structures and to introduce readers to the state of the art. We have developed
several special features that will support this mission. These features will serve
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interacting with you.

The ASL lexicon

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This paper explores a range of Foreign vocabulary in American Sign Language and
demonstrates that there are ways of accounting for them without undermining
the fundamental independence of a natural sign language. Arguments are made for a unified
lexicon in which Native and Foreign vocabulary are arranged schematically as extending
from a core to a periphery with gradations of conformity to phonological constraints on
ASL forms. At the conclusion of the paper there is a brief review of issues concerning the
presence of Foreign vocabulary in natural sign languages.

Keywords: American Sign Language, lexicons, sign language phonology, sign language
morphology, loan vocabulary

Introduction

This paper examines the composition of the ASL lexicon. To date, studies of the
ASL lexicon have focused on certain sets of vocabulary to the exclusion of others,
noteably verbs of motion and location, agreement and plain verbs (T. Supalla 1985;
Fischer & Gough 1978; Klina & Bellugi 1979; Padden 1988), adjectival predicates
(Klina & Bellugi 1979), and derivational forms (Supalla & Newport 1978; Klina
& Bellugi 1979). Mentioned only in brief are signs said to be borrowed from
English such as initialized signs and loan signs derived from fingerspelling.

This marked division between core and Foreign vocabulary in ASL is most
likely due to two reasons. First, there appears to be ideological anxiety about the
presence of Foreign elements in a natural sign language. Sign linguists have labored
long and hard to demonstrate that sign languages are not codes for spoken
languages; the inclusion of Foreign vocabulary would seem to detract from the
strength of this position. Second, there is more generally a shortage of unitary
analyses of diverse lexicons, or lexicons where vocabulary derive from more than
one origin (Itô & Mester 1995). My goal here is to explore a range of Foreign
vocabulary in a signed language and demonstrate that there are ways of accounting
for them without undermining the fundamental independence of a natural sign
language. I will draw from a recent attempt to account for the variety of vocabu-
larly in the Japanese lexicon. At the conclusion of this exercise I will briefly review
implications of a realigned lexicon on larger issues of sign language description.

Battison first noted (1978) that some ASL signs have as their origin the fingerspelling system used by ASL signers. For these signs, he proposed calling them "loan signs", not because they were loans from other sign languages, but derived from fingerspelled words. Although Battison does not discuss at length other vocabulary, he acknowledges that there are other forms of similar origin. In this paper, I expand his initial discovery to include a number of other vocabulary of Foreign origin. They are: name signs, first described by S. Supalla (1992), initialized signs, and the less well-known sign-fingerspelled compounds and so-called "abbreviation signs". None are especially rare among signers; they appear frequently in everyday signing, but few descriptions of ASL vocabulary refer to them. In following sections, I will detail each category in turn.

1. Native vocabulary

I define Native vocabulary as made up of several well-known sets of ASL vocabulary, notably the classifier structures — verbs of motion and location, size-and-shape specifiers, and other classifier predicates. Also included are the verb categories of plain and agreement verbs, adjectival predicates and the pronominal system, including directional predicates UP, DOWN, THIS-WAY/THAT-WAY. This vocabulary can be defined as "iconic" not in the sense that the forms are obviously transparent to the naive viewer or continuously vary with the real world, but in terms of their origin in the gestural domain. T. Supalla (1985) describes handshapes of ASL verbs of motion as "incorporating meaning based on salient visual-tactile characteristics of the referent object". Singleton et al. (1993) find that naive hearing subjects can mimic and report the meaning of ASL verbs of motion and location with 72% accuracy. Their ability to recognize, even mimic, these forms, it can be argued, derive from a common human ability to manipulate gestures for symbolic purposes. My reference to the term "iconic" is intended to represent these vocabulary as originating from the complex gestural resources of human beings (see Goldin-Meadow & Mylander 1985; Kendon 1988; McNeill 1992).

Of relevance to the present discussion are the following characteristics of Native vocabulary: their syllable structure, the affixation of inflectional morphology to verbs and nouns, and derived nouns. As will be discussed in a subsequent section, different categories of Foreign vocabulary in ASL adhere to certain of these constraints, but not all.

