A Comparative Study of English Verbs of Causation between Native Speakers and English-learners: from the Perspective of Framenet

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CONTENTS

INTRODUCTION

INTRODUCTION

- 教育現場では文法（＝統語的）指導が主である
- 学習者と母語話者の語彙認識のギャップを知りたい
  → 意味的観点から学習者言語を見た研究が少ない
- FrameNet !!
- In this study, I will clarify how correctly English-learners in Japan are able to acquire the semantic use of English verbs, especially three verbs which evoke the situation of causation: *cause, bring, lead (to),* and will discuss what is insufficient in learners' cognition in terms of the use of those verbs compared with native speakers from the semantic and syntactic perspectives based on FrameNet.

REVIEW OF RELATED LITERATURE

REVIEW OF RELATED LITERATURE

- **NO 先行研究** (NO grad thesis…☹)
  - A semantic approach in language learning
  - Lexical mapping of meaning from L1 to L2
  - FrameNet

REVIEW OF RELATED LITERATURE

◆ A semantic approach in language learning

- Latent Semantic Analysis (LSA) による学習者習熟度研究

  - Crossley, Salsbury, McCarthy and McNamara (2008)

  習熟度が上がるにつれて発話中のlexical similarityが向上

- *Conceptual transfer*

  “Concepts underlying words in L1 are transferred to the L2 and mapped onto new linguistic labels, regardless of the differences in the semantic boundaries of corresponding words. (Ijaz, 1986) ”

→ 学習者がどれほどL2感覚を掴めているかを意味論的アプローチで観察できる

REVIEW OF RELATED LITERATURE

◆ **Lexical mapping of meaning from L1 to L2**

池上嘉彦 (2006)『英語の感覚・日本語の感覚：〈ことばの意味〉のしくみ』日本放送出版協会.

- "the feeling of whether a language expression is natural or not matters beyond the rules of languages in a restricted sense, such as grammar or use of a word. (p.72, translation mine)"
- 動詞の重要さ - dynamic vs. stative

  1) John struck Bill. 2) John loved Mary.

  3) John crossed the street. 4) John had blue eyes.

  → Grammatical structure is determined by speakers or writers and reflects how they perceive the event they are going to describe.

→文法と意味の強い繋がり / 文構造を決める動詞に最も反映される

REVIEW OF RELATED LITERATURE

- **FrameNet** https://framenet.icsi.berkeley.edu/fndrupal/

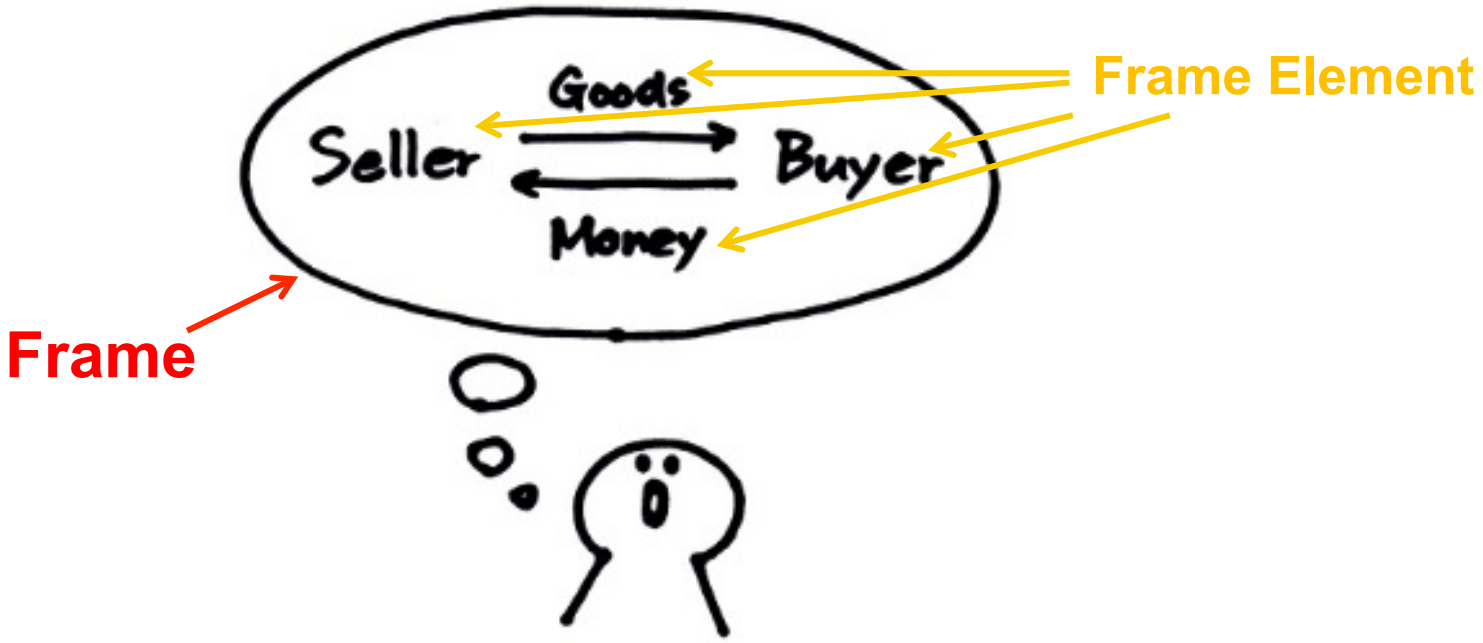
  - operated by the International Computer Science Institute (ICSI) in Berkeley since 1997

