimes transitive
- Typically involuntary yet represent voluntary perception experiences e.g. hearing vs. listening (Banks 2015, p.24)

# Challenge of the Behavioural Process

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- There are no clear grammatical distinctions between **intransitive** material processes and behavioural processes – only meaning

the two creatures	had been jumping about	like mad things	all this time
Actor	Process: material	Manner: comparison	Extent: temporal

we	can dance	without lobsters
Behaver	Process: behavioural	Accompaniment: comitative

Halliday and Matthiessen 2014: 333



# Analysis of the Behavioural Process (O'Donnell et al. 2009)

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- Prototypical uses easier to analyse
  - *I laughed at that*: 93% Behavioural, 4% Mental, and 3% Material
- Borderline cases more difficult -> caused by deviations in semantic and syntactic information
  - *and talked about his hometown*: 40% Behavioural, 53% Verbal, and 7% Material
- Problem for the theory

# Aims

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- To empirically test the theoretical criteria of the Behavioural Process
- To identify if there are some more subtle lexico-grammatical features that these processes display, that would help us to validate the category

# Method

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- Investigated instances of Behavioural Processes using corpus data
- Involved manual analysis of Hanks' (2004) Corpus Pattern Analysis, as well as other features including tense, aspect and mood

# Data collection

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- 15 Behaviours (Halliday 1994) and (Banks 2015)
- 5 semantic categories:

Psychological		Communicative	Physiological	
Perception	Cognition		Emotion	Other
Look	Ponder	Talk	Frown	Hiccup
Stare	Ruminate	Converse	Laugh	Shiver
Listen	Meditate	Gossip	Cry	Sneeze

- Corpus of Contemporary American English (COCA; Davies 2008-)
- 30 x 15 -> 450 concordance lines

# Data Analysis

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- Corpus Pattern Analysis (CPA; Hanks 2004)

**PDEV: meditate** *This is a first draft which has not yet been checked.*

[Access full data](#)

- 1 **Pattern: Human meditates**  
**Implicature: Human focuses their minds on calm thoughts in order to achieve an altered state of consciousness** +  
*Example: Then I sat down to meditate , with the sacred choral music playing softly in the background.*
- 2 **Pattern: Human meditates on or upon Entity or on or upon Eventuality**  
**Implicature: Human thinks deeply and at length about Entity or Eventuality**  
*Example: He liked to take ideas gently, to get time to meditate on the best modes of expressing truth.*

- ✓ CPA Ontology
- ✓ Considers frequencies
- ✓ Reveals the different senses of each verb use

# Data Analysis

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- Grammatical Aspect: the expression of time by grammatical items (Van Rompaey 2013)
- **Perfective**: view all parts of the situation as a whole
  - *He cleans his apartment*
- **Imperfective**: depicts the situation as incomplete and ongoing (-ing form)
  - *He is cleaning his apartment*
- **Habitual**: “a situation which is characteristic of an extended period of time” (Comrie 1976:27-28) Eg. He sells cars
- **Iterative**: “a situation [...] repeating itself on one or more occasions” (Declerck et al. 2006:35) Eg. He sneezed three times

# Data Analysis

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- Lexical Aspect (Aktionsart)
  - a semantic category that concerns how “the action of the verb proceeds” (Karl Brugmann, cited in Brinton 1988:2)
  - analysis was carried out according to five types *state*, *activity*, *accomplishment*, *culmination* or *semelfactive* (Van Rompaey 2013)
  - involves analysis of key notions to identify these categories:  
(Stative/dynamic, durative/punctual, evolving/non-evolving, telic/atelic, agentive/non-agentive, transitional/non-transitional)

# Data Analysis

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- Stative / dynamic – change, motion, activity (be sick / tell a story)
- Durative / punctual – last in time (save lives / choose a film)
- Evolving / non-evolving – gradual change (become clear / kill someone)
- Transitional / Non-transitional – sudden change from one state to another, lead up events (win a race / knock on the door)
- Telic / atelic – inherent end point (bake a pie / keep secrets)
- Agentive / non-agentive (kill someone / become famous)



# Data Analysis

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**Table 1: Van Rompaey's (2013) summary of lexical aspect categories**

