DERIVING NIUEAN DIRECTIONAL PARTICLES COMPOSITIONALLY[*]

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Niuean has several directional particles with a variety of uses. In this paper, I will discuss the directional particles that encode direction based on person, as described by Seiter (1980). I analyze the directional particles as PATH heads and take inspiration from the contrast between high and low applicatives in order to explain an unexpected alternation in person. However, the directional particles differ from applicatives in that it is not the merge position of the functional head that creates the difference in scope and meaning, but the transitivity of the verb. In all of the structures I discuss, PATH merges higher than the VP (like a high applicative). The difference is whether there is an argument lower than PATH that it can compose with. I take no position on whether or not PATH is a kind of applicative. This analysis also gives us information about the structure of person feature hierarchies; in particular, I show that Cowper and Hall (2019)'s feature hierarchies make correct predictions about the person contrasts found in Niuean. This analysis also tells us about how person can interact with PATH and enriches of the applicative literature by reapplying the idea of applicatives to a new context.

I begin in Section 1 by describing three constructions that use the directional particles in Niuean, including one that includes an unexpected alternation in person. I also propose structures for all three directional particle constructions, based on Massam (2020)'s proposal about the structure of clauses in Niuean. In Section 2, I summarize the distinction between high and low applicatives from Pylkännen (2008) and show how we can use a parallel analysis to derive the contrasts between the three Niuean directional particle constructions. In Section 3, I describe the quadripartition feature hierarchy from Cowper and Hall (2019) and demonstrate that this feature hierarchy explains the pronoun system in Niuean. I then argue that that the same feature hierarchy, albeit truncated, is used for the directional particles, and explain the person alternation using underspecified Vocabulary Insertion rules within a Distributed Morphology framework. Section 4 concludes.

1. Description of the directional particles

Niuean has three directional particles that encode direction based on person: *mai*, *atu*, and *age*. In the general case, these indicate direction towards 1st, 2nd, and 3rd person, respectively. All three can be used for true datives, that is, with transfer of possession and speech verbs, as shown in (1), as well as for indicating direction in combination with a verb of motion, as shown in (2).

(1)   True datives[1]

      a.   Kua vagahau **mai** a ia ki a au.
              PERF speak   DIR1 ABS 3SG GOAL PERS 1SG
              'He spoke to me.'   (Sperlich 1997: 41)

      b.   To faka-maama   **atu** e au ki a koe.
              FUT CAUS-understand DIR2 ERG 1SG GOAL ABS 2SG
              'I will explain it to you.'   (Sperlich 1997: 194)

      c.   Kua pao **age** e ia e tala fufuu ke he faoa.
              PERF reveal DIR3 ERG 3SG ABS story secret GOAL people
              'She revealed the secret story to the people.'   (Sperlich 1997: 260)

(2)   Verb of motion + Direction

      a.   Une **mai** (ki a au)!
              move DIR1 (GOAL PERS 1SG)
              'Come here (to me)!'   (Sperlich 1997: 200)

      b.   Aafe **atu**.
              turn DIR2
              'Turn there.'   (Sperlich 1997: 41)

      c.   Fihafiha ni: e tagata ne o: **age** he fonoaga i
              very.few EMPH ABS people PST PL.come DIR3 ART meeting.place LOC
              ne   po:
              EMPH.ABS night
              'Very few people came to the meeting last night.'   (Sperlich 1997: 77)

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[1] Glossing abbreviations are as follows: 1, 2, 3 = first, second, third person; ABS = absolutive case; ART = article; CAUS = causative; DIR = directional particle; EMPH = emphatic marker; ERG = ergative case; LOC = locative; PERF = perfective aspect; PERS = personal marker; PL = plural; POSS = possessive; PST = past tense; SG = singular.

Mai and *atu* have also undergone extensions that *age* has not (cf. Hooper 2002 on Tokelauan). I focus on one of these extended uses, derived datives, that occurs when the particle is combined with a manner verb, as illustrated in (3). In this construction, a derived dative with a third person direction surfaces with *atu*, the 2ⁿᵈ person directional particle, as shown in (3c).