1.1. ASL syllable structure

Handshapes of ASL verbs have encoded some of the strongest, most frequent morphemes in the language. The sign SEND (Figure 1) is monosyllabic and has two tokens and two types: the 0-handshape followed by 5-handshape. The sign DESTROY is bimorphemic, and has four tokens but only two types: 5-handshape followed by A-handshape, then A-handshape opening to 5-handshape again. That the constraint applies at the

syllable structure in ASL, and as it turns out, are most relevant in the discussion of vocabulary originating or extracted from fingerspelling. When Battison (1978) proposed his constraint on handshape changes in ASL signs, he acknowledged only word-level phenomena: "signs are limited to no more than two such different handshapes" (p. 49). Additionally, "... the handshape changes [involve] relative openness and closedness of the handshapes" (p. 52). Mandel (1981) and Sandler (1989) refined Battison's observation in an attempt to capture a common observation that many if not most handshape changes involve changes only within the same set of fingers. Signs appear not to involve a change from one to another completely unrelated handshape, such as from X to F. They stated the constraint in terms of "selected fingers" or the notion that handshape changes involved movement only within fingers already specified for one or the other handshape position. Brentari (1990) agreed with their observation but argued that the observation pertained only to syllable-level phenomena. A second constraint, the "peripherality constraint", covers word-level facts about handshape changes, specifically that the two handshapes within a syllable differ in terms of relative openness or closed-ness. The two handshapes need to display minimal differentiation.

Selected Fingers Constraint: The syllable may license only one set of features that specifies selected fingers. THROW involves a H handshape in closed position followed by open. At the level of the syllable, the same fingers involved in the first position of the hand configuration are involved in the second.

Peripherality Constraint: The word may license a maximum of one [-peripheral] handshape. [-peripheral] is a handshape posture that is not fully open or fully closed; i.e., bent, curved, or flat. At word-level, the handshape change involves at most two positions of hands.

Perlmutt (1993) proposed a similar but more general formulation in which there was no reference to which fingers are involved; instead the constraints should refer simply to the number of changes permitted at syllable- and word level. There are no more than two handshape tokens, or particular instances, forming a contour in a syllable, and no more than two handshape types, or distinct instances, in a morpheme.

Handshape Contour Constraint: A syllable can have at most one handshape contour. The Two-Type Constraint: A representation on the handshape tier of a lexical entry can contain at most two handshape types.

The sign SEND (Figure 1) is monosyllabic and has two tokens and two types: the 0-handshape followed by 5-handshape. The sign DESTROY is bimorphemic, and has four tokens but only two types: 5-handshape followed by A-handshape, then A-handshape opening to 5-handshape again. That the constraint applies at the
level of the morpheme is demonstrated by the multimorphemic sign SEND+AGENT which has three handshape types at the level of the word: S, 5, and B but no more than two per morpheme.

Figure 1: SEND

Figure 2: DESTROY

Coulter (1982) and Perlmutter (1992) have argued that the native lexicon is largely (but not exclusively) monosyllabic. There are monosyllabic, monomorphemic signs such as LIKE, UNDERSTAND, GERMANY and monosyllabic, polymorphemic signs, e.g. agreement verbs such as I-GIVE-YOU. Smaller in number are polysyllabic, monomorphemic signs which include DESTROY, MAKE-NOTE-OF, APPOINTMENT. Polysyllabic, polymorphemic signs include some classifier structures, aspectual marking on adjectives and certain inflections on agreement verbs, e.g. dual marking. Importantly, at the level of the morpheme, there appears to be no more than two syllables allowed.¹

¹ Additional discussions of issues in phonological description of ASL signs can be found in Coulter (1993), Corina (1993) and Sandler (1989).
apparent “abbreviation signs”, sign-fingerspelled compounds, to name signs. All share an origin in the American fingerspelling system.

2.1. The American fingerspelling system

The conventional description of fingerspelling in ASL is that it constitutes borrowed vocabulary from English and is used to represent names, places, and vocabulary for which no signs are available. The fact that fingerspelling has existed since the earliest filmed records of ASL (Veditz 1913; Hotchkiss 1913) seems not to have discouraged the popular sentiment that fingerspelling is English and its presence in ASL is marginal.2 But as Lucas & Valli (1992) point out, the relationship between fingerspelling and English is a distant one. The system is at least two levels of representation removed from English: it is a representation of another representation. More precisely, it is two inventions removed: first, the written invention followed by the manual, face-to-face invention. Furthermore, its presence in ASL is ubiquitous; fingerspelled words appear as frequently as 7–10% of the overall vocabulary in everyday signing (Padden 1991). It has a durable and established niche in ASL.

