The argument status of directional PPs

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January 6, 2014

1   Introduction

This thesis investigates the argument status of directional PPs as in (i), which have been noted to be more argument-like than static location adjuncts such as (ii).

(i.) Tina ran to the park.

(ii.) Samantha walked in the garden.

I argue that the argumenthood of a place PP depends on its ability to contribute a telicity in order to occupy an event position of a complex event. I will first explore the differences in telicity of place PPs, focusing primarily on cases when they occur with intransitive motion verbs. I go on to propose a four-way classification of place PPs into the classes of Locative, Goal, Path and Ambiguous, where telicity is the motivation for group membership. These classes are traced through several telicity and argumenthood diagnostics in order to establish the telic and argument status of the Goal and Ambiguous (goal-reading) classes, whereas the Locative, Path and Ambiguous (path-reading) classes are atelic adjuncts.

I suggest that these results can be accounted for by adopting an event-structural analysis based on Vendler's (1957) Aktionsart classes, whereby a telic PP is fundamentally incorporated into the event structure of a motion verb by occupying the $\langle e2 \rangle$ position of a telic pair. This identification is reflected in its status as an argument, where PP and motion verb are linked in the mutual expression of a complex event: an active accomplishment. Only the Goal and Ambiguous (goal-reading) classes can fill this position, therefore only these classes pattern as arguments. In contrast, the fact that atelic PPs

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of the Locative, Path and Ambiguous (path-reading) classes cannot occupy this position contributes to their status as adjuncts. This analysis is adapted from that in Truswell (2007).

2   Introduction: Directional PPs and telicity

This thesis investigates the argument status of Directional PPs. Consider the place PPs in brackets in examples (1-4). Because these phrases are optional they are typically classified as adjuncts along with other time, manner or purpose expressions that are adverbial in nature (Van Valin and LaPolla, 1997, p.26; Jackendoff, 1983, 1993; Kearns, 2011).

(1)   John ate the sandwich [in the library].

(2)   Eliza jogged [in the park].

(3)   Sam drove [toward the station].

(4)   Keith skated [to school].

The PPs in (3) *toward the station* and (4) *to school* are examples of Directionals, which are distinguished from the static location PPs in (1-2) in that they are often tied to motion verbs and express some type of movement along a path (Van Valin and LaPolla, Needham and Toivonen, Kearns, Fong).

   In particular, Directional PPs have be noted to express a change as part of their meaning, thus altering the telicity and shifting the Aktionsart of the verb they modify (Verkuyl and Zwarts, 1992; Jackendoff, 1993; Zwarts, 2006; Rákosi, 8; Van Valin and LaPolla, 1997; Dowty, 1979; Fong, 1997). Examples (5-7) are taken from Rákosi (2012, p.8) to illustrate the ability of a Directional to add a telos to a previously atelic event.

(5)   Peter walked for 10 minutes.

(6)   *Peter walked to the bank for 10 minutes.

(7)   Peter walked to the bank in 10 minutes.

These example show how two the two telicity tests, *in 10 minutes* and *for 10 minutes*, reveal that while (5) describes an atelic event, (6-7) describe events that are telic. Briefly, atelic predicates can be modified with *for* whereas telic

ones must occur with *in*. Refer to section (5) for further detail.

Example (5) illustrates that *Peter walked* is atelic because it can be modified by *for 10 minutes*. Accordingly, the ungrammaticality of (6) and grammaticality of (7) when the same sentence occurs with the directional PP *to the bank* reveals that *Peter walked to the bank* is telic.

For Rákosi this fact suggests that directional PPs are more argument-like than other types of PP adjuncts (2012, p.8). While Travis (2000), Koopman (2010), Villavicencio (2000, 2002), Needham and Toivonen (2011) and others have noted that directionals pattern with arguments more than static PP adjuncts, it has also been suggested that telicity may be an important factor in influencing a PP's argumenthood (Fong, 1997; Folli and Ramchand, 2005; Zwarts, 2006; Van Valin and LaPolla, 1997).

As mentioned, a directional PP is considered to specify an endpoint such that when it occurs with a motion verb the event becomes telic. In regards to this point, this thesis investigates whether it is true that all directionals have this telicity-altering ability. Indeed, the examples in (8) and (9) suggest that they do not.

(8)   walk towards the river for an hour

(9)   *walk toward the river in an hour

Although the both (8-9) contain the directional PP *towards the river*, the ungrammaticality of (9) indicates that *walk towards the river* is atelic as it cannot be modified by *in an hour*. I follow Kracht (2002), Zwarts (2006), Jackendoff (1983) and Verkuyl (1972) in arguing that only some directional PPs can contribute telicity through the specification of an endpoint. Accordingly, I believe a finer typology of place PPs is needed if this ability is influential in determining a PPs argumenthood.

I will begin by presenting several ways that place PPs have been characterized in the literature. Following this, I will introduce my classification based on Kracht, where I propose a division into the four classes of Locatives, Goals, Paths and Ambiguous. As telicity is the motivation for group membership, I will define telicity and outline several diagnostic tests which will subsequently be applied to place PPs in order to support my telicity-based classification. Finally, I suggest that these distinctions are important, as I will show in the next section that they influence performance on various diagnostics of argumenthood.

2.1 Fong

Fong follows Dowty (1979) in assuming that a Directional Locative (DL) encodes a change (1997, p.55), however she argues based on observations in English and Finnish that they do not directly refer to paths, rather they have a more abstract meaning.

In English DLs can only occur with verbs that describe motion to express a change of location (1997, p.58), however in Finnish they can also occur with verbs such as *find* and *forget* where there is no motion interpretation. Instead, DLs with *find* and *forget* encode more abstract, aspectual changes.

In order to capture the use of Finnish and English DLs in a unified way, Fong argues that in both cases the DL operates on the diphasic structure provided by the temporal properties of the event described by the verb (1997, p.107). This structure consists of two distinct ordered phases which correspond to the situations at beginning and at the end of the event (1997, p.26). It is the diphasic structure itself that is basic, and any spatial or aspectual interpretations are reconstructed based on the relative ordering of the two sub-parts (1997, p.61).

In Finnish this structure can be mapped to both spatial and aspectual interpretations, whereas in English only spatial reconstructions are available. This is why DLs in English can only occur with motion verbs, because only motion verbs define the spatially diphasic structure required for a DL to access (1997, p.61).

The following examples taken from Fong (1997, p.40) illustrate how the DLs in (10) *into the room* and (11) *out of the room* interact with the motion verb *dance* to introduce an abstract diphasic structure that leads to the change of location interpretations in both.

(10)   Pat danced into the room.

(11)   Pat danced out of the room.

Both (10) and (11) encode changes from one region to another. In (10) the PP *into the room* introduces the diphasic structure of the ordered phases: *not p* > *p*. The first phase, *not p*, corresponds to the situation at beginning of the event when Pat is not in the room. The second phase, *p*, describes the situation at the end of the event when Pat is in the room.

The PP in (11) *out of the room* also introduces a diphasic structure, however the ordering of phases is opposite from (10): *p* > *not p* (1997, p.34).

Both (10) and (11) express a change of location denoted by the transition from the first to phase of the diphasic structure introduced by the DLs. The motion verb *dance* allows a spatial reconstruction of this structure, where the interpretation in (10) is that the path of dancing started when Pat was outside of the room and culminated with Pat being located inside of it, where (11) Pat's dancing began inside the room and culminated with Pat being outside of it.

Since English DLs can only access phases defined spatially, the aspectually diphasic structures of *forget* and *find* cannot occur with DLs, because the diphasic structure they define is non-spatial (1997, p.48). Consider the ungrammatical examples in (12) and (13).

(12)   *Sam forgot the book into the car.

(13)   *Jack found the keys out of the drawer.

Although both examples have the appropriate diphasic structure on which DLs can operate, the English verbs *forget* and *find* cannot support the DLs because the do not supply the spatial information for a path-reconstruction that is required of English DLs.

In contrast, Finnish DLs are not limited in this way. In Finnish a DL can access non-spatial structures, in particular the aspectually diphasic structures of *find* and *forget* (1997, p.23). Accordingly, the Finnish versions of sentences (12) and (13) are grammatical.

Fong argues that manner of motion verbs such as *run* or *dance* are basic activity verbs (1997, p.63). However, they are able to incorporate change of location meanings to yield a diphasic structure when they occur with a DL (p.59), in which case they become accomplishments (p.80). She cites examples such as (14) to support that the use of a DL with motion verbs leads to an 'unequivocal' change of location interpretation (1997, p.58), where the cat comes to be located outside the room at the end of the event.

(14)   The cat ran out of the room.

Accordingly, Fong argues that for cases like (14) when an activity verb *run* occurs with a DL, it undergoes lexical aspect shift to become accomplishment as there is a change of location interpretation. Change of location meaning is what shifts to accomplishment because accomplishments are complex that decompose into two phases: a causing activity and a resulting change of location (1997, p.71). Fong suggests that this has repercussions for argument

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structure, where the result of such an aspect shift opens up a slot in the verbs predicate argument structure that corresponds to a resultant location (1997, p.97). It is this position in which a directional PP is located.

Although Fong claims that DLs 'unequivocally' involve a change of location (1997, p.58), the examples in (15-17) demonstrate that this is not always true.

(15)   The cat ran from the room.

(16)   Syd drove towards London.

(17)   Eliza jogged through the park

Examples (15-17) illustrate motion verbs with DLs that do not encode a change of location. This suggests that a binary distinction between directional PPs that express a change on one hand, and non-directional PPs that do not is too restricted. For this reason I will use the five-way distinction proposed by Kracht for my classification of place PPs in section (3). Kracht's five modes are outlined in section (2.3), where only two, the co-initial and the co-final, can be interpreted in terms of Fong's diphasic structure (Kracht, 2002, p.171).

2.2   Jackendoff

Jackendoff (1983; 1993) makes the distinction between Place-functions and Path-functions. The following examples taken from Jackendoff (1983, p.163) illustrate that a Place can be occupied by a thing as in (18), or it can express the location of an event or state in (19).

(18)   The lamp is on the floor.

(19)   Jean ate breakfast in her bedroom.

In (19) the preposition *in* expresses a Place-function that uses the reference point *her bedroom* to encode a region, in this case the region that is 'inside her bedroom'. Since Place-functions specify static locations they are represented by non-directional PPs. In contrast, Path-functions are more complex and can express some type of motion along a route, therefore they correspond to the class of directional PPs.

A Path establishes a trajectory into which a reference point is mapped

(Jackendoff, 1983; 1993). This reference point can be either a Thing or a Place, demonstrated by examples (20) and (21), respectively.

(20)   to the house

(21)   from under the table

In (21) the trajectory begins at the place *under the table*, while in (20) it begins at the thing *the house*.

There are five Path-Functions: TO, FROM, TOWARD, AWAY-FROM and VIA (Jackendoff, 1993, p.44). Paths are grouped into three types, Bounded Paths, Directions and Routes, according to the relationship to the reference point specified by the particular Path-function (Jackendoff, 1983, p.166).

Bounded Paths map a reference place or thing to one of the endpoints of the path, either at the beginning or the end (Jackendoff, 1983, p.165). The Path-functions that correspond to this type are TO and FROM. Consider the examples below.

(22)   John ran to the room.

(23)   John ran from the house.

The Path-function in (22) TO takes the argument *the room* which is the reference point to which the motion of *run* proceeds (Jackendoff, 1993, p.46). Thus, the argument of TO is the goal as it is located at the end of the path.

On the other hand, (23) illustrates the Path-Function FROM. The argument of FROM, *the house*, is the object from which the motion *run* proceeds (1993, p.46). Accordingly, FROM represents a source as it is mapped to the beginning point of a path. Both TO and FROM encode Bounded Paths because they specify a reference point that it is at a Path's 'edge' .

The next class identified by Jackendoff is that of Directions, encoded by the Path-Functions TOWARD and AWAY-FROM. This type of path express that the argument of these functions is not located on the path, but would be if the path were extended by some unspecified distance demonstrated by the PPs in (24) and (25).

(24)   John ran toward the house.

(25)   John ran away from the house.

In (24) the Path-Function TOWARD specifies that its argument *the house* is not located directly at the finish point of the route it encodes. Rather, John's running is simply directed toward a point that is located somewhere beyond the endpoint of the path.

The opposite is true for the Path-Function in (25), such that AWAY-FROM encodes that the reference point *the house* is located somewhere before the beginning of the path, rather than somewhere beyond the end of it. In both cases, TOWARD and AWAY-FROM encode directions because they specify reference places or things that do not fall within the path they establish.

Finally, a Route represents a reference point that is related to some place along the 'inside' of a Path, however it does not provide any information about a its endpoint (Jackendoff, 1983, p.166). The Path-Function VIA in (26) encodes such a Route.

(26)   The car drove through the tunnel.

VIA expresses that the route traversed by the theme *the car* is contained within the path denoted by VIA's argument *the tunnel* (Jackendoff, 1983, 72). VIA does not mention anything about the endpoints of the motion (Jackendoff, 1993, 166), i.e. (26) means that the car's driving was located within a path 'through the tunnel', however the exact starting and ending point of this path are left unspecified.

When a Path-Function occurs with a motion verb it expresses movement along some types of Path. Motion verbs have the Event-Function GO which takes two arguments, a Thing in motion and the Path it traverses (Jackendoff, 1993, p.44). Consider the following example taken from Jackendoff (1993, p.44) which illustrates the interaction of GO with the Path-Function TO.

(27)   John ran into the room.

Run is a motion verb therefore it has the function GO. The two arguments of GO are the subject *John* and the Path-function TO which corresponds to the PP *into the room*. TO takes a Place as its argument. The Place is decomposable into the Place-function IN which takes a Thing, 'the room', as it argument (Jackendoff, 1993, p.45). Since TO encodes a Bounded Path, (27) describes that the reference point *the room* is located at the endpoint of the path of *run*. Even if the Path-Function is unexpressed it is still an implicit argument of the verb.

On the other hand, the manner of motion verb in (28) differs from the motion verb in (27) in that it does not necessarily imply the traversal of a path.

(28)   Debbie danced.

With verbs like *dance* Jackendoff argues that there is no implicit Path argument. Therefore (28) is not an example of GO, rather it has the single-argument function MOVE (Jackendoff, 1993, p.88). However, it is possible for the manner of motion verb in (28) to occur with a path phrase, illustrated below.

(29)   Debbie danced into the room.

Although the *dance* has the single argument function MOVE, it can incorporate GO when used with a path phrase such as *into the room* in (29). However the Path-argument TO belongs to the GO-function only, not to MOVE (Jackendoff, 1993, p.89).

Importantly, Jackendoff notes that the Path-Functions TO TOWARD FROM AWAY-FROM and VIA differ in the specification of a culmination. Consider the examples below.

(30)   The train traveled to New York.

(31)   The train traveled toward New York.

When TO appears as a Path-Function in (30) there is the inference that the goal is attained, i.e. that the train has reached New York (Jackendoff, 1983, p.196). There is no such inference with the Path-Function TOWARD, such that (31) describes the train as getting closer to New York without actually reaching it (Jackendoff, 1983, p.208).

With respect to the discussion in this thesis regarding the differences in telicity of directional PPs, this point is particularly important as it suggests that they do in fact differ in this manner. Directional PPs that encode a terminal point can provide a telos to an otherwise atelic predicate. However, not all directionals are telic because, as Jackendoff notes above with TOWARD, they do not all specify a culmination.

2.3 Kracht

Kracht argues that locative expressions have two layers, one that specifies the configuration and the other the mode (2002, p.159). A configuration is a description that is void of motion and positions one object in relation to another. Prepositions that encode the configuration do not signal a change of location and are termed *localisers* (Kracht, 2002, p.187). Some examples of localisers are the prepositions *on*, *in* and *at*.

A mode describes the way an object moves with respect to the configuration specified by the localiser (Kracht, 2002, p.159). While there is no upper limit on number of configurations that a language can encode, the number of modes is much more restricted (Kracht, 2002, p.227). Kracht proposes five modes: static, cofinal, coinitial, transitory, approximative (2002, p.159). Only the static mode is non-directional, while the other four modes express some type of movement (2002, p.163).

The difference between directionals and static location PPs is captured in terms of the mode (Kracht, 2002, p.159). Nondirectional PPs correspond to the static mode which specifies the location of events. In contrast, the directional modes of cofinal, coinitial, transitory and approximative encode the location of an event's participants (Kracht, 2002, p.228).

In terms of participants, Kracht suggests there is a specific object that the event describes as being in motion. This object is called a 'mover', and it this 'mover' toward which the directional modes are oriented (Kracht, 2002, p.193). A directional modes can only be licensed when the event has an eligible mover, an ability that Kracht restricts to active subject and objects (2002, p.193).

The static mode specifies that the object remains in the configuration throughout the event, exemplified by the PP *in the forest* (Kracht, 2002, p.159). The cofinal mode describes an object that moves into the configuration during the event time. The PP *into the barn* is an example of the cofinal mode, since at the beginning of the event time the mover is located outside of the barn and at the end it has moved into it. The coinitial mode expresses that the object in question moves from the configuration over the course of the event, exemplified by the PP *out of the kitchen*. The mover has the property of being in the kitchen at the beginning of the event, but it no longer has it at the end (Kracht, 2002, p.185). The transitory mode describes an object that moves in and out of the configuration, as in the PP *through the tunnel*. Finally, the approximative mode encodes a movement

that approaches the configuration without actually reaching it, such as the case with the PP *towards the lake*.