(3)   Derived datives: Manner + Direction

      a.   Ahu **mai** e   vai   he pakete.
             bale DIR1 ABS water LOC bucket
             'Fetch (to me) water in the bucket.'   (Sperlich 1997: 45)

      b.   Kua hela **atu** au ko fē   a   koe
             PERF glance DIR2 1SG PRED where PERS 2SG
             'I glanced to see if you are there.'   (Sperlich 1997: 114)

      c.   Kua eene fakatekiteki **atu**   a   ia   ke he haana   kapitiga
             PERF poke slowly   DIR2 ABS 3SG GOAL 3SG.POSS friend
             'He slowly poked his friend.'   (Sperlich 1997: 56)

Alongside *mai*, *atu*, and *age*, there are also two more directional particles, *hake* and *hifo*, meaning 'upwards' and 'downwards', respectively. The analysis of the vertical directional particles are beyond the scope of this paper; however, they do appear in the same linear order and so can be assumed to occupy the same hierarchical position.

Massam (2020) argues that complex predicates in Niuean are derived by snowballing leftward movement of phrases, triggered iteratively by each head within the extended projection of the verb. She argues that DP arguments are merged outside of this complex predicate, and that the entire complex predicate undergoes phrasal movement around the arguments into a head low in the left periphery. The directional particles form part of this complex predicate, in the position following pseudo-noun-incorporated NPs in the complement of the verb (see Massam 2001), as shown in (4), or low modifiers, as shown in (5).

(4)   …kua   taute kaina **hifo**   tuai   i   Niu Silani…
        PERF build house DIR.down recent LOC New Zealand
     '(Most Niueans) have built houses down in New Zealand…' (Massam 2020: 82)

(5)   Fakaalofa lahi **atu**!
     Greeting   great DIR2
   'Greetings to you!'   (Massam 2020: 82)

If we adopt Massam (2020)'s roll-up analysis, this means that the directional particle (which I assume to be a PATH head) is merged higher than the object's base position. The VP, containing the verb, NP, and any low modifiers, would then undergo

leftward movement to the specifier of PATH. The subject is merged higher than the complex predicate, and the entire complex predicate, including both the verb and the directional particle, move around the subject to a position in the left periphery. See Massam (2020) for more discussion and evidence.

As such, the complex predicates from the three types of coonstruction described above would be structured as follows. I propose that PATH has a dependent person feature in all three structures, which I encode as [±author], while the word order of V – PATH – S is a direct reversal of the order in the tree due to roll-up movement.

The true datives in (1), encoding transfer of possession or speech, are transitive or ditransitive, having at least goal and agent arguments, as illustrated in Figure 1. The person feature of the directional particle indicates the grammatical person of the goal, which is also encoded by means of an overt DP. Because there is a goal argument, the motion encoded by the directional particle has an endpoint, and the predicate is telic.
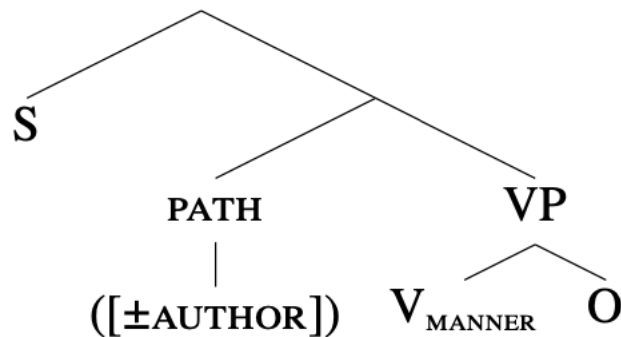
Figure 1. Structure of the true datives
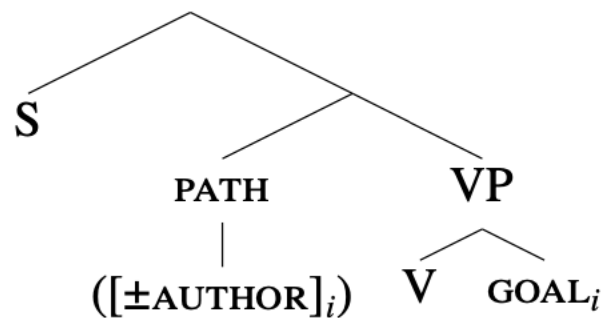
The verbs of motion in (2), on the other hand, are intransitive, as illustrated in Figure 2. There is no goal argument, and so the directional particle indicates a direction only, with no endpoint. As a result, the predicate is atelic.