More globally, the ASL fingerspelling system is one of many similar inventions in sign languages of the world, designed to cross modalities and allow representation of spoken material in visual form. The ASL fingerspelling system is a one-handed alphabetic system also found in European sign languages such as French Sign Language and Swedish Sign Language. The British deaf community uses a two-handed alphabetic system (Sutton-Spence & Woll 1993), as do Australians and New Zealanders. Deaf Italians use alphabetic fingerspelling for foreign names, but articulate by mouth spoken Italian vocabulary, as do the Dutch in the Sign Language of the Netherlands (Schermers 1990). In Japanese Sign Language, there is a manual representation of the syllabic hiragana system. In addition, JSL and other Asian sign languages, including Taiwan Sign Language (An 1995) and Hong Kong Sign Language have manual character signs, e.g. NORTH. Danish Sign Language uses a “mouth-hand system” involving mouth movements coordinated with disambiguating hand configurations (Birch-Rasmussen 1982).

Despite its origin as an invention for representing English words in alphabetic form, it is as yet unclear how to characterize the form of fingerspelled words in

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2 The American fingerspelling system can be traced to an invention by a hearing priest in the seventeenth century, Juan Pablo Bonet, who developed it in the course of his tutoring a young deaf boy. The system was subsequently appropriated by the Abbe Sicard, a French educator of deaf children (Lane 1984).
Initialization is one of the most productive of word-building processes in ASL, used widely for technical or professional purposes. Many initialized signs appear in pairs with Native signs representing the common and familiar, and initialized signs, the scientific and distant, e.g. the Native FEELING-DOWN and initialized CLINICAL-DEPRESSION; Native SUSPICIOUS and initialized PARANOIA; Native SOUND and initialized PHONOLOGY; Native GOVERNMENT and initialized POLITICAL POLITICS.

Initialized signs almost always correspond to the first letter of an English translation of the sign. An exception is the sign SEX/GENDER in which the handshape is the last letter of the word, X. Interestingly, there has been further word-building from this particular sign; in the related form, TRANSEXUAL, the contacting root movement has been replaced with a root movement meaning “to reverse, change”.

As widespread as this particular process of word-building has been in ASL, many deaf people say they are suspicious of initialized signs. Part of the anxiety stems from the fact that sign language reformers of the 1970’s (Gustason et al. 1975) proposed substituting large numbers of native vocabulary with initialized signs which predictably met with much resistance in the deaf community. Yet initialized signs are widespread, even if specific initialized forms from the Gustason et al. project are disallowed. It should be noted that the rapid growth of new initialized signs used in everyday contexts in the community almost perfectly coincides with the rise of the deaf professional middle-class during this period (Padden 1990). With the movement of deaf people away from traditional and low-paying solitary trades into technical and scientific fields of work, they needed new vocabulary for their new work lives. In these new contexts, initialized signs are productive means of forming semantic and lexical oppositions between known, intimate, in-group vocabulary and scientific vocabulary (Ramsey & Padden 1996).

2.3. Name signs

S. Supalla (1992) noticed that “arbitrary” name signs in ASL constitute an extremely small system of possible forms, constituting a sublexicon. The handshapes are drawn from a small inventory of fingerspelled handshapes in addition to a small set of permissible movement, location and orientation elements. In contrast to the “descriptive” name sign system in which names are derived from the classifier inventory, arbitrary name signs have no classifier elements, instead the signs are formed from combinations of a limited set of arbitrary elements.

Name signs, like initialized signs, employ the fingerspelled handshape corresponding to the first letter of an English name, usually a first name or a last name, and sometimes both. But unlike initialized signs, name signs permit only a few movement elements. My name sign, CAROL, is the C handshape combined with the shaking movement located in neutral space. Because the inventories are so limited, it is not uncommon for individuals in the national deaf community to have the same name sign although typically same name signs are avoided in a local or professional community.

