FOREIGN VOCABULARY IN SIGN LANGUAGES

A Cross-Linguistic Investigation of Word Formation

Edited by DIANE BRENTARI
Purdue University

4

Typological and Modality Constraints on Borrowing: Examples From the Sign Language of the Netherlands

Nini Hoiting and Dan I. Slobin

ABSTRACT

Sign Language of the Netherlands (SLN) has borrowed verb particles from Dutch and assimilated them to sign language grammar, using them as semi-auxiliaries in serial verb constructions. Two case studies are examined. The verb particle door ("through") is used in SLN as an aspectual marker in combination with verbs that are phonologically blocked from aspectual modulation. The verb particle op ("act-on") is used in SLN as an agent-patient marker in combination with verbs that are phonologically blocked from agreement. In both instances, the borrowed item is inflected as an SLN verb (for aspect in the first case, agreement in the second), and is used in combination with lexical verbs that cannot be so inflected. The borrowed items are used as grammatical elements that are consistent with the verb-framed and serial-verb typology of SLN. They do not have the full meanings of the original Dutch elements, but express only those dimensions (temporal or casemarking) that are consistent with the structural demands of SLN. They do not function as full verbs in SLN, but as sorts of auxiliaries. It is proposed that such cases of borrowing are influenced by two major factors: the comparative typology of languages (verb-framed SLN vs. satellite-framed Dutch) and the modalities (visual-manual vs. acoustic). The analysis has consequences for bilingual language acquisition and instruction, as well as the syntactic typology of sign languages.
BACKGROUND: THE HISTORICAL AND PEDAGOGICAL CONTEXT

The history of SLN begins in 1785, when Henri Daniel Guyot returned to Holland from Paris, bringing the insights of Abbé l’Épée. Along with other European pioneers, Guyot followed l’Épée’s advice to build on what we would now call local “home sign” systems, adding structural concepts developed for French Sign Language. By 1790 he had established a school in Groningen (now in Haren) with about a half-dozen deaf children. As far as can be ascertained, Guyot’s method was eclectic, using sign-supported Dutch to aid literacy, while also allowing for the elaboration of existing systems of gestural communication used by the deaf. The Groningen school was notable in its early employment of deaf teachers.

In the middle of the 19th century, oralism took over. In 1864 the school in Groningen officially designated oralism as the only method of instruction, and after the Milan Convention of 1880 this philosophy dominated in the Netherlands for 100 years. However, documentation suggests that teachers continued to use some sign-supported Dutch throughout the period. There were four schools for the Deaf in the 19th century, each of them providing a nucleus for a Deaf community that must have continued to elaborate a natural sign language—that is, what is currently referred to as SLN. The first Deaf communities in the Netherlands were formed around the schools, and until the rise of oralism, the schools and the communities formed a single entity. However, when the educational establishment turned its back on the use of sign language, independent Deaf associations arose outside of the schools. The first formal Deaf Association was founded in Amsterdam in 1878, and other cities followed. Thus SLN continued as an active language until its formal reacceptance in recent years.

These facts, along with the absence of detailed records of the use and structure of SLN and sign-supported Dutch, make it impossible to determine the historical and sociolinguistic circumstances of Dutch influence on modern SLN. Consequently, in searching for the roots of borrowing from Dutch into SLN, we can only analyze the role of Dutch as reflected in modern SLN. In attempting to reconstruct the situations in which Dutch elements entered SLN, a number of factors must have played a role. We know that fingerspelled Dutch was in use from the beginning of Guyot’s school. And, of course, many deaf pupils became literate in Dutch, thereby providing possibilities of borrowing through their own bilinguality. In addition, schools for the Deaf have always included pupils who were deafened after having acquired the spoken language. It should also be noted that until the middle of the 20th century, deaf and hard-of-hearing children attended the same schools. It is also evident that teachers must have introduced various elements of Dutch grammar and lexicon into their ad-hoc instruction using some kinds of gestural communication. The use of various kinds of manually coded Dutch (sign systems) played a role both in introducing Dutch into the manual modality, and in giving rise to contact languages such as those described for ASL and English by Lucas and Valli (1992). All of these avenues were open for the movement of Dutch into SLN, although we cannot document the point-of-entry of any specific element.

In this chapter, we examine two instances of obvious borrowing from Dutch into SLN, indicating ways in which the linguistic system of SLN has assimilated Dutch grammatical elements into its own structural design. Our claim is that verb particles from a spoken language such as Dutch come to serve as semi-auxiliary verbs in a signed language, due to two types of factors: **typological**—the lexicalization pattern typical of signed languages, and **psycholinguistic**—the nature of the manual-visual modality.