Figure 2. Structure of the motion verb constructions
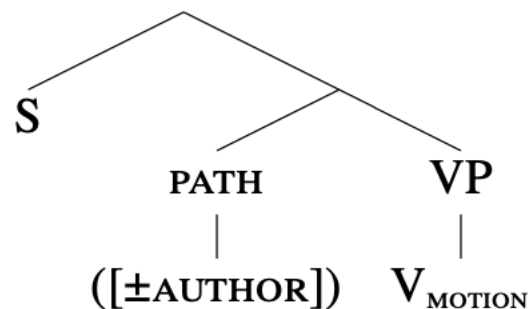
Finally, the derived datives of (3) are formed by transitive or intransitive manner verbs, as illustrated in Figure 3. If there is an object in these constructions, it is a theme, not a goal. The directional particle encodes the endpoint of the movement, as with the true datives; however, unlike the true datives, the endpoint is not doubled by an overt goal argument. Because it has an endpoint, the predicate is telic.

Figure 3. Structure of the derived datives

The properties of these three structures are summarized in Table 1.

Table 1. Structural properties of the three PATH constructions.

| Property	True datives	Motion construction	Derived datives
Transitivity	Ditransitive or transitive	Intransitive	Transitive or intransitive
Semantic class of verb	Transfer of possession or speech	Motion	Manner
Meaning of directional particle	Recipient or addressee	Direction	Endpoint of action
Person features	Doubled by PATH and goal	On PATH only	On PATH only
Endpoint	Yes	No	Yes
Lexical aspect	Telic	Atelic	Telic

2. Deriving endpoints via scope

The analysis of directional particles in this paper is inspired by the analysis of high and low applicatives by Pylkännen (2008). A key structural contrast between high and low applicatives is whether the applied argument scopes over both the verb and the direct object, or only the direct object. This structural difference results in a semantic distinction: when the applied argument scopes over both the verb and the object, the

applied argument is interpreted as relating to the event as a whole, but when the applied argument scopes over only the object, it is interpreted as relating to the object only.

High applicatives denote a relationship between the event and the applied argument. The applied argument in a high applicative is typically affected by the event, such as a benefactor or malefactor. In order to denote this relationship between the event as a whole and the applied argument, high applicatives attach above the verb root as shown in Figure 4, taking scope over both the verb and the object. The applied argument, as well, scopes over the entire event, both the verb and the object.

Figure 4. High applicatives
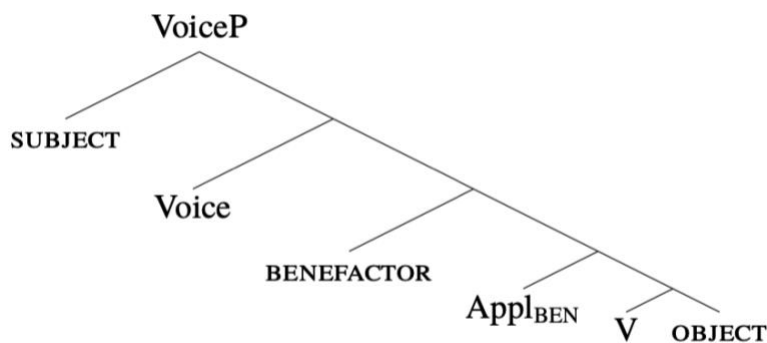
Low applicatives, on the other hand, denote a relationship between two individuals. In low applicatives, the applied argument is usually the source or goal in a transfer of possession. This is derived by attaching the low applicative head below the verb root, with the applied noun in its specifier and the direct object in its complement, as shown in Figure 5. In low applicatives, the applied argument scopes over the direct object, but not the verb. This scopal relationship indicates a possession (or more broadly, a containment; see Bjorkman and Cowper 2016) relationship between the applied argument and the direct object.