2.4. Loan signs

While initialized signs and arbitrary name signs draw only from the fingerspelled handshape inventory in combination with movement and location elements of the Native lexicon, loan signs are entirely derived from fingerspelled words. Nativized loan signs involve extensive restructuring with significant reductions in the movement contour of the origin fingerspelled word. The number of handshapes in the fingerspelled word is typically reduced to two in the loan sign. Battison (1978) lists restructured loan signs whose origin forms ranged from at least two letters up to five letters. Examples are those of two-letter origin, #SAY-NO, three-letter: #JOB (Figure 3), four-letter: #EASY and five-letter: #WOULD. In his analysis, restructured forms typically retained first and last letters with medial letters deleted or reduced as in #JOB which has a handshape change J to B, deleting the medial O and #WOULD with a handshape W to D, deleting all other medial letters.

Figure 3: #JOB

Loan signs fall into a range of word classes, from nouns (#JOB), verbs (#SAY-NO), adjectives (#EASY), conjunctions (#BUT), interjections (#FUCK) and wh-words (#WHAT). Except for very few forms, e.g. #BREAD (Figure 4), loan signs’ origins as fingerspelled words can still be recognized, despite reduction and resyllabification. Hirsh-Pasek (1981) finds that young signers can report the fingerspelled words from which the loan signs in her sample were derived.
suggesting the intriguing possibility that loan signs retain not only some of the handshapes but also movements inherent to the full fingerspelled forms.\(^3\)

Figure 4: #BREAD

2.5. Abbreviation signs

Except for #BULLSHIT, none of Battison's examples include words that exceed five letters leaving open the question of how to analyze so-called "abbreviation" signs. They are possibly loan signs since they involve reduction of the string of fingerspelled letters to at most two handshapes. Like loan signs, some take agreement inflection, e.g. #FEEDBACK which can inflect for person and number of the subject and object. Unlike loan signs which tend to retain the first and last letters of the origin fingerspelled word, many abbreviation signs retain the first and a medial letter. The following abbreviation signs have one handshape change and a simple movement such as a path or brushing movement:

- F-B ‘feedback’
- W-S ‘workshop’
- W-D ‘withdraw’
- V-T ‘videotape’
- V-P ‘vice president’

3. When fingerspelled words are emphasized, movement contours become more prominent and distinctive. T. Holcomb (personal communication) observed his young preliterate daughter assigning different movement contours to R-I-C-E and I-C-E; with R-I-C-E, his daughter used a characteristic circling movement, but with I-C-E, she used an opening and closing movement.

Other forms have two points of contact:

- S-W ‘social work’
- S-C ‘senior citizen(s)’
- B-T ‘board of trustees’
- U-S ‘Usher’s Syndrome’
- B-G ‘background’
- V-N ‘Viet Nam(ese)’
- P-J ‘project’

The medial handshape may coincide with the second word in a phrase or a compounded unit, e.g. #USHER’S-SYNDROME and #WORKSHOP, or the second stem, e.g. #PROJECT, #WITHDRAW. A few abbreviation signs involve a first and final letter, e.g. #CURRICULUM.

Brentari (1990) analyzes abbreviation signs not as loans but as initialized signs. She does not offer an extended analysis, but it is not an unreasonable proposal. Abbreviation signs, like initialized signs, occupy semantic fields linking clusters of initialized signs, e.g. S-C ‘senior citizen’ joins TWINS, SINGLE; V-N ‘Vietnamese’ joins JAPAN, CHINA, KOREA; S-W ‘social work’ joins THERAPY, REHABILITATION. But a number of other abbreviation signs have no such groupings, e.g. F-B ‘feedback,’ W-D ‘withdraw’, U-S ‘Usher’s Syndrome.’ I leave final analysis of these forms to the future.

3. A unified lexicon

The question here is whether there are grounds for collapsing the separate lexicons of Native and Foreign vocabulary in a single lexicon. Are there significant generalizations to be obtained from a lexicon in which Native and Foreign vocabulary are organized in some patterned way? Ito & Mester (1995) face a similar issue in Japanese which has four major categories of vocabulary, each of different origin: Native or Yamoto vocabulary, mimetic, Sino-Japanese and European. Instead of simply marking differences among them, Ito & Mester propose a schematic "core-periphery" structure in which Native vocabulary exists primarily in the core, with other vocabulary differentiated in varying degrees extending to the periphery. For example, some phonological constraints, e.g. "sequential voicing" in which initial consonants of the second unit of a compound are voiced are found only in Yamoto vocabulary. Other constraints, such as disallowing single [p], are found in both Yamoto and Sino-Japanese forms but not in Foreign and Mimetic vocabulary. The patterning of which vocabulary conforms to which constraints can be mapped onto their proposed core-periphery arrangement.
Although many details of ASL’s phonological structure remain unresolved (and controversial), I shall undertake in this paper a preliminary effort at mapping the pattern of phonological constraints and morphological classes in an ASL lexicon containing a division between Native and Foreign vocabulary. I begin first by characterizing phonological constraints applying to Native vocabulary and the different morphological rules that have been identified in the literature. I then discuss each subset of Foreign vocabulary. Finally I review phonological constraints and morphological rules that have been proposed for ASL signs and discuss them in the context of a unified ASL lexicon.