**TYP OLO GICAL CONSIDERATIONS**

We refer to SLN as the **borrowing language** and Dutch as the **source language** (following Moravcsik, 1978). In most instances of borrowing discussed in the literature, emphasis is placed on the influences of the source language on the borrowing language. For example, in Weinreich’s (1963) seminal work on “languages in contact” the emphasis is on “the rearrangement of patterns that result from the introduction of foreign elements into the more highly structured domains of language” (p. 1). Moravcsik (1978) defined borrowing as “a process whereby a language acquires some structural property from another language” (p. 99). However, here we wish to focus on ways in which grammatical material from the source language is adapted to the typological tendencies of the borrowing language. Rather than making SLN Dutch-like in its grammar, these borrowings take Dutch grammatical morphemes and make them...
SLN-like. Therefore we take Thomason and Kaufman’s (1988) more neutral definition of borrowing, referring only to “the incorporation of foreign elements into the speaker’s native language” (p. 21). However, the sort of “incorporation” analyzed by Thomason and Kaufman involves accommodation to the source language—what they refer to as “contact-induced language change” or “interference.” By contrast, the instances of incorporation examined here involve assimilation of the borrowed elements to the structural tendencies of the borrowing language.2

A major determinant of assimilation is the typological contrast between the two languages involved. Dutch and SLN can be characterized as typological opposites in terms of Talmy’s (1991) distinction between satellite-framed and verb-framed languages. Talmy proposed that the languages of the world fall into two types, on the basis of their lexicalization patterns. Here we focus on linguistic expressions in the domains of space and time. Dutch, like all Germanic languages, uses a set of verb particles, or satellites, to express “core notions” of events such as movement in space and time. Satellite-framed lexicalization patterns can be easily demonstrated using English examples:

(1) Satellite-framed language characteristics (e.g., English)
a. The man went in (to the house).
b. The man went on (talking).

By contrast, the Romance languages are verb-framed and use verbs to express such notions, as in Spanish parallels to (1a) and (1b):

(2) Verb-framed language characteristics (e.g., Spanish)
a. El hombre entró (a la casa).
   “The man entered (the house).”
b. El hombre siguió (hablando).
   “The man continued (talking).”

Slobin and Hoiting (1994) have argued that SLN—and probably all signed languages—are verb framed in their typology.3 Consider, for example, verbs of movement. The manual modality allows for movement of a gesture in space, which is a natural symbol for movement on the referential plane. Thus a signed language has no need for satellite morphemes such as ‘in,’ ‘across,’ ‘towards,’ ‘through,’ and the like, because the hand can represent direction by movement, in relation to the establishment of referent locations in signing space. That is, rather than verb–satellite constructions such as ‘go in’ or ‘go towards,’ signed languages use directional verbs such as ‘enter’ and ‘approach.’ Further, when manner of motion is encoded, the two language types have different options. Satellite-framed languages use constructions in which the main verb is a manner-of-motion verb and the satellite encodes direction, such as ‘run in’ or ‘swim towards.’ Verb-framed constructions place the manner verb in a subordinate form, such as ‘enter running’ or in a serial-verb construction, such as ‘run enter.’ Slobin and Hoiting proposed that signed languages are of the latter type, examining references to movement in SLN and in ASL. (For other discussions of signed languages as serial—verb languages see, for example, Bos, 1994, 1996; Gee & Kegl, 1983; T. Supalla, 1990.) These typological patterns have consequences for the ways in which a language of one type makes use of elements borrowed from a language of another type. As illustration, we offer two examples of the selective use of Dutch verb particles in SLN.

CASE STUDY 1: BORROWING OF THE DUTCH PARTICLE DOOR

In Dutch, as in English, a collection of verb particles, or satellites, function to mark various locative and temporal notions in conjunction with a wide range of main verbs. As a case study, we take the Dutch particle door, closely related to the English particle ‘through.’ As in English, such forms can function as both verb particles (satellites) and prepositions. For example:

---

2The cases presented here seem to be relatively rare in the literature on sign language, though we suspect that many more instances of assimilation can be found (see, e.g., Lucas & Valli, 1992, p. 11). The usual assumption, however, is that the influence of the spoken language will lead to accommodation by the signed language to the spoken language. For example, Fischer (1975) proposed:

“When two languages come into contact, there is bound to be an influence in at least one direction, apparently in general from the more to the less prestigious language. This is a form of linguistic imperialism, really, where the more powerful wins out. English and ASL are two such languages.” (p. 11).