Figure 5. Low applicatives
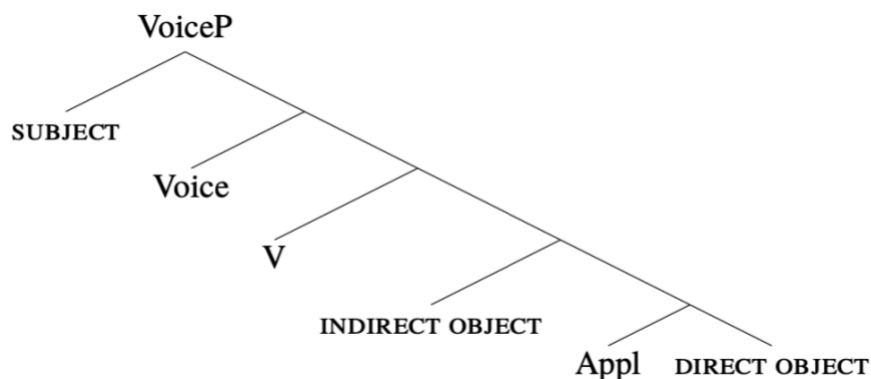
The distinction between high and low applicatives arises due to the merge order of the applicative head and the verb root. However, in the directional particle constructions, the PATH head and the verb root maintain the same merge order in all three constructions. The structural differences come from the argument structure of the verb. If PATH c-commands a VP containing a nominal, that denotes a containment relationship, such that the event has an endpoint denoted by the PATH head; the event is contained within the PATH. If PATH does not c-command a VP with a noun, then there is no endpoint. In the true datives, PATH c-commands the event like in high applicatives, containing both the verb and the goal. Thus, an endpoint is encoded. In this case, the endpoint/goal is interpreted as possessee or addressee. In the motion construction, PATH c-commands only the verb, so no endpoint is encoded. Finally, in the derived datives, PATH c-commands the event, containing both the verb of manner and the theme, and so the verb is interpreted as following a PATH and the directional particle is interpreted as the endpoint. In this analysis, the telicity of the predicate is derived compositionally, which is consistent with Verkuyl (1972)'s observation that telicity is a property of the VP, not of the verb itself.

3.   Person features on PATH

In this section, I anayze the dependent person features on PATH. I propose that the person system for Niuean pronouns is derived by means of the quadripartition feature hierarchy from Cowper and Hall (2019). In this feature hierarchy, [±author] scopes over [±participant], deriving the clusivity contrast in the pronoun system of Niuean.[2] However, the feature hierarchy is truncated or impoverished when dependent on PATH. Finally, I propose a set of vocabulary insertion rules which, together with the feature hierarchy, derives the attested ranges of meaning for the three directional particles.

Cowper and Hall's (2019) typology of person feature hierarchies is able to construct the range of attested cross-linguistic person systems, using only two binary features, as shown in (6).

(6)   a.   [+author] = 'includes the speaker'
       b.   [-author] = 'does not include the speaker'
       c.   [+participant] = 'includes a(t least one) discourse participant'
       d.   [-participant] = 'does not include a discourse participant'
                         (Cowper and Hall 2019: [11])

Cowper and Hall (2019) show that the various person systems in the languages of the world can be constructed by using one, both, or neither of these two features, and by changing the scope order of the two features. These possible combinations yield exactly five person systems, all of which are attested in the languages of the world, and two of which are relevant in Niuean.

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[2] Many thanks to Ross Godfrey, for directing me to this path of research.

The pronoun system of Niuean has a three-way contrast in person, as well as a clusivity distinction, as shown in Table 2.

Table 2. Niuean personal pronouns (Seiter 1980: 49)

		SG	DUAL	PL
1	exclusive	au	maua	mautolu
	inclusive		taua	tautolu
2		koe	mua	mutolu
3		ia	laua	lautolu

Such a system is derived by Cowper and Hall's (2019) quadripartition person feature hierarchy with [±author] scoping over [±participant], as shown in Figure 6.

Figure 7. The quadripartition feature hierarchy (Cowper and Hall 2019).
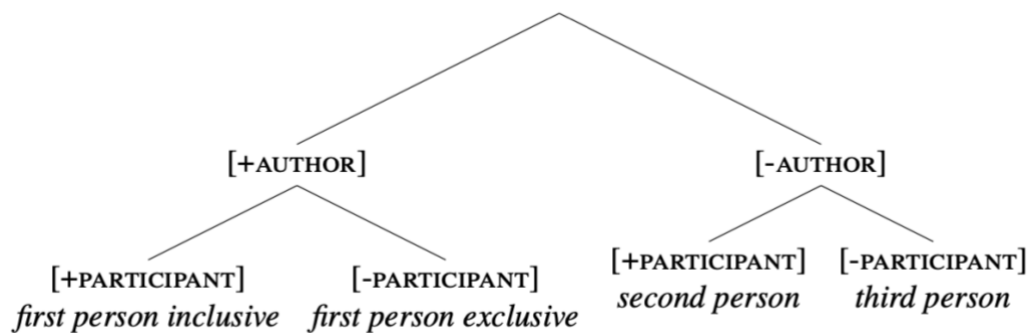
In this feature hierarchy, the meaning of [±participant] is derived contrastively with regards to its position in the feature hierarchy. When [±participant] is a dependent of [+author], it indicates specifically whether or not the referent includes a discourse participant *other than the speaker*, deriving the clusivity contrast. As such, the four feature combinations are interpreted as in (7).