  - online English lexical database of verbs and nouns specialized in meaning and syntax based on Frame Semantics proposed by Fillmore

  - Frame Semantics: ある語の理解にはその語と関連する世界知識へのアクセスが不可欠である (cf. coast vs. shore) と考える理論

REVIEW OF RELATED LITERATURE

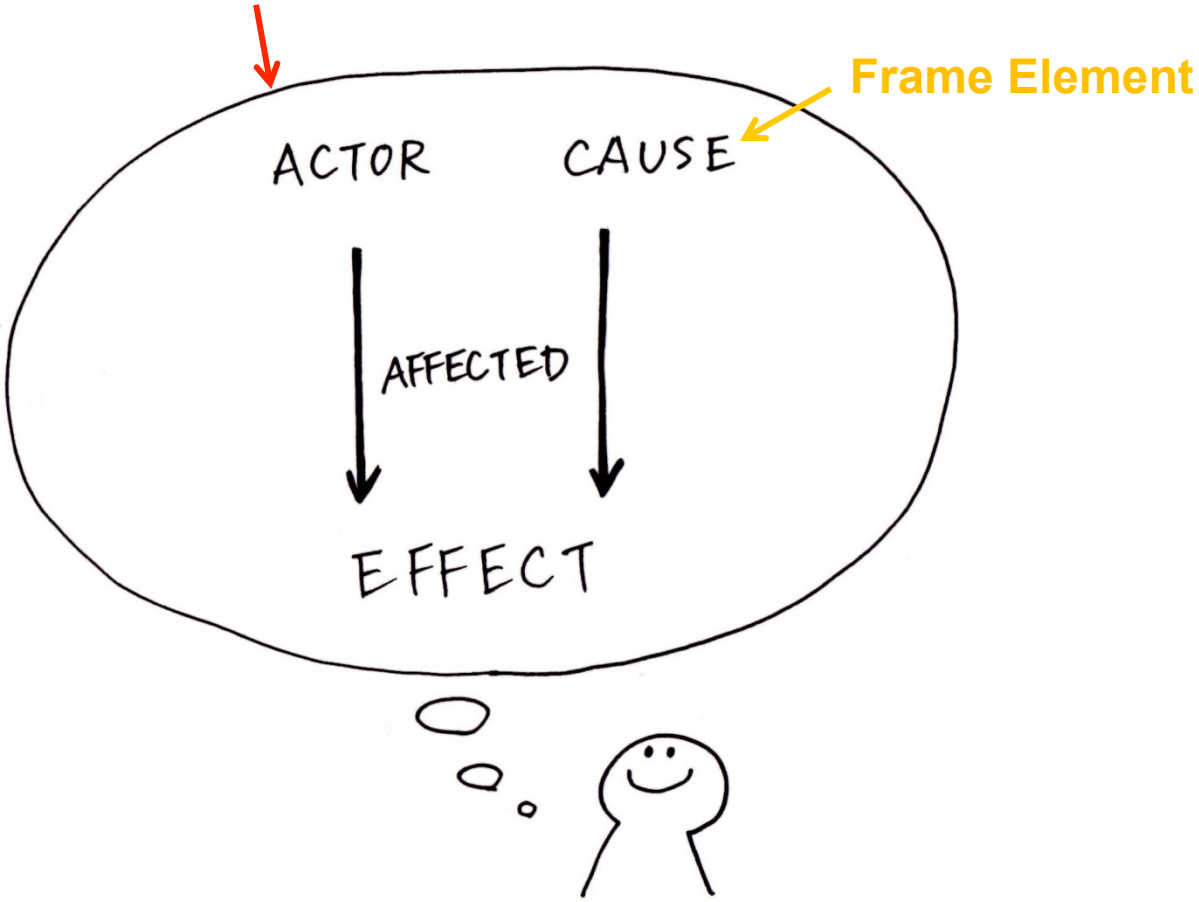
◆ 動詞 buy が喚起するフレーム – “Commerce-buy”