Although these “political” factors cannot be denied, the modality of sign language may be a more resilient factor than previously acknowledged.

3Most Indo-European languages, with the exception of the Romance languages, are satellite-framed, along with Finno-Ugric and a number of Amerindian languages; verb-framed languages include Romance, Semitic, Turkic, and Bantu languages, along with Korean, Japanese, and others. Serial-verb languages like Chinese and Vietnamese appear to lie between the two types, depending on one’s analysis (Slobin & Hoiting, 1994; Talmy, 1991).
(3) Prepositional and verb particle use of door
a. Locative preposition:
   *Hij reed door het park.*
   *He rode through the park.*
b. Locative satellite:
   *Hij reed er door.
   he rode CLITIC-through
   *He rode through (there).*4

(4) Temporal/aspectual uses of door
a. as a postposition
   *(Hij werkte de nacht) door.
   he worked the night through
   *He worked through the night.*
b. as a separate verb particle
   *(Hij werkte) door.
   he worked through
   *He worked on through/kept on working.*

Temporal and aspectual uses are widespread, as in (4). The temporal meaning of door is a metaphorical extension of its locative sense of continued forward movement. In its purely temporal use, door can be associated with a general verb such as *gaan* (‘go’), *maken* (‘do/make’), or *laten* (‘let’) to indicate continuity of a presupposed or established process in discourse, such as the examples in (5):

(5) Temporal/aspectual uses of door with general verbs
a. *Hij ging door.
   he went through
   *He kept on, persisted, continued (doing something).*
b. *Zij maakte veel door.
   she made much through
   *She went through a lot (of trouble).*

Native users of SLN have undoubtedly been exposed to all of these uses of door, both through written Dutch and through the attempts of teachers to use some form of sign-supported Dutch. It is striking, therefore, that only some of these uses have entered into SLN.5

Both the locative and temporal uses are found in Signed Dutch (NmG = Nederlands met Gebaren ‘Dutch with Signs’). The form of the sign is a static B-handshape facing the body, crossed by a dynamic B-handshape moving away from the body. Morpheme-by-morpheme equivalents of examples (3), (4), and (5) occur in Signed Dutch; however locative uses such as shown in (3) are not used at all in SLN. Thus we must ask why it is only the temporal uses of door that have been borrowed by the natural sign language, although both locative and temporal uses are modeled in the written and signed versions of the spoken language.

The answer is to be sought in terms of the manual-visual modality. Natural sign languages are endowed with an effective means of referring to spatial movement, as noted previously. Sentences like (3a), ‘He rode through (the park),’ are signed by means of a verb of motion, with a handshape vehicle classifier moving across a ‘park’ that has been located in signing space. There is no motivation for borrowing a locative term from Dutch to encode the path of motion. Rather, the verb-framed typology of SLN is completely adequate to the task, using native means. The use of the crossed B-handshape sign in such contexts is seen as a redundant and non-native importation from Signed Dutch.

On first consideration, it would seem that SLN would also have no need for the temporal senses of door. The language provides several types of cyclic repetition to indicate verbal aspect, similar to those described for ASL by Klima and Bellugi (1979, pp. 247–271) and Anderson (1982).6 For example, the verb *TELEPHONE* is signed by a Y-handshape held near the ear. Continuative Aspect is marked by three repetitions of an elliptical modulation accompanied by pursed lips and a slight blowing gesture. Habitual Aspect, by contrast, uses a slower elliptical modulation accompanied by gaze aversion, lax lips with protruding tongue, and slowly circling head movement. It appears, however, that a portion of the SLN verb lexicon is not amenable to this sort of aspectual modulation, due to phonological constraints: if a sign has internal movement, it is not possible to superimpose an elliptical movement over the

---

4English satellites can stand alone, without their nominal complements, for example, ‘He rode through’; ‘ran in’: ‘swarm past’. Dutch equivalents require the use of clitic -er as a placeholder, as in (3).

5The findings are based on data provided by several native signers of SLN in the northern provinces of The Netherlands (Groningen, Friesland, Drenthe, Overijssel).

6To our knowledge, there are no written analyses of aspect in SLN. However, work with SLN informants makes it clear that the sorts of aspectual modulations discussed in this chapter are part of the grammar of the language.

7Lexical items in capital letters are glosses of SLN items.
inherent movement of the sign; if a sign includes body contact, elliptical
movement is also blocked. It is precisely in such instances—and only
such instances—that SLN borrows door as an aspectual particle. That is, a
lexical element is borrowed to perform a function that is already present in
the language, but that cannot be inflectionally expressed on all verbs.