3.1. Foreign vocabulary and the ASL syllable

Constraints on native signs govern some but not all foreign vocabulary. Brentari notes that some loan signs conform to her Selected Fingers and Peripherality Constraints (section 1.1): #BREAD, #SO, #WHAT, #SAY-NO, #BULLSHIT, but not all, for example: #JOB, #DOG, #BACK, #TO-OKEY. In the latter set of vocabulary, the handshape changes do not involve selected fingers but conform to the peripherality constraint. Clearly some forms are more native-like, but as a group, Foreign vocabulary do not obey all her constraints. Foreign vocabulary seems to permit not only a broader set of handshapes, but also more marked handshapes than native signs (e.g. W and D as in #WITHDRAW).

Perlmutter’s constraints (section 1.1), in contrast, hold across Native and at least some Foreign vocabulary. His constraints limit the number of handshape changes at the level of the syllable and word. Only one handshape contour (or one handshape change) is permitted at the level of the syllable; and at morpheme level, no more than two different types of handshapes are permitted overall. Battison (1978) noted a strong tendency in his loan signs to reduce to no more than two handshapes. Because nearly all his examples involved monosyllabic loan signs, all are covered under the Handshape Contour constraint. Many abbreviation signs are bisyllabic but have no more than two handshapes types, e.g. BACKGROUND, SOCIAL WORK.

What remains uncovered by any of these constraints are loan signs where there are intermediary handshape forms within what appears to be a handshape contour, e.g. #EASY and #EARLY. Both have initial E and final Y handshapes, but there are handshapes in the transition between the initial and final handshapes, S in #EASY and R and L in #EARLY. As an initial analysis, it is possible that these forms are not monosyllabic, but bisyllabic, with the following structure:

#EASY  [E - S] >> [S - Y]
#EARLY  [E - R] >> [L - Y]

If this analysis is correct, Perlmutter’s Handshape Contour constraint will govern these forms, but the Two-Type constraint will not (#EASY has 3 handshape types and #EARLY has 4).

Aside from loan signs and abbreviation signs, Perlmutter’s two constraints hold for initialized signs and name signs as well. The following table summarizes the sets of vocabulary and the constraints they obey:

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Native</th>
<th>Name</th>
<th>Abbrev</th>
<th>Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected Fingers</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Peripherality</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Handshape Contour</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Two-Type</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

A model of lexical organization such as one proposed by Itô & Mester (1995) would be fruitful here. At the core lie Native signs which obey all constraints, and extending out in the periphery are some Foreign signs which obey some but not all constraints, to the furthest boundary where there exist other Foreign vocabulary that obey the least number of constraints. This model captures the fact that borrowed vocabulary conform to constraints on ASL signs in varying degrees, some more than others. In essential form, borrowed vocabulary are not entirely alien and constraints on ASL signs apply to them as well.

3.2. Inflectional morphology

Verbs in all of the aforementioned categories of Foreign vocabulary, except of course name signs, can be either plain or agreement verbs. Examples of each in the two classes are:

<table>
<thead>
<tr>
<th></th>
<th>Initialized Signs</th>
<th>Loan Signs</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain</td>
<td>TUTOR, TRY</td>
<td>#BREAK-UP,</td>
<td>VIDEOTAPE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>#BREAK-OFF</td>
<td></td>
</tr>
<tr>
<td>Agreement</td>
<td>VISIT*, KILL</td>
<td>#SAY-NO</td>
<td>GIVE-FEEDBACK</td>
</tr>
</tbody>
</table>

* Some dialects permit both subject and object agreement with VISIT; others disallow first person object agreement.