Frame : “Briefly, the idea is that people have in memory an inventory of schema for structuring, classifying, and interpreting experiences, and that they have various ways of accessing these schemata and various procedures for performing operations on them. (Fillmore, 1976, p.25)”

REVIEW OF RELATED LITERATURE

◆ 本研究の対象：Causation フレーム



REVIEW OF RELATED LITERATURE まとめ

本研究の有用性の根拠:

- 文法的側面だけではなく、意味的側面からも学習者言語を見るべきである
- L1→L2 mappingにおいて動詞に学習者の理解度が反映される
- 学習者の文構造と意味反映に関してFrameNetが分析基準を提供してくれる

METHOD

METHOD

◆ 対象語彙

Causationフレーム – cause, bring, lead (to)

◆ Research Questions

(1) What is the tendency of learners' use of Frame Elements with Causation verbs?

(2) How different is learners' variety of Frame Elements from native speakers? - causeについてのみ

(3) How different is the realization of Frame Elements between native speakers and English-learners? - causeについてのみ

METHOD

◆ Instruments

サーチエンジン： Sketch Engine

学習者コーパス： ICLE (JP) / NICE (NNS) / NICT JLE (NNS)

→ 上級者英語 をみる為

ネイティブ英語コーパス： BNC

METHOD

◆ Data sampling

Sketch Engineサンプリング → TeraPad処理 → Excel貼り付け

The total number of learner data samples

	cause	bring	lead
ICLE	80	71	64
NICE	41	32	31
NICT JLE	41	589	15

The sample size of native speaker data

	cause	bring	lead
BNC	200	200	200

METHOD

◆ Tagging (Excel参照)

There are other options than [the money] [that] bring [us] [happiness].
→ CAUSE CAUSE bring AFFECTED EFFECT

Learner sample size after annotation

	cause	bring	lead
ICLE	78	33	47
NICE	41	12	25
NICT	22	4	1
total	141	49	73

Size of native speaker sample after annotation

	cause	bring	lead
BNC	199	52	115

METHOD

- **Creating the list of FEs and their realizations**

Frame Element	Number Annotated	Realization(s)
Actor	(26)	NP.Ext (24) PP[by].Dep (2)
Affected	(5)	DNI.-- (1) INI.-- (2) NP.Obj (1) PP[for].Dep (1)
Cause	(94)	PP[by].Dep (20) PPing[by].Dep (5) NP.Ext (65) CNI.-- (1) DNI.-- (1) VPto.Dep (1) PP[through].Dep (1) Sfin.Ext (1)
Effect	(112)	NP.Obj (87) VPto.Dep (6) PP[between].Dep (1) NP.Ext (21) NP.Dep (1) PPing[to].Dep (1) VPing.Dep (1) DNI.-- (1)
Place	(6)	PP[at].Dep (1) PP[in].Dep (3) PP[throughout].Dep (1) PP[on].Dep (1)
Time	(11)	AVP.Dep (2) PPing[after].Dep (2) NP.Dep (2) PP[within].Dep (1) PP[at].Dep (1) PP[in].Dep (1) PP[on].Dep (1) PPing[on].Dep (1)