	<b>dynamicity and durativity</b>	<b>telicity</b>	<b>agentivity</b>
<i>state</i> (Vendler 1957 and Moens & Steedman 1988)	stative	-	-
<i>activity</i> (Vendler 1957) or <i>process</i> (Moens & Steedman 1988)	dynamic and durative or evolving	-	±
<i>accomplishment</i> (Vendler 1957) or <i>culminated process</i> (Moens & Steedman 1988)	dynamic and durative	+	±
<i>achievement</i> (Vendler 1957) or <i>culmination</i> (Moens & Steedman 1988)	dynamic and punctual and transitional	N/A	±
<i>achievement</i> (Vendler 1957), <i>series</i> (Brinton 1988), <i>point</i> (Moens & Steedman 1988) or <i>semelfactive</i> (Smith 1991)	dynamic and punctual and non-transitional	N/A	±

# Results

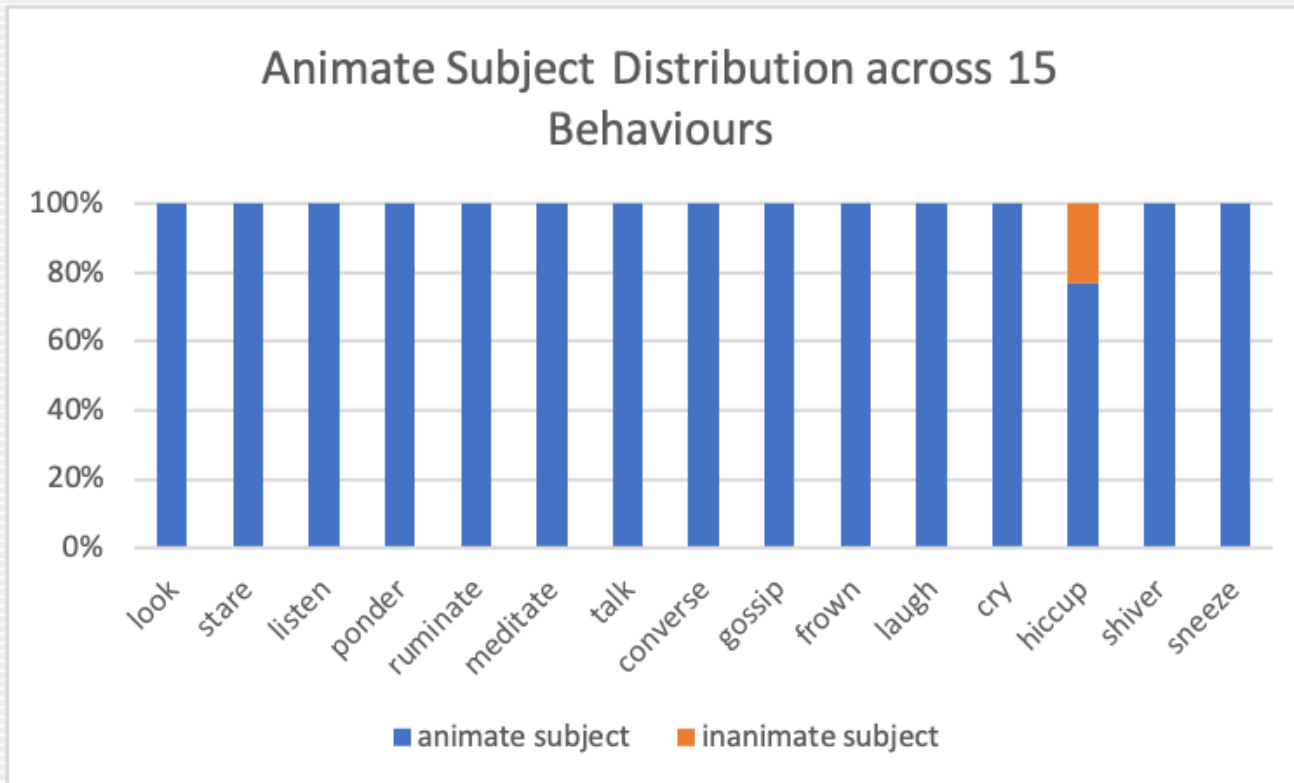
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- Lexico-grammatical features
  - Animacy, intransitivity, *-that* complements, lexical aspect and grammatical aspect
- No apparent trend according to the five semantic groups of Behavioural Processes