Taking the verb WORK as an example of the first type, the source
language models are as shown in (6). However, SLN users do not simply
sign the equivalent of door in such constructions. Rather, the crossed B-hand-
shape sign, or THROUGH, is itself treated as a sort of verb, in consonance
with the verb-framed typology of SLN. The evidence for this claim is the
fact that THROUGH receives the same aspectual modulations as a verb
such as TELEPHONE in the example discussed previously. The verb
WORK is an example of the first proposed phonological constraint: it con-
ists of parallel opening and closing of two flat O-handshapes (downward
palm orientation and forward finger orientation).

(6) Dutch models for analogous SLN sentences
a. CONTINUATIVE:
   \textit{Hij werkt door.}
   he works through
   ‘He’s going on working (at the moment).’

b. HABITUAL:
   \textit{Hij werkt altijd door.}
   he works always through
   ‘He always works on and on.’

The continuative sense of (6a) and the habitual sense of (6b) are differen-
tiated by the same combination of elliptical movements and nonmanual
features described previously, that is, elliptical modulation accompanied by
pursed lips and a slight blowing gesture for Continuative Aspect, and slower
elliptical modulation accompanied by gaze aversion, lax lips with protrud-
ing tongue, and slowly circulating head movement for Habitual Aspect.
However, these modulations accompany THROUGH rather than
WORK. This is presumably because of the phonological constraint pro-
posed previously. Thus, although the borrowed element serves as a satellite
in the source language, it is treated as a sort of verb in the borrowing lan-
guage. The result seems to be a serial-verb construction with an uninflected
main verb, WORK, and a sort of “semi-auxiliary,” THROUGH, which is
inflected for aspect.

Similar examples can be found regarding the second phonological
constraint, that of body contact. For example, the verb TRY is signed with

the fingertips of an H-handshape touching the side of the nose—again, an
articulation that doesn’t allow elliptical movement. Similar to the previ-
ous example, the sequence TRY THROUGH + “aspectual modulation” is
used for habitual meaning.

We use the designation “semi-auxiliary” because THROUGH does
not have all of the characteristics of a verb. It only occurs in combination
with a full lexical verb and does not occur by itself. It does not show
person agreement. It cannot be independently negated. The semantic func-
tion of THROUGH is limited to the expression of certain nuances of aspect.
Syntactically, THROUGH is limited to the position immediately follow-
ing the verb. This is further evidence for its assimilation into SLN syntax,
because the position of door in Dutch, and of THROUGH in Signed
Dutch, is determined by the finiteness of the main verb. In the source
language and in its signed surrogate, particles such as door follow finite
verbs, as in (4b), but are prefixed to nonfinite verbs. Compare (4b), repro-
duced as (7a), with its variants using a nonfinite participle (7b) and an
infinitive (7c). In addition, in subordinate clauses in Dutch and in Signed
Dutch a modal verb, such as \textit{kan} ‘can,’ intervenes between the satellite
and associated verb, as in (7d). In SLN, by contrast, a single sign order is
maintained for all functions, as in (7e). This is because tense is indicated
outside of the clause; subordination does not affect sign order, and finiten-
ness of verb forms plays no role in SLN syntax. The use of a single syn-
tactic position for all functions indicates the integration of the borrowed
element into the syntax of the borrowing language.

(7) Temporal/aspectual use of door in Dutch
a. \textit{door} as a separate verb particle
   \textit{Hij werkte door.}
   ‘He worked through.’

b. \textit{Door} with a nonfinite participle in Dutch
   \textit{Hij heeft doorgewerkt.}
   he has through-worked
   ‘He has worked through.’

c. \textit{Door} with an infinitive in Dutch
   \textit{Hij moet doorwerken.}
   he must through-work
   ‘He must work through.’

\footnote{For a discussion of “semi-auxiliaries” or “quasi-auxiliaries” see Heine (1993, pp. 13–16).}
d. Modals (e.g., *kan*) can intervene between *door* and the verb in subordinate clauses in Dutch and Signed Dutch

. . . zodat hij *door* *kan* werken.

. . . so that he through can work

. . . 'so that he can work through.'

e. The equivalent of *door* in SLN occurs in a single word order

WORK THROUGH

'continue working' or 'work habitually'

There is additional evidence that THROUGH is becoming grammaticalized in SLN. Although the citation form is two-handed, as described previously, in many instances forward waving of a single lax B-handshape is sufficient to express the aspectual modulation. This seems to be the preferred form for younger SLN signers. Reduction of phonological form is a well-known hallmark of advanced grammaticalization (e.g., Hopper & Traugott, 1993).