The four directional modes of cofinal, approximative, coinitial and transitory roughly correspond to Jackendoff's five Path-Functions TO, TOWARD, FROM, AWAY-FROM and VIA, where TO is similar to the cofinal, FROM and AWAY-FROM to the coinitial, TOWARD to the approximative and VIA to the transitory. Refer to section (2.2) for further discussion regarding these Path-Functions.

Crucially, Kracht notes that the four directional modes of cofinal, coinitial, transitory and approximative differ in terms of telicity, such that those that specify a start or endpoint can convert events from atelic to telic (Kracht, 2002, p.194). He suggests that the only two modes that encode such information are the coinitial and cofinal modes, respectively. I take these factors into account in establishing group membership in the classification proposed in the next section. However, I extend the ability to influence telicity to include the transitory mode, which I argue can encode an endpoint when it is interpreted as a goal.

3   A Classification of place PPs

Using the five modes outlined in section (2.3), I propose a further grouping into four classes according to their telicity: Locatives, Paths, Goals and Ambiguous. While Locatives and Paths are atelic, the class of Goal is telic. Finally, the Ambiguous class has variable behaviour, such that they are telic in goal interpretations and atelic when interpreted as a path.

(2.0.1)

		Locative	Goal	Path	Ambiguous	
Mode(s):		static	co-final	approximative	co-intial	
					transitory	
					goal-reading	path-reading
Example:		in NP	to NP	toward NP	out of NP	from NP
			into NP		through NP	through NP
Subsection:		2.1	2.2	2.3	2.4.1	2.4.2

3.1 The Locative class

The Locative class corresponds to Kracht's static mode. Locative PPs are not directional, rather they encode the place where the event itself is located. Since they do not encode any movement, they are not tied to verbs of motion. Examples (32-34) illustrate Locative PPs with intransitive verbs.

(32)   Mary slept in her bedroom.

(33)   The dog ran in the park.

(34)   Jimi Hendrix died in London.

3.2 The Goal class

The class of Goal PPs corresponds to Kracht's cofinal mode. Goals consist of directional PPs that encode the destination or endpoint of a motion.

(35)   The plane flew to Paris.

(36)   Amy drove to the zoo.

(37)   Jack danced to the kitchen.

I have chosen to focus primarily on the preposition *to* to represent Goals, however this class also includes PPs headed by *into* and *onto*, as they both express motion that culminates in a result location. These PPs are illustrated by (38) and (39), respectively.

(38)   Rory danced into the room.

(39)   The snake slithered onto the box.

3.3 The Path class

The Path class consists of PPs of the approximative mode. These PPs are directional in that they convey movement along some type of route that does not specify any start or endpoint.

(40)   Roger walked toward the kitchen.

(41)   Arthur ran toward the class.

(42)   The train travelled toward New York.

Although I concentrate on PPs headed by *toward* in this thesis, I suggest that other PPs, in particular *along NP*, could be grouped together with *toward* as belonging to the Path class. Some examples are illustrated in (43) and (44).

(43)   Mary biked along the path.

(44)   The train travelled along the coast.

3.4   The Ambiguous class

This class is comprised of the co-initial and transitory modes, both of which convey some type of motion. Co-initial PPs encode movement away from a reference point, while transitory PPs specify a trajectory. There are two interpretations available to these PP, either a goal-reading or a path-reading.

3.4.1   Ambiguous: goal-reading

Co-initial PPs with this reading encode an result location. Transitory PPs with this reading express a trajectory that is extends farther than thing being traversed.

(45)   a. Rick biked through the park.
        b. David bolted out of the house.

3.4.2   Ambiguous: path-reading

Under this interpretation co-initial PPs encode a route away from a reference object without specifying a result, while transitory PPs express that the trajectory is fully contained within the location traversed.

(46)   a. Lily strolled through the garden.
        b. James ran from the woods.

The Ambiguous PPs in the (a) sentences of (45) and (46) illustrate the transitory mode, while the (b) sentences express that of co-initial. Although the (a) sentences in both (45) and (46) have the preposition *through*, it is interpreted differently in each case.

In (45) *through* has a goal-reading which specifies that Rick biked into the

forest on one side and out of it on the other, therefore the result is that Rick is 'through' the forest at the end of *biking*. In contrast, the path-reading of *through* in (46) does not describe Lily's result location of being 'through the garden'. Rather, it encodes that the route travelled by Lily's is fully contained inside the boundaries of the garden throughout the event of *strolling*, not that she enters the garden on one side, traverses it, and exists on the other.

The PPs in the (b) sentences of (45) and (46) illustrate the co-initial mode. Unlike those in (a), the co-initial prepositions in the (b) examples are not the same in (45) and (46). The goal-reading in (45.b) is represented by *out of*, while the path-reading in (46.b) is represented by *from*.

With the goal reading in (45.b), the co-initial PP *out of the house* specifies that at the end of the motion of *bolting* David transitions from being 'in the house' to the result location of 'out of the house'. However, the path-reading in (46.b) does not specify this type of terminal point, such that *from the woods* encodes that James begins somewhere near the edge of the woods and at the end of *running* he is a farther distance away from it. It does not require that he is initially located 'in the woods' and ends up in the result location of outside of it.

Only the transitory (a) and co-initial (b) modes have a these two readings available, therefore these two modes are grouped together to form the Ambiguous class.

3.5   Spatial-temporal inconsistencies

One of the difficulties in describing the co-initial mode as having a 'goal'-reading is that it is (superficially) not consistent with intuitions. This illustrated by example (47) repeated below.

(47)   David bolted out of the house.

Since a goal is located at the end of some activity, the PP it out of the house in (47) seems like more of a 'source', which we would naturally want to place at the beginning of an event. This apparent contradiction of is based on the fact that for this mode, space and time do not match up.

Although spatially, *out of the house* is indeed located at the outset of an event as the source from which the entity physically moves, in terms of Aktionsart and event structure, it is found temporally at the end of the event

time since it functions as the culmination to an event by specifying a result location: in the end David ends up out of the house.

3.6   Clarification of terminology

As an aside, I present a table from Kearns (2011, p.210) in order to disambiguate between two common uses of the term 'path'.

(3.6.1)

Path-a		
Source	Path-b	Goal
from the mirror	along the beach	to the lighthouse

A 'path' in the general sense (path-a) refers to goals, sources and paths (path-b). Accordingly, every PP in (48)-(51) can be termed 'path' in the general sense (examples taken from Kearns).

(48)   The glider drifted [through the clouds].

(49)   Jones ran [along the cinder path].

(50)   Jones ran [to the park].

(51)   The car drove [out of the lot].

The narrow sense of 'path' (path-b) refers only to PPs that encode a route without a starting or final location. Thus, the narrow sense (path-b) only refers to the PPs in (48)-(49), but not to those in (iii)-(iv). (Kearns, 210).

   I illustrate this difference in order to clarify my own terminology in the classification of place PPs proposed in this thesis. I distinguish between four classes: Locatives, Paths, Goals and Ambiguous. The class that I term 'Path' refers to a path in the narrow sense (path-b in Kearns' table), which encodes a route only. To correspond to the general use of path (path-a) I use the term 'directionals', which refers to the Goal, Path and Ambiguous classes.

4   Telicity

Telicity is a property that refers to the natural terminal point expressed by a verb and its arguments (Kearns, 2011, p.166; Declerck, 2006, p.61; Van Valin

and LaPolla, 1997, p.93; Depraetere, 1995, p.3; Davidse and Ryman, 2008, p.260; Comrie, 1976, p.45; Walkova, 2012, p.499). A predicate is classified as telic if it denotes a natural culmination point that must be attained in order for the event to be realized. Once this point has been reached, the event cannot continue. In contrast, verbs that do not specify a point of completion are considered atelic. Consider the examples (52) and (53) taken from Walkova (2012, p.499).

(52)   John sang.

(53)   John made a chair.

The predicate in (52) does not encode an inherent endpoint- once John has sung it is possible for him to continue singing. Accordingly (52) is classified as atelic. However in (53) there is a natural culmination such that once John has made a chair, he cannot continue making that same chair. Thus (53) is an example of a telic predicate.

Following Kearns (2011), Davidse and Rymen (2008), Declerck (2006) and Depraetere (1995) I make the distinction between telicity and boundedness. Boundedness is the more general property of encoding an endpoint by any means, while telicity is a term reserved for the natural culmination expressed by a verb and its arguments only (Depraetere, 1995, p.4; Davidse and Ryman, 2008, p.260; Kearns, 2011, p.166). The importance of this distinction is illustrated in (54), which is identical to (52) except it has been modified with the time adverbial *for 2 hours*.

(54)   John sang for 2 hours.

The entire expression in (54) now includes a terminal point, such that after the elapse of 2 hours the event of singing is completed. However, (54) is not telic. Rather it is an example of an atelic predicate that has been bounded. This is because the limit has been arbitrarily imposed by the time adverbial 'for 2 hours', rather than begin an inherent property of the verb (Walkova, 2012, p.500; Kearns 2012, p.166; Davidse and Rymen, 2008).

In terms of my analysis of place expressions, I follow Kearns in assuming that arguments include directional PPs, thus (55) is treated as a telic predicate, and not an atelic predicate that has been bounded (2012, p.166).

(55)   run to the beach

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5 Descriptions of the Telicity Tests

In this section, I outline several diagnostics of telicity in Kearns (2011), Walkova (2012), and Van Valin and LaPolla (1997). Each test is described and illustrated via several examples that do not contain place PPs.

It is important to note two things concerning test application. First, all sentences must be in the simple past tense in order to obtain conclusive results (Kearns, 2011, p.161). Introducing elements such as the progressive aspect or future tense leads to grammaticality for both telic and atelic predicates, therefore when these elements are included the tests do not reveal any distinctions. (Kearns, 2011, p.159).

Secondly, it is sometimes possible to contextualize the interpretation of a given sentence to obtain grammaticality, however this type of coercion does not reflect the basic telicity or atelicity of the predicate in question. Accordingly, such coerced cases are not considered when attempting to determine the telicity of a predicate (Kearns, 2011, p.161).

5.1 Test 1: In 10 minutes

In this test, a time modifier headed by *in* is added to a predicate in order to discover whether the predicate is telic or atelic (Kearns, 2011, p.159). *In* adverbials only modify predicates that are telic (Kearns, 2011, p.159). Thus, if the resulting addition of an *in* adverbial is grammatical it suggests that the predicate that it modifies is telic.

The two classes of telic events are achievements and accomplishments. When *in* modifies an accomplishment it describes the duration of the entire event, while for achievements it expresses the time that elapses before the onset of the event (Kearns, 2011, p.160). Examples (56) and (57) illustrate accomplishments, while (58) is an example of an achievement.

(56)   We built a house in 2 months.

(57)   Jimmy ran a mile in 15 minutes.

(58)   He recognized her in a minute.

(59)   *Toby was happy in 3 years.

(60)   *Paul knew Linda in 30 years.

(61) *Amy ate pie in 10 minutes.

The grammaticality of (56-58) indicates that *We built a house*, *Jimmy ran a mile* and *He recognized her* are all telic. In contrast, the ungrammaticality of sentences (59-61) suggests that *Toby was happy*, *Paul knew Linda*, and *Amy ate pie* are atelic.

It is essential that the verbs be in the simple past tense, because in the future tense an *in* adverbial can modify both telic and atelic predicates as expressing the delay before the event onset (Kearns, 2011, p.161). Grammatical *in* adverbials with atelic predicates are shown in (62) and (63).

(62) We will walk in the park in an hour.

(63) Jones will push the cart in 90 seconds.

5.2 Test 2: For 10 minutes

This test is parallel to the first in that a time modifier is added to a predicate to evaluate its telicity, however in this case it is headed by *for*. Like *in* adverbials, *for* adverbials also express the duration of the event described by the predicate. Unlike *in*, *for* occurs only with atelic predicates (Kearns, 2011, p.159). Accordingly, if a *for* adverbial is able to grammatically co-occur with a predicate, then that predicate is atelic. If the result is ungrammatical then the predicate is telic. Consider the examples below.

(64) *Jimmy ran a mile for 15 minutes.

(65) *Phoebe reached the summit for 2 hours.

(66) *Ron ate 3 pies for 10 minutes.

(67) Toby was happy for 3 years.

(68) Paul knew Linda for 30 years.

(69) Amy ate pie for 10 minutes.

This test identifies examples (67-69) as atelic since *Toby was happy*, *Paul knew Linda* and *Amy ate pie* can be grammaticality modified by a *for* adverbial. However, the fact that (64-66) are ungrammatical suggests the predicates in these examples *Jimmy ran a mile*, *Phoebe reached the summit* and

Ron ate 3 pies are telic.

For adverbials are grammatical only with atelic predicates because they place a measure on an otherwise unbounded process (Jackendoff, 1993, p.28). The atelic predicate in (67) *Toby was happy* expresses an unbounded process, as such it can felicitously be bounded by a *for* expression. In (66), since the telic *Ron ate 3 pies* already describes a bounded event it cannot be further bounded (Jackendoff, 1993, p.28).

When making the grammaticality judgements in (64-69) it is crucial to focus the interpretation where *for* expresses the duration of the entire event. This is because *for* can also grammatically modify telic predicates when it is interpreted as expressing the duration of the result state (Kearns, 2011, p.163). Examples (70) and (71) from Kearns (2011, p.163) illustrate how telic predicates with *for* are grammatical under a result state reading.

(70)   Sarah flew to Paris for a week.

(71)   Ruby put wine in the fridge for an hour.

Since *Sarah flew to Paris* and *Ruby put wine in the fridge* are telic this test predicts they will be ungrammatical when modified by a *for* adverbial. However, both (70) and (71) can be grammatical when the *for* adverbial expresses the duration of the result state, i.e. when *Sarah flew to Paris for a week* means that as a result of flying Sarah ended up in Paris, and she intends to stay there for 1 week.

However, if *for* expresses the duration of the whole event, where *Sarah flew to Paris for a week* means that the flight took 1 week to get to Paris, in this case the telic predicates are indeed ungrammatical. The same is true in (71), such that *Ruby put wine in the fridge for an hour* is only acceptable when it expresses that the wine stayed in the fridge for 1 hour, not that the putting of the wine into the fridge took one hour. Only the latter interpretations of *for* reveal different performance according to telicity, therefore is it necessary to focus on this reading in order for this test to distinguish between telic and atelic predicates.

5.3   Test 3: Sub-interval property

The sub-interval property refers to the extent to which the description of an event in its entirety is true for any of the sub-intervals in that event's run time (Kearns, 2011, p.164). A predicate is said to have this property

if the same description of an event as a whole can be applied to accurately characterize any particular sub-stretch of time in the course of that event. Atelic predicate have this property, while telic predicates do not (Kearns, 2011, p.164).

Consider example (72) below from Van Valin and LaPolla (1997, p.57) where the description of the entire event is *John ate a sandwich*. This description cannot apply to any given sub-interval of the event, because there exist many sub-intervals during which John has not yet eaten the sandwich (Van Valin and LaPolla, 1997, p.57). At some point he has eaten just 1 half, at another perhaps only even a couple of bites. That it is not true to say *John ate a Sandwich* of every sub-interval of the event indicates that this predicate does not have the sub-interval property. Accordingly, this suggests that *John ate the sandwich* is telic. More examples are presented below.

(72)   John ate a sandwich.

(73)   Amy ate pie.

(74)   Keith watched TV.

(75)   Mick wrote a song.

Like (72), *Mick wrote a song* in (75) does not have the sub-interval property. The description *Mick wrote a song* cannot describe every sub-interval of the event, since it is possible to extract a section of the run-time when Mick has written only a few lines, at which point the description 'Mick wrote a song' would not accurately describe that particular sub-interval. This identifies *Mick wrote a song* as telic.

On the other hand, the predicates in (73) and (74) have the sub-interval property which indicates that they are both atelic. The descriptions *Amy ate pie* and *Keith watched TV* accurately describe the whole event as well as any particular sub-intervals. There is no point during the event time when these descriptions are false. For example, if the entire event *Amy ate pie* happened over 2 hours, it is possible to describe the isolated interval from minutes 12 to 15 as *Amy ate pie*. This test identifies (73) and (74) as atelic since they possess the sub-interval property.

Jackendoff (1993) connects this property to the distinction between mass and count nouns, such that any part of atelic event can describe the whole event in the same way that any part of a mass noun, *water*, can be described

as 'water'. In contrast, not any part of telic event can describe the whole event, similarly not any part of a count noun, *an apple*, can be described as 'an apple' (Jackendoff, 1993, p.29).

5.4 Test 4: 'Take time' construction

This test involves embedding the predicate into question in a 'take time' construction, such as *it took 10 minutes for X* , which expresses the duration of a telic event (Kearns, 2011, p.161). If the result is ungrammatical, this indicates that the predicate is atelic.

(76)   It took 14 minutes for Ron to eat 3 pies.

(77)   It took 20 seconds for Jimmy to run a mile.

(78)   It took 3 weeks for Phoebe to reach the summit.

(79)   *It took 10 minutes for Amy to eat pie.

(80)   *It took 80 seconds for Ann to push the cart.

(81)   *It took half an hour for Toby to watch TV.

This test identifies the predicates *Ron are 3 pies*, *Jimmy ran a mile* and *Phoebe reached the summit* in (76-78) as telic, while the ungrammaticality of (79-81) suggests that *Amy ate pie*, *Ann pushed the cart* and *Toby watched TV* are atelic.