# Results

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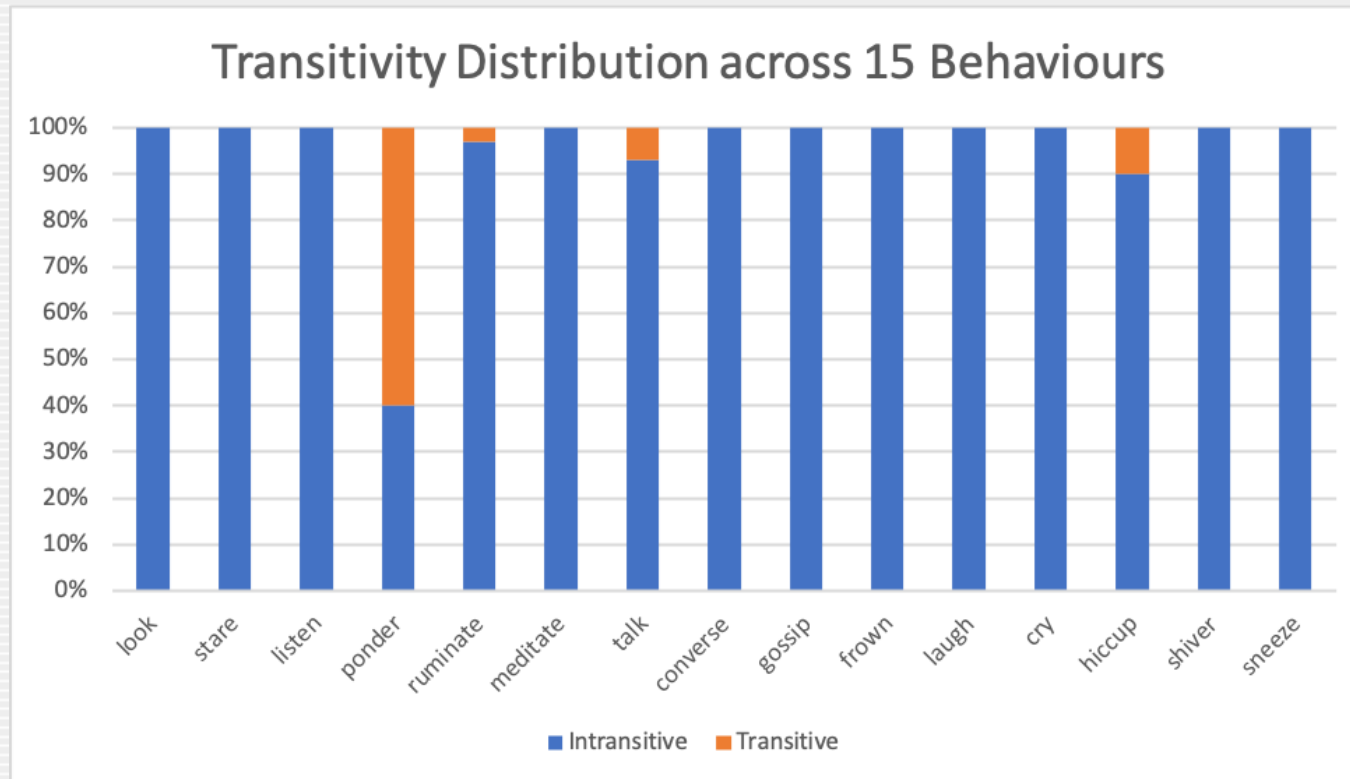
- Animacy