We have considered the possibility that THROUGH in SLN might be a sort of repeated adverbial, rather than a verb-like element modulated for aspect. There is no obvious criterion for choosing between these analyses, except for the overall typological use of serial-verb constructions in SLN and in other signed languages. (It should also be noted that treating THROUGH as an adverbial would require the grammar to allow for aspectual modulation of both verbs and nonverbs in similar fashion. The consequences of such a move cannot yet be evaluated.) The second case study, which presents quite a different sort of serial-verb phenomenon, lends support to the analysis of THROUGH as a semi auxiliary, because both case studies are amenable to the same sort of syntactic analysis.

CASE STUDY 2: BORROWING OF THE DUTCH PARTICLE *OP*

Bos (1994, 1996) has described an "auxiliary verb" in SLN that she glosses as ACT-ON. Like THROUGH, this verb always occurs after a lexical verb (a "fixed verb" in the terminology of Bos), with the function of indicating agent-patient relations. The sign is a 5-handshape that moves in an arc in signing space from the referential locus of agent to that of patient. For example (Bos, 1996, handout):

(8) Typical use of ACT-ON in SLN (Bos, 1996)

INDEX, BOYFRIEND INDEX<sub>3a</sub> LOVE<sub>3a</sub> ACT-ON<sup>9</sup>

'My boyfriend loves me.'

Evidence of the origin of ACT-ON as a Dutch preposition is provided by the obligatory simultaneous nonmanual feature—a sudden bilateral closure evidently derived from the spoken word *op*. The apparent source language model is the following:

(9) Source language model (Dutch) for SLN use of *op*

Hij is verlief<sub>f</sub> op mij.

he is in love *op* me

'He is in love with me.'

This is a common pattern in Dutch for marking the patient of verb participles or adjectives of emotional state, such as *boos* *op* 'angry *at*,' *trots* *op* 'proud *of*,' and *jaloers* *op* 'jealous of.' However, it is never used in Dutch to mark the patient of a finite verb as in the SLN example in (8) (*Hij lief<sub>t</sub> op mij 'He loves *op* me*'). Other examples, from our own data, are given in (10a)-(10b).

(10) Door used to mark the patient of a finite verb in SLN

a. INDEX<sub>3a</sub> INDEX<sub>3b</sub> TEASE<sub>3a</sub> ACT-ON<sub>3b</sub>

'He teases her.'

b. INDEX<sub>3a</sub> INDEX<sub>3b</sub> ACCUSE<sub>3a</sub> ACT-ON<sub>3b</sub>

'He accuses her.'

Again, the borrowing language has assimilated a grammatical particle to its own verbal system: *op* has been transmuted into a verb-like element, serving as a kind of fixed-position auxiliary in a serial-verb construction. And again, like THROUGH, ACT-ON is an inflected auxiliary—in this instance marking the case-roles of the nouns associated with the main verb. That is, by moving from the referential locus of the agent to that of the patient, ACT-ON indicates the semantic relation between these two loci. Again, the borrowed element is used when a phonological constraint blocks the normal SLN marking of semantic relations by means of moving the verb from one referential locus to another. For example, the verb

---

<sup>9</sup>"INDEX" refers to points in signing space; 1 first person, 2 second person, 3 third person, with appended lowercase letters indicating "referential loci" (Engberg-Pedersen, 1993) in signing space. Words in uppercase letters refer to lexical signs.
LOVE (8) is articulated with body contact on the chest; TEASE (10a), and ACCUSE (10b) have handshapes that cannot be freely directed to all loci (e.g., the citation form points away from the body). By contrast, a sign like CRITICIZE (11) does not require the ACT-ON auxiliary, because it is formed by a hooked index finger that can freely move from one locus to another in any direction:

(11) An example of an SLN verb which incorporates the verb agreement loci on the verb; it does not use ACT-ON

3a CRITICIZE 3b
'He criticizes her.'