Similar to the *for 10 minutes* test of section (5.2), the interpretation must focus on the duration of the entire event. This is because atelic predicates can appear in this construction under an alternate reading that expresses the delay of time before the onset of the event (Kearns, 2011, p.162). Therefore the former interpretation must be chosen otherwise this test fails to distinguish between atelic and telic predicates.

6 The telicity of place PPs

This section will now apply the four tests to predicates with place PPs according to the four classes I proposed in section (3). Beginning with the Locative class, followed by Goals, Paths and finally the Ambiguous class, I will investigate how the tests reveal their differences in telicity, establishing

Locatives, Paths and Ambiguous (path-reading) as atelic, while Goals and Ambiguous (goal-reading) are telic.

I present this characterization in order to justify the telicity-based classification of place PPs proposed in section (3), where it was suggested that such a grouping has important connections to argumenthood, an issue that will be addressed in section (7.1).

6.1 Locative PPs are atelic (inert)

All of the diagnostic tests confirm that the Locative class is atelic. However, the label 'atelic' is perhaps misleading. I do not mean to claim that PPs of the Locative class have the force of creating atelic predicates out of telic ones, i.e. it is not that case that a telic event such as (82) becomes atelic in (83) with the addition of a Locative PP. Rather, what I suggest is that Locative PPs cannot influence telicity at all.

(82)   James built a chair.

(83)   James built a chair in Toronto.

Clearly *James built a chair in Toronto* in (83) remains telic. Therefore is it perhaps more accurate to characterize Locative PPs such as *in Toronto* as 'inert' rather than atelic.[1] The reason that they are identified as 'atelic' by the tests is because in every case they were tested with motion verbs which are themselves atelic.

Accordingly, this section explores how the various diagnostics demonstrate the Locative class as consisting of PPs that are inert in terms of telicity.

6.1.1 'In 10 minutes' test

Telic predicates can be modified by *in* adverbials, whereas atelic predicates cannot. Consider the following examples of motion verbs with Locative PPs.

(84)   a. *Syd ran in the forest in 10 seconds.
         b. *Maude skated in the park in 20 minutes.
         c. *We danced in Paris in 3 days.
         d. *Heather drove in the parking lot in 2 hours.
         e. *Arthur walked in the house in 15 seconds.

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[1]Thank you to Rob Truswell for his suggestion of the term 'inert'.

Each of the examples above are ungrammatical, which suggest that the predicates in (84.a-e) with Locative PPs are atelic.

6.1.2 'For 10 minutes' test

A *for* adverbial modifies an atelic predicate. If Locative PPs are atelic, then we expect grammaticality in the following examples when these PPs occur with *for* adverbials.

(85) a. Syd ran in the forest for 10 seconds.
    b. Maude skated in the park for 20 minutes.
    c. We danced in Paris for 3 days.
    d. Heather drove in the parking lot for 2 hours.
    e. Arthur walked in the house for 15 seconds.

The fact that examples (85.a-e) are grammatical is consistent with an analysis of Locative PPs as atelic.

6.1.3 Sub-interval property

This property refers to the extent to which the description of an event is equally true for any of the sub-intervals of that event. Atelic predicates have this property, while telic ones do not. The examples (86.a-c) illustrate that a predicate consisting of a motion verb and a Locative PP is atelic.

(86) a. Syd ran in the forest.
    b. We danced in Paris.
    c. Arthur walked in the house.

According to this test the predicates above with the Locative PPs (a) *in the forest*, (b) *in Paris* and (c) *in the house* are atelic because they have the sub-interval property.

For example, in (a) the event description *Syd ran in the forest* can accurately describe any of the sub-intervals along the run-time of that event. If the event went on for 30 minutes, it is certainly possible to describe the interval of time from minutes 7 to 9 as *Syd ran in the forest*. The is also true for (b) and (c), as such predicates with a Locative PPs are atelic since they possess the sub-interval property.

6.1.4 'Take-time' construction

This construction only selects telic predicates, therefore if Locatives are atelic then their occurrence a 'take-time' construction is predicted to be ungrammatical. The examples below confirm this.

(87)   a. *It took 10 seconds for Syd to run in the forest.
           b. *It took 10 seconds for Maude to skate in the park.
           c. *It took 10 seconds for us to dance in Paris.
           d. *It took 10 seconds for Heather to drive in the parking lot.
           e. *It took 10 seconds for Arthur to walk in the house.

Since atelic predicates cannot occur in the 'take-time' construction, the ungrammaticality of the Locative PPs in (87.a-e) identifies that a motion verb with a PP of this class expresses an atelic event.

6.1.5 Summary

The results from tracking the Locatives class through several telicity diagnostics reveals that PPs of this class are inert, such that when they occur with atelic motion verbs the resulting event remains atelic.

6.2 Goal PPs are telic (active)

This section investigates Goals, where the tests identify PPs of this class as telic. More specifically, I argue that these PPs are in fact 'telos-adding', such that they convert an atelic event into a telic one. The following subsections illustrate this ability, where in each of the tests a Goal PP that occurs with an atelic motion verb results in predicate that has become telic.

6.2.1 'In 10 minutes' test

An *in* adverbial modifies a telic predicate, therefore if Goal PPs are telic, then we expect grammaticality in the following examples when these PPs occur with *in* adverbials.

(88)   a. Syd ran to the forest in 10 minutes.
           b. Lane skied to the cabin in half an hour.
           c. Rory walked to the store in 2 minute.
           d. Maude flew to London in 6 hours.

The telic status of the Goal class is confirmed by examples (88.a-d), where the PPs in (a) *to the forest*, (b) *to the cabin*, (c) *to the store* and (d) *to London* are all grammatically modified by an *in* adverbial when they occur with the motion verbs *run, ski, walk* and *fly*, respectively.

6.2.2 'For 10 minutes' test

Atelic predicates can be modified by *for* adverbials, whereas telic predicates cannot. Consider the following examples of motion verbs with Goal PPs.

(89)   a. *Syd ran to the forest for half an hour.
             b. *Harry jogged to the kitchen for 30 seconds.
             c. *Ron drove to Paris for 6 hours.
             d. *Leah skated to school for 15 minutes.

The ungrammaticality of examples (89.a-d) suggests these predicates are telic. This supports the telos-adding ability of Goal PPs: although the motion verbs (a) *run*, (b) *jog*, (c) *drive* and (d) *ski* are themselves all atelic, when they occur with the Goal PPs *to the forest, to the kitchen, to Paris* and *to school*, the resulting predicate is a telic. This is reflected in the impossibility of further bounding these predicates with a *for* modifier.

6.2.3 Sub-interval property

This property refers to the extent to which the description of an event is equally true for any of the sub-intervals of that event. The sub-interval property does not hold for telic predicates, therefore if Goal PP are telic then the examples below should not have this property.

(90)   a. Nick ran to the corner.
             b. Jimmy bolted to mall.
             c. Evan climbed to the top.
             d. Isi drove to the zoo.

The fact that the examples (90.a-d) lack the sub-interval property confirms that the Goal class is telic. In (c) the description of the entire event *Evan climbed to the top* is not true of the particular sub-interval during which Evan has not yet arrived at the top of the mountain. If he is only halfway up, then the description Evan climbed to the top is false. Accordingly (c) does not have the sub-interval property.

This is also true for (a), (b) and (d), such that the introduction of the Goal PPs *to the corner*, *to the mall* and *to the zoo* results in predicates that no have the sub-interval property, a finding that suggests these PPs are telic.

6.2.4 'Take-time' construction

This construction selects telic predicates, therefore if Goals are telic then their occurrence a 'take-time' construction is predicted to be grammatical. Examples (91.a-d) confirm this.

(91)   a. It took 10 minutes for Syd to run to the forest.
        b. It took 1 day for Kit ski to the cabin.
        c. It took 10 seconds for Jack dance to the kitchen.
        d. It took 2 hours for Taylor drive to Montreal.

Since only telic predicates can occur in the 'take-time' construction, the grammaticality of (91.a-d) suggests that these predicates with the Goal PPs *to the forest*, *to the cabin*, *to the kitchen* and *to Montreal* are telic.

6.2.5 Summary

In sum, this section applied several telicity diagnostics to the Goal PPs, where results identify this class as telic.

6.3 Path PPs are atelic (inert)

Paths are a class of directional PP that conveys movement along a route without specifying a start or endpoint. This section investigates several diagnostic tests that confirm the atelic status of these PPs. More precisely, Paths resemble the class of Locatives in that they are best described as being 'inert' with respect to telicity, rather than as being able to convert a telic predicate into atelic one.

6.3.1 'In 10 minutes' test

Telic predicates can be modified by *in* adverbials, whereas atelic predicates cannot, therefore the following examples with Path PPs should be ungrammatical.

(92)   a. *Eliza skated towards the goal in 10 minutes.
        b. *Syd ran towards the forest in 2 hours.
        c. *Maude drove towards Kingston in 3 days.
        d. *Harold danced towards his room in 20 seconds.

The ungrammaticality of the predicates containing Path PPs in (92.a-d) suggests that they are atelic. For example, in (d) *Harold danced* describes an atelic event which remains atelic even when modified by the Path PP in *Harold danced towards his room.* This is reflected in the inability of the latter to occur with the time adverbial *in 20 seconds.*

6.3.2   'For 10 minutes' test

A *for* adverbial modifies an atelic predicate. If Paths are atelic, then we expect grammaticality in when these PPs occur with *for* adverbials. Consider examples (93.a-d).

(93)   a. Lane skied towards the cabin for 15 minutes.
        b. The plane flew towards New York for 3 hours.
        c. Syd ran towards the forest for 20 seconds.
        d. Amy travelled towards England for 10 minutes.

According to this test, the grammaticality of these sentences with a *for* time adverbial confirms that they are atelic. The fact that the Path PPs (a) *towards the cabin*, (b) *towards New York*, (c) *towards the forest* and (d) *towards England* do not appear to alter the telicity of the predicates they modify indicates that this class of PP is indeed inert with respect to telicity.

6.3.3   Sub-interval property

The sub-interval property refers to the extent to which the description of an event is equally true for any of the sub-intervals in that event's run time. Consider the examples below which illustrate motion verbs that occur with Paths PPs. Example (94.e) is taken from Van Valin and LaPolla (1997, p.57).

(94)   a. Bart jogged towards the tree.
        b. Lisa dashed towards the school.
        c. Maggie crawled towards her room.
        d. The balloon floated towards the ceiling.
        e. John ran towards the house.

This test reveals that (94.a-e) are atelic since they have the sub-interval property. For example, in (e) *John ran towards the house* Van Valin and LaPolla note one could isolate any given part of that entire event and accurately describe it as 'John ran toward the house' (1997, p.57). Since the same description can be applied to characterize the whole event in addition to any of its sub-intervals, the predicate in (e) *John ran towards the house* has the sub-interval property. This identifies it as atelic.

6.3.4   'Take-time' construction

This construction only selects telic predicates. Accordingly, if Paths are atelic then their occurrence a 'take-time' construction is predicted to be ungrammatical. The examples below confirm this.

(95)   a. *It took 10 minutes for Syd to run towards the forest.
        b. *It took 2 minutes for Liz to stroll toward her office.
        c. *It took 20 seconds for Jenna to dance towards the kitchen.
        d. *It took 3 hours for Pete to bike towards the island.

Since atelic predicates cannot occur in the 'take-time' construction, the ungrammaticality of the Paths in (95.a-d) suggests that a motion verb with a PP of this class expresses an atelic event.

6.3.5   Summary

In sum, the four telicity diagnostics all identify that the class of Paths are inert in terms of telicity, such that their addition to an atelic motion verb does not have the force of creating a telic predicate.

6.4   Ambiguous PPs: Variable behaviour

The final class to be investigated is that of Ambiguous. The PPs of this class have two interpretations: either as a goal or as a path. A goal-reading expresses a culmination in a result location, while a path-reading encodes a route only, without specifying any endpoint. The four diagnostics reveal a difference in telicity according to which interpretation is chosen.

6.4.1 Ambiguous (path-reading) PPs are atelic (inert)

In this section the Path-reading of Ambiguous PPs is considered in terms of a number of telicity tests, which ultimately suggests that, like the Locative and Path classes, PPs of this class are inert.

In terms of telicity, Ambiguous (path-reading) PPs are similar to the Path class in that both encode movement along a path without specifying any type of endpoint. However, PPs of this subclass differ from Paths in two main ways. First, the Path class consists of the approximative mode only, whereas the Ambiguous (path-reading) class is made up of the transitory and coinitial modes. As such, in spatial terms the type of movement encoded by the two classes is different.

More importantly, the two classes differ in that Ambiguous (path-reading) PPs, as a subclass of Ambiguous PPs, have two interpretations available: as a path or as a goal. This is not the case for PPs of the Path class, which only have the option of a path reading. Since the modes of transitory and coinitial are the only two that demonstrate this variable behaviour, these two modes are grouped together to form the Ambiguous class. The approximative mode is therefore excluded from this class since it is not ambiguous between goal and path readings, instead it is grouped into the Path class wherein PPs have path interpretations only.

The Ambiguous class consists of the co-initial and transitory modes, represented by *from NP* and *through NP*, respectively. Consider the examples below.

(96)   John ran from the park.

(97)   Harry walked through the woods.

Under their path-readings, the co-initial PP in (96) *from the park* and the transitory PP in (97) *through the woods* do not express a change that culminates in a result location. In (96), *from the park* simply encodes movement that begins somewhere near the park, and terminates some distance farther away from it. It is not necessary that John's starting location was on the inside of the park and as a consequence of his running he ended up in the result location of 'out of the park'.

In (97), the path-reading of the transitory PP *through the woods* is interpreted as expressing that Harry walked along some route that is fully contained within the woods throughout the entire event time. Accordingly,

(97) could be paraphrased as 'Harry walked around inside of the woods'. This paraphrase is superficially identical to that with a Locative PP such as *walked in the woods*. They differ in that an Ambiguous (path-reading) PP such as *through the woods* explicitly specifies a path, whereas a Locative does not.

In particular, since both the path- and goal-readings of a transitory Ambiguous PP share the same form, *through NP*, it is important to keep in mind for this section that *through NP* is interpreted as 'a route contained inside of NP'.

6.4.2 'In 10 minutes' test

An *in* adverbial modifies a telic predicate, therefore if Ambiguous PPs with a path-reading are inert the following examples should be ungrammatical.

(98)   a. *Syd ran from the forest in 10 minutes
        b. *Amy jogged through the park in 1 minute.
        c. *Lane skied from the woods in 2 hours.
        d. *The balloon floated through the air in an hour.

Examples (98.a-d) confirm that Ambiguous PPs with a path-reading are inert. This is indicated by the fact that when such PPs modify an atelic motion verb the predicate remains atelic and cannot be modified by an *in* adverbial to express duration.

For example, *Amy jogged* describes an atelic event that when added to the Ambiguous PP with a path-reading in (b), *Amy jogged through the park*, still describes an event that is atelic. This is because (b) says that Amy remains in the park throughout the entire event of running, not that she ran for an extended period of time at the end of which culminates with Amy's being located 'through the park' .

Similarly, the ungrammaticality of (a) indicates that *Syd ran from the forest* is atelic, as it encodes that the motion of Syd's running began somewhere near the forest and finished somewhere farther away from it. It is not the case that (a) describes a change of location where Syd ran and as a result of his running he ended being located 'outside of the forest'. Accordingly, the PP in (a) is inert as it cannot provide a telos to the event of 'running', thus the predicate remains atelic and cannot be modified by an *in* adverbial.

6.4.3 'For 10 minutes' test

Atelic predicates can be modified by *for* adverbials, whereas telic predicates cannot. Consider the following examples of motion verbs with Ambiguous (path-reading) PPs.

(99)   a. David ran from the forest for 10 minutes.
        b. Nick hiked through the Rockies for 3 days.
        c. Harry drove through the city for 20 minutes.
        d. Roger strolled from the garden for 2 hours.

This test reveals that the this subclass of PP are atelic since due to the grammaticality of examples (99.a-d). Since they can be delimited by a *for* adverbial, this identifies that the above predicates consisting of a motion verb and an Ambiguous (path-reading) PP describe unbounded processes. If these predicates were telic, they would not be able to be further bounded via the *for* expression.

6.4.4 Sub-interval property

This property refers to the extent to which the description of an event is equally true for any of the sub-intervals of that event. Atelic predicates have this property, while telic ones do not.

(100)   a. Jenna ran from her mother.
        b. Tracy crept through the park.
        c. Liz biked from the woods.
        d. Jack drove through the city.

The fact that examples (100.a-d) lack the sub-interval property confirms that Ambiguous PPs with a path-reading are inert. This is demonstrated by (c) where the PP *from the woods* occurs with the verb *bike*. Since the event described by *bike* is itself atelic it has the sub-interval property: the description of the event as a whole *Liz biked* is equally true for any of its sub-intervals. When the PP *from the woods* is added to *bike* the event remains atelic. This is indicated by the fact that it maintains the sub-interval property: it is possible to extract any given sub-part of the event *Liz biked from the woods* and describe it as *Liz biked from the woods*. Accordingly, this subclass of PP does not influence the telicity of the predicate, i.e. it is inert.

6.4.5 'Take-time' construction

This construction selects telic predicates, therefore if the Ambiguous (path-reading) class is atelic then the occurrence the following PPs in a 'take-time' construction is predicted to be ungrammatical.

(101)   a. *It took 15 minutes for Bill to stroll through the garden.
        b. *It took 60 seconds for Maggie to dance from Paris.
        c. *It took 2 months for Lisa to bike through the mountains.
        d. *It took 3 hours for Syd to run from the forest.