Interestingly, there appear to be very few Foreign spatial verbs. This is most likely due to the multimorphemic character of spatial verbs in which the handshapes are themselves morphemes drawn from the inventory of classifier handshapes. Because fingerspelled handshapes do not appear in that inventory, indeed, potentially
conflict (e.g. the letter F vs. the classifier for slender-thin-round-object), spatial verbs with fingerspelled handshapes are disallowed.

Plural inflection appears widely on initialized, abbreviation and loan signs, e.g. the initialized PROPOSAL+Plural, the abbreviation BACKGROUND+Plural, and the loan sign #JOB+Plural.

3.3. Derived nouns

The initialized verb DEVELOP has a noun counterpart, DEVELOPMENT, as does the abbreviation sign GIVE-FEEDBACK (FEEDBACK). In these cases, the noun counterpart form is smaller and reduplicated, as in the Native vocabulary. Oddly, there seem to be few loan signs with smaller, reduplicated noun counterparts. Of those verbs that have semantic noun counterparts, e.g. #TO-O.KAY — ‘an okay’, a fingerspelled word (not loan sign) is typically used. Other examples are: #TO-KNOCKOUT/K-O ‘a knockout’; #TO-FAX/F-A-X ‘a fax.’ An deeper analysis of characteristics of fingerspelled words to follow in the next section may shed light on this odd gap in the morphology.

4. The case of fingerspelled words in ASL

It is obvious that fingerspelling consists of sequencing of handshapes coinciding with letters of the alphabet, but perhaps precisely because of this fact, very little has been asked in the sign language literature about the structural content of fingerspelling. For example, are the individual handshapes organized into constituents of some kind? If so, what kind of constituents? Brentari (1990) suggests that “…totally fingerspelled words are parsed — as one word with many syllables” (p. 66). Lucas & Valli (1992) propose an alternative, “…what have traditionally been thought of simply as handshapes or as letters are morphemes in the standard meaning of that word… They are free morphemes which may also have bound allomorphs when they occur with other fingerspelled morphemes” (pp. 42-43). Akamatsu (1982) and Wilcox (1992) observe based on impressionistic and movement analysis data that fingerspelled words appear to have organization at the level of the entire form as well as smaller movements involved in the sequencing of handshapes. Because I bring here no new evidence advocating whether fingerspelled forms are polysemic or polymorphemic (or both), I leave this issue for a future paper.

Instead, I address another set of questions about fingerspelled forms: Assuming that fingerspelled forms are words that have lexical integrity, what is their lexical status? What morphological rules apply to them? To address these questions, I turn to a set of vocabulary that have not to my knowledge been described in any literature on ASL vocabulary: sign-fingerspelled compounds.

4.1. Compounds with fingerspelled forms

It is well-known that ASL has productive compounding of native forms (Klima & Bellugi 1979) in which signs combine to form a compound, e.g. RED+SQUARE ‘brick’ and SLEEP+SUNRISE ‘oversleep.’ These compounds undergo reduction and simplification of movement from reduplicated to nonreduplicated forms, e.g. in BABY+SIT, the reduplicated BABY is reduced to a single movement in the compound.

BABY+SIT joins other compounds of native forms that are “loan translations”, or literal translations of English compounds. Examples are: DEAD+LINE ‘deadline’, TIME+LINE ‘timeline’, and HOME+WORK ‘homework’. Such compounds are plentiful in everyday ASL, including some that seem semantically odd in ASL, e.g. BABY+SIT which means to ‘babysit’ and not the phrase ‘the baby is sitting’. Despite their loan status, these compounds in all respects behave like compounds of Native signs: They constitute a unit and show reduction and simplification of movement.

Because ASL has compounds that permit loan of meaning as well as form, the cases of compounds that consist of a sign and a fingerspelled word are intriguing. As with signed compounds, the forms have lexical integrity; they function as single units, and cannot be broken apart without altering the meaning of the combined units. The first list contains compounds where signs constitute the first unit, and the second list, the second unit:

Sign + Fingerspelled Forms

DEAD+E-N-D ‘deadend street’
SUN+B-U-R-N ‘sunburn’
PAY+R-O-L-L ‘payroll’
SOFT+W-A-R-E ‘software’
HARD+W-A-R-E ‘(computer) hardware’
SOAP+B-O-X ‘soapbox (for lecturing)’
EYE+T-O-O+T-H ‘eyetooth’
CHEAP+S-K-A-T-E ‘cheapskate’
Fingerspelled + Sign Forms

