Anyone encountering an Algonquian language soon notices that a single word often expresses several different meanings which would be conveyed by separate words in a European language, e.g., Ojibwa takkw/apik/ikkotan 'to cut something stringlike shorter'. The root takkw 'short', the medial apik 'stringlike', and the final ikkotan 'to cut it' are combined into one form. Therefore, to understand the meaning of many Algonquian words we have to understand the meaning of their parts. Besides learning about meaning we can also see how Algonquian peoples structure information, if we are willing to accept the idea that favoured conceptual patterns will be mirrored in patterns of word formation.

When we study the meanings of morphemes within a word we are looking at the structure of the lexicon, i.e., the structure of words which in normal speech are handled as whole units. However, they were constructed from their morphemes at various times during the preceding centuries. Since in everyday speech the words are handled as whole units we may wonder how independent the parts are from each other. We can accept that the parts will function as independent meaning units if there are many combinations into which they enter. For instance the root takkw 'short' combines with many medials: takkw/akko/t 'it is a short wooden thing', takkw/apik/at 'it is a short stringlike thing', takkw/intam/a 'they are shallow depths', etc. However where parts appear frozen together in one or two patterns the resulting meaning may diverge from the meaning of the parts. For instance the root wawiyewa 'round' was probably constructed a long time ago from parts which are not now identifiable. We suspect this because the first part wà- occurs in other roots to do with curved shape: vàk 'curved', and vàn 'concave'. However, these formations are so ancient that now we can only accept the results as single units. In the work that follows we will sometimes be looking at formations which fall between these two extremes. In some cases a medial will occur with only two different finals but we will still claim that the resulting meaning is dependent on the meaning of the parts. We will do so because the formation is like many other similar formations and represents some more general semantic strategy discernible in other forms. For all the combinations we will examine, the claim being put forward is that they are part of the word-building strategies which were available in the last few hundred years. However, it is not claimed that all of them were available to the latest generation of speakers for the building of new words, although some of them certainly were. Two Algonquian words for 'radio' which were cited at this year's Algonquian conference by Marguerite MacKenzie and Gerry McNulty respectively show that new combinations were being constructed as recently as the late 1920's: East Cree ayamó/yàpi; Montagnais ayamó-mistikw. The first form is literally 'talk-string' and the second 'talk-stick'. In each
case it is the parts of the antenna which are mentioned in the second element, since the antenna was correctly perceived as crucial to receiving any signal at all on an early radio in the northern bush.

In proceeding with semantic studies of Algonquian word formation we soon come upon the difference between morphemes with readily discernible "concrete" meanings and those with hard to discern "abstract" meanings. In the word kiš/á/kam/it/e 'it is hot liquid' the root kiš 'hot', the medial kami 'liquid', and the concrete final it 'to heat', all have relatively clear concrete meanings. The other two morphemes, premedial a and abstract final e, have abstract meanings which are not immediately obvious. In a previous paper (Denny & Mailhot, 1976) we investigated the meaning of premedial a and made some suggestions about the meanings of the abstract finals. The purpose of the present study is to look at a complete set of abstract finals so as to see the whole semantic system they convey.

For the present investigation, I have restricted myself to the abstract finals which occur in inanimate intransitive (II) verbs. The II verbs include most of those used to describe the inanimate world, the physical environment so vital to Algonquian life, e.g., wapanipissa 'it is an east-rain'. By studying their most abstract elements I hope to show some of the conceptual strategies employed by Algonquians in viewing the natural world. The semantic analysis I will present was worked out during my own studies of East Cree and Montagnais, in which I was heavily dependent upon the guidance of Marguerite MacKenzie and José Mailhot respectively. However, in order to test my ideas I decided to apply them to a large general lexicon of II verbs, to see if all the complexities likely to be found could be accounted for. I chose the recently published lexicon of Ojibwa done by Piggott & Kaye (1973). The most notable of its features for the present study is that it is presented as a reverse dictionary, as well as forwards, so that words ending in the same abstract final are grouped together. Although the data set under consideration is this one from Ojibwa, I have also frequently referred to similar reverse dictionaries of Ojibwa, Cree, Menomini and Fox kindly provided to me by John Hewson. The Piggott & Kaye lexicon is for the Odawa dialect spoken on Manitoulin Island; the few forms included from the Western dialect spoken at Kenora are left out of this study. Also excluded were five forms which are not morphologically II verbs, although apparently so used by some speaker since they appear in the lexicon. Three of these are animate intransitive verbs used for an inanimate subject, kišittā 'it is finished', takkāssicīkē 'it causes the cold', and kiśisikē 'it causes the heat'. The fourth one moškīhana 'it is flooded' involves the instrumental concrete final h which does not occur as the main concrete final in II verbs; perhaps it is a psuedo-transitive like ākōhān 'to cover one's nakedness with something'. The fifth one tipāhāpan 'it is a mile' seems to be a particle, perhaps used as an II concrete final with no abstract final.

A few points about the presentation of this data should be made clear. First of all readers will often note morphophonemic variation of the various morphemes, especially the insertion of the epenthetic vowel i and the epenthetic consonant y which will be represented at the beginning of a morpheme. All short
i's at the beginning of morphemes are assumed to be epenthetic, although more skillful morphophonemic analysis may show that some of them are integral to the morpheme in question. Secondly, additional forms are sometimes taken from Baraga's (1878b) dictionary of Ojibwa, in which case they are marked (B) after the gloss. Also, Cree and Montagnais forms are sometimes cited where the semantics under discussion are the same as in Ojibwa. Thirdly, where the Piggott & Kaye lexicon lists a morpheme as having short vowels different from those usually given for that morpheme, the usual vowels are given therein, since this paper is concerned with Ojibwa semantics not the Odawa dialect.