Since only telic predicates can occur in the 'take-time' construction, the ungrammaticality of (101.a-d) suggests that these predicates containing the Ambiguous (path-reading) PPs *through the garden*, *from Paris*, *through the mountains* and *from the forest* are telic. This supports the inert status of this subclass.

6.4.6 Summary

The various diagnostics demonstrate that the Ambiguous class of PPs with a path-reading are inert in terms of telicity, such that when they co-occur with an atelic motion verb the resulting predicate is still atelic.

6.5 Ambiguous (goal-reading) PPs are telic (active)

In contrast, Ambiguous PPs with a goal-reading are identified as telic according to the telicity diagnostics. This class is made up of the co-initial and transitory modes, both of which have a goal-reading illustrated by the PPs in (102) and (103), respectively.

(102)   Bill danced out of the kitchen.

(103)   Maude drove through the forest.

Under their goal-readings, the co-initial PP in (102) *out of the kitchen* and the transitory PP in (103) *through the forest* both encode a change of location. In (102) *John danced out of the kitchen* described a result where the motion of Bill's dancing began inside of the kitchen and culminated with Bill being located outside of it.

The goal-reading of a transitory PP expresses that the route or trajectory

extends farther than the thing being traversed. This is illustrated in (103) where *Maude drove through the forest* is interpreted as encoding that the route that Maude drove along was 'longer' than the forest, such that she drove into the forest on one side and out of it on the other.

Although PPs of the Ambiguous (goal-reading) class are similar to the Goal class in that both specify a result or culmination point to a motion, there a several important differences between the two. First, the Ambiguous (goal-reading) class consists of the transitory and co-initial modes, whereas the Goal class contains the co-final mode. Accordingly, they differ spatially as these modes are different in terms of the direction of the motion they expres.

Additionally, the two classes differ in that Ambiguous (goal-reading) PPs, as a subclass of Ambiguous PPs, have the option of being interpreted as a goal or as a path. This is not true for PPs of the Goal class, which only have a goal reading available.. Since the modes of transitory and coinitial are the only two that demonstrate this variable behaviour, these two modes are grouped together to form the Ambiguous class. The co-final mode is therefore excluded from this class since it is not ambiguous between goal and path readings, instead it is grouped into the Goal class wherein PPs have goal interpretations only.

As mentioned in section (6.4.1), both the path- and goal-readings of a transitory Ambiguous PP share the form *through NP*, thus it is important to keep the goal-reading outlined above in mind for the tests in this section.

6.5.1   'In 10 minutes' test

Telic predicates can be modified by *in* adverbials, whereas atelic predicates cannot. Consider the following examples of motion verbs with Ambiguous (goal-reading) PPs.

(104)   a. Bart drove walked the shed in 15 minutes.
            b. Maude ran through the forest in 3 hours.
            c. The plane flew out of the box in 5 minutes.
            d. The crab crawled out of the water in 10 seconds.

Examples (104.a-d) confirm that Ambiguous PPs with a goal-reading are telic. This is indicated by the fact that when such PPs modify an atelic motion verb the predicate becomes telic and can now be grammatically modified by an *in* adverbial to express duration.

For example, *Maude ran* describes an atelic event that when added to the Ambiguous PP with a goal-reading in (b), *Maude ran through the forest*, now describes an event that is telic. This is because (b) says that Maude began running on one side of the forest, ran through the forest, and emerged out of the forest on the other side. Therefore the extended period of described by *run* culminates with Maude being located 'through the forest'.

Similarly, the grammaticality of (d) indicates that *The crab crawled out of the water* is telic, since at the beginning the crab was located 'in the water', and through the motion of crawling came to be in the result location of 'out of the water'. Accordingly, the PP in (d) is telic as it provides a terminal point to the event of 'crawling', thus it can be modified by an *in* adverbial.

6.5.2 'For 10 minutes' test

A *for* adverbial modifies an atelic predicate, therefore if Ambiguous PPs with a goal-reading are telic the following examples should be ungrammatical.

(105) a. *Syd ran out of the forest for half an hour.
  b. *Harry strolled out of the room for 2 hours.
  c. *James darted through the tunnel for 60 seconds.
  d. *Lily drove through London for 10 minutes.

The ungrammaticality of examples (105.a-d) confirm the telic status of this subclass. Although the motion verbs (a) *run*, (b) *stroll*, (c) *dart* and (d) *drive* are themselves atelic, when they occur with the Ambiguous (goal-reading) PPs *out of the forest*, *out if the room*, *through the tunnel* and *through London*, the resulting predicates are a telic. This is reflected in the impossibility of further bounding these predicates with a *for* modifier.

6.5.3 Sub-interval property

This test illustrates that Ambiguous (goal-reading) PPs are telic, as telic events lack the sub-interval property. Consider the examples below.

(106) a. Sam skated out of the classroom.
  b. The train travelled through the tunnel.
  c. Adam waltzed out of the room.
  d. Paul biked through the forest.

The fact that none of the sentences above have the sub-interval property suggests that they are telic. For example, the description in (a) *Sam skated out of the classroom* and (b) *The train travelled through the tunnel*, cannot be applied to accurately describe any given sub-stretch of time in those events. In particular, the description in (a) *Sam skated out of the classroom* is not appropriate for the interval when Sam is still inside of the park and has yet to cross the threshold where he will then be considered 'out of the park'.

Similarly, in (b) if one extracts the sub-interval when the train has just entered the tunnel, it is not true to describe that interval as *the train travelled through the tunnel*.

6.5.4   'Take-time' construction

This construction only selects telic predicates, therefore if Ambiguous PPs with a goal-reading are create a telic predicate then their occurrence a 'take-time' construction is predicted to be grammatical. The examples below confirm this.

(107)   a. It took 20 minutes for Linda crawl through the tunnel.
          b. It took 10 seconds for Syd to run out of the kitchen.
          c. It took 3 hours for Roger walk through the park.
          d. It took 15 minutes for Matt to climb out of the cage.

Since atelic predicates cannot occur in the 'take-time' construction, the grammaticality of the Ambiguous PPs with a goal-reading in (107.a-d) identifies that a motion verb with a PP of this class expresses a telic event.

6.5.5   Summary

These tests confirm the telic status of PPs of the Ambiguous class when they are interpreted as goals.

7   Telicity results

The findings obtained in section (6) justify the proposed classification of place PPs, as test results in table (7.0.1) confirm they do in fact differ with respect to telicity.

(7.0.1)

	LOCATIVE	GOAL	PATH	AMBIGUOUS	
				goal-reading	path-reading
In 10 Minutes	atelic	telic	atelic	telic	atelic
For 10 Minutes	atelic	telic	atelic	telic	atelic
Sub-Interval	atelic	telic	atelic	telic	atelic
Take-Construction	atelic	telic	atelic	telic	atelic

From these observations I argue that the Locative and Path classes consist of atelic PPs, meanwhile the Goal class is comprised of telic PPs. Finally, the Ambiguous class is alternatively atelic or telic. This ambiguity is reconciled by the particular reading under which the PP is interpreted: a path interpretation yields an atelic PP, while a goal interpretation yields a PP which is telic.

The clustering of the modes in this particular manner supports my classification of place PPs in section (3), repeated in table (7.0.2).

(7.0.2)

	Locative	Goal	Path	Ambiguous	
Mode(s):	static	co-final	approximative	co-intial	
				transitory	
				goal-reading	path-reading
Example:	in NP	to NP	toward NP	out of NP	from NP
		into NP		through NP	through NP

7.1 Expectations for argumenthood

Making these fine-grained distinctions within place PPs is important due to potential implications for the argumenthood. If the hypothesis is that telic PPs will be more argument-like than atelic PPs, given the results of the telicity tests the expectations are that the Goal and Ambiguous (goal-reading) classes should pattern as arguments. In contrast, the Locative, Path and Ambiguous (path-reading) classes should be adjuncts.

(7.1.1)

	LOCATIVE	GOAL	PATH	AMBIGUOUS	
				goal-reading	path-reading
Telicity:	atelic	telic	atelic	telic	atelic
Argumenthood:	adjunct	argument	adjunct	argument	adjunct

Without these making these telicity-based distinctions, place PPs are difficult to characterized since as a whole they pattern neither consistently as arguments nor as adjuncts.

8   Conclusion

This section has presented evidence to justify the classification of place PPs initially outlined in section (3), repeated below in table (8.0.1).

(8.0.1)

	Locative	Goal	Path	Ambiguous	
Mode(s):	static	co-final	approximative	co-intial	
				transitory	
				goal-reading	path-reading
Example:	in NP	to NP	toward NP	out of NP	from NP
		into NP		through NP	through NP

I proposed the four classes of Locative, Goal, Path and Ambiguous PP where the motivation for group was based on telicity. The results from several telicity diagnostics confirm the inert status of the Locative, Path and Ambiguous (path-reading) classes. PPs of these classes cannot influence the telicity of a predicate. In contrast, the Goal and Ambiguous (goal-reading) classes are active with respect to telicity, such that they can alter the aspectual properties of a predicate through the contribution of a terminal point.

9   Directional PPs and argumenthood

Arguments are subcategorized for by the verb and are the required participants in an event, in contrast to adjuncts which add 'extra' pieces of information. While the former have a close relationship with the head, the latter are not dependant in the same way (Kroeger, 2004, p.10; Tallerman, 2005, p.98; Dixon and Aikenvald, 2000, p.2; Dalrymple, 2001, p.11).

Many kinds of expressions can be easily classified as according to this distinction. For example, adverbials that indicate time, manner or place are typically considered clear adjuncts (Kearns,2011, p. 37; Dixon and Aikenvald, 2000, p.2; Jackendoff, 1993, p.71). Example (108) is taken from Kearns,

while (109) is from Jackendoff to illustrate an example specific to discussion of place PPs.

(108)   Seymour will slice the salami (carefully) (in the kitchen) (tomorrow).

(109)   Harry bought a yo-yo (in Chicago).

The modifiers in (108) and (109) are adjuncts, thus they are not part of the verb's lexical entry and are not included in its argument structure (Jackendoff, 1993, p.71).

Making the distinction between arguments and adjuncts can occasionally be controversial. This is exemplified by directional PPs, as they represent a challenge to the view that expressions of place, time or manner are typically adjuncts. In this section I investigate how directional PPs pattern according to various diagnostic tests of argumenthood. The tests themselves are not uncontroversial, such that many problems have been identified which suggest that perhaps they are not directly testing for argumenthood (see Toivonen (2013) for an in-depth discussion). I acknowledge that these issues exist, however I employ several of the diagnostics in this section with the hope that the overall results will be fairly accurate in determining the argument status of place PPs due to the numerous and varied nature of the tests used.

9.1   Unclear cases

The boundary between arguments and adjuncts is not always clear-cut (Williams, 1994, p.25; Kearns, 2011, p.37), such that it can be difficult to determine the status of some kinds of place expressions. The particular type of PP that exemplifies this dilemma are directionals (Van Valin and LaPolla, 1997; Mauner et al., 2002, p.162; Needham and Toivonen, 2011). Consider the PPs in (110-113).

(110)   Syd ran to school.

(111)   Andy walked toward the river.

(112)   The train rolled through the tunnel.

(113)   Sam raced out of the kitchen.

These prepositional phrases express some type of direction that is usually related to verbs of motion (Kearns, 2011; Kracht, 2002; Fong, 1997; Needham and Toivonen, 2011; Van Valin and LaPolla, 1997). Directionals are similar to adjuncts of location as they are both optional PPs that refer to places. However, the directionals in (110-113) are often considered more argument-like than then those of location in (114-117) (Van Valin and LaPolla, 1997; Travis, 2000; Koopman, 2010; Villavicencio, 2000, 2002; Kearns, 2011; Jackendoff, 1983, 1993).

(114)   Tina skated in the park.

(115)   Amy drove in Paris.

(116)   Syd ran in the forest.

(117)   Jack danced in the city.

The fact that the PPs in (110-113) seem like arguments is problematic, given that is it generally assumed that modifiers of time, place and manner are considered to be clear adjuncts (Jackendoff , 2002, p.134; Van Valin and LaPolla, 1997; Kracht, 2002). Although any given event must occur at a particular time and in a particular place (Dalrymple, 2001), these expressions are not considered arguments because they are able to be added to any predicate and are always optional (Jackendoff, 1983, p.134; Kracht, 2002, p.214).

Additionally, Jackendoff notes that in some languages there is a difference in the syntactic treatment of non-directionals (Place-Functions) and directionals (Path-Function) (1983, p.164). For example, certain German prepositions take dative case when used as Place-functions and accusative when used as Paths, while in Hungarian prepositions take the extra suffix -n when used as Place-functions that is absent when they express Path-functions (Jackendoff, 1983, p.164). Jackendoff's functions are discussed in further detail in section (2.2). These syntactic differences support an attempt to make finer distinctions within the class of place PPs, as directionals seem to be more argument-like than static location adjuncts.

9.1.1   Directional PPs are adjuncts

In Rákosi's (2012) analysis of non-core participant PPs, he argues that phrases that fall in between arguments and adjuncts are thematic adjuncts. However, he notes that since directional PPs can alter the aspectual profile of a verb

to create a telic predicate, this suggests they are in fact more argument-like than the other adjunct PPs he investigates (2012, p.8)

Kracht (2002) claims that location PPs are adjuncts due to the fact that they can be freely omitted while arguments typically cannot (p.165). It is possible to modify the sentence in (118) with various types of PPs of location, both static (119) and directional (120).

(118)   John is walking.

(119)   John walked on the roof.

(120)   John walked to the shop.

According to Kracht the location PPs in (119) and (120) are syntactic adjuncts (p.203). However, an adjunct is not always admissible. For example, the PP in (120) *to the shop* is a directional, and directional PPs are only admissible if event denoted by verb has a 'mover'. This analysis is outlined in more detail in section (2.3). Thus, while both directional and static PPs are adjuncts, the former is quite selective whereas the latter can be added much more liberally to any verb, regardless of whether or not there is a 'mover'. (Kracht, 2002, p.214).

For Folli and Ramchand (2005), the directional PP *to the park* in (120) is also considered an adjunct (p.6). In line with Rákosi, they recognize that a directional PP provides a telos to an otherwise unbounded verb, however they argue it is possible to add a telos by means of an adjunct. Following Verkuyl (1989), Folli and Ramchand distinguish between inner and outer aspect, such that the telic structure in (120) achieved by attaching the adjunct PP at the level of outer aspect, rather than (120) being the product of RP (result phrase) augmentation (Folli and Ramchand, 2005, p.8). See Verkuyl (1989) for a detailed discussion regarding the differences between inner and outer aspect.

9.1.2   Directional PPs are arguments

Regarding the unclear status of directional PPs, several analyses exists in which these phrases are characterized as (intermediate) arguments. For Carnie (2011), arguments include among other things the endpoint of the event described by a motion verb (p.71). By this definition directional PPs could be considered arguments.

In accordance, Kearns notes that although the syntactic optionality of directional PPs might suggest that these phrases are adjuncts, she proposes that they are in fact arguments (2011, p.37). In the event of translocation described by a motion verb there is movement from one place to another. In such cases, the path argument that specifies this route is required by the verb (Kearns, 2011, p.39). Sometimes the path must be expressed syntactically, as in (121), while other times it can be left implicit (122).

(121)   Corey ambled toward the beach.
         *Corey ambled.

(122)   Liam ran out of the kitchen.
         Liam ran.

The directional PPs *toward the beach* and *out of the kitchen* in (121) and (122) are arguments as they are necessary participants in the events described by the verbs *amble* and *run*. Kearns argues that these phrases are implied in both (121) and (122), while in (121) there is the additional requirement that the phrase be syntactically explicit (2011, p.39).

Similarly, for Jackendoff (1993) a directional PP is an argument of a motion verb with the event function GO (p.45). Consider examples (123) and (124).

(123)   John ran into the room.

(124)   John ran.

The verb *run* expresses the GO function which requires two arguments in conceptual structure. The first is filled by *John* and the second by the directional PP *into the room*. The path argument is necessarily present in conceptual structure even if it is not syntactically expressed. This is the case for examples like (124), where the path phrase is an implicit argument (Jackendoff, 1993, p.45).

The manner of motion verb in (125) does not have the GO-Function. Instead, *dance* encodes a one-place function, MOVE.

(125)   Liz danced into the house.

On its own, MOVE does not take a Path-function as an argument, however it can incorporate a GO- Function to appear with a directional PP. This is illustrated in (125), where the PP *into the house* is not a direct argument of

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MOVE, rather it is the argument of GO.

An account for the intermediate status of directional PPs is outlined in Needham and Toivonen (2011), where directionals are claimed to be derived arguments (p.75). In LFG, a lexical entry only contains information regarding the predicate's arguments, not its adjuncts. In the case of directionals, the PP is not listed in the predicate's basic argument structure, however it can be added to the manipulated argument structure via a lexical rule (Needham and Toivonen, 2011, p.86). The function of such a rule is to relate the two entries- one basic and one that is derived. Directional PPs are part of the derived entry, which explains why they sometimes pattern as adjuncts and other times as arguments.

Finally, Van Valin and LaPolla (1997) distinguish between argument-marking prepositions (ARG), adjunct-marking prepositions (ADJ) and argument-adjunct marking preposition (AAJ) (p.159), such that directional PPs can be classified as the latter (p.161). Argument-adjuncts (AAJ) are adjunct-like in that they are predicative, however they do not introduce a modifier. Rather, AAJs introduce an argument that is shared with the logical structure of the core. This argument-sharing behaviour is the defining feature of argument-adjuncts (Van Valin and LaPolla, 1997, p.160). Consider how the directional PP in (127) displays this characteristic.