# Results

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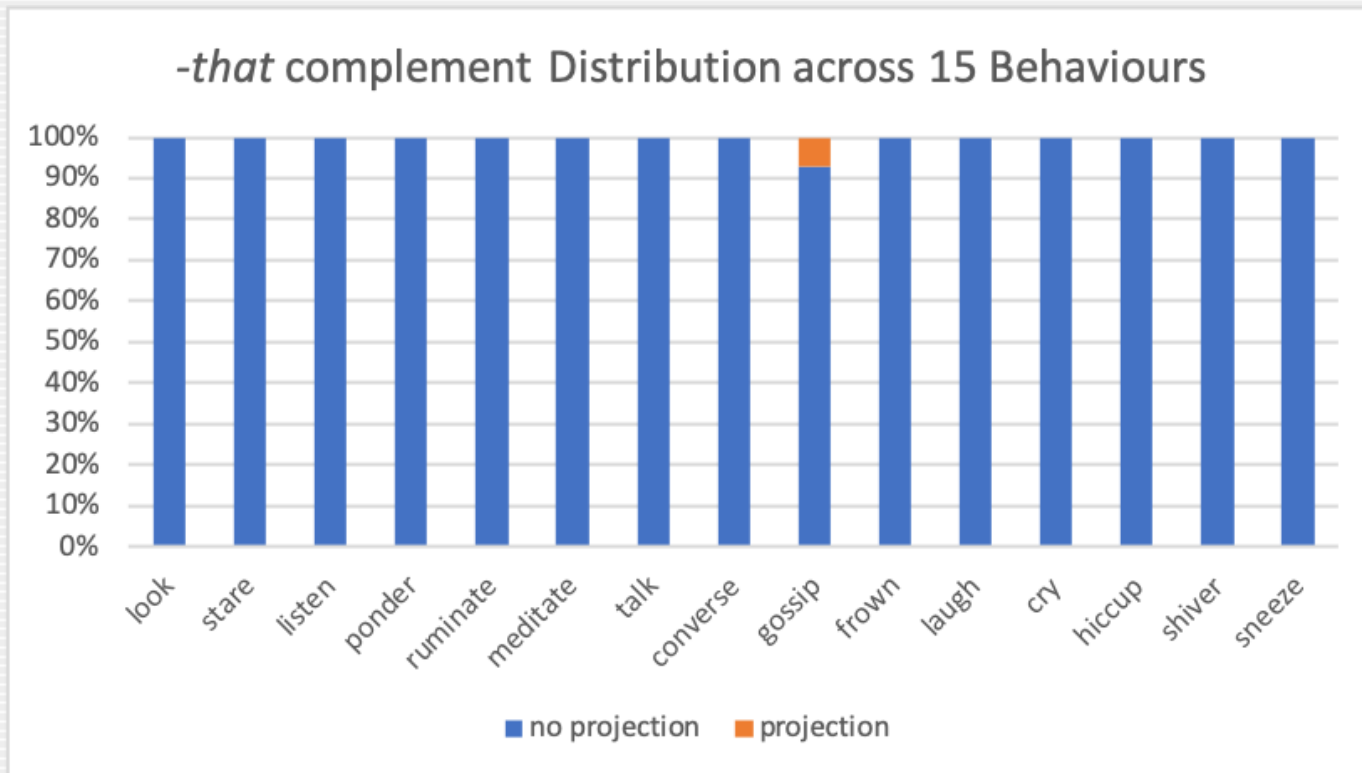
- Intransitivity