P-R-O-O-F+READ 'proofread'
P-O-O-T+WORk 'footwork'
L-E-G+WORk 'legwork'
B-E-L+BOY 'bellboy'
S-T-O-C-K+MARKET 'stock market'

In addition, there are fully fingerspelled forms which represent English compounds:

Fingerspelled Compounds

B-A-L-P-O-I-N 'ballpoint (pen)'
L-A-P-O-P 'laptop (computer)'
W-O-R-K-U-T 'exercise/workout'
S-K-Y-L-I 'skyline'
P-I-C-K-U-P 'pickup (truck)'
P-I-C-K-P-O-C-K 'pickpocket'

At first glance, there appear to be no distributional grounds for whether signs appear as first or second units, or whether English compounds are represented fully or partly in fingerspelling. The patterning does not become obvious until clusters of loan translations are compared:

DEAD+LINE 'deadline'
TIME+LINE 'timeline'
S-K-Y-L-I-N 'skyline'

EYE+B-A-L-L 'eyeball'
PAINT+B-A-L-L 'paintball (for war games)'
BLACK+B-A-L-L 'to blackball (someone)'
PAPER+WORk 'paperwork'
HOME+WORk 'homework'
O-O-T+WORk 'footwork'
E-G+WORk 'legwork'

LINE refers to a boundary or a conduit, as in TELEPHONE LINE, but not an outline, as in 'skyline'. The sign translation LINE is disallowed for the latter meaning and the form is fingerspelled to preserve semantic integrity of LINE. BALL means usually a playing ball held by hand. In 'eyeball' and 'paintball', the balls are not playing balls nor are they of a size to be held in both hands; a 'paintball' is actually a pellet. As in LINE, BALL is disallowed for meanings varying from the semantic category of the sign BALL.

It also appears that pointing classifiers, including those for body parts, are disallowed in compounds. In F-O-O-T+WORk and L-E-G+WORk the body part is fingerspelled. More generally, it appears that there are restrictions on classifier constructions appearing in compounds. WATER+F-A-L-L is allowed but not *WATER+LIQUID-FLOWING-DOWNWARDS; W-I-N-D+S-H-I-E-L-D but not *WIND+FLAT-SURFACE-CURVED. One possible reason why such compounds are blocked is that the predicate classifier forms lack derived noun counterparts; instead the fingerspelled word is used for the second half of the noun compound. More generally, there are pairs of signs and fully fingerspelled words which stand in either semantic or word class opposition, e.g.:

FREE 'liberated'
F-R-E-E 'free of charge'

PICK U-P 'to pick up'
P-I-C-K-U-P 'pickup (truck)'

WORK O-U-T 'to work out'
W-O-R-K-O-U-T 'exercise workout'

LOVE 'to love'
L-O-V-E 'love (noun)'

In these cases, fingerspelled words not only convey meaning borrowed from English, but coexist with ASL signs in semantic and grammatical distribution. In this sense, fingerspelled words in compounds act as diagnostics of semantic categorization and word class in ASL vocabulary.

Forms such as sign-fingerspelled compounds and commonly fingerspelled words constitute the most foreign of all ASL vocabulary. They do not reflect for person and number, nor do they accept plural affixation. PAINT+B-A-L-L in the plural adds the phrase, SMALL-ROUND-OBJECT+[Redup], but does not itself undergo reduplication. They violate all phonological constraints discussed in this paper. It would appear that without further evidence of resyllabification, or restructuring, these forms are the least nativetized, and reside either directly at the boundaries of the lexicon or outside it. However, resolving the lexical status of fully fingerspelled forms and sign-fingerspelled compounds and their location in the ASL lexicon will depend on new evidence of internal structure of fingerspelled forms, whether the constituents organize as syllables or morphemes, or both. To accomplish this, newly emerging ideas about syllable structure in signs will need to be applied to the problem of fingerspelled forms.