RESULTS

RESULTS

i. 学習者のCausationのFrame Element使用率に偏りは無く、母語話者と比較しても使用率に大きな差は無かった

ii. Frame Elementごとに特徴的用法・認識が見られた (cause)

iii. 統語的実現形の差異で意味認識の差が見られた (cause)

RESULTS – i 使用率

Learners' usage rate of Frame Elements

	ACTOR	AFFECTED	CAUSE	EFFECT	TIME	PLACE	FREQUENCY	MANNER	CIRCUMSTANCES
cause	29%	26%	74%	105%	2%	2%	3%	3%	1%
bring	24%	35%	78%	100%	2%	4%	0%	0%	2%
lead (to)	11%	42%	97%	93%	0%	3%	0%	0%	1%

RESULTS – i 使用率

Native speakers' usage rate of Frame Elements（FrameNet とほぼ一致）

	ACTOR	AFFECTED	CAUSE	EFFECT	TIME	PLACE	FREQUENCY	MANNER	CIRCUMSTANCES
cause	29%	26%	74%	105%	4%	5%	2%	2%	2%
bring	31%	44%	54%	100%	6%	0%	0%	0%	0%
lead (to)	3%	38%	95%	101%	6%	2%	0%	2%	0%

RESULTS – ii FEごとの特徴的用法(cause)

- **ACTOR –**　意志性の有無
- **AFFECTED –**　人がほとんど(NNS) vs. モノもある(NS)
- **CAUSE –**　広義の為なんでも出てくる
- **EFFECT –**　ネガティブイメージの要素ばかり
- **TIME, PLACE, FREQUENCY, MANNER, CIRCUMSTANCES**
  - –　サンプル数が極端に少なく特徴も見られず

RESULTS – iii 統語的実現形での差異(cause)

FE	Number Annotated	Realization(s)
ACTOR	41	NP.Ext 33 PP[by].Dep 5 PP[of].Dep 1 CNI 2
AFFECTED	36	NP.Obj 20 PP[between].Dep 1 PP[for].Dep 4 PP[to].Dep 2 DNI 2 INI 7
CAUSE	104	NP.Ext 65 PP[by VPing].Dep 1 PP[by].Dep 20 PP[from].Dep 1 VPing.Dep 10 VPto.Dep 2 VP原形.Dep 1 CNI 2 DNI 1 INI 1
EFFECT	148	NP.Ext 41 NP.Obj 84 NP.間接Obj 10 PP[of].Dep 1 VPing.Dep 2 VPto.Dep 10
PLACE	4	PP[in].Dep 3 PP[inside].Dep 1
TIME	3	AVP 2 PP[in].Dep 1
MANNER	5	AVP 2 PP[in].Dep 1 PP[to].Dep 1 PP[without].Dep 1
FREQUENCY	4	AVP 4
CIRCUMSTANCES	2	when節 2

NNS 学習者

FE	Number Annotated	Realization(s)
ACTOR	74	NP.Ext 52 PP[by].Dep 15 CNI 2 DNI 5
AFFECTED	69	NP. Obj 44 NP.間接Obj 1 PP[among].Dep 1 PP[between].Dep 3 PP[for].Dep 3 PP[in].Dep 2 PP[of].Dep 2 PP[to].Dep 6
CAUSE	147	NP.Ext 97 PP[by].Dep 35 PP[by VPing].Dep 1 Sentence 2 VPing.Ext 4 DNI 8
EFFECT	204	NP.Ext 64 NP.Obj 96 NP.間接Obj 8 VPing.Ext 1 VPto.Dep 35
PLACE	9	PP[in].Dep 7 PP[on].Dep 1 PP[throughout].Dep 1
TIME	8	PP[at].Dep 1 PP[during].Dep 2 PP[in].Dep 4 PP[on].Dep 1
MANNER	3	AVP 2 PP[to].Dep 1
FREQUENCY	3	AVP 3
CIRCUMSTANCES	3	PP[in].Dep 1 until節 1 when節 1

NS 母語話者

RESULTS – iii 統語的実現形での差異(cause)

- **ACTOR –** NP.Ext（圧倒的） か PP[by].Dep
- **AFFECTED –** NP.Obj が主だが、PP[前置詞].Dep も豊富
- **CAUSE –** NP.Ext か PP[by].Dep
  分詞構文の意味上の主語としても出現（NS 母語話者）
- **EFFECT –** NP.Obj が最多（VP ＜ NP）
  二重目的語構文の indirect object としても多々出現
  （※LDOCEではungrammaticalとされているが・・・？）

DISCUSSION

DISCUSSION

(1) What is the tendency of learners' use of Frame Elements with Causation verbs?