(126)   Paul ran.

(127)   Paul ran to the store.

The PP *to the store* is an example of an AAJ. Unlike argument-marking prepositions, the argument of *to* is not derived from the logical structure of the verb *run*. Additionally, it is unlike adjunct-marking prepositions in that does not take the logical structure of the sentence as one of its arguments. Instead, it shares the argument *Paul* with the logical structure of *run* (Van Valin and LaPolla, 1997, p.160). As argument-adjunct marking prepositions, directional PPs are thus an intermediate case between arguments and adjuncts.

10   Argumenthood diagnostics

This section introduces several diagnostics identified in the literature that have been proposed to test for argumenthood. See Needham and Toivonen (2011) for further discussion of these diagnostics.

10.1   Core participants test

The meaning of a predicate entails that certain participants are involved (Dowty, 1982). In this test arguments are the core participants that are conceptually necessary in the event laid out by the predicate (Jackendoff 1993, p.45), while adjuncts such as time, manner or place are not. Consider the constituents in brackets in (128.a-d).

(128)   a. The lion devoured [the gazelle].
         b. Bart ate [pizza].
         c. [Yesterday], Seth slept in.
         d. Linda [happily] painted a picture.

This test identifies *[the gazelle]* and *[pizza]* in (a) and (b) as arguments since they are conceptually mandatory. In (a) *[the gazelle]* is a core participant since it is not possible to have an event of devouring without something being devoured, while in (b) the event of *eat* requires that something be eaten.

In contrast, *[yesterday]* and *[happily]* in (c) and (d) are adjuncts as they are not core participants of the verbs *sleep in* and *paint*, respectively. In (c), although an event of sleeping in clearly happens at some particular time, this time specification is not considered to be a core participant because such an expression is implied in the use of any verb, rather than being specific to *sleep in*. Similarly, the manner expression in (d) *happily* is not conceptually necessary to the painting of a picture.

Regarding the entailment of certain participants, one problem is that speakers intuitions sometimes differ.

(129)   I sold the house.

Although the person to whom that house is sold is unmentioned, it is nevertheless part of the implicit meaning of the verb (Dowty, 1982, p.90).

10.2   Optionality test

This test, cited in Dalrymple (2001, p.11) as the subcategorization test, states that it is possible to omit adjuncts, whereas arguments are not optional in the same way (Tallerman, 2005, p.98). The sentence that results from the omission of an adjunct should therefore be grammatical. In contrast, the omission of an argument should result in ungrammaticality.

(130)   a. The lion devoured *(the gazelle).
         b. Bart ate (pizza).
         c. (Yesterday), Seth slept in.
         d. Tom killed *(his father).

The ungrammaticality of omitting *the gazelle* and *his father* in (130.a) and (d) indicates that they are arguments. However, examples (b) and (c) illustrate the optionality of *pizza* and *yesterday*, which according to this test would suggest they are adjuncts.

One issue with this test is that many uncontroversial arguments can be optional, while on the other hand adjuncts are sometimes obligatory (Jackendoff, 1990; Goldberg and Ackerman, 2001).

(131)   a. Sandy loves eating (cookies).
         b. Mandy elbowed her way into the crowd.

The behaviour of *cookies* and *into the crowd* in (131.a-b) is in conflict with the claims of this test, as *cookies* is still an argument of *eat* regardless of the fact that it can be omitted. Additionally, the fact that the PP *into the crowd* in (d) cannot be omitted contradicts the idea that adjuncts are always optional.

10.3   Iterativity test

Another test initially identified by Kaplan and Bresnan is the multiple occurrence test (Dalrymple, 2001, p.12). Adjuncts that have the same function are able to be iterated, whereas arguments are not (Bresnan, 1982; Fillmore, 1968; Pollard and Sag, 1987).

(132)   a. Jimi Hendrix died [on Sunday] [in London].
         b. Rory read a book [last Tuesday] [in the afternoon].

In contrast, with example (133) sentences (a) and (b) are ungrammatical because there cannot be a multiple occurrence of arguments.

(133)   a. *Jane baked [a cake] [muffins].
         b *Lane played [the drums] [the guitar].

This test is problematic as a diagnostic of argumenthood, as it is difficult to determine if the constraint on iterativity is property restricted to arguments, or if it is reflective of a more general uniqueness constraint that may also be relevant to adjuncts (Rákosi, 2012). See Asudeh and Toivonen (2012) for further discussion.

10.4   Verb specificity test

In the test of verb specificity, if the element can be tied to a specific class of verbs then it is likely an argument (Koenig et al., 2003), whereas if it can appear with any verb then it is an adjunct (p.78).

(134)   a. The meeting lasted [2 hours].
          b. The flight took [45 minutes].
          c. Sally walked the dog [at noon].
          d. John likes to sleep in [on Sundays].

In (a) and (b), these types of time expressions are tied to the class of verbs including *take* and *last* to express duration, therefore they are arguments. In (c) and (d) the fact that *at noon* and *on Sundays* can appear with any verb indicates that they are adjuncts.

10.5   Extraction test

The extraction test tells us that while it is possible to extract arguments out of a weak island, it is not possible to do the same for adjuncts (Dalrymple, 2001, p.13; Williams, 1994; Chomsky, 1977).

(135)   a. Who do you wonder why John liked *t*?
          (You wonder why John liked Lisa.)

          b. *Where do you wonder why John danced *t*?
          (You wonder why John danced in the park.)

          c.*How do you wonder why Sam slept *t*?
          (You wonder why Sam slept soundly.)

          d. What do you wonder why Ron ate *t*?
          (You wonder why Ron ate chips.)

According to this test, the grammaticality of (a) and (d) identifies *Lisa* and *chips* as arguments of *like* and *eat*, while the ungrammaticality of (b) and (c) suggests that *in the park* and *soundly* are not arguments of *dance* and *sleep*, respectively.

   One problem with this test is that judgements can sometime be unclear, for example consider (136) taken from Williams (1994).

(136)   *With whom do you wonder whether Mary left *t*?
        ?Who do you wonder whether Mary left with *t*?

This example illustrates that extracting an adjunct from a weak island is not always clearly ungrammatical. The PP *with who* in (136) is an adjunct of *leave*, however some speakers are accepting of its extraction in *Who do you wonder why Mary left with t?*, but not in *With whom do you wonder why Mary left t?*

10.6   Adjunct island test

Related to the extraction test is the adjunct island test, where the claim is that it is possible to extract out of an argument, but not out of an adjunct (Ross, 1967; Huang, 1982; Chomsky, 1986; Johnson, 2003; Hedberg and DeArmond, 2009).

(137)   a. Which pants did David Bowie promise [to wear *t*]?
        (David Bowie promised to wear bell-bottomed pants.)

        b. *Who did Arthur flee [after punching *t*]?
        (Arthur fled after punching D.W.)

        c. Who did Milhouse want [to kiss *t*]?
        (Milhouse wanted to kiss Lisa.)

        d. *What did Catherine die [before trying *t*]?
        (Catherine died before trying snails.)

The grammaticality of wh-extraction out of *[to wear t]* and *[to kiss t]* suggests that they are arguments of *promise* and *want*, respectively. In contrast, the inability to extract out of *[after punching t]* or *[before trying t]* in (b) and (d) indicates that they are not arguments of *flee* and *die*, rather they are adjuncts.

There are cases when it is possible to extract out of adjuncts (Borgonovo and Neeleman, 2000; Truswell, 2007). The sentence in (138.a) shows extraction from a PP, while in (138.b) extraction is from non-finite secondary clause.

(138)   a. Which table did she dance on *t*?
        b. What did John arrive whistling *t*? (from Truswell, 2007, p.1360)

See section (17) for Truswell's analysis of cases like (138.b).

10.7 Prepositional content test

An argumenthood test that specifically targets prepositions is the prepositional content test, which states the more content that a preposition contributes, the more likely that it is to be heading an adjunct (Needham and Toivonen, 2011, p.79; Pollard and Sag, 1987, p.136; Wechsler, 1991, p.123).

(139) a. Harry relied on Sirius. / *Harry relied in Sirius.
    b. James trusted in Peter. / *James trusted on Peter.
    c. Maya danced in a bar.
    d. Will died on Friday.

The prepositions in (a) and (b), *on* in *relied on Sirius* and *in* in *trusted in Peter* are not contentful in the same way as *on* and *in* in (c) and (d). Accordingly, the prepositions in (a) and (b) are heading arguments, while those in (c) and (d) head adjuncts.

10.8 Pseudo-cleft test

This test restricts only adjuncts to be able to appear after 'do' in a VP focused pseudocleft (Needham and Toivonen, 2011, p.80; Hedberg and DeArmond, 2009).

(140) a. What Heather did on Sunday was study.
    b. *What Julie did the coffee was drink.
    c. *What the lion did the gazelle was devour.
    d. What Seth did at the club was dance.

As *the coffee* in (b) and *the gazelle* in (c) cannot appear in a pseudocleft, this identifies them as arguments. The grammaticality of (a) and (d) demonstrates the status of *on Sunday* and *at the club* as adjuncts.

10.9 VP anaphora test

In the VP anaphora test only adjuncts are able to be added to 'do so' clauses, while arguments are not (Needham and Toivonen, 2011; Lakoff and Ross, 1966; Baker, 1978; Jackendoff, 1977). The reasoning behind this is that the

tight link between a verb and its argument is such that 'do so' refers to both of these elements, while it does not, however, refer to a verb and its adjunct.

(141) a. Paul wrote a song yesterday and John did so today.
       b. *Paul played the bass and Ringo did so the drums.
       c. *Jess kissed Joe and Juliet did so Tom.
       d. Brian slept soundly and Leo did so fretfully.

According to this test, the grammaticality of (a) and (d) indicates that *yesterday* and *soundly* are adjuncts, whereas the ungrammaticality of (b) and (c) suggests that *the bass* and *Joe* are arguments.

11 Argument status of place PPs

This section will explore the application of the various argumenthood diagnostics to Place PP in order to demonstrate that the Locative, Path and Ambiguous (path-reading) classes are adjuncts, while the Goal and Ambiguous (goal-reading) classes are arguments.

11.1 Locative PPs are adjuncts

The Locative class encompasses PPs of the static mode, which are headed by *in*. This section traces such PPs through the argumenthood tests outline in section (10) in order to illustrate that they are adjuncts. This conclusion is fairly uncontroversial, as it is consistent with how place PPs are often regarded.

11.1.1 Optionality test

In general adjuncts are optional, while arguments are not. Accordingly, this test identifies Locative PPs as adjuncts since they all optional.

(142) a. Syd ran (in the forest).
       b. Molly cooked (in the kitchen).
       c. Chelsea danced (in her apartment).
       d. Sarah worked (in Montreal).

Examples (142.a-d) illustrate that it is possible to omit the Locative PPs *in the forest in the kitchen in her apartment* and *in Montreal* and maintain grammaticality.

11.1.2 Core participants test

Location expressions are typically not considered to be core participants. This suggests that the PPs in (143.a-d) are adjuncts.

(143)   a. Maude walked in the park.
             b. A tree fell in the woods.
             c. The kids played in the tent.
             d. Tina swam in the lake.

Although any given event must occur in a specific location, such as in (a) where the *walking* takes place *in the park*, this type of place expressions is not entailed by a specific verb in particular.

11.1.3 Iterativity test

It is possible to iterate adjuncts, however there is a restriction on the multiple occurrence of arguments.

(144)   a. Syd ran in the forest in Toronto.
             b. The tree fell in the playground in the park.
             c. In Mexico, Amy walked in the sand.
             d. Bill danced in a bar in New York.

This test suggests that PPs of the Locative class are adjuncts since it is possible to iterate them freely.

See Brunson (1993) for a discussion of the multiple occurrence of Locative adjuncts, as in *Mary saw David in the park in Toronto* versus **Mary saw David in Toronto in Montreal.*

11.1.4 Prepositional content test

According to this test, Locative PPs are adjunct given that the Locative prepositions appear to contribute a concrete meaning, as in (145. a) and (b).

(145)   a. Syd ran in the forest.
             b. Maude read a book in the tree.

The PPs headed by *in* in (145) can be contrasted with those in (146), where *in* is not contentful in the same way.

(146)   a. Sam trusted in Tina.
           b. Eliza confided in me.

If the preposition in (145.b) is exchanged with another locative preposition the result is a different meaning for the sentence. For example, if *in* is changed to *under*, the PP *under the tree* describes a situation where the location of 'Maude' is different than the situation described by the PP *in the tree*.

11.1.5   Verb specificity test

Elements that are tied to a specific verb class are more likely to be arguments. The examples in (147.a-e) illustrate that PPs of the Locative class can be added to any verb. Examples (d-e) are taken from Allerton (1982, p.62).

(147)   a. Jimi Hendrix died in London.
           b. Maria sang in the Abbey.
           c. Jack ate chips in his bed.
           d. Oliver is studying in Switzerland.
           e. Oliver is playing football in Switzerland.

Accordingly, Locative PPs are adjuncts as they are not restricted to appear with a particular kind of verb.

11.1.6   Extraction test

Recall that it is ungrammatical to extract adjuncts from a weak island.

(148)   a. *Where does Roger wonder why Syd ran *t*?
        Roger wonders why Syd ran in the garden.

        b. *Where does Bill wonder why Jimmy skated *t*?
        Bill wonders why Jimmy skated in the park.

        c. *Where does Evan wonder why Ron climbed *t*?
        Evan wonders why Ron climbed in the mountains.

        d. *Where does Abi wonder why Isi drove *t*?
        Abi wonders why Isi drove in Montreal.

The ungrammaticality of (148.a-d) identifies Locative PPs as adjuncts.

11.1.7 Adjunct island test

According to this test extraction is only grammatical out of arguments. Regarding the status of Locative PPs, different results are obtained depending on how the test is applied. When the question is structured as *Where did Syd run in t?*, the ungrammaticality of (149.a-d) suggests that Locative PPs are adjuncts.

(149) a. *Where did Syd run in?
   b. *Where did Maude skate in?
   c. *Where did Heather drive in?
   d. *Where did Arthur walk in?

However if the structure of the question is *Which forest did Syd run in t* as in (150.a-d), then the grammaticality of these examples indicates that Locatives are arguments. Example (150.d) is from Truswell.

(150) a. Which park did Maude skate in *t*?
   b. Which forest did Syd run in *t*?
   c. Which field did Heather drive in *t*?
   d. What did Amy dance in the shadow of *t*?

In both cases I interpret the results as indicating that Locative PPs are adjuncts. This is consistent with the first application of this test in (149), however the fact that the alternative application yields grammaticality seems to support that Locatives ares arguments. In order to reconcile this contradiction, I suggest that the grammaticality of (150) might simply reflect the fact that speakers are fairly comfortable with preposition stranding regardless of whether it heads an argument or an adjunct. As such the adjunct status of this class can be maintained, since the grammaticality of (150) is not necessarily due to the fact that Locative PPs are arguments.

11.1.8 Pseudo-cleft test

Only adjuncts can appear after 'do' in a VP focused pseudo-cleft. Consider the Locative PPs in (151.a-d)

(151) a. What Pam did in the park was skate.
   b. What Rory did in kitchen was dance.
   c. What Lou did in the woods jog.
   d. What Jill did in London drive.

This test indicates that the PPs *in the park in the kitchen in the woods* and *in London* are adjuncts as (151.a-d) are all grammatical.

11.1.9 VP anaphora test

According to the VP anaphora test, PPs of the Locatives class are adjuncts given the grammaticality of (152.a-d)

(152)   a. Syd biked in Toronto and Roger did so in Montreal.
          b. Nick walked in the forest and James did so in the city.
          c. Iris danced in the kitchen and Bree did so in the bedroom.
          d. Maude jogged in the park and Ivy did so in the woods.

11.1.10 Summary

In sum, this section has applied the argumenthood tests to Locative PPs to established the adjunct status of this class. The overall results are presented in table (11.1.11).

(11.1.11)

Tests:	Locative Class
Optionality	Adjunct
Core Participants	Adjunct
Iterativity (same)	Adjunct
Iterativity	Adjunct
Prep. Content	Adjunct
Verb Specificity	Adjunct
Extraction Test	Adjunct
Adjunct Island	Adjunct
Pseudocleft	Adjunct
VP Anaphora	Adjunct

11.2 Goal PPs are arguments

This section characterizes the class of Goal PPs according to their behaviour on the argumenthood diagnostics in section (10). Although the results are not entirely consistent, overall Goals tend to pattern as arguments. This finding is perhaps unexpected, given that place PPs are often considered adjuncts.

11.2.1 Optionality test

According to this test adjuncts are optional while arguments are obligatory.

(153)   a. Heather danced (to the kitchen).
           b. Ben walked (to the park).
           c. Syd drove (to London).
           d. Emy sprinted (to the door).

The Goal PPs *to the kitchen to the park to London* and *to the door* are identified as adjuncts as it is possible to omit them and maintain grammaticality for (153.a-d).

11.2.2 Core participants test

Opinions differ regarding whether or not a motion verb is considered to entail directional PP. For Fong, the basic meaning of a motion verb such as *run* or *dance* does not refer to a path (1997, p.68). In this view PPs of the Goal class are not core participants and are therefore adjuncts.

In contrast, Jackendoff (1993, p.45) and Kearns (2011, p.39) propose that the specification of a trajectory is implicit with verbs that express movement. My own intuitions are consistent with the latter view, such that the movement of described by *running* must necessarily end somewhere. Accordingly, this suggests that Goal PPs are arguments as they are core participants that are required by a motion verb.