The aim of this paper, then, is to show the meaning of the abstract finals which occur in each of the Ojibwa II verbs in the Piggott & Kaye lexicon. Five meaningful surface abstract finals were found: a, at, an, e, and in. In addition, a small number of verbs were found which appear to be formed without any abstract final, so that they consist solely of a root, e.g., tako 'it is in a place naturally or permanently', or root and medial, e.g., takk/akami 'it is cold water', or root and concrete final, e.g., akwít/apan 'it is rising dawn'. These forms will not be considered since our focus is upon words having abstract finals. The method used to determine the meaning of each abstract final was to examine the morphemes which it immediately combines with, i.e., the morpheme next leftwards in a written representation. An abstract final may combine with a preceding concrete final such as k 'to grow' in wák/ik/in 'it grows bent', or with a medial such as ašk 'grass' in šakk/ašk/at 'it [grass] is damp', or with a root such as miskw 'red' in miskw/a 'it is red'. Therefore we will look at the combinations of abstract finals with each of roots, medials, and concrete finals.

The whole set of II verbs viewed in this manner are shown in Table 1. The columns are the abstract finals: a, at, an, e, in, and O. The three sets of rows are roots, medials, and concrete finals. Each row within a set is a semantic subclass, to be described below. Thus each cell in the table represents all the words in the Piggott & Kaye lexicon which combine a particular abstract final with a preceding root, medial or concrete final of a particular semantic subclass. For example, the cell defined by the column for abstract final a and the row for medials of the configuration subclass contains an entry which is the medial akkamik. This entry stands for the 16 words in the Piggott & Kaye lexicon which end -akkamik/a. Our analysis will proceed by characterizing each of the abstract finals in terms of the preceding elements with which it combines.

First of all however, a few preliminary matters must be discussed. We will treat the two finals at and an as alternative realizations of the same semantic unit, for two reasons. First, as Table 1 shows, in Ojibwa, an does not combine with any preceding elements of types different from those that at combines with. Secondly, in the sister language Cree at does not occur and an is used for almost all the words which in Ojibwa take either at or an. The similarity between them indicates that at and an are one semantic category. Thus, we are searching for the nature of 4 semantic abstract finals represented by a, at(an), e, and in.

Another preliminary matter of considerable consequence is...
the semantic sub-classes employed for subdividing roots, medials, and concrete finals. It is not claimed that these are particularly Algonquian, i.e., they do not represent any kind of an empirical discovery about Algonquian semantics. It is also not claimed that they are the only set of sub-classes which might be appropriately devised. What is claimed for them is that 1) they are precisely definable, and 2) they work well in showing up the semantics of the abstract finals. We must now proceed to the definitions of these sub-classes.

A first point which will be noticed is that the semantic sub-classes are the same for roots and concrete finals but different for medials. This is because of a real semantic similarity between roots and concrete finals which they do not share with medials. Simply put, roots and finals express verbal predication whereas medials are incorporated nominal elements (Denny 1976). Since roots and concrete finals both express verbal predicates it is not surprising that they can be divided into the same set of semantic subclasses. Since medials express nominal predicates, i.e., kinds of entities, they need a separate set of subclasses.

The semantic subclasses for roots and concrete finals are defined as follows:

1) configuration: size and shape within an entity
2) position: orientation and position which have to be defined in relation to other entities
3) perception: sense qualities derived from specialized sense receptors
4) judgement: states evaluated by a mental standard
5) process: changes of state
6) atmospheric condition: diffuse conditions of the local atmosphere around the speaker

We turn now to the semantic classes expressed by the medials. The term "medial" causes some annoyance to linguists not fully acculturated in the traditions of Algonquian scholarship, so it should be pointed out at once that they are what are called noun classifiers or incorporated nouns in other language families. Two things seem to be true of this class of morphemes so widely found among the world's languages: 1) they are dependent nominals, i.e., they attach to other words such as verbs as in Algonquian, numerals as in Mayan, demonstratives as in Chinese and even nouns themselves as in the case of the Bantu noun prefixes, and 2) they express noun predicates, i.e., they place the nominal referent in a class, e.g., Ojibway ḡīkk 'mineral solid'. The first group, configurations, are those which place objects into shape-defined categories. These have been discussed in detail elsewhere (Friedrich 1970; Denny 1977) so that we will summarize them only briefly here. For convenience in the present paper, I have adopted Friedrich's terms one-dimensional (1D), two-dimensional (2D), and three-dimensional (3D) objects, which would be exemplified by a string, a piece of bark, and a berry respectively, although I have argued elsewhere for a revised analysis (Denny 1977). I have tentatively analysed medial ǧī as "3D, differentiated" because it seems to apply to three-dimensional objects with significant subparts, in contrast to minak which seems to be used for 3D objects viewed as homogeneous entities. Examples of ǧī where subparts