The semantic dimensions of ACT-ON also reveal interesting patterns of borrowing. Note, first of all, that the source language model uses op in constructions referring to emotional states: in love, angry, jealous, and proud. The borrowing language applies the form to the processes that bring about emotional states: to love, to tease, or to accuse. This realignment allows the borrowed form to function as an auxiliary verb rather than a stative marker. In addition, the sign that functions as an auxiliary in these constructions, ACT-ON plus mouthing derived from op, also serves as a main verb meaning 'put a flat object on a surface.' Verbs of object manipulation are common sources of patient markers in a wide variety of spoken languages, as discussed in the literature on grammaticalization or grammaticization (see, for example, Lord, 1993). A verb like 'put on' is a conceptually available form for the marking of agent-patient relations, in that it moves from a source to a goal location while transferring an object. Such a verb can be readily construed as affecting not only the location, but also the state of the patient. Metaphorically, a state like love or anger can be 'put onto' someone else. Thus issues of metaphor (e.g., Lakoff, 1987) interact with patterns of syntax and lexicalization in accounting for the odyssey of lexical elements from a source to a borrowing language.

When spoken languages use verbs of object manipulation to express transitivity, such verbs often evolve into case markers on nouns (e.g., Li & Thompson, 1976; Lord, 1993). However, it is doubtful whether a sign such as ACT-ON could ever become a noun marker, because—in its very nature—it moves between two index points in space. There is also no obvious way in which it could develop into a marker on another verb, such as the case-role verbal morphemes in head-marking languages (Nichols, 1986). In such languages (e.g., Navajo, Abkhaz) verbal morphemes indi- cate, for example, agent-patient relations between a 3SING and a 1SING participant, or between 1SING and 2SING, and so forth. Although such elements can readily be affixed to a spoken verb, there is no obvious way in a signed language in which a sign such as ACT-ON can become part of another verb sign. The manual-visual modality makes it most natural to maintain serial-verb constructions, rather than to reduce semi-auxiliary verbs to either noun or verb markers. We would argue, therefore, that linguistic typology is, to some extent, dependent on the modality of the channel (manual or vocal).

CONCLUSIONS

The fate of borrowed elements provides useful clues to the underlying linguistic nature of the borrowing language. This point was made by Battison (1978) in his pioneering work, Lexical Borrowing in American Sign Language. In his study of fingerspelled English words in ASL he proposed that "restructuring fingerspelled words makes them 'look and act like' native ASL signs, and this therefore constitutes one promising indicator of the salient structural characteristics of the ASL native lexicon" (p. 102). Similarly, Lucas and Valli (1992) noted that although ASL borrowed English prepositions such as IN, ON, and BEHIND, they are not used in their locative meanings, but only for "extended" meanings, such as MONEY BEHIND to refer to savings. They concluded—as we have as well: "What's interesting in the ASL case is that it appears that signs were invented expressly for English prepositions with prepositional function and are either not used as such or have acquired other functions" (p. 11).

To use Battison's term, our two small case studies attempt to show that restructuring Dutch grammatical morphemes makes them "look and act like" native SLN auxiliary verbs, thereby indicating the salient structural characteristics of the lexical patterns of SLN. The two case studies show SLN to be a verb-framed language of the serial-verb type, with strong tendencies to use movement modulations of signs to encode both aspect and agent-patient relations. The confrontation of the two types of language, Dutch and SLN, exists not only on the plane of linguistic typology, but also on the plane of modality. The deep-seated use of movement for the expression of both temporal and semantic relations in a signed language such as SLN makes it natural to assimilate borrowed grammatical morphemes from Dutch to patterns of verbal modulation. Thus both a verb particle such as door and a relational particle such as op are re-formed in
SLN to function as auxiliary verbs. As in all phenomena of language change, the resulting patterns are codetermined by features of syntactic and lexical patterns, in conjunction with semantic patterns—and, in this instance, features of modality as well.

Numerous spoken languages also use serial-verb constructions of the sort found in SLN and ASL (see, e.g., Givón, 1975; Lord, 1993; McWhorter, 1992). However, it is relatively rare for a semi-auxiliary in such a construction to contribute additional meaning by means of inflection, such as the aspectual information marked on THROUGH or the case-role relations marked on ACT-ON. That is, serial-verb languages tend to be analytic rather than synthetic, relying on word combination and word order rather grammatical inflection as a basic organizing principle. The manual channel, however, makes it possible to superimpose information by simultaneous combinations of handshape, movement, and nonmanual features. Therefore inflected serial verbs should not be unusual in signed languages.

The role of modality in our case studies is nicely highlighted in comparison with the nature of borrowing in Creole languages (John McWhorter, personal communication, January 1997). Case Study 1 is not unusual in the contact situations that lead to the development of Creoles. That is, verb particles and prepositions can be borrowed from a satellite-framed donor language and come to serve as auxiliary verbs in serial-verb constructions to express temporal notions. It is relevant to our argument, however, that such elements can also be borrowed by Creole languages to express locative notions. We suggest that this is because there is no way of depicting locations in space using the vocal channel; therefore the same type of linguistic construction is used for both temporal and spatial expression. In signed languages, by contrast, we suggest that such elements will be borrowed only for temporal expression.