- 学習者のFrame Elemetnt使用率に偏りは無い
  → 同じCausation frameを頭の中に持っている＝Causationの世界を理解できている

- Lead (to) の主語の概念誤認識（学習者）
  → ACTOR の使用が見られたがしかし・・・。

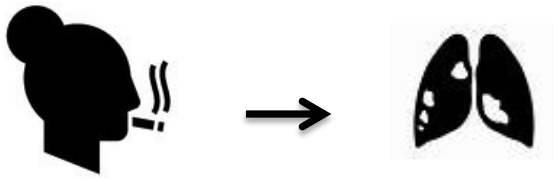


Image of *Smoking leads to lung cancer.*

DISCUSSION – cause についてのみ

(2) How different is learners' variety of Frame Elements from native speakers?

(3) How different is the realization of Frame Elements between native speakers and English-learners?

- ACTOR の意志の有無性と文構造
  (NS) 意志性有 → NP.Ext active／意志性無 → PP[by].Dep passive
  (NNS) 意志性に関わらず文構造に特徴無し

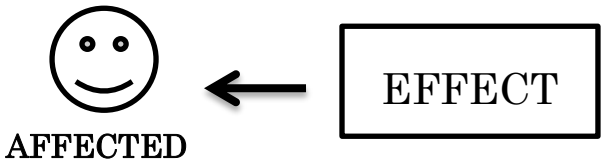
- (NNS) 人をAFFECTEDのNP.Objで実現するcausationの認識
  → 次のスライド参照

- ネガティブイメージEFFECTの二重目的語構文
  LDOCE: SVO_1O_2 の O_2 は problem または trouble である
  cf. The Scotch Whisky Industry recognises that there are people whose drinking causes them medical or social harm.
  (cited from BNC)

DISCUSSION – cause についてのみ

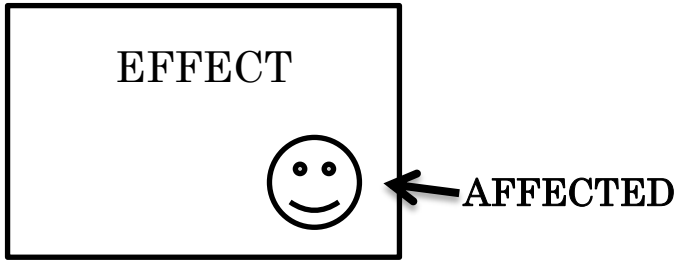
NNS（学習者）

We‘re very sorry to cause you a trouble .　(cited from NICT)



NS（母語話者）

The diversion of the Danube into a new canal in October caused the deaths of thousands of fish and extensive damage to riverside vegetation.　(cited from BNC)



CONCLUSION

CONCLUSION

- **具体的Frame Element（意味）と 文構造（統語）の関係性発見**

- **NNS, NS間で因果関係世界の基礎認識は一致していることが前提**
  - FE要素（意味）を具体的に見ることで、どう構文（統語的）に学習者の認識が表されているか
  - 母語話者と比較して、Causation世界に対してどのような具体的認識イメージを持っているかのギャップを確認できた

- **FrameNetやっぱり役立ちましたーーーー！**
  - FrameNet made it clear how learners' English in causal context is realized semantically and syntactically at the same time, and by comparing it with native speaker English, characteristic stereotypes of causal relations in learner English was observed.

CONCLUSION

◆ **Limitations and issues**

- 学習者データのトピックコントロール
- 学習者データと母語話者データの数
- タグの信頼性

◆ **Future perspective**

- Causationフレーム内の全動詞の類義語比較研究
- ゆくゆくは語彙教授法に応用可能
- Natural L2 へ近づくキッカケに・・・（私の夢）

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THANK YOU FOR LISTENING!