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seem involved are 1) pakko/ći/ss/in 'it lies there in a heap' where the parts of the object have to be appropriately arranged to constitute a heap, and 2) pāšk/ći/sh/a ‘it [animate] bursts' where the object bursting might be a bag of something, this unit consisting of a protective covering differentiated from its contents. The medial akkamik elicited controversy at this year's Algonquian Conference. On the basis of its identical form for spatial and temporal uses in Ojibwa, Menomini and Fox, I suggested a single meaning for it, "stretch of time or space". However, John Hewson objected, hypothesizing two different Proto-Algonquian forms *axkamek 'stretch of ground' and *ahkamik 'stretch of time'. Certainly in Cree the two medials are different, askamik 'stretch of ground' and ahkamik 'stretch of time'. Since, the analysis of abstract finals offered in this paper can hold whether there are two forms or one, we will leave the historical linguists to advise us further on the matter. The semantics involved are discussed in an appropriate section below. The second group of medials are time units. The third group, substances, include things that can be manipulated by human activity into various shapes. In contrast, group 4, geographic units, include things that are features of the landscape beyond the power of human manipulation. Finally, the fifth group, are medials referring to plants, whether individual plants such as anakk 'tree', or plant parts such as pak 'leaf'.

We can now begin the analysis of the abstract finals. If we survey Table 1 the following facts emerge concerning which roots (R), medials (M), and concrete finals (CF) immediately precede the various abstract finals:

| a | R: configuration, perception, atmospheric condition NOT position, judgement, process |
|   | CF: configuration, atmospheric condition NOT position, perception, judgement, process |
|   | M: all kinds EXCEPT time |

| at(an) | R & CF: perception, judgement, atmospheric condition NOT configuration, position, process |
|   | M: all kinds |

| ē | R & CF: position and process NOT configuration, perception, judgement, atmospheric condition |
|   | M: none |

| in | R: none (two exceptions) |
|   | CF: process ONLY |
|   | M: none |

| Ø | R: position, atmospheric condition ONLY |
|   | CF: atmospheric condition, process ONLY |
|   | M: substance ONLY |

In analysing these facts, we will look only at the central parts of the systems involved, i.e. we will study only the abstract finals and leave aside those forms which have no abstract final,
and we will also leave aside the atmospheric condition roots and concrete finals since these usually take no abstract final.

When we were describing the semantic subclasses, process roots and concrete finals were contrasted with the other main types which are stative. Looking at the above summary, it can be seen that process roots and concrete finals occur only with abstract finals e and in: piskan/e 'it ignites'; pć/ipte/e 'it comes towards' with CF pit 'move'; pitte/ık/in 'it is a second growth' with CF k 'grow'. On the other hand, roots and concrete finals which are clearly stative, such as those from the configuration, perception, and judgement subclasses, occur only with abstract finals ā and at(an). Examples are: 1) for configurations, kippak/ā 'it is thick', šıp/išk/ā 'it is bent' with CF šk 'to be in a configuration as a result of movement'; 2) for perceptions, tā́k/ā 'it is cold', wissak/án 'it is bitter', sıw/ippokok/č 'it tastes sour' with CF ppokw 'have a certain taste'; and 3) for judgements, āp̌at/at 'it is easy', in/entako/t 'it seems thus' with CF entakw 'thought to be'. Since process morphemes occur only with e and in, and the three kinds of stative morphemes only with ā and at(an), a first step in the analysis is to split the abstract finals into process and state groups:

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process state
ē, in ā, at(an)
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Further support for this view comes from the fact that e and in do not occur immediately after medials, but ā, and at(an) do. When the latter occur with a medial the resulting verb describes some state of the object classified by the medial, e.g., išp/ákonak/ā 'it is deep snow' with medial ákonak 'snow', šakk/ık/at 'it [2D] is damp' with medial ik 'two-dimensional object'. However, for a medial to occur in a word using abstract final ē or in, a concrete final concerning a process must intervene, e.g., medial ik-ēk (2D) in kēsīp/ık/iśe/ē 'it [2D] folds' with process CF ss 'become', nāniss/ık/aKōt/ē 'it [2D] hangs in tatters' with process CF akōt 'hang', and mīňw/ık/iśe/in 'it [2D] has become well = it is smooth/even' with CF ss 'become'. This pattern suggests that medials can be characterized by states, as expressed in forms where they are preceded by a stative root and followed by a stative final, e.g., kinw/ék/at 'it [2D] is long', but cannot be characterized by processes since they cannot be directly followed by a process abstract final. However, we could say that medials can be involved in a process if it is fully specified by a process concrete final and process abstract final, as in the three examples just given.

In this first step of the analysis, it has been shown that only two of the abstract finals ā, and at(an), are ever immediately preceded by stative roots and concrete finals, or by medials. These are therefore claimed to be stative abstract finals. Similarly, only the other two abstract finals, ē and in, are ever immediately preceded by process roots and concrete finals, so that these are claimed to be process abstract finals.

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In the second step of the analysis these conclusions will be taken as established and we will go on to answer further questions.

As a second step we will examine the stative finals $a$ and at(an). Returning to the summary of Table 1, it can be seen that $a$ and at(an) differ in that $a$ occurs with configuration roots but not judgement roots whereas at(an) occurs with judgement but not configuration roots: kinw/$a$ 'it is long', sanak/at 'it is difficult'. They also differ in that $a$ occurs with configuration concrete finals but not judgement and perception concrete finals whereas the reverse is true for at(an). The association of configuration morphemes with $a$ and judgement morphemes with at(an) is the most clearcut difference in their behaviour. If we use this to characterize the, we can conclude that $a$ refers to states which are seen as objective and as inhering in the object, such as configurations of size and shape, whereas at(an) refers to states imputed to the object by human judgement.