Case Study 2, by contrast, is rather different. This sort of borrowing is apparently not attested in Creole languages. The use of an auxiliary verb to indicate case-role relations in a serial-verb construction may be special to sign language borrowing situations such as the one examined here. We believe that this is due to the manual–visual modality, which easily allows for the expression of case–role relations by the use of movement in space between referential loci. Creole languages use word order for agent–patient relations. In a signed language, however, pronominal referents are indicated by indexed locations rather than by lexical items. In connected discourse, most references to participants are pronominal, and therefore relations between participants are indicated by verb signs that move from one participant to another. When the relation is not encoded by a sign that moves in space (that is a sign that “inflects for agreement”), an agent–patient auxiliary such as ACT-ON provides the necessary information, in combination with a content verb. Again, the assimilation of a borrowed element is codetermined by the typology and the modality of the borrowing language—and these two factors are, themselves, interdependent.10

As a final note, we suggest that these two case studies have implications for bilingual language acquisition by deaf children. The contrast between the two natural languages in our study—Dutch and SLN—highlights the artificiality of the hybrid language, Signed Dutch. Although easy to use by Dutch speakers, it is dismissed as a “nonlanguage” by users of SLN. It fits neither the basic typology nor modality constraints of a signed language, though it is presented on the hands. As we have seen, elements of Signed Dutch are assimilated into SLN structure, suggesting that the hybrid language cannot be maintained for natural communication. In this regard, it should be noted that studies of the acquisition and use of various types of “manually coded English” by deaf children show that these systems, as well, are assimilated to the patterns of natural signed languages (e.g., Davidson, Newport, & Supalla, 1996; Stack, 1996; S. Supalla, 1991). Regarding our two case studies, it is striking that deaf children acquiring such artificial sign systems introduce inflections for aspect and case (“agreement”) such as those discussed here.

However, even if the instruction of deaf children is limited to two natural languages, SLN and Dutch, the consequences for pedagogy are serious. The deaf child born into a country speaking a satellite-framed language—when given the opportunity to acquire a verb-framed sign

10Smith (1990) has reported evidence for several auxiliaries in Taiwan Sign Language. Although these forms are apparently grammaticization of existing signs, rather than borrowings, they are consistent with the syntactic, serial–verb account offered here for SLN borrowings. What Smith calls AUX-1 parallels the use of ACT-ON to mark agent–patient relations in SLN. The form is a rapid and smooth concatenation of an indexed point, moving from subject to object locus. It is probably derived from pronouns, but has been grammaticalized into a single transitional movement. As in SLN, this auxiliary is only used with verbs that do not, themselves, mark agreement by movement from one locus to another; that is, the auxiliary provides the agreement. The list of verbs is quite similar to those marked by ACT-ON in SLN: THINK, COMMEMORATE, SUSPECT, WANT, TOLERATE, LISTEN-TO, FEAR, DRAW, RESIST, LOVE. Smith (1990) stated: “The sole function of AUX-1 appears to be to carry subject and object agreement information. It can be used with virtually any verb, but it tends to be used more frequently with nonagreement verbs that do not inflect to convey the person agreement of their subjects and objects. The use of AUX-1 in conjunction with main verbs that are themselves marked for subject and object agreement is regarded by most signers as tiring and redundant. One signer commented that such sentences are more frequently produced by younger schoolchildren or by less sophisticated signers. These reactions suggest that when an auxiliary is present, it is ungrammatical to also mark subject or object agreement on the main verb.”
SNL to function as auxiliary verbs. As in all phenomena of language change, the resulting patterns are codetermined by features of syntactic and lexical patterns, in conjunction with semantic patterns—and, in this instance, features of modality as well.

Numerous spoken languages also use serial-verb constructions of the sort found in SNL and ASL (see, e.g., Givón, 1975; Lord, 1993; McWhorter, 1992). However, it is relatively rare for a semi-auxiliary in such a construction to contribute additional meaning by means of inflection, such as the aspectual information marked on THROUGH or the case-role relations marked on ACT-ON. That is, serial-verb languages tend to be analytic rather than synthetic, relying on word combination and word order rather than grammatical inflection as a basic organizing principle. The manual channel, however, makes it possible to superimpose information by simultaneous combinations of handshape, movement, and nonmanual features. Therefore, inflected serial verbs should not be unusual in signed languages.