# Results

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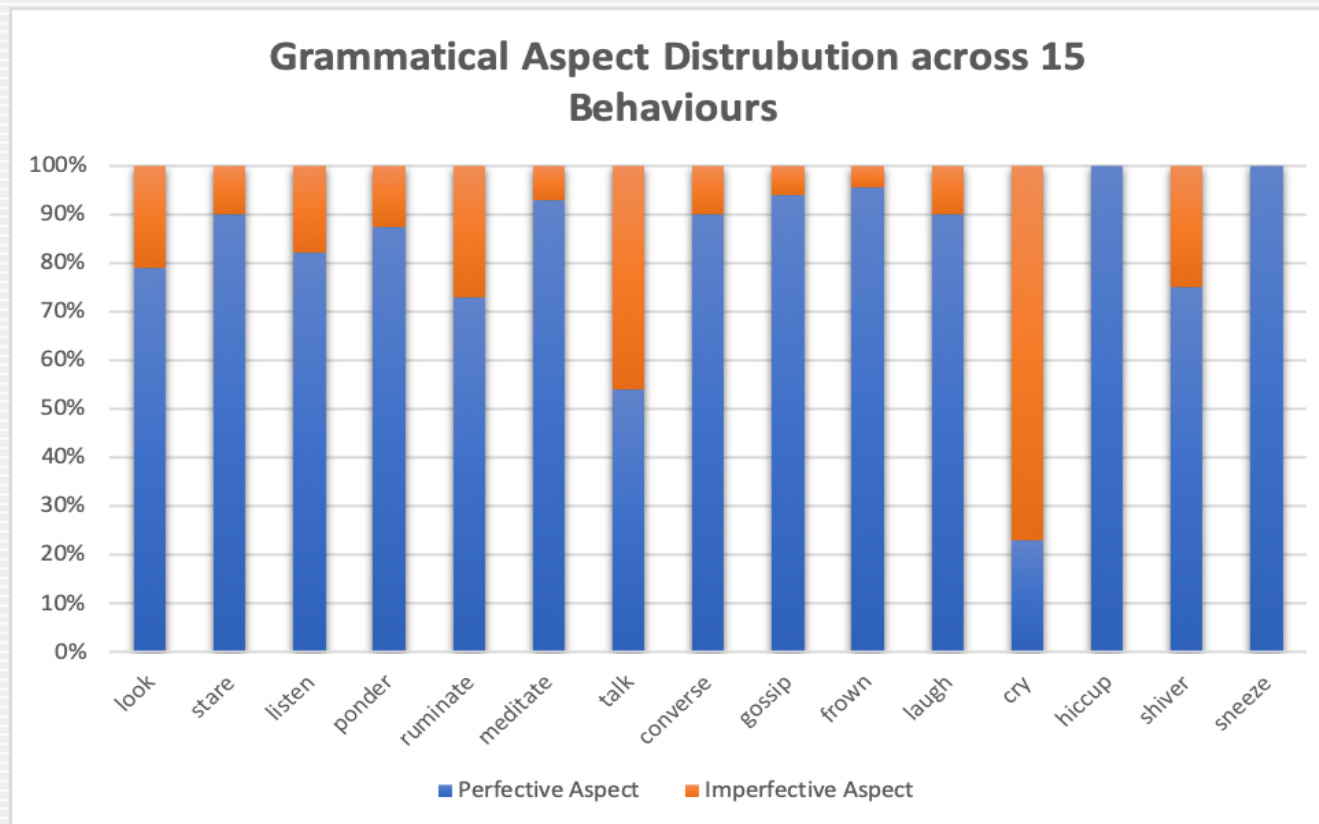
- *-that* complement