Of the various configuration and judgement morphemes involved in the above difference, it is only the configuration concrete finals occurring with $a$ which require some further comment, since the brief glosses given in Table 1 cannot convey their meaning. The first of them kk 'widespread' indicates that a widespread configuration applies to some object mentioned in the root of the word: nēkaw/ikk/$a$ 'there is widespread sand', omōtay/ikk/$a$ 'there are bottles all around', nipī/kk/$a$ 'there is widespread water, e.g., lots of puddles', animikki/kk/$a$ 'there is thunder all around'. The other configuration concrete finals are all concerned with the configuration of movements. The second one k 'seep' forms verbs describing the configuration of liquids when they seep or leak through an opening. In each case the root indicates the configuration of the movement, e.g., onc 'a certain place' in onc/ik/$a$ 'it wells up, leaks', tapp 'through an opening' in tapp/ik/$a$ 'it seeps through an opening'. It may be noticed that configurations of movements, since they involve changes of shape, are often expressed by position roots, rather than the configuration roots used for the configurations of objects. Thus onc 'a certain place' and tapp 'through an opening' are both position roots since they indicate the configuration of the movement of the liquid by relating it to other entities, a location in the case of onc and an opening in the case of tapp. For the next two concrete finals concerning configuration of movement, both position and configuration roots are used. These are concrete finals $\$k$ and kk. These are in fact instrumental finals from the transitive verb paradigms of Ojibwa which refer to the use of the body or foot to exert force on an object. When used in an II verb they indicate that the object has been moved by someone's body or foot in a configuration of movement specified by the root. Examples of $\$k$ are: ašswē/$\$k$/ä 'it is tilted', pīmisko/$\$k$/ä 'it is rotated', sasswe/$\$k$/ä 'it is scattered about', pakone/$\$k$/ä 'it has a hole', sōp/ik/$s$/ä 'it is bent over', pīko/$\$k$/ä 'it is broken'. The first two roots express positions and the rest express configurations, however when occurring with $\$k$ they all express some configuration of movement, including movements in which the object "moves" into parts, as when being holed or broken. The relation to transitive verbs and the instrumental meaning of these finals can be seen in the following set:

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Only one example of concrete final kk occurs in the Piggott and Kaye lexicon, pisk/ikk/a 'it is bent'. The last concrete final for configuration of movement is ašk which is specialized for the movement of waves: mamank/ašk/a 'there are big waves' with root mankan 'big' reduplicated, appakat/ašk/a 'the waves beat down' (B), pön/ašk/a 'the waves cease to rise' (B).

So far in comparing abstract finals a and at(an) we have concluded that the former indicates objective states of the object spoken about, whereas the latter indicates states imputed to the object by human judgement. We will use this view to understand the relation of these two abstract finals to the other class of roots and concrete finals with which they both occur, those referring to perception. Looking at perception morphemes we see a significant asymmetry: at(an) occurs with both perception roots and concrete finals, whereas a occurs only with roots and not concrete finals. However, inspection of the concrete finals involved shows that all of them refer to perceptual processes, i.e., the use of particular sense modalities by the speaker to infer some state of the object: mākw 'to smell' in siw/imāko/t 'it smells sour', ppokw 'to taste' in siw/ippoki/t 'it tastes sour', nākw 'to look' in wini/nāko/t 'it looks dirty'. Thus, the perception concrete finals are similar to the judgement concrete finals in expressing particular ways in which speakers infer states of an object. On the basis of this, we should broaden the meaning of at(an), from states imputed to an object by human judgement, to states imputed by processes of inference, either perception or judgement.

Although the perception concrete finals refer to perceptual processes, the perception roots refer to states of the object spoken about. These states are split between the abstract finals a and at(an) as is shown in the detailed breakdown given in Table 1. Since this detailed breakdown gives only one or two words in some of the subclasses of perception, it is worthwhile to amplify the data with some examples from Baraga's dictionary and from Cree, which show that the same abstract final occurs in a given subclass:

- temperature: takkā 'it is cold', Cree kīsōw/a/w 'it is warm'
- tactile: nōkk/a 'it is soft', maškaw/a 'it is hard' (B)
- pasakw/a 'it is sticky', ošašš/a 'it is slippery' (B)
- wetness: kipōkk/at 'it is damp', pēnkw/an 'it is dry' (B)