The role of modality in our case studies is nicely highlighted in comparison with the nature of borrowing in Creole languages (John McWhorter, personal communication, January 1997). Case Study 1 is not unusual in the contact situations that lead to the development of Creoles. That is, verb particles and prepositions can be borrowed from a satellite-framed donor language and come to serve as auxiliary verbs in serial-verb constructions to express temporal notions. It is relevant to our argument, however, that such elements can also be borrowed by Creole languages to express locative notions. We suggest that this is because there is no way of depicting locations in space using the vocal channel; therefore the same type of linguistic construction is used for both temporal and spatial expression. In signed languages, by contrast, we suggest that such elements will be borrowed only for temporal expression.

Case Study 2, by contrast, is rather different. This sort of borrowing is apparently not attested in Creole languages. The use of an auxiliary verb to indicate case-role relations in a serial-verb construction may be special to sign language borrowing situations such as the one examined here. We believe that this is due to the manual-visual modality, which easily allows for the expression of case-role relations by the use of movement in space between referential loci. Creole languages use word order for agent-patient relations. In a signed language, however, pronominal referents are indicated by indexed locations rather than by lexical items. In connected discourse, most references to participants are pronominal, and therefore relations between participants are indicated by verb signs that move from one participant to another. When the relation is not encoded by a sign that moves in space (that is a sign that "reflects for agreement"), an agent-patient auxiliary such as ACT-ON provides the necessary information, in combination with a content verb. Again, the assimilation of a borrowed element is codetermined by the typology and the modality of the borrowing language—and these two factors are, themselves, interdependent.\(^{\text{10}}\)

As a final note, we suggest that these two case studies have implications for bilingual language acquisition by deaf children. The contrast between the two natural languages in our study—Dutch and SNL—highlights the artificiality of the hybrid language, Signed Dutch. Although easy to use by Dutch speakers, it is dismissed as a "nonlanguage" by users of SNL. It fits neither the basic typology nor modality constraints of a signed language, though it is presented on the hands. As we have seen, elements of Signed Dutch are assimilated into SNL structure, suggesting that the hybrid language cannot be maintained for natural communication. In this regard, it should be noted that studies of the acquisition and use of various types of "manually coded English" by deaf children show that these systems, as well, are assimilated to the patterns of natural signed languages (e.g., Davidson, Newport, & Supalla, 1996; Stack, 1996; S. Supalla, 1991). Regarding our two case studies, it is striking that deaf children acquiring such artificial sign systems introduce inflections for aspect and case ("agreement") such as those discussed here.

However, even if the instruction of deaf children is limited to two natural languages, SNL and Dutch, the consequences for pedagogy are serious. The deaf child born into a country speaking a satellite-framed language—when given the opportunity to acquire a verb-framed sign

\(^{\text{10}}\)Smith (1990) has reported evidence for several auxiliaries in Taiwan Sign Language. Although these forms are apparently grammaticizations of existing signs, rather than borrowings, they are consistent with the syntactic, serial-verb account offered here for SNL borrowings. What Smith calls AUX-1 parallels the use of ACT-ON to mark agent-patient relations in SNL. The form is a rapid and smooth concatenation of an indexed point, moving from subject to object locus. It is probably derived from pronominal signs, but has been grammaticized into a single transitional movement. As in SNL, this auxiliary is only used with verbs that do not, themselves, mark agreement by movement from one loci to another; that is, the auxiliary provides the agreement. The list of verbs is quite similar to those marked by ACT-ON in SNL: THINK, COMMEMORATE, SUSPECT, WANT, TOLERATE, LISTEN-TO, FEAR, DRAW, RESIST, LOVE. Smith (1990) stated: "The sole function of AUX-1 appears to be to carry subject and object agreement information. It can be used with virtually any verb, but it tends to be used more frequently with nonagreement verbs that do not index the person agreement of their subjects and objects. The use of AUX-1 in conjunction with main verbs that are themselves marked for subject and object agreement is regarded by most signers as tiring and redundant. One signer commented that such sentences are more frequently produced by younger schoolchildren or by less sophisticated signers. These reactions suggest that when an auxiliary is present, it is ungrammatical to also mark subject or object agreement on the main verb."
language—is faced with the task of mastering two typologically distinct languages (Hoiting & Slobin, 1993). This task can be made easier if teachers and curriculum designers are aware of the differences between the two types of languages and help the learner to become bilingual. Typologically based analysis of borrowing can hopefully contribute to this end.

REFERENCES


