The acquisition of idioms: Stages and theoretical implications
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Introduction Being phrases with internal syntactic structure but manifesting idiosyncrasy of meaning, idioms involve an inherent duality. As such, they provide a unique window into how modules of the language faculty and other aspects of cognition mature and interact. Previous studies have addressed the acquisition of idioms mainly with regard to effects of context and degree of semantic opacity and the developmental differences between idiom comprehension and production based on English, French and Italian ([1], [4, 5], [6], [9]). Little is known about (i) the potential implications of the idioms' internal structure for their acquisition; (ii) idiom acquisition in other languages. We present an experimental study of the acquisition of Hebrew verb phrase idioms, investigating (i) stages of acquisition; (ii) effects of internal structure; (iii) potential consequences regarding idiom storage in the lexicon. Two variables are manipulated: (1) full/gapped idiom: whether an idiom forms a full constituent (e.g. *shoot the breeze*) or includes a gap (e.g. *cut x some slack*) (2) decomposable/non-decomposable idiom: whether the idiom is isomorphic with its meaning, i.e. each of its components corresponds to an element of its meaning ([8]) (e.g. [*kill*] [*two birds*] [*with one stone*] '[achieve] [two goals] [with one action]'), or not (e.g. *shoot the breeze* 'chat').

Experiment 1: comprehension **Participants**: 90 Hebrew speaking children; 30 first graders (age 6-7), 30 second graders (7-8) and 30 third graders (8-9). **Stimuli**: 20 Hebrew phrasal idioms having also a licit literal meaning, composed of frequent lexical items, including transitive V NP PP: 5 full and decomposable, 5 full and non-decomposable, 5 gapped and decomposable, and 5 gapped and non-decomposable. Phrase length, structure and frequency were controlled. **Design**: Illustrated short stories providing the appropriate setting without revealing the meaning of idioms were individually read to participants. Each story ended with an idiom, and was followed by a multiple-choice question. Stories and tasks were pseudo-randomly ordered. Subjects were asked to choose the correct interpretation among (i) the correct idiomatic meaning (ii) a literal, contextually inappropriate meaning (iii) a contextually appropriate invented idiomatic meaning. **Results**: See figure 1.

Experiment 2: production (a completion task) **Participants:** 90 Hebrew speaking children who did not take part in experiment 1, divided into 3 groups as above. **Stimuli**: the same as in experiment 1. **Design**: 20 pseudo-randomly ordered illustrated short stories and tasks were individually read to each participant. The target idiom appeared at the end incomplete, allowing recognition of the idiom but not a correct guess. Subjects had to complete idioms. **Results:** See figure 2.

Discussion The ability to comprehend and produce idioms develops gradually in Hebrew from age 6-7, with a gradual decrease in literal responses (figure 3).This is consistent with the findings of previous studies of idiom comprehension targeting children who acquire Italian, French and English ([1],[4],[6],[7]). Internal structure had an effect on acquisition in production (completion) only, and while (non)decomposability played a role across age groups, gaps only affected 2nd graders. We suggest the effect of gaps is related to idiom length, and explain why the effect is limited. (Non)decomposability, in contrast, played a role in production: Across all age groups, *nondecomposable* idioms scored significantly better in the completion task. We first explain why proposals assigning different storage to the two idiom types [8] cannot explain the data. We then argue that during acquisition children, unlike adults, store *nondecomposable* verb phrase idioms (in contrast to *decomposable* ones) as independent 'big-unit' entries, which facilitates idiom completion. This predicts that adults will not exhibit the non-decomposability effect found in children's production. An experiment conducted on 45 adult native Hebrew speakers to test this prediction shows that the adult participants demonstrated the opposite pattern and performed better with decomposable