It can be seen that colour, temperature, and tactile qualities are expressed by roots taking a, whereas wetness, proprioceptive qualities and taste are expressed by roots taking at(an). The phenomenal quality of our perceptual experience and our common sense ideas about perception might lead us to expect all perceived states to be classified as objective states, like size and shape, and therefore to take a--perceived states are experienced by us as inhering in the object, e.g., the object...
has the blue colour, the sticky surface, the strong consistency, or the sour taste. Therefore, it may be sensible to ask what is special about wetness, proprioceptive qualities and taste which would account for their being associated with the final at(an) which normally occurs with inferred states. One possibility which applies to proprioceptive and taste qualities is the fact that the receptors involved are located within the body, rather than at its surface, as is the case for vision, temperature and touch. This gives the experience of a sensation within the body as well as a quality of the object, and this sensation within the body may give a subjective or inferred cast to the experience. In the case of proprioception, we feel the pressure within the muscles and joints when we try to bend something and conclude that "it is strong". In the case of taste, we feel the sensations within the mouth. This suggested explanation, however, does not apply to wetness, represented in the Piggott and Kaye lexicon by kipōk̓at 'it is damp'. Since wetness is perceived from various combinations of tactile and temperature sensations we would expect it to behave like those groups and take abstract final ā: takk̓ā 'it is cold', oshশশ̓ā 'it is slippery' (B). In fact, this seems to be a point where the Odawa dialect reported in the Piggott and Kaye lexicon deviates from other Ojibwa dialects and from Cree. In Cree, we find two roots for wetness both taking ā: pāhk̓w̓ā/w 'it is dry' and nIsk̓ā/w 'it is damp'. For other dialects of Ojibwa, Baraga gives penkw̓an 'it is dry' with an, but tīpp̓ā 'it is damp' with ā. If we accept that the expected pattern is for wetness roots to take ā, we must ask why in some cases Ojibwa combines them with at(an). Tentatively we can suggest that since wetness qualities are based on various tactile and temperature qualities they always involve a further inference. This extra degree of perceptual processing may make them feel more subjective, and tempt some speakers to mark them as inferred states.

Let us summarize our account of perception morphemes with ā and at(an). The perception concrete finals express perceptual processes. When they are used in a stative verb they mark the state as an inferred state, and consequently at(an), the abstract final for inferred states, is used. The perception roots refer to states which are seen as objective, inhering in the object; consequently they normally take ā, the abstract final for objective states. However, when receptors inside the body are involved which give a sensation within the body, this unusual subjective quality is marked with the inferred state final at(an). Finally, for some dialects the extra degree of perceptual inference involved in wetness compared to its base sensations of touch and temperature, leads to its being marked as an inferred state by at(an).

We may conclude step 2 of the analysis, concerning differences between abstract finals ā and at(an), by examining the occurrence of medials with them. In a previous paper (Denny & Mailhot 1976) we suggested that, when states of an object referred to by a medial are being expressed, the abstract final at is normally used, e.g., šakk̓/issak̓at 'it is damp wood' with M ssak 'processed wood'. However, when a spatial configuration of the object is involved it may be marked with the abstract final ā, e.g., pîn/issak̓ā 'it is a clean floor' in which the processed wood has the particular spatial configuration of a floor. An
An important aspect of this hypothesis is that at is the unmarked abstract final, as indicated by the fact that the general morpheme for making an IT verb from any AI verb, mak, uses this final, e.g., ikkitō/mak/at 'it says' from AI ikkitō 'he says'. If we look at Table 1 we see, in support of this view, that all classes of medials occur with at, whereas time unit medials do not occur with ā, e.g., nišō/konak/at 'it is two days', presumably because there can be no spatial configuration involved. The use of ā to mark spatial configurations is further supported if we compare the medials from a particular semantic class which occur with ā and with at. If we look at the geography class, we see that medials for objects whose shape and size is important such as hills, or other features, and depths of water take ā, e.g., pim/atin/ā 'it is a long ridge', significant in both size and shape, takkw/intam/ā 'it is shallow [literally: short depths]'. However, for objects whose shape or size is indefinite such as wind, varying such as sky, or nonexistent such as day, the unmarked final at occurs, e.g., šīpā/yānim/at 'it is drafty', miskopi/kko/t 'it is a red sky', kippok/ikišik/at 'it is a damp day'. [Note that the medial for day as a meteorological event, kīšik, is different from the medial for day as a time unit, konak.] A final case is that cited in a previous paper (Denny & Mailhot 1976) and mentioned previously in this one, akkamik 'stretch of', which is used with ā for a stretch of space, kīnō/kkamik/ā 'it is a long stretch of ground' and at for a stretch of time, aškwā/kkamik/at 'it [an event] is ended'. Although only one medial occurs for these two uses in Ojibwa, Menomini 'ahkamek', and Fox 'ahkmik', it appears to have split into two forms in Cree, askamik for stretch of space and ahkmik for stretch of time. However, the single semantic unit being expressed is readily illustrated in English by use of the word "stretch":

"it's a long stretch"  temporal: e.g., period of time away from home  
"it was a bad stretch"  temporal: e.g., period of illness spatial: e.g., bumpy part of a road

In the Ojibwa forms, akkamik with the unmarked final at refers to various qualities of a stretch of time, such as its beginning, māt/akkamik/at 'it [an event] starts', or the kind of activity which characterizes it, kīkkantī/kkamik/at 'it is a quarrel taking place'. On the other hand akkamik with the objective final ā is used for a stretch of space, pišišiko/kkamik/ā 'it is an empty stretch of land', pakko/kkamik/ā 'it [stretch of ground] has a bump'.