11.2.3 Iterativity test

This test reveals different results depending on the way that it is applied. If multiple occurrence is interpreted as referring to multiple Goal PPs, then under this interpretation Goals pattern as arguments, illustrated by the ungrammaticality of (154.a-d).

(154)   a. *Syd ran to the park to Toronto.
           b. *Amy skipped to her to her room.
           c. *Lily climbed to the mountain to the peak.
           d. *Mick drove to Los Angeles to California.

However if the iterativity requirement is such that different class-combinations are allowed as in (155), in this case Goals pattern with adjuncts.

(155)　　a. Rory ran to the park in Toronto.
　　　　b. Lane biked to school from her house.
　　　　c. Ron danced to the bench in the park.
　　　　d. Molly raced out of the bedroom into the kitchen.

Even if the multiple occurrence test is applied more loosely to allow co-occurrences of different classes, as in (155.a-d), there are still restrictions on the combinations and orderings of classes. See section (12.1.2) for further discussion.

11.2.4　Prepositional content test

The fact that the Goal preposition *to* in (156.a-d) *to Paris*, *to the zoo*, *to the zoo*, *to the station* and *to the cabin* is contentful suggests that it is heading an adjunct.

(156)　　a. The plane flew to Paris.
　　　　b. Jimmy skipped to the zoo.
　　　　c. Paul strolled to the station.
　　　　d. John skiied to the cabin.

11.2.5　Verb specificity test

Elements that are tied to a particular verb class are more likely to be arguments. As directionals, PPs of the Goal class typically can only occur with verbs that involve motion (Allerton, 1982, p.62; Kracht, 2002, p.163; Fong, 1997). Consider the examples in (157.a-d). Example (157.a) is taken from Allerton (p.62).

(157)　　a. *Oliver is studying to Switzerland.
　　　　b. *Jessa swallowed to the park.
　　　　c. *Isi lived to Kingston.
　　　　d. Fred walked to London.

The ungrammaticality of (a) and (b) demonstrates that the Goal PPs *to London* and *to the Park* cannot be used with verbs that do not describe movement. However, one exception is the case of 'fictive motion' discussed in depth in Talmy (1996). This is illustrated by examples (158) and (159), the latter of which is taken from Kracht (2002, p.164).

(158)   The sign pointed to New York.

(159)   A bridge from Buda to Pest.

In these examples the objects *the sign* and *a bridge* are not in motion, yet the Goal PPs are grammatical. For Jackendoff (158) would be considered a case of ORIENT while (159) is EXTENSION. These two functions are treated in detail section (2.2).

Additionally, Levin (1993) notes that PPs of the Goal class can appear with verbs of sound emission, such as *rumble, clatter*, or *crunch* (p.105).

(160)   a. The truck rumbled into the driveway.
         b. Eliza clattered to the front of the line.
         c. The car crunched into the parking lot.
         d. Mark thundered to his room.

In example (160.a) from Levin (1993, p.105), the Goal PP *into the driveway* occurs with a verb of sound emission rather than one of motion. Although *rumble, clatter, crunch* and *thunder* in (160) are not inherently verbs of displacement, they are able to take on a directed displacement meaning when they occur with the PPs *into the driveway, to the front of the line, into the parking lot* and *to his room*, respectively (1993, p.106). Accordingly, (160.a-d) are interpreted as 'to go by V-ing', in which case they do in an extended sense express an event of motion. For an extensive discussion of the different verbs that can appear with directional phrases see Levin (1993), in particular pp.105-106 and pp.262-270.

Ultimately, the fact that only a very restricted set of primarily motion verbs can appear with Goal PPs, this suggests that these PPs are arguments.

11.2.6   Extraction test

In this test, the ungrammaticality of (161.a-c) suggests that PPs of the Goal class are adjuncts.

(161)   a. *Where do you wonder why Syd ran to *t*?
         b. *Where do you wonder why Fred danced to *t*?
         c. *Where do you wonder why George flew to *t*?

The people from whom I solicited judgements did not accept any type of extraction out of a weak island, even in the case of clear arguments, such as in (162).

(162)   *What do you wonder why Bill ate *t*?
         You wonder why Bill ate pizza.

As a result this test is unlikely to be particularly illustrative regarding how Goal PPs behave with respect to the argument-adjunct division, considering both argument and adjunct extractions were treated as being equally ungrammatical.

11.2.7   Adjunct island test

Wh-extraction is only grammatical out of arguments. Accordingly, the grammaticality of (163.a-d) suggests that the Goal PPs are arguments.

(163)   a. Where did Molly flee to?
         b. Where did Arthur drive to?
         c. Which park did Charlie ski to?
         d. Which school did Bill walk to?

11.2.8   Pseudo-cleft test

This test predicts that only adjuncts can occur after 'do' in a VP focused pseudo-cleft.

(164)   a. *What Syd did to the park was run.
         b. *What Bart did to school was skate.
         c. *What Julie did to the zoo was drive.
         d. *What the plane did to London was fly.

Indeed, this test indicates that the Goal PPs *to the park*, *to school*, *to the zoo* and *to London* are arguments, given the ungrammaticality of examples (164.a-d).

11.2.9   VP anaphora test

The VP anaphora test suggests that Goal PPs are arguments due to their ungrammaticality in the 'do so' constructions in examples (165.a-d).

(165)   a. *Syd ran to the forest and Roger did so to the park.
         b. *Isi flew to London and Eliza did so to Paris.
         c. *Nicole walked to school and Jess did so to the store.
         d. *Ben skipped to class and Matt did so to his house.

The ungrammaticality of a goal PPs with 'do so' has also been noted in Macdonald (2010).

11.2.10   Summary

In sum, this section explored the behaviour of Goal PPs under the application of several argumenthood tests, where results indicate that overall Goals patterns as arguments. Table (11.2.11) summarizes these findings.

(11.2.11)

Tests:	Goal Class
Optionality	Adjunct
Core Participants	ARGUMENT
Iterativity (same)	ARGUMENT
Iterativity	Adjunct
Prep. Content	Adjunct
Verb Specificity	ARGUMENT
Extraction Test	Adjunct
Adjunct Island	ARGUMENT
Pseudocleft	ARGUMENT
VP Anaphora	ARGUMENT

11.3   Path PPs are adjuncts

The various argumenthood diagnostics ultimately identify PPs of the Path class as adjuncts. However the way they pattern is not absolutely consistent, as demonstrated in the following subsections which trace Path PPs through the individual tests.

11.3.1   Optionality test

According to this test the Path PPs *towards the net*, *towards the forest*, *towards Kingston* and *towards his room* are all adjuncts, due to the fact that they can all be omitted.

(166) a. Eliza skated (towards the net).
      b. Syd ran (towards the forest).
      c. Maude drove (towards Kingston).
      d. Harold danced (toward his room).

11.3.2 Core participants test

Although intuitions are not always consistent, I follow Jackendoff and Kearns in assuming that path arguments are implicitly entailed by any verb that describes an event of translocation. In terms of this test, Path PPs are identified as arguments since they describe core participants in this type of event.

(167)   Paul dashed toward the station.

The event expressed by the verb *dash* requires a path, as it encodes movement from one location to another that necessarily implies the existence of a trajectory that *Paul* travels.

11.3.3 Iterativity test

Like the class of Goals, the two different interpretations of 'multiple occurrence' yield different results for the argument status of Path PPs. Regarding the iteration of multiple PPs of the Path class, the ungrammaticality of (168.a-d) identifies these PPs as arguments.

(168)   a. *Lane skied towards the cabin towards the mountains.
         b. *The plane flew towards New York towards the ocean.
         c. *Syd ran towards the forest towards the bench.
         d. *Amy travelled towards England towards the UK.

In contrast, the iteration of different class combinations in (169) suggests that Path PPs are adjuncts.

(169)   a. Lane skied towards the cabin in the mountains.
         b. The plane flew towards New York from Seattle.
         c. Syd ran out of his house towards the forest.
         d. Amy travelled from Canada towards the UK.

11.3.4 Prepositional content test

Recall that the more content a preposition contributes the more likely it is to be heading an adjunct.

(170)   a. Bart jogged towards the tree.
         b. Lisa dashed towards the school.
         c. Maggie crawled towards her room.
         d. The balloon floated towards the ceiling.

Accordingly, the Path PPs in (170.a-d) are adjuncts given that *towards* in *towards the tree*, *towards the school*, *towards her room* and *towards the ceiling* contributes a clear meaning.

11.3.5   Verb specificity test

The fact that Path PPs are tied to verbs of motion indicates that they are arguments. Consider the examples in (171.a-d)

(171)   a. *Oliver studied towards Switzerland.
          b. *Eva ate towards the school.
          c. Hannah drove towards Switzerland.
          d. Jessa skipped dashed towards the school.

While (c) and (d) demonstrate that PPs of this class are grammatical when they occur with the motion verbs *drive* and *skip*, the ungrammaticality of (171.a-b) illustrates that they cannot be added to verbs that do not describe movement, such as *study* or *eat*.

Regarding this point, several exceptions to the claim that directional PPs are linked to motion verbs were outlined in section (11.2.5). These exceptions were presented in terms of Goal PPs, however they are also relevant for the class of Paths.

11.3.6   Extraction test

The ungrammaticality of (172.a-d) illustrates that it is not possible to extract a Path PP out of a weak island.

(172)   a. *Where do you wonder why Eliza skated towards *t*?
          b. *Where do you wonder why Syd ran towards *t*?
          c. *Where do you wonder why Maude drove towards *t*?
          d. *Where do you wonder why Harold danced toward *t*?

According to this test, this identifies Path PPs as adjuncts.

11.3.7   Adjunct island test

Extraction out of an adjunct is typically considered ungrammatical. Consider the Path PPs in (173).

(173)   a. Where did Syd run towards *t*?
          b. Where did Lane ski towards *t*?
          c. Where did Rory walk towards *t*?
          d. Where did Maude fly towards *t*?

The adjunct status of the Paths is reflected in the ungrammaticality of (173.a-d).

11.3.8   Pseudo-cleft test

Considering that only adjuncts are grammatical in this test, the grammaticality of (174.a-d) confirms that the Path PPs *towards the forest*, *towards her office*, *towards the kitchen* and *towards the island* are adjuncts.

(174)   a. What Syd did towards the forest was run
          b. What Liz to did toward her office was stroll.
          c. What Jenna did towards the kitchen was dance.
          d. What Pete did towards the island was bike.

11.3.9   VP anaphora test

According to the VP anaphora test, adjuncts but not arguments can appear after 'do so'.

(175)   a. Bart swam towards the shallow end and Kit did so towards the deep end.
          b. Lisa skated toward the bench and Taylor did so towards the playground.
          c. Jim crawled towards the bedroom and Pam did so towards the kitchen.
          d. Amy danced towards the window and Bill did so towards the closet.

Given that examples (175.a-d) are grammatical, this indicates that Path PPs are adjuncts.

11.3.10   Summary

As directionals, the class of Path PPs are is argument-like than the nondirectional Locative class, however the overall results from the diagnostics suggest that these PPs are ultimately adjuncts.

(11.3.11)

Tests:	Path Class
Optionality	Adjunct
Core Participants	ARGUMENT
Iterativity (same)	ARGUMENT
Iterativity	Adjunct
Prep. Content	Adjunct
Verb Specificity	ARGUMENT
Extraction Test	Adjunct
Adjunct Island	ARGUMENT
Pseudocleft	Adjunct
VP Anaphora	Adjunct

11.4 Ambiguous PPs: Variable behaviour

This section explores PPs of the Ambiguous class, which are alternatively adjuncts or arguments depending on their interpretation as a path or as a goal, respectively. A summary of the results in presented in table (11.4.0).

(11.4.0)

	AMBIGUOUS	
	goal-reading	path-reading
Optionality	Adjunct	Adjunct
Core Participants	ARGUMENT	ARGUMENT
Iterativity (same)	ARGUMENT	ARGUMENT
Iterativity	Adjunct	Adjunct
Prep. Content	Adjunct	Adjunct
Verb Specificity	ARGUMENT	ARGUMENT
Extraction Test	Adjunct	Adjunct
Adjunct Island	ARGUMENT	ARGUMENT
Pseudocleft	ARGUMENT	Adjunct
VP Anaphora	ARGUMENT	Adjunct

11.4.1 Ambiguous (path-reading) PPs are adjuncts

The right column of table (11.4.0) illustrates that Ambiguous PPs with a path-reading are adjuncts. The Ambiguous class consists of the co-initial

and transitory modes, represented by *from NP* and *through NP*, respectively. Consider the examples below.

(176)   John ran from the park.

(177)   Harry walked through the woods.

Under their path-readings, the co-initial PP in (176) *from the park* and the transitory PP in (177) *through the woods* do not express a change that culminates in a result location. In (176), *from the park* simply encodes movement that begins somewhere near the park, and terminates some distance farther away from it. It is not necessary that John's starting location was on the inside of the park and as a consequence of his running he ended up in the result location of 'out of the park'.

In (177), the path-reading of the transitory PP *through the woods* is interpreted as expressing that Harry walked along some route that is fully contained within the woods throughout the entire event time. Accordingly, (177) could be paraphrased as 'Harry walked around inside of the woods'.

In particular, since both the path- and goal-readings of a transitory Ambiguous PP share the same form, *through NP*, it is important to keep in mind for this section that *through NP* is interpreted as 'a route contained inside of NP'.

11.4.2   Optionality test

According to this test Ambiguous PPs with a path reading are adjuncts, as *from the kitchen*, *through the garden*, *from the shed* and *through Tokyo* in (178.a-d) can be omitted.

(178)   a. Margot danced (from the kitchen).
         b. Richie strolled (through the garden).
         c. Ari walked (from the shed).
         d. Wes drove (through Tokyo).

11.4.3   Core participants test

Regarding the status of Ambiguous (path-reading) PPs, I assume that a path is necessarily entailed with any verb that describes an event of translocation involving movement from one region to another. Consider the PPs in (179.a-b).

(179)   a. The burglar drove from the police station.
        b. Marie skidded through ballroom.

Both *drive* and *skid* imply a movement through space, where the PPs *from the police station* and *through the ballroom* name the paths traveled by the themes *the burglar* and *Marie*. It seems unlikely that there could be a situation where an event of *driving* or *skidding* involves no movement at all along some type of route. This suggests that these PPs are arguments as they are core participants in a motion event.

11.4.4   Iterativity test

When multiple occurrence refers to the stacking of multiple Ambiguous (path-reading) PPs, this test identifies that PPs in (180) as arguments due to the fact that they cannot be iterated in (180.a-d).

(180)   a. *Muffy walked from the woods from the bench.
        b. *Buster skated through the park through Toronto.
        c. *Arthur hiked through the mountains through the field.
        d. *Alan skated from the net from the goalie.

Alternatively, if the requirement is such that different class combinations are allowed then the grammaticality of (181.a-d) illustrates that this subclass patterns with adjuncts.

(181)   a. Lily through the park in Toronto.
        b. James walked through the woods towards the river.
        c. Milo danced from the garden into the house.
        d. Ian stumbled towards the store from the station.

11.4.5   Prepositional content test

The content that is contributed by the prepositions *from* and *through* suggests that the Ambiguous (path-reading) PPs in (182. a-b) are adjuncts.

(182)   a. Leah biked from the field.
        b. The ball rolled through the tunnel.

11.4.6 Verb specificity test

This test identifies Ambiguous PPs with a path reading as arguments as they appear to be tied to verbs of motion. This is reflected in the ungrammaticality of (183.a-c), whereas (183.d-f) are grammatical since they describe events involving movement.

(183)   a. *Eliza ate through the park.
         b. *Oliver swallowed from her bedroom.
         c. *Isi played football from Switzerland.
         d. Sasha ran from the woods.
         e. John skiied through the mountains.
         f. Taylor walked through the park.

Recall that a number of exceptions were identified which seemed to contradict the claim that directional PPs can only occur with motion verbs. See section (11.2.5) for a discussion.

11.4.7 Extraction test

Only arguments can be extracted out of weak islands. In contrast, such extraction is ungrammatical with adjuncts.

(184)   a. *Where do you wonder why Jane walked from t?
         b. *Where does Ann wonder why Norah ambled through t?
         c. *Where does Mick wonder why Meg jogged through t?
         d. *Where do you wonder why Dave skated from t?

The fact that these examples are ungrammatical indicates that PPs of the Ambiguous class with a goal reading are adjuncts.

11.4.8 Adjunct island test

Related to the extraction test, the adjunct island test specifies that extraction out of adjuncts is ungrammatical. Accordingly, the grammaticality of examples (185.a-d) suggests that PPs of this subclass are arguments.

(185)   a. Where did Jude drive from t?
         b. Where did Mia walk through t?
         c. Which storm did Roman biked through t?
         d. Which park did Maude skated from t?

11.4.9 Pseudo-cleft test

This test indicates that PPs of the Ambiguous class with a path-reading are adjuncts due to the grammaticality of (186. a-d).

(186)   a. What the boat did from the harbour was float.
        b. What Brian did through the flowers was skip.
        c. What James did through London was stroll.
        d. What Lily did from the cabin was jog.

Although the Ambiguous path-reading PPs in (186) are perhaps less grammatical than the Locative in (187.a), they were nevertheless judged as 'more grammatical' than the Goal and Ambiguous goal-reading counterparts in (187.b-c).

(187)   a. What Liam did in the garden was walk.
        b. *What Syd did to the forest was run.
        c. *What Amy did out of the park was dance.