4. The restriction may be that signs articulated below the chest are generally avoided. But pointing is also avoided in other signs; in 'eyewash' informants report that it is "funny" to point to both the eye, then the tooth; instead the preferred translation is EYE+T-O-O-T H.
5. Conclusion

Foreign vocabulary in ASL conform in patterned ways to phonological constraints and morphological rules proposed for Native ASL signs. The pattern is variable across Foreign vocabulary, but can be schematized as proposed for Japanese phonology by Itô & Mester (1995). In their proposed "core-periphery structure", Itô & Mester group vocabulary not merely by etymology, for example, Yamato or Native vocabulary or Sino-Japanese vocabulary but order groups within the lexicon along a schema in which certain vocabulary adhere to all constraints, and reside in the core. Vocabulary adhering to fewer constraints are arranged along the periphery with the most peripheral of all vocabulary being those least conforming to constraints on core forms. European Foreign vocabulary in Japanese are among the most peripheral of all vocabulary. The advantage of such a schematic representation is the ability to capture how Native and Foreign vocabulary are alike, yet conform differently due to etymological origins. A lexicon which handles Foreign vocabulary on an ad-hoc basis would fail to represent significant generalizations across vocabulary.

At this point, it may be worthwhile to reflect on the long debate in sign linguistics about the role of English in ASL. Linguists have typically selected exclusively Native signs in their analyses of ASL grammatical structure and relegated all other vocabulary not nearly Native to the realm of "Sign English." Because of this neglect, large numbers of ASL vocabulary are described more in terms of ideology than in terms of structural properties. For example, the source of initialized signs in ASL are usually blamed on Sign English even though films and books of ASL through the early part of this century show that initialized signs in ASL existed before the official inventions of manually coded English in the early 1970s. Indeed, on a structural basis, it is difficult to determine how newer initialized signs differ from presumably older and more well-entrenched signs such as TEAM or FAMILY. Newer initialized signs are somehow tainted by association, unfairly, it would seem.

Likewise, someone who fingerspells "a lot" is said to be using Sign English. But these judgments are made in the absence of any analysis of the distribution of fingerspelled words in ASL. Lucas & Valli (1992) have found that among native signers conversing with each other, fingerspelling is quite frequent. In an earlier paper (Padden 1991), I find that fingerspelled words are overwhelmingly nouns, with adjectives the next frequent and verbs, least frequent of all. Clearly fingerspelled forms do not have free distribution in the language. Additionally, the data on sign-fingerspelled compounds demonstrates that fingerspelled units and words appear in semantic distribution to signed forms, indicating an interdependence, not independence between the forms.

At least one exercise of this paper is to direct this discussion in a different direction; instead of asking how fingerspelling is English and how English is represented in Sign English, a more fruitful way may be to re-conceive of Foreign vocabulary as elements of the ASL lexicon and investigate their internal structure relative to Native signs. The former strategy is fraught with ideological distractions; the latter strategy acknowledges that diverse lexicons are not oddities, but normal consequences of language use in diverse communities. At least with respect to the Foreign vocabulary I have discussed here, their internal structure pose interesting similarities to Native signs and can be accounted for in ways comparable to lexicons proposed for Japanese or even English (Chomsky & Halle 1968; Kiparsky 1982). ASL Foreign vocabulary may have its origin in written English, but the forms are by no means completely nonconforming to ASL.

Finally, the question of how to account for the presence of Foreign vocabulary in ASL is part of a larger and more ambitious project, one that deserves a longer discussion than I provide here: a description of the place of representational systems in natural sign languages. This is a task to which a number of linguists are now directing their attention. New descriptions are emerging from Europe, e.g., Sutton-Spence & Woll (1993) on British Sign Language, Asia, e.g., Ann (1995) on Taiwan Sign Language, and the Americas, e.g., Davis (1989), Kelly (1990), Lucas & Valli (1992) on ASL demonstrating that representational systems are not isolated occurrences but widespread phenomena. From the variety of representational systems that have been described, it appears that they include manual systems and mouthing systems, as for example mouthed vocabulary in Italian Sign Language and the sign language of the Netherlands (Schermer 1990). Mouthing is an apparently natural representation of an oral language, but its appearance in a sign language can be misleading. From my early observations, it appears that mouthed vocabulary has much in common with manual representational systems in terms of distribution in sign structures. These similarities across sign languages are only now being discussed.

Aside from noting the variety of these systems and their ubiquitously, their presence attests to a range of language activity by deaf people that has yet to be described in any comprehensive way. If we can overcome theoretical and descriptive barriers to studying them, these systems may well reveal new insights into sign languages and the complex communities that support them.

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References


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