From this examination of medials with at and ā, we see 1) that at serves as an unmarked abstract final following medials, in addition to referring to inferred states following stative roots, and 2) that ā is confirmed as referring to objective states, since the spatial states it refers to when it occurs with medials are already included as one kind of objective state. We can show these findings in a diagram which summarizes the view developed up to the end of step two:
We now go on to step three of the analysis, the difference in meaning between abstract finals ę and in. As the summary of Table 1 shows these are only immediately preceded by position and process roots and concrete finals. We will first consider the problem of forms involving position morphemes which immediately precede only concrete final ę, e.g., takk/att/ę 'it is cold somewhere' with CF att 'to be somewhere', with one exception, the root tako 'to be in a place naturally or permanently' which takes no abstract final. It may seem curious that position morphemes, which we have classed as stative, can occur with abstract final ą which we have classed as processive. The position morphemes refer to any spatial relation of the object being talked about to other entities including space itself, e.g., root att and concrete final att both meaning 'to be somewhere'. The reason morphemes expressing states of this sort can be associated with a process abstract final is that positions are states which are usually the results of processes; some process must have moved an object into a position. It is for this reason that tako 'to be in a place naturally or permanently' contrasts with all the other position morphemes; only permanent or natural position is independent of processes. The view that positions are typically the result states of processes is further indicated by the fact that most of the position roots in the Piggott & Kaye lexicon occur with the process concrete final ss which, as we shall see shortly, means 'to become'. Since these roots are either the 3rd or 4th morpheme from the end of the word they are not shown in Table 1; a few examples are: āttawā/ss/in 'it is right side up', nittam/iss/in 'it is first', neko/ss/in 'it is in/under', and sākit/ap1/ss/in 'it [1D flexible] sticks out'. A full discussion of such forms is given in the next section of the paper. It may be helpful at this point to notice that in English as well, temporary positions are treated as processes and permanent positions as states. If we take the positional predicate 'stands' we find that progressive aspect can be used only for temporary standing which has resulted from movement. Thus, Pierre is standing outside is acceptable but *The Rockies are standing in Western Canada is not. However, simple aspect is suitable for permanent position, The Rockies stand in Western Canada, but is somewhat strange for temporary position, ?Pierre stands outside the door. Certainly the last sentence suggests that Pierre makes a rather permanent habit of standing in that position. Since it is widely accepted that progressive aspect can be said of processes but not of...
states, we conclude that in English, as in Ojibwa, positions which are not permanent are seen as processes. We have now got a solution to the first problem in step three of the analysis: only permanent position is stative, expressed by takö with no abstract final; most positions are the temporary result states of processes and take the process abstract final e, or the combination of process concrete final ss and process abstract final in.

The remaining problem in step three of the analysis is to discover the difference in meaning between the two process abstract finals e and in. They are similar in that they both occur only with process and position roots and concrete finals, and never with medials. However, in has the more restricted usage since it occurs only with process concrete finals (except for two unusual roots). Looking first at e we see that it occurs with a wide range of roots and concrete finals referring to processes, most of them processes undergone by the inanimate subject of the verb: akówiŋ/lö 'it is immersed', mőśkin/e 'it is filled', kíś/iö 'it is finished cooking' with CF it 'to heat', wäp/ánö/e 'it is coloured white' with CF änt 'to make', màciw/apot/e 'it floats away' with CF ápö 'to be carried by current', and many verbs formed with CF kät 'to be done to': ošiphi/käöö/e 'it is written', tétewákkoöö/käöö 'it is knocked on repeatedly'. However, some of the processes expressed could be seen as ones in which the inanimate object is a sort of agent: cínkwi/e 'it rumbles', apööö 'it flies', sāk/apott/e 'it emits smoke' with CF apott 'to smoke', and many verbs formed with CF pit 'to move': píc/ipit/e 'it comes towards', pakko/pi/pit/e 'it falls into water', akwa/pit/e 'it comes ashore'. In contrast to this situation the abstract final in occurs with no process roots and only four process concrete finals. Besides ss 'become' which is discussed below, these concrete finals are äss 'to be blown', e.g., akwik/ass/in 'it is blown away', at 'to freeze', e.g., maśkaw/ät/in 'it freezes hard', and k 'to grow', e.g., wāk/ik/in 'it grows bent'.

What is peculiar about these processes compared to the many processes which use abstract final e? It seems to be that these are relatively unobservable processes. This is particularly true of freezing and growing--they cannot be observed as processes but must be inferred from the states which they yield as results. Being blown, on the other hand, is not entirely unobservable; however, the causal agent, wind, is at least invisible and is particularly variable and unpredictable in its behaviour. In this way it contrasts with other natural forces such as the sun's heat, expressed by concrete final ätt, and water current, expressed by apöö, both of which take abstract final e, e.g., wäp/ätöö 'it is faded by the sun'.

The heat of the sun and water current are both more regular and predictable than is wind. In addition water current is often visible and the sun's heat can be observed by temperature perception. We conclude that where processes are entirely or largely unobservable, so that they must be inferred from their result states, abstract final in is used. It is therefore the abstract final for inferred processes, where e is the abstract final for processes which can be observed.

We have now to check this notion with forms employing the unusual concrete final ss 'to become' which occurs with both e and in. The meaning of this final is so abstract and general.
that it is really the same as the notion of process itself.
This is particularly so, since we have defined process as a
change of state in contrast to a state. This generality of
meaning can be seen in forms using the semantically empty
root ṅṣ 'thus': iṅṣ/iss/ṅṣ 'it becomes thus', iṅṣ/iss/ṅṣ 'it is
in such a state', and with the root kwēkk 'change':
kwēkk/iss/ṅṣ 'it changes', kwēkk/iss/ṅṣ 'it is changed'.
Thus, the meaning of concrete final ss is best indicated as
'become' meaning to change state so as to acquire a particular
goal state. This abstract meaning of ss is well illustrated
in the form using root niṣs 'down' and medial ākkw 'organic
solid': niṣs/ākkw/ss/ṅṣ 'it becomes down' which has been
glossed in English as 'it slides down', 'it opens', 'it is
thrown open', 'it is dismantled', 'it is taken apart'.
Presumably these more specific meanings are all examples of
becoming down. The abstract meaning of ss 'become' is further
indicated by the use of iṅṣ/iss/ṅṣ 'it becomes thus' to mean
'an opportunity arrives' and tipiṅsko/ss/ṅṣ 'it becomes the
same' to mean 'an event arrives again' or 'a predicted event
comes to pass'. Most of the forms involving ss have roots
which indicate the goal state of the process, e.g., cāk
'completely' in cāk/iss/ṅṣ 'it runs out, it becomes used up',
sak 'connected' in sak/iss/ṅṣ 'it becomes attached firmly',
mōkk 'come suddenly to' in mōkk/iss/ṅṣ 'it rises up, comes
out, surfaces'. However, some forms have a root indicating
the manner of becoming, e.g., pim 'along' in pim/iss/ṅṣ 'it
goes along', or sīk 'pour' in sīk/iss/ṅṣ 'it spills out'.