11.4.10 VP anaphora test

In this test adjuncts can occur after 'do so' while arguments cannot. The grammaticality of (188.a-d) suggests that the Ambiguous PPs *from the bench*, *through the park*, *through London* and *from the net* are adjuncts.

(188)   a. Nate walked from the bench and Lane did so from the swings.
        b. Mark strolled through the park and Jill did so through the garden.
        c. Joel drove through London and Sara did so through Paris.
        d. Kurt skated from the net and Mile did so from the goalie.

11.4.11 Summary

In sum, this section has traced Ambiguous PPs with a path-interpretation throughout several tests in order to establish their status as adjuncts, confirming the left column of table (11.4.12).

(11.4.12)

	AMBIGUOUS	
	goal-reading	path-reading
Optionality	Adjunct	Adjunct
Core Participants	ARGUMENT	ARGUMENT
Iterativity (same)	ARGUMENT	ARGUMENT
Iterativity	Adjunct	Adjunct
Prep. Content	Adjunct	Adjunct
Verb Specificity	ARGUMENT	ARGUMENT
Extraction Test	Adjunct	Adjunct
Adjunct Island	ARGUMENT	ARGUMENT
Pseudocleft	ARGUMENT	Adjunct
VP Anaphora	ARGUMENT	Adjunct

11.5   Ambiguous (goal-reading) PPs are arguments

In addition to a path-reading, PPs of Ambiguous class also have available an interpretation as a goal. The argumenthood diagnostics will be applied to Ambiguous PPs with the latter reading in order to illustrate their argument status. The left column of table (11.4.12) summarizes these results.

This class is made up of the co-initial and transitory modes, both of which have a goal-reading illustrated by the PPs in (189) and (190), respectively.

(189)   Bill danced out of the kitchen.

(190)   Maude drove through the forest.

Under their goal-readings, the co-initial PP in (189) *out of the kitchen* and the transitory PP in (190) *through the forest* both encode a change of location. In (189) *John danced out of the kitchen* described a result where the motion of Bill's dancing began inside of the kitchen and culminated with Bill being located outside of it.

The goal-reading of a transitory PP expresses that the route or trajectory extends farther than the thing being traversed. This is illustrated in (190) where *Maude drove through the forest* is interpreted as encoding that the route that Maude drove along was 'longer' than the forest, such that she drove into the forest on one side and out of it on the other.

Recall that section (6.4.1) noted that both the path- and goal-readings of a transitory Ambiguous PP share the form *through NP*, thus it is important to keep the goal-reading outlined above in mind for the tests in this section.

11.5.1 Optionality test

According to the optionality test, the Ambiguous class with a goal reading is patterns as arguments, since the PPs *out of Chicago*, *through the forest*, *out of the kitchen* and *through the park* can grammatically be omitted.

(191) a. The plane flew (out of Chicago).
      b. Lane walked (through the forest).
      c. Sam danced (out of the kitchen).
      d. Jay bolted (through the park).

11.5.2 Core participants test

Recall that although intuitions differ, I assume in this thesis that a route or a path travelled is implicitly included in the meaning of motion verbs. When an Ambiguous (goal-reading) PP is overtly expressed it makes explicit this route.

(192) a. The plane flew.
      b. The plane flew out of Montreal.

Example (192.a) illustrates that although the Ambiguous (goal-reading) PP *out of Montreal* is not required syntactically, it is still implied by *fly*, as the plan has to have flown from *somewhere*. This 'somewhere' is specified in (b) by the PP *out of Montreal* which explicitly encodes the path that in (a) was only implied. As such, PPs of this subclass appear to be core participants, an observation that identifies them as arguments according to this test.

11.5.3 Iterativity test

According to the version of this test where iterativity refers to the multiple occurrence of PPs from the same class, Ambiguous (goal-reading) PPs pattern as arguments exemplified by the ungrammaticality of (193.a-d).

(193) a. *The crab crawled out of the sand out of the hole.
      b. *Cindy skipped out of the classroom out of school.
      c. *Jenny ambled through the garden through the field.
      d. *Rupert waltzed through the parking lot through the backyard.

In the alternative application in (194), PPs of different class are iterated. In this case Ambiguous PPs with a goal reading are identified as adjuncts since they can grammaticality be stacked.

(194)   a. The crab crawled out of the sand into the water.
          b. Mary flew out of the window through the air.
          c. John bolted through the woods from the cabin.
          d. Cole biked through the park in Victoria.

11.5.4 Prepositional content test

Recall that the more content a preposition contributes the more likely it is to be heading an adjunct.

(195)   a. Emma skated out of the park.
          b. Jane dashed through the tunnel.
          c. Grace drove through the car wash.
          d. Tess ran out of her cage.

Given that the prepositions *out of* and *through* in *out of the park*, *through the tunnel*, *through the car wash* and *out of her cage* express a concrete meaning, this indicates that they are heading adjuncts.

11.5.5 Verb specificity test

According to this test, the class of Ambiguous (goal-reading) PPs are arguments. This is demonstrated by the ungrammaticality of the PPs *through Switzerland* and *out of the city* in (196.a) and (d) when they occur with the verbs *study* and *smell*, since these verbs do not encode the required movement.

(196)   a. *Oliver studied through Switzerland.
          b. Taylor climbed out of the window.
          c. Barry skidded through the intersection.
          d. *Molly smelled out of the city.

In contrast, the fact that the verbs *climb* and *skid* express motion means they can support Ambiguous (goal-reading) PPs. This is reflected in the grammaticality of (196.b-c).

  Although these directional PPs appear to be tied to motion verbs, in some cases they can occur with verbs of different classes. See section (11.2.5) for an outline of these exceptions.

11.5.6 Extraction test

It is only possible to extract arguments out of weak islands, not adjuncts. The examples in (197) illustrate that it is not possible to do this type of extraction with Ambiguous (goal-reading) PPs.

(197) a. * Where does Fiona wonder why Dan skated through *t*?
 b. *Where do you wonder why Lane danced out of *t*?
 c. *Where does Ann wonder why Sunny rolled out of *t*?
 d. *Where do you wonder why Colin travel through *t*?

By the test, the ungrammaticality of (197.a-d) suggests that the these PPs are adjuncts.

11.5.7 Adjunct island test

Extraction is grammatical from arguments but not from adjuncts. Accordingly, the grammaticality of (198.a-d) confirms the argument status of PPs of this subclass.

(198) a. Where did Jack skip out of *t*?
 b. Where did Kit bolt through *t*?
 c. Which bed did Andy tumble out of *t*?
 d. Which intersection did Erin drive through *t*?

11.5.8 Pseudo-cleft test

In this test, arguments cannot appear after 'do' in a VP focused pseudo-cleft. Consider the Ambiguous PPs with a goal reading in (199).

(199) a. *What Lisa did out of school was skip.
 b. *What Bart did out of her crib was crawl.
 c, *What Maggie did through the intersection was skid.
 d. *What Eliza did through the carwash was drive.

The ungrammaticality of the Ambiguous (goal-reading) PPs *out of school*, *out of her crib*, *through the intersection* and *through the carwash* after 'do' identifies them as arguments.

11.5.9   VP anaphora test

Only adjuncts can appear after 'do so, while arguments cannot.

(200)   a. *Kate dashed out of the store and Harry did so out of school.
         b. *Chloe danced through the park and Ron did so through the common room.
         c. *Mandy flew out of Paris and Victor did so out of Chicago.
         d. *Noah pranced out of jail and Tom did so out of his bedroom.

This test suggests that Ambiguous (goal-reading) PPs are arguments, due to the ungrammaticality of (200.a-d).

11.5.10   Summary

Through the application of several argumenthood tests, this section has demonstrated the argument status of Ambiguous PPs when they are interpreted as goals, confirming the left column of table (11.5.11).

(11.5.11)

	AMBIGUOUS	
	goal-reading	path-reading
Optionality	Adjunct	Adjunct
Core Participants	ARGUMENT	ARGUMENT
Iterativity (same)	ARGUMENT	ARGUMENT
Iterativity	Adjunct	Adjunct
Prep. Content	Adjunct	Adjunct
Verb Specificity	ARGUMENT	ARGUMENT
Extraction Test	Adjunct	Adjunct
Adjunct Island	ARGUMENT	ARGUMENT
Pseudocleft	ARGUMENT	Adjunct
VP Anaphora	ARGUMENT	Adjunct

12   Argumenthood results

In sum, I have tracked the behaviour of various Place PPs from the four proposed classes throughout several argumenthood diagnostics. The results indicate that overall the directional classes of Path, Goal and Ambiguous are

more argument-like than the Locative class. Unsurprisingly, the latter class patterned consistently with adjuncts.

In contrast, the Goal and Ambiguous (goal-reading) classes exhibited argument-like behaviour on many of the tests. These irregularities are consistent with the claim that directional PPs represent an unclear case in terms of the argument-adjunct distinction. Crucially the findings do not show that *all* directional PPs are arguments. Out of the three directional classes of Path, Goal and Ambiguous, Goals were intermediate arguments, Paths were adjuncts and Ambiguous alternated between the two depending on their interpretation as goal or as path. The results are summarized in table (12.0.1).

(12.0.1)

	Locative	Goal	Path	Ambiguous	
				goal-reading	path-reading
Optionality	Adj	Adj	Adj	Adj	Adj
Core Participants	Adj	ARG	ARG	ARG	ARG
Iterativity (same)	Adj	ARG	ARG	ARG	ARG
Iterativity	Adj	Adj	Adj	Adj	Adj
Prep. Content	Adj	Adj	Adj	Adj	Adj
Verb Specificity	Adj	ARG	ARG	ARG	ARG
Extraction Test	Adj	Adj	Adj	Adj	Adj
Adjunct Island	Adj	ARG	ARG	ARG	ARG
Pseudocleft	Adj	ARG	Adj	ARG	Adj
VP Anaphora	Adj	ARG	Adj	ARG	Adj

In section (3) the five modes of static, co-final, co-initial, transitory and approximative PPs were outlined and subsequently grouped into four classes: Locatives, Goals, Paths and Ambiguous.

	Locative	Goal	Path	Ambiguous	
Mode(s):	static	co-final	approximative	co-initial	
				transitory	
				goal-reading	path-reading
	in NP	to NP	toward NP	out of NP	from NP
		into NP		through NP	through NP

An examination the results obtained in section (11) justify such a categorization, where findings from the argument diagnostics confirm the adjunct

status of the Locative and Path classes, the argumenthood of the Goal class, and the differential status of the Ambiguous class.

12.1   Discussion

The table in (12.0.1) is perhaps slightly misleading, such that the overall results are likely to in fact be more consistent than what is presented. For example, the extraction test identifies Goal and Ambiguous (goal-reading) PPs as adjuncts, whereas I suggest they are arguments. However, the baseline judgements that I obtained for this test indicate that even cases of extraction from canonical arguments were rejected. An example of this is illustrated in (201), which should grammatical since *Lisa* is an argument of *like*, however it was judged as ungrammatical.

(201)   *Who do you wonder why John liked *t*?
          (You wonder why John liked Lisa.)

This indicates that the result of 'adjunct' for the Goal and Ambiguous (goal-reading) classes does not conflict with their status as arguments, since this test does not seem to be an accurate diagnostic of argumenthood for the people from whom I solicited judgements.

Additionally, the adjunct island test yields an 'argument' result for the classes of Path and Ambiguous (path-reading) PPs, although I argue that these PPs are ultimately adjuncts. The wh-extraction in this test results in preposition stranding, which is something speakers are typically comfortable with from both arguments an adjuncts. Accordingly, I suggest that perhaps the grammaticality of extraction in this test is not due to the fact that Path and Ambiguous (path-reading) PPs are arguments, rather it can be attributed to the acceptance of stranding a preposition that is separate from argumenthood.

12.1.1   Review of key tests

The pseudo-cleft and VP anaphora tests are particularly important in demonstrating that Locative, Path and Ambiguous PPs with a path-reading are adjuncts, in contrast to the Goal and Ambiguous (goal-reading) classes which are arguments. According to the former test only adjuncts can appear after 'do' in a VP focused pseudo-cleft, therefore if the result of clefting a place PP is ungrammatical this would suggest that the PP is an argument.

The grammaticality of the Locative PP in (202) indicates that *in the park* is an adjunct, in contrast to the Goal in (203) which is identified as an argument as the PP *to the garden* is ungrammatical in this construction.

(202)   What Syd did in the park was walk.

(203)   *What Lane did to the garden was dash.

This test also indicates that PPs of the Path and Ambiguous (path-reading) classes are adjuncts, reflected in the grammaticality of (204) and (205-206), respectively. Although the PPs in (204-206) were not judged to be as grammatical as the Locative PP in (202), they were certainly considered to be more acceptable than the Goal in (203).

(204)   What John did towards school was bike.

(205)   What Kim did from the park was run.

(206)   What Syd did through the city was stroll.

On the contrary, the Ambiguous (goal-reading) PPs in (207-208) patterned with the Goal PP in (203) in that they were judged to be clearly ungrammatical. This suggests that these PPs are arguments.

(207)   *What the plane did out of Toronto was fly.

(208)   *What Amy did through the city was drive.

It is particularly illustrative to contrast the Ambiguous PP *through NP* with a path-reading in (206) and a goal-reading in (208). Recall that the path-reading of the PP *through the city* in (206) encodes that the route travelled by *Syd* is fully contained within 'the garden'. With this reading in mind the clefting was judged to be grammatical.

   With the goal-reading in (208) the PP *through the city* describes movement that enters *the city* on one side and exits on the other. In this case, the clefting of a PP with this interpretation was consistently judged as ungrammatical.

   Similarly, the VP anaphora test identifies place PPs that can be added to 'do so' clauses as adjuncts. The fact that (209) is grammatical confirms the adjunct status of the Locative class, whereas the ungrammaticality of the Goal PP in (210) suggests that PPs of this class are arguments.

(209)   Syd ran in the forest and Roger did so in the park.

(210)   *Syd ran to the forest and Roger did so to the park.

This test also indicates that the Path and Ambiguous (path-reading) classes are adjuncts, demonstrated by the grammaticality of (211) and (212-213), respectively. Like the previous test, although the PPs in (211-213) were perhaps not as grammatical as the Locative in (209), they were nevertheless judged to be more grammatical than the Goal PP in (210).

(211)   Syd ran toward the forest and Roger did so toward the park.

(212)   Syd ran from the forest and Roger did so from the park.

(213)   Syd ran through the forest and Roger did so through the park.

Finally, PPs of the Ambiguous class with a goal-reading are identified as arguments due to the ungrammaticality of (214) and (215).

(214)   *Syd ran out of the forest and Roger did so out of in the park.

(215)   *Syd ran through the forest and Roger did so through the park.

The PPs of this subclass in (214) and (215) were rejected to the same degree as the Goal PP in (210), accordingly they were judged as more ungrammatical than the Ambiguous PPs with a path-reading in (211-213).

It is interesting that different interpretations of the same prepositions should have such a significant impact on speakers' judgements in these tests. I propose that this can be linked to the telicity differences between the two readings established in section (6), a connection that is explored further in section (14).

12.1.2   Challenges

A difficulty was encountered in the application of the iterativity test for argumenthood. It was unclear whether multiple occurrence should be interpreted as referring to multiple occurrence of PPs of the same class or of different class combinations. The former interpretation identifies only the Locative class as adjuncts and all others as arguments. In contrast, the latter application indicates that all four classes are adjuncts.

This test may be problematic as a determiner of argumenthood, because

although multiple directional classes can be stacked there still appear to be restrictions on their co-occurrence. First, the ordering of the PPs matters where the directional classes seem to need to be closer to the verb, without the interference of a Locative PP. Consider the PPs in (216) and (217).

(216)   Tina ran out of the forest in Toronto.

(217)   Maude ran in Toronto out of the forest.

In (216) the Ambiguous (goal-reading) PP *out of the forest* occurs before the Locative PP *in Toronto*, while in (217) there is the opposite ordering. Although example (217) isn't outright ungrammatical, it was nevertheless judged to be not as well formed as (216).

   Additionally, there is perhaps some type of restriction on ordering where some speakers are more accepting of directional PPs that are stacked in the order in which they occur in time. Contrast the order in (218) with that or (219).

(218)   Harry skipped out of the house into the forest.

(219)   Ron skipped into the forest out of the house.

Example (218) was judged to be better than (219), although (219) was not necessarily to the point of ungrammaticality.

13   Conclusion

In section (3) I proposed a division of PPs into four classes: Locatives, Goals, Paths and Ambiguous. This section demonstrated that it is important to make these distinctions because the various classes pattern differently with respect to argument-adjunct division. Overall, the directional classes (Goal, Path and Ambiguous) are more argument-like than non-directional (Locative) class, which is a clear adjunct.

   Performance differed for the three directional classes, such that the tests pointed to the adjunct status of the Paths, in contrasts to Goals which were argument-like. Finally, the Ambiguous class was alternatively adjunct or argument-like according to interpretation as path or goal, respectively.

   These results confirm the telicity-based hypothesis that the classes which were identified as telic in section (6) are also those that are arguments, while

those identified as atelic are adjuncts. Following from these observations, I suggest a relationship between argumenthood and telicity such that a PP that contributes a telos can alter a predicate's Aktionsart, which augments the event structure template to include the position of 'result' or 'endpoint' that is filled by the PP, in which case it is argument-like. Atelic PPs are incapable of affecting Aktionsart as they cannot occupy an event position corresponding to a terminal point since supply no such information, thus they are adjuncts.