(7) a.   [-author, -participant] = 3rd person
     b.   [-author, +participant] = 2nd person
     c.   [+author, -participant] = 1st person exclusive
     d.   [+author, +participant] = 1st person inclusive

Unlike the personal pronouns, the directional particles of Niuean do not have number and therefore no clusivity contrast. Furthermore, in the derived datives, there is only a two-way contrast between *mai* and *atu*, with *atu* being used for both 2nd and 3rd person. This can be achieved in Cowper and Hall (2019)'s system by truncating the feature hierarchy, removing the participant features in the context of PATH. According to Cowper and Hall, a language with only a [±author] feature contrast would only distinguish between

first persons (both inclusive and exclusive) on the one hand, and all other persons on the other. Thus, the distribution of the directional particles can be explained if *mai* is specified for [+author] while *atu* is specified for [-author].

One piece of the puzzle still remains. *Atu* encodes both 2nd and 3rd person in derived datives, but *age* still appears in other kinds of constructions with PATH. In these cases, I argue, PATH is underspecified for person. This can be derived with the Vocabulary Insertion rules in (8), with *age* being inserted in the elsewhere case.

(8)   Vocabulary Insertion Rules
        mai ↔ PATH [+author]
        atu ↔ PATH [-author]
        age ↔ PATH

Let us now return to our original puzzle. Although *atu* normally encodes 2nd person and *age* 3rd person, 3rd person is encoded with *atu* in derived datives, as shown above in (3c). I argue that this is because *age* itself has no person feature, as shown in (8), and so it can't encode an endpoint. In true datives, this is not a problem because the directional particle is doubled by the goal argument. The motion construction does not have an endpoint at all, and so is compatible with *age*. However, in derived datives, there is an endpoint, and it is marked by PATH alone. Therefore, there needs to be a dependent feature on PATH specifying the endpoint. *Atu* is inserted because it is [-author], which is the best fit.

4.   Conclusion

In this paper, I described three uses of the directional particles with person features in Niuean: the true datives, directional motion, and derived datives. I proposed that the directional particle is a PATH head with a dependent person feature, merged above the verb root. I also proposed that the argument structure of the verb affects how PATH is interpreted. When the verb has a goal argument, this results in a true dative and the person feature on PATH doubles an overt goal argument as the endpoint of the event. When the verb is an intransitive verb of motion, the person feature on PATH is interpreted as a direction with no endpoint. Finally, when the verb is a transitive verb of manner, the person feature on PATH is again interpreted as the endpoint, although it is not doubled by a goal argument.

Secondly, I propose that the person features of Niuean are organzied in the quadripartition feature hierarchy proposed by Cowper and Hall (2019). This feature hierarchy derives the clusivity contrast found in the first-person plural pronouns of Niuean. Furthermore, it explains why 2nd and 3rd person are syncretic in the derived datives. When the feature hierarchy is truncated, as I propose happens when it is a dependent of the PATH head, the feature with lower scope, [±participant], is deleted, leaving only a contrast between 1st person and all other persons. I further propose that *age* is underspecified for person, and that an underspecified PATH head is not compatible with derived datives, as the person feature is necessary in order to encode an endpoint.

This analysis predicts that tests for telicity, such as the *in an hour/for an hour* test, should give contrasting results for the motion verbs and the derived datives (Verkuyl 1972, Dowty 1979).

There is more research needed on the directional particles of Niuean. For one, the uses and interpretations of directional particles discussed in this paper is only a subset. In addition, the directional particles can indicate the experiencer in appearance constructions (e.g., looks like *to me*), *mai* can also mean outwards, and *atu* can also be used in comparatives.

Another possible line of further research is in considering the typology of verb-initial languages. Freeze and Georgopoulous (2000) make the observation that verb-initial languages lack a word for *have*. According to Harley (1995), HAVE is when a possessor c-commands a possessee, and would therefore be equivalent to a low applicative. If verb-initial languages, like Niuean, cannot have low applicatives, they need an alternative construction for indicating transfer of possession. It would be interesting to compare the directional particle construction in Niuean with constructions indicating transfer of possession in other verb-initial languages.

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