Having grasped the meaning of ss we now want to see what
difference there is when it combines with the two abstract
finals ṅṣ and ṅṣ. The pairs of words already seen above help
to show this:

iṅṣ/iss/ṅṣ 'it becomes thus' iṅṣ/iss/ṅṣ 'it is in such a state'
kwēkk/iss/ṅṣ 'it changes' kwēkk/iss/ṅṣ 'it is changed'

We see that when ṅṣ occurs with ss the verb refers to the process
of becoming, whereas when in occurs with ss the verb refers to
the state resulting from such a process. It is of interest
that Cree uses two different concrete finals in this situation
payi 'to become' with ṅṣ abstract final, and ht 'to have become'
with in, e.g., Cree kwēsk/ipayi/w 'it changes' and kwēsk/iht/in
'it is changed'. Another interesting Ojibwa pair in this
regard is šaṅsk/āpikk/iss/ṅṣ 'it slips off a mineral solid' and
šaṅsk/āpikk/iss/ṅṣ 'it slips and falls on a mineral solid'. The
two forms only differ in the abstract final yet the first form
with ṅṣ refers to the process of slipping and the second form
with in refers to the result of that process which is falling.
Nor is this the only form in which falling is treated as a
result state; pank/iss/ṅṣ 'it falls' with root pank 'go down'
reflects the fact that falling is often a result of some
process. In contrast, the other main root used in verbs of
falling kaw means 'to go over and down' i.e., it lexicalizes
both the process of losing balance and the result state of
falling, e.g., kaw/iss/ṅṣ 'it falls over'.

Based on the above minimal pairs we have suggested that,
when occurring with concrete final ss 'become', abstract final
ṅṣ refers to processes and abstract final in refers to result
states. We have also seen that ṅṣ refers to processes in a

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number of other forms involving ss. Let us now look at some other forms with in to see if they refer to result states. Examples include those reported earlier involving position roots, such as aṣ̌ave/ss/in 'it is on its side', all of which we suggested are the result states of processes. Also included are configuration roots which express the results of processes, e.g., pisk 'back' in pisk/iss/in 'it is bent back', akkw 'so far' in akko/ss/in 'it is piled so high'. An interesting contrast here is inakkote/ss/in 'it is placed so wide' expressing the result of a process contrasted with inakkote/yā 'it is so wide' simply expressing an objective state. A similar contrast involving an atmospheric condition root is akkacik/iss/in 'it is shaded', the result of a process, compared with akkacik/ā 'it is shady', an objective state. Many further examples are provided by process roots such as pāk 'to swell' in pāk/iss/in 'it is swollen', ānikkō 'to join' in ānikkō/ss/in 'it is joined', pāppiāw 'to scatter bits' in pāppiāw/iss/in 'it is spread in bits'; in all these cases the verb describes the result of a process. We conclude that with concrete final ss 'become' verbs using abstract final ē refer to processes, e.g., pākk/iss/ē 'it breaks open' (B), whereas verbs using abstract final in refer to result states of processes, e.g., pākk/iss/in 'it is open' (B).

We have now to integrate these findings involving concrete final ss with our previous analysis of the difference between the abstract finals ē and in based upon the other concrete finals with which they occur. In all cases abstract final ē refers to processes. However, for abstract final in, we suggested that when occurring with specific concrete finals such as k 'to grow' it referred to processes inferred from their result states, and when occurring with ss 'become' it referred to result states themselves. It appears that the primary reference of in is to the result states of processes, but that these can sometimes be used to infer the process when it is unobservable.

We have now completed our analysis of abstract finals ā, at(an), ē, and in. The semantic core of the system can be shown as follows:

The complete system including the unmarked use of at is:

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We may now summarize what we have learnt about the system of abstract finals for the inanimate intransitive verbs of Ojibwa.

1) The four abstract finals a, at(an), e, and in divide into state (a and at(an)) and process (e and in) groups, since only the former are immediately preceded by stative roots and concrete finals, and only the latter are immediately preceded by process roots and concrete finals.

2) The two abstract finals for states, a and at(an), differ in that a refers to objective states such as size and shape whereas at(an) refers to inferred states imputed to the inanimate object by the speaker's processes of judgement and perception. Perceived states themselves are normally objective, but some involving receptors inside the body or inferences from the perceptual data are marked as inferred. In addition, abstract final at is the unmarked final in the system.