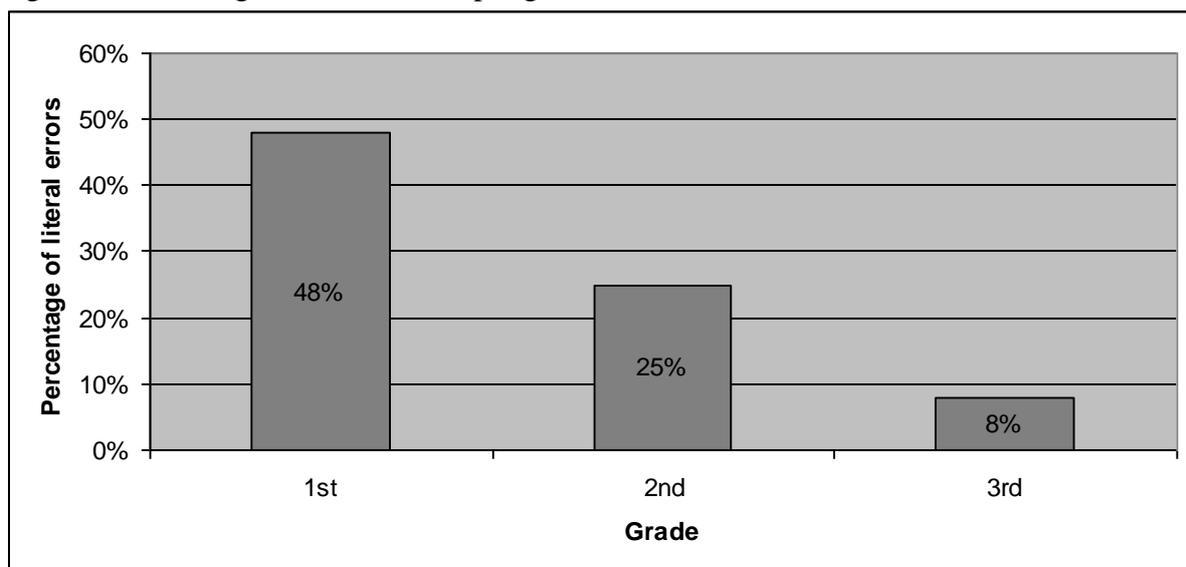idioms. We attribute this performance pattern to the semantic composition analysis they are able to apply.

Figure 1: Children's performance in experiment 1 (comprehension; multiple-choice test)

Literal errors	Performance	
48%	**chance level : 47.5%** (t(29)= 0.6, p=0.55)	1st graders
25%	**70%** (t(29)= 5.7, p<0.0001)	2nd graders
8%	**90 %** (t(29)= 19.08 p< 0.0001) significantly **better than 2nd graders** (W(19)= 190, p=0.0001)	3rd graders
Decomposable vs. nondecomposable	Gapped vs. full idioms	All groups
no significant difference	**no** significant difference	

Figure 2: Children's performance in experiment 2 (production; idiom completion)

Decomposable vs. Nondecomposable	Gapped vs. full	Mean of correct responses per item	Grade
nondecomposable significantly **better** (t(29)= 5.4	**no** significant difference (t(29)=1.12, p=0.3)	**2.6** (8.6% correct)	1st
Nondecomposable significantly **better** (t(29)=7.6, p < 0.0001)	**gapped** significantly **better** (t(29)= 3.2, p =0.003)	4.15 (13.8% correct) significantly **better** **than 1st graders** (W (11)=56, p = 0.007)	2nd
Nondecomposable significantly **better** (t (29)=5.7, p<0.0001)	**no** significant difference (t(29)=1.8, p=0.16)	**12.5** (41.6% correct) significantly **better** **than 2nd graders** W(19)= 182, p=0.0003)	3rd

Figure 3: Percentage of literal errors per grade

References:[1] Ackerman 1982; [2] Billow 1975; [3] Cain et al 2008; [4,5,] Levorato & Cacciari 1992, 1999; [6] Laval 2003 ; [7] Levorato, Nesi & Cacciari 2004 [8] Nunberg et al. 1994; [9] Nippold & Tarrant-Martin 1989.