# Results

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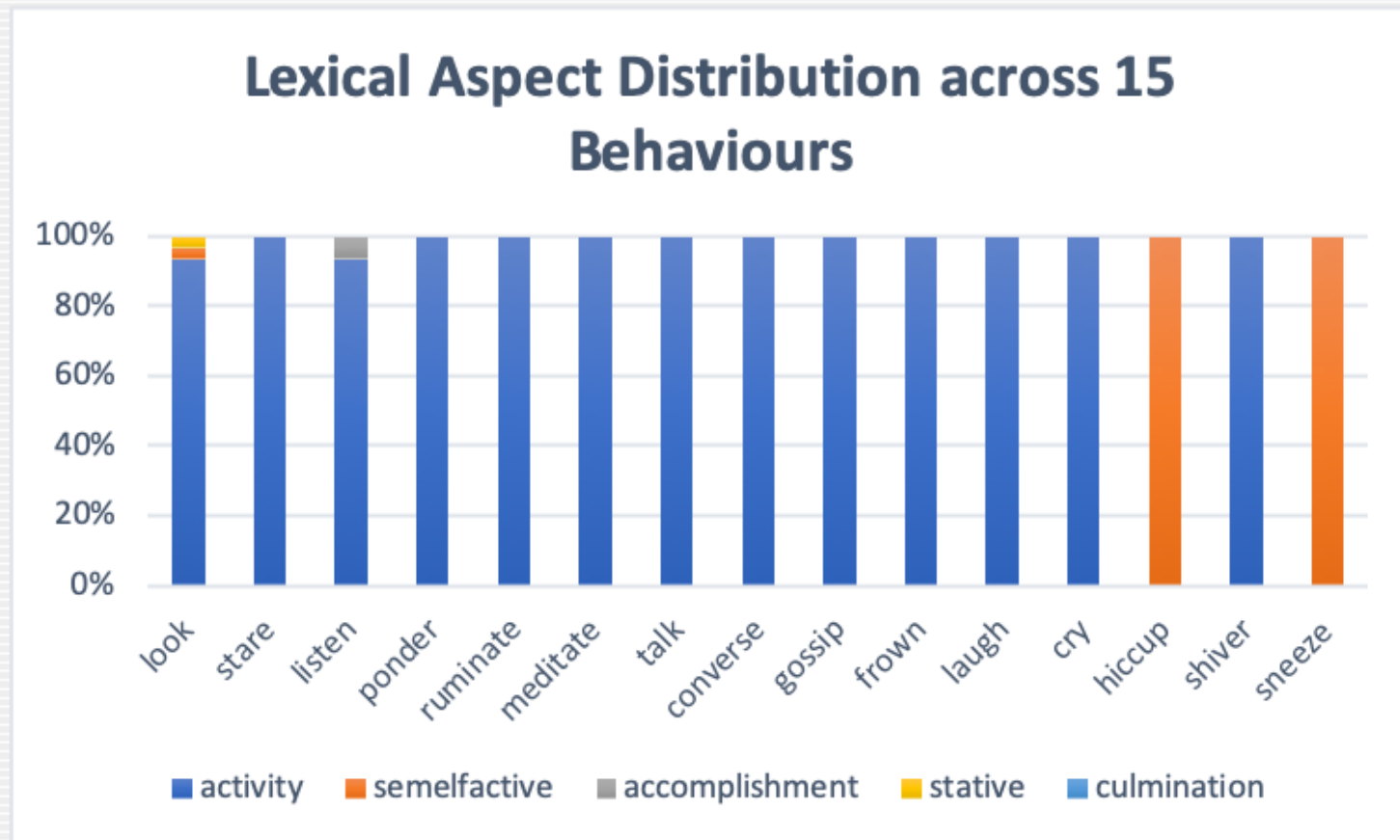
- Grammatical aspect (present tense clauses)



# Results

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- Lexical aspect



# Results

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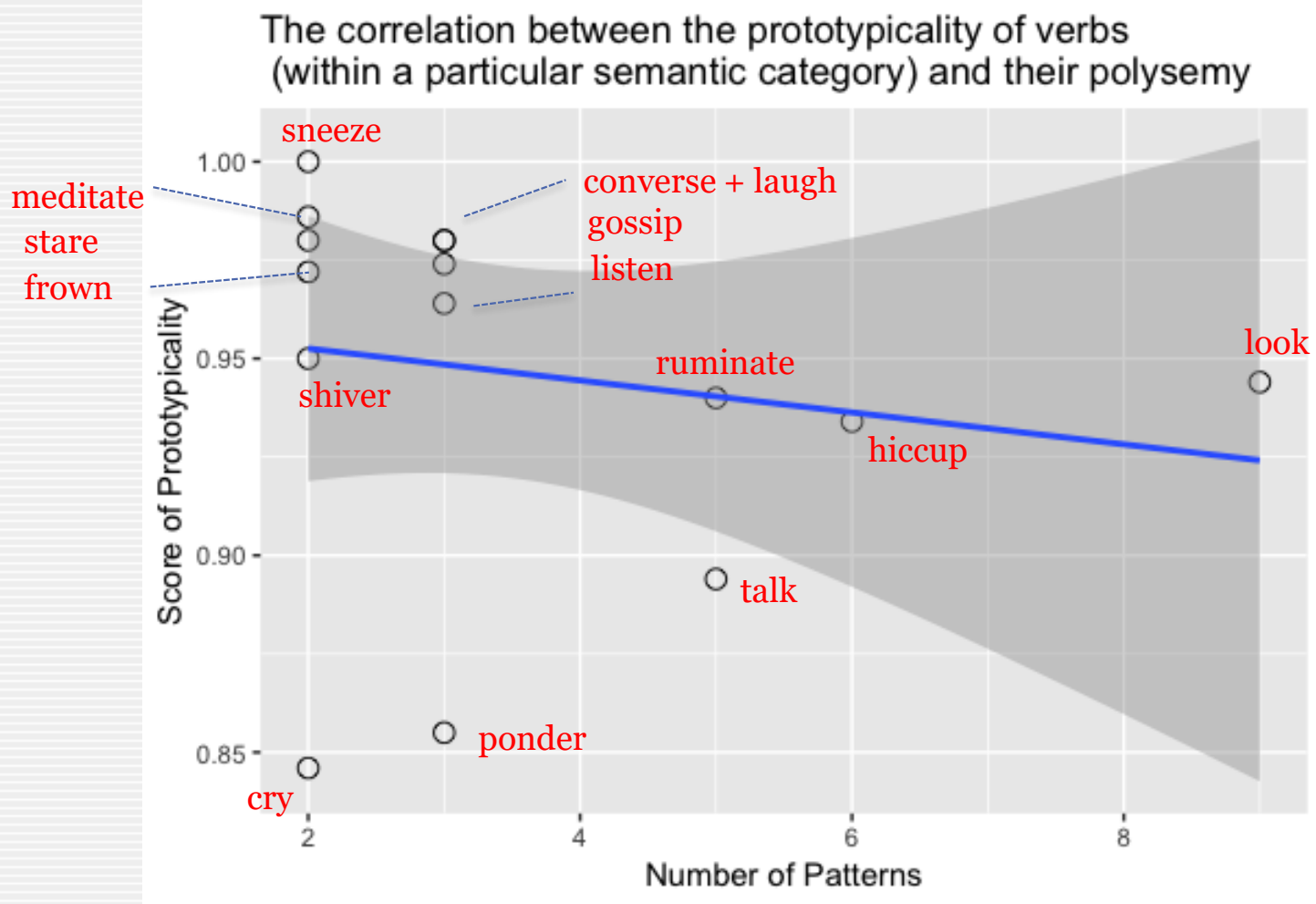
- Pattern number frequency
- The most frequent pattern use of these verbs were in line with criteria of the behavioural **besides ponder** (60% mental)
- Hypothesize: higher the pattern number, the less prototypical of the behavioural category