3) The two abstract finals for processes, e and in, differ in that e refers to projesses in which the inanimate object referred to is involved in a change of state, whereas in refers to the result states brought about by processes. Another use of in is to refer to unobservable processes like growing which must be inferred from their result states.
<table>
<thead>
<tr>
<th>ROOT</th>
<th>configuration</th>
<th>at(an)</th>
<th>e</th>
<th>in</th>
<th>Ʉ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>micc(big), papİw (small[PLUR]), kippak(thick), appİtt(so high), appİcc(so far), akİcciİ(narrow), akİw(so far), anikokkw(so big), napak(flat), sİİkw(smooth), sİİk(wrinkled), piİs(in bits), takİw(short), kiİw(long), iİp(high), inakkotέ(so wide), wäk(bent), wäwIyέ(round), kİn(sharp), mankiİ(wide), piİttıİ(double), pakonέ(having a hole)</td>
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<td></td>
<td></td>
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<td></td>
<td>akİcc(small)</td>
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<td>2)</td>
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<td></td>
<td></td>
<td>tak(bee some-where), pInt (inside)</td>
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<td>3)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>tako(bee permanently at)</td>
</tr>
</tbody>
</table>

| TABLE 1 |

| Colour: makkatέ (black), wāpIśk (white), miskw (red), ośāw(brown/yellow), ośāwaśk (blue/green) | wetness:kipÖkk (damp) |
| temperature:takk (cold) | proprioceptive: ninam(weak), sónk(strong), kosİkw(heavy), nānk(light) |
| tactile:nÖkk(soft), pasakw(sticky) | taste:wIssak (bitter), wİşkop(sweet), sİw(sour) |

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<table>
<thead>
<tr>
<th>TABLE 1 (cont'd)</th>
<th>ā</th>
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<th>ŏ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4) judgement</strong></td>
<td>sanak (difficult), wënippan (easy), ūkkawat (dangerous), āpat (useful), wëssaw (fan), nipōtew (lonely), pīn (clean), wīn (dirty), pakaškan (rotten), pāttēn (many), mānāt (bad), pēßōw (near)</td>
<td>onīšišš (fine, good)</td>
<td></td>
</tr>
<tr>
<td><strong>5) process</strong></td>
<td>piskan (catch fire), ūtt (go out), appit (fly), ont (boil), anokky (work), akwīnt (immersed), akōt (hang), nissōt (trapped), akkō (stick), mōškin (filled), cīnkw (rumble), pātt (dried), māntakōt (fall from a height)</td>
<td></td>
<td></td>
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<tr>
<td><strong>6) atmospheric condition</strong></td>
<td>wāssē (daylight), takkē (cool weather), āpw (warm weather), kissin (cold weather), akkacik (shady)</td>
<td>nicīw (stormy), kōtō (act angry), pakam (begin to storm), kōtō (arrive), kišik (be day), tipikk (be night)</td>
<td>onōkošši (be evening), nōtin (rainy), minōkkami (be spring), awan (foggy), pankan (still out), wāpan (dawn), pipōn (be winter), nāwakkwē (be noon), kimiwan (be raining)</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>MEDIAL</th>
<th>at(an)</th>
<th>ć</th>
<th>in</th>
<th>Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) configuration akkamik(stretch of ground), ci(3D differentiated), minak(3D)</td>
<td>akkamik(stretch of time), minak (3D), Ik(2D), ápik(1D flexible)</td>
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<tr>
<td>2) time</td>
<td>konak(days), pipōnak(years)</td>
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<tr>
<td>3) substance</td>
<td>ssak(processed wood), ciškiwak (mud), ākonak (fallen snow), kami([body of] liquid)</td>
<td>ssak(processed wood), ápikk (mineral, solid), ākkw(organic solid)</td>
<td>kami(liquid)</td>
<td></td>
</tr>
<tr>
<td>4) geography</td>
<td>ïtam(depths of water), atin (hill), ākkwē (woods)</td>
<td>ānim(wind), akkw(sky), kIšik(day)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) plants</td>
<td>pak(leaf), ašk (grass), anakk (tree)</td>
<td>ašk(grass)</td>
<td></td>
<td></td>
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<tr>
<td>CONCRETE FINAL</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1) configuration kk(widespread), k(seep), kk(moved by body/foot), āšk (wave movement), šk (moved by body/foot)</td>
<td>att(be somewhere)</td>
<td></td>
<td></td>
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<tr>
<td>2) position</td>
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<tr>
<td>3) perception</td>
<td>mākw(smell), nākw(look), ppokw(taste), anikw(weigh)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TABLE 1 (cont'd)</td>
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<td>---</td>
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</tr>
<tr>
<td>4) judgement</td>
<td>ëntäkw (thought to be), äpat (useful for), w (be characterized by or as)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) process</td>
<td>ss (become), aköt (hang), oškin (filled), py (do in/with water), wëw (make noise), änt (colored), kint (priced), ätt (heated by sun), äpaw (wetted), äpy (go), äpy (to be strung), äpatt (smoke), änkot (be spread out), ppit (tied), akwint (immersed), nikkät (called), kkät (thrown), kät (done to), ät (done to), kköt (caused to be), kkot (be cut), it (heated), äpöt (carried by current), akkön (catch fire), änh (shine), pit (move), šköt (caused to be by body/foot)</td>
<td>ss (become), äss (be blown), at (freeze), k (grow)</td>
<td>amo (make its way), ciwan (current flow)</td>
<td></td>
</tr>
</tbody>
</table>

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