Verb	Number of patterns	Number of patterns representing Behavioural Processes
Look	9	4
Hiccup	6	2
Ruminate	5	4
Talk	5	3
Listen	3	3
Ponder	3	2
Gossip	3	2
Converse	3	3
Laugh	3	3
Frown	2	2
Cry	2	2
Shiver	2	2
Sneeze	2	2
Meditate	2	2
Stare	2	2



# Results

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$$r_s = -0.4344854, p = 0.05$$

# Summary

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- Theoretical proposals of lexico-grammatical reactances generally confirmed
  - Imperfective aspect
- Higher the pattern number, the less prototypical of the behavioural category

# Future research

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- Larger scale comparison with intransitive material processes
  - 250 x 10 verbs (1250 behavioural/material)
  - Lexico-grammatical reactances → differ in grammatical aspect?
- Investigate certain constructions – intransitive meaning

# References

- Banks, D. 2015. On the (non) necessity of the hybrid category behavioural process. In: Bayley, P. ed. *Hybridity in Systemic Functional Linguistics: Grammar, Text and Discursive Context*. 1st ed. London: Equinox, pp. 21–40.
- Comrie, B. 1976. *Aspect: an introduction to the study of verbal aspect and related problems (Cambridge textbooks in linguistics Vol. 7)*. Cambridge: Cambridge University Press.
- Davies, M. 2008-. The Corpus of Contemporary American English (COCA): 560 million words, 1990-present. Available at: <https://corpus.byu.edu/coca/>.
- Declerck, R., Reed, S. and Cappelle, B. 2006. *The grammar of the English verb phrase (Topics in English linguistics Vol. 60)*. Berlin: Mouton de Gruyter.
- Halliday, M. 1994. *An Introduction to Functional Grammar*. 2<sup>nd</sup> Ed. London: Edward Arnold.
- Halliday, M.A.K. and Matthiessen, C. 2014. *An Introduction to Functional Grammar*. 4th ed. London: Routledge.
- Hanks, P. 2004. Corpus Pattern Analysis. *Proceedings of the 11th Euralex International Congress*, pp. 87–98.
- Van Rompaey, T. 2013. *The development of P + NP + of/to + V(ing) progressive aspect markers*. PhD dissertation. Faculteit Letteren. Katholieke Universiteit Leuven.

# Results

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- Grammatical Aspect (full dataset)