14   Towards an event-structural analysis

In the present analysis of place PPs, I explore the connection between argumenthood and telicity, suggesting that a PP which contributes a telos is more argument-like than one that does not, since the incorporation of the former into an unoccupied position in the event structure of an activity predicate yields a complex event type: an accomplishment. The table below outlines the original classification of place PPs that was proposed in section (3).

(14.0.1)

LOCATIVE	GOAL	PATH	AMBIGUOUS	
			as goal	as path
in NP	to NP	toward NP	out of NP	from NP
	into NP		through NP	through NP

The motivation for this classification was based on telicity. Section (6) confirmed that the Locative, Path and Ambiguous (path-reading) classes are atelic, whereas the Goal and Ambiguous (goal-reading) classes are telic.

(14.0.2)

	LOCATIVE	GOAL	PATH	AMBIGUOUS	
				as goal	as path
Telicity:	atelic	telic	atelic	telic	atelic

Subsequently, section (11) demonstrated the differences in behaviour of these classes according to the argumenthood tests, where Locative, Path and Ambiguous (path-reading) classes are adjuncts, and the Goal and Ambiguous (goal-reading) classes are arguments. These results are repeated in table (14.0.3).

(14.0.3)

| | Locative | Goal | Path | Ambiguous | |
				as goal	as path
Argumenthood:	ADJ	ARG	ADJ	ARG	ADJ

An examination of the tables (14.0.2) and (14.0.3) reveals the alignment of the telicity and argumenthood results, such that the telic classes are arguments while the atelic classes are adjuncts.

(14.0.4)

| | Locative | Goal | Path | Ambiguous | |
				as goal	as path
Telicity:	atelic	telic	atelic	telic	atelic
Argumenthood:	ADJ	ARG	ADJ	ARG	ADJ

This consistency suggests that the telicity of a place PP has important effects for its status as an argument or an adjunct, a finding which supports the telicity-based classification advanced in this thesis. The following sections will integrate the telicity and argumenthood results via an event-structural analysis.

14.1   Relating telicity and argumenthood

The observation that adjuncts can behave like arguments under the condition that they occupy an event position of the main verb has been made for cases other than those involving place PPs. Notably, Truswell (2007) has made similar claims regarding wh-extraction. Although Ross (1967) notes that it is only possible to extract out of arguments, Truswell argues that is sometimes possible to do so out of adjuncts which are normally considered islands (2007, p.1365). This is accounted for by the event-structural licensing of the adjunct by the matrix verb

In my analysis adapted from that of Truswell, I propose that a telic PP saturates the event structure of an activity predicate by occupying the unfilled position corresponding to the event's endpoint. This integration is reflected in the PPs argument status, as it has become fundamentally linked to the verb in the realization an 'active accomplishment' (Van Valin and LaPolla, 1997). In contrast, atelic (inert) PPs are incapable of occupying this result position due to the fact that they do not denote a culmination.

Accordingly, atelic PPs are adjuncts.

My analysis differs from Truswell's in in two main ways. First, I am concerned with the relationship between elements within a single clause, rather than across matrix and secondary clauses. Secondly, my analysis is reversed syntactically in terms of which element, adjunct or (matrix) verb, occupies which event position of the telic pair (Truswell). These issues are addressed in more detail in section (17).

I borrow several concepts employed by Truswell in my analysis of place PPs. In particular, I will begin by outlining Vendler's (1957) Aktionsart classes and the telic pair notation used to represent the event structure of those classes that are complex. Once this is established I will present a brief overview of Truswell's analysis concerning extraction out of secondary clauses.

15 Aktionsart

Aktionsart refers to the aspectual properties of a predicate (Van Valin and LaPolla, 1997, p.92; Davidse and Rymen, 2008, p.259). Vendler (1957) identifies the four aspectual event classes of states, activities, achievements and accomplishments, which are characterized according to three main features: telicity, durativity, and dynamicity (Walkova, 2012, p.496; Kearns, 2011, p.156; Truswell, 2007, p.1356; Van Valin and LaPolla, 2007, p.90).

Telicity refers to the property of having a natural point of culmination (Kearns, 2011, p.157). Refer to section (5) for several common diagnostic tests. In order to illustrate the difference between telic and atelic predicates I present examples (220)-(222) taken from Kearns (2011, p.157).

(220)   eat an apple

(221)   run to the corner

(222)   push a cart

The predicates in (220) and (221) are of telic since they denote events that inherently terminate. In (220) the event *eat an apple* is finished once the apple has been eaten, while (221) *run to the corner* ends once the running has reached the corner. In contrast, *push a cart* in (222) is atelic because it describes a situation which does not have a natural finish point (Kearns, 157).

The next feature is that of durativity. A durative event occupies time, in contrast to non-durative events which do not. The latter make up the 'front edges' of states (Kearns, 2011, p.157)

(223)   notice the mark

(224)   drink wine

In (223), *notice the mark* is a non-durative predicate as it describes an instantaneous transition from 'not being aware of the mark' to 'being aware of the mark'. Example (224) illustrates a durative predicate, where *drink wine* takes place over an extended period of time.

Finally, dynamic events internal texture, while static do not (Kearns, 2011, p.158).

(225)   know the answer

(226)   The leaf flutters in the wind

Nothing really 'happens' in the static predicate in (225) *know the answer*, therefore (225) is classified as static. However, the predicate depicted in (226) is dynamic because *the leaf flutters in the wind* has internal texture such that the leaf is moving through the wind at different points throughout the event.

15.1   States

States are atelic, durative and static (Kearns, 2011, p.157; Walkova, 2012, p.497; Van Valin and LaPolla, 1997, p.93; Zwarts, 2006, p.13). Examples (227.i-iii) a illustrate state predicates.

(227)   i. Alice knew the answer.
         ii. Syd believes in God.
         iii. Jack loves pizza.

These are states because the sentences describe events which hold over a stretch of time (durative), where nothing really happens (static) and which do not encode a natural endpoint (atelic).

15.2 Activities

Like States, Activities are atelic and durative, however differ in that they are dynamic rather than static (Kearns, 2011, p.157; Walkova, 2012, p.497; Van Valin and LaPolla, 1997, p.93; Zwarts, 2006, p.13). An activity is realized at every point during the time in which it takes place. Therefore if interrupted, it is still true that the activity has happened (Walkova, 2012, p.497). Consider the activity predicates in (228).

(228)   i. John walked in the garden.
          ii. Clive pushed a supermarket trolly.
          iii. Lily drank beer.

In (228.iii), if the time during which the activity of *Lily drank beer* spans 2 hours, it is possible to interrupt that time after only 45 minutes at which point the activity 'Lily drank beer' will still have taken place. This relates to the sub-interval property, a diagnostic that was used to test for telicity in section (5.3).

15.3 Achievements

Achievements are classified as dynamic, non-durative and telic (Van Valin and LaPolla, 1997, p.93; Kearns, 2011. p.158; Zwarts, 2006, p.13). Rather than 'having' a telos, an achievement is itself a kind of telos. The sentences in (229) are achievements since they described events that are realized instantaneously.

(229)   i. They reached the summit.
          ii. Clive realized that Deirdre was gone.
          iii. Jones spotted the car.

In (i) there is a point of immediate transition from 'not being at the summit' to 'being at the summit'. Similarly, (ii) and (iii) each describe achievements since there is an instantaneous moment of 'realizing' and 'spotting', respectively.

Generally achievements are encoded by the one-place operator BECOME (Dowty, 1979). Section (17) explores how Truswell reformulates a certain class of achievements using the two-place operator THEN, which effectively means that they can be regarded as durative.

15.4   Accomplishments

Accomplishments are telic, durative and dynamic (Kearns, 2011, p.158; Van Valin and LaPolla, 1997, p.93). Accomplishments have the most complex structure since they encode a change over time which consists of an preparatory activity period that leads up to an endpoint indicated by a result state predicate (Van Valin and LaPolla, 1997, p.104; Kearns, 2011, p.158; Zwarts, 2006, p.13; Truswell, 2007; Fong, 1997). This endpoint must be reached, otherwise it is not true that the accomplishment took place (Walkova, 2012, p.498).

(230)   i. John ran a mile.
          ii. Jones built a house.
          iii. Marcia drew a circle.

In (230.ii), *Jones built a house* is an accomplishment because it describes the extended activity of *building* that results in the house being built. Only when this endpoint has been reached is the event *Jones built a house* realized.
Similarly, both (i) and (iii) are accomplishments which decompose into the extended phases of *running* and *drawing* which culminate in the result states of *reaching the one mile mark* and *a circle being drawn*, respectively.

15.5   Summary

In conclusion, this section presented Vendler's four classes of States, Activities, Achievements and Accomplishments. I follow Walkova (2012), Smith (1997,p. 32), Dowty (1979), Tenny (1987), Levin and Rappaport-Hovav (1995) Truswell (2007) and others in assuming that states, activities and (most) achievements are simplex in that they involve only a process or an endpoint. Accordingly, these single eventualities that cannot be decomposed into sub-events .

   In contrast, accomplishments and (some) achievements are complex. They express a relationship between two eventualities since they are the combination of both a process and an endpoint (Truswell, 2007, p.1362).

   See Dowty (1979, p.5165) who outlines several diagnostics for determining the Aktionsart class of a given predicate, and Walkova (2012) for some problems with these tests.

16 Telic pairs: Representing the structure of complex events

I follow Zwarts (2006), Pustejovsky (1991), Krifka (1998), Higginbotham (2000), Truswell (2007), Fong (1997, 'phases') in assuming that events consist of sub-events which verbs structure in a particular way. Pustejovsky and Higginbotham represent these sub-events in terms of telic pairs with the structure ⟨e1,e2⟩, where ⟨e2⟩ represents the event that occurs at the end of ⟨e1⟩. This notation is important in Truswell's analysis presented in the next section.

Telic pairs represent the structure of complex events, since only complex events encode a relation among sub-events. Accordingly, they are only appropriate for the Aktionsart classes of accomplishments and a specific kind of achievement as only these two classes are decomposable in this manner. As mentioned in section (15.5), accomplishments and (some) achievements consist of an extended activity phase and a terminal point. The former corresponds to the ⟨e1⟩ and the latter to the ⟨e2⟩ of a telic pair ⟨e1,e2⟩. Consider the examples below, where (231) illustrates a canonical accomplishment and (232) a canonical achievement.

(231)   draw a circle

(232)   arrive

The accomplishment in (231) can be represented as a telic pair ⟨e1,e2⟩ as it encodes a relation between two sub-events: the activity of drawing and the result state of a circle being brought into existence. Roughly, the 'drawing' is represented by ⟨e1⟩ and the 'circle' by ⟨e2⟩, where the relation that holds between the two is one of causation.

The example in (232) illustrates an achievement. Although achievements are typically considered to encode single eventualities, Higgibotham proposes that an achievement such as *arrive* can be analyzed in term of telic pairs (1999, 4). In this case ⟨e2⟩ corresponds to the culmination expressed by the 'arrival', and ⟨e1⟩ corresponds to the period of 'not having arrived' that precedes it.

Higginbotham also uses telic pairs to represent accomplishments derived from an activity verb and goal PP such as (233) (1999, 2).

(233)   I flew my spaceship to the morning star.

I follow Van Valin and LaPolla in calling examples such as (233) an 'Active Accomplishments'. In (233) the activity verb *fly* on its own does not decompose into sub-events, however when it occurs with the PP *to the morning star* the result is an active accomplishment consisting of the extended preparatory phase of 'flying' that is followed by the culmination of 'being at the morning star'. Regarding the telic pair that represents this active accomplishment, $\langle e1 \rangle$ corresponds to the activity *fly*, while $\langle e2 \rangle$ corresponds to the result location at the morning star.

Although Higgibotham proposes a telic pair analysis specifically for goal PPs, I suggest that this can be extended more generally to include other types directional PPs involved in active accomplishments. However, not all directionals occur in active accomplishments since they do not all encode an endpoint. Only those that do encode such an endpoint can be analyzed using telic paris, as only their occurrence with an activity verb will express a complex event. This is discussed further in section (18.2), where I suggest that only the Goal and Ambiguous (goal-reading) classes participate in this type of complex event, which is why only these two classes pattern as arguments.

17 Event structure and wh-extraction

Truswell (2007) considers cases of grammatical wh-extraction out of secondary adjunct clauses which seems to contradict the generalization that adjuncts are islands (Ross, 1967). Consider the example below taken from Huang (1982, p.503).

(234)   *Who did Mary cry [after John hit t]?

Example (234) illustrates the ungrammaticality of wh-extracting the complement out of adjunct secondary clause. However, examples (235) and (236) taken from Truswell (originally from Borgonovo and Neeleman, 2000, p.200) demonstrate that sometimes such extraction is grammatical. Truswell refers to these adjuncts as 'transparent' (2007, p.1356).

(235)   What did John arrive [whistling t]?

(236)   What did John drive Mary crazy [whistling t]?

Syntactic conditions alone do not predict why (234) is ungrammatical but (235) and (236) are not, thus Truswell concludes that semantic factors must

be considered when determining the grammaticality of wh-extraction (Truswell, 2007, p.1357). Specifically, it is possible to get grammatical wh-extraction out of an adjunct clause only when the matrix verb encodes a relation between two events, and if the event denoted by the adjunct can occupy an unfilled position in the matrix's event structure template (Truswell, 2007, p.1359). Only accomplishments and a certain class of achievement decompose into sub-events, therefore only when the matrix verb belongs to one of these two classes do we find transparent adjunct clauses (Truswell, 2007, p.1366). This condition further predicts restrictions on the telicity of the two clauses, such that the matrix clause must be telic, and be modified by a secondary clause that is atelic (Truswell, 2007, p.1369).

This analysis explains the ungrammaticality of (234), repeated below for clarity as (237)

(237)   *Who did Mary cry [after John hit *t*]?

In this case the matrix verb *cry* is an activity. Activities describe single eventualities that do not encode relations among sub-events. Accordingly, there is no unfilled event position identified by *cry* for the adjunct *[John hit t]* to occupy and extraction is ungrammatical.

In contrast, Truswell's analysis predicts the grammaticality of examples (238) and (239), both of which illustrate a transparent secondary predicate modifying an accomplishment.

(238)   What did John drive Mary crazy [whistling *t*]?

(239)   What did John cut himself [carving *t*]?

In (238) the matrix clause describes an accomplishment, such that *John drove Mary crazy* consists of two sub-events: the result of Mary being crazy, and the causing activity that leads up to this result. This can be represented as the telic pair $\langle e1, e2 \rangle$, where $\langle e1 \rangle$ corresponds to the preceding activity and $\langle e2 \rangle$ to the result state. The matrix identifies both these positions, however it only fills the one corresponding to $\langle e2 \rangle$- the result that Mary is crazy. The actual causing activity that leads to this result is unspecified. The adjunct clause *whistling* expresses the cause that drove Mary crazy, therefore it can occupy the empty $\langle e1 \rangle$ position. Accordingly, wh-extraction from this adjunct is grammatical.

The matrix clause in (239) *John cut himself* also describes an accomplishment that decomposes into two sub-events represented as a telic pair $\langle e1, e2 \rangle$:

the result that John has cut himself, and the preceding activity that caused John to cut himself. The matrix itself occupies the ⟨e2⟩ position since it only specifies the culmination that John ends up 'cut', which leaves ⟨e1⟩, the nature of the causing of the cutting, empty. The adjunct *[carving t]* says that the cause of John cutting himself was by carving, therefore it can occupy the unfilled ⟨e1⟩ position of the matrix and wh-extraction is grammatical.

When a transparent adjunct modifies a matrix accomplishment as in (238-239), the relation between ⟨e1⟩ and ⟨e2⟩ is CAUSE. However, transparent secondary clauses can also modify achievements, in which case a different relation holds between the two sub-events. Consider example (235), repeated below as (240)

(240)   What did John arrive [whistling *t*]?

The matrix verb *John arrived* is an achievement.Typically achievements are encoded by the one-place operator BECOME (Dowty, 1979), in which case they are not complex events decomposable into relations between two events like the accomplishments in (238) and (239). However, Truswell assumes that achievements as well as accomplishments are complex events consisting of an extended preparatory phase followed by a punctual change of state (Truswell, 2007, p.1368). In an achievement, the relation between the two sub-events is reformulated as e1 THEN e2, where THEN encodes a relation of immediate temporal precedence (Truswell, 2007, p.1365).

In (240) the matrix achievement *arrive* consists of an extended phase of 'not having arrived' that leads up to an 'arrival' which is represented as the telic pair ⟨e1,e2⟩. The matrix only encodes the culmination of 'John's arrival', therefore it corresponds to the ⟨e2⟩ position and leaves ⟨e1⟩ unoccupied. The empty ⟨e1⟩ can be filled by the adjunct clause *[whistling t]*, since it specifies the nature of the preceding activity before John's arrival (Truswell, 2007, p.1366). Since the adjunct clause can occupy this position that *arrive* provides but does not fill, then wh-extraction is grammatical.

Truswell's reformulation using THEN is necessary as otherwise one wouldn't expect to find transparent secondary clauses with a matrix that describes an achievement. This is because a BECOME analysis doesn't predict achievements to be decomposable into sub-events, therefore there would be no unoccupied event position for secondary predicate to fill (Truswell, 2007, p.1364).

17.1 Summary

In conclusion, Truswell argues that wh-extraction out of an adjunct is possible as long as it can be located within an event position in the event structure template of the matrix predicate. Crucially, extraction is possible only if the main predicate is telic and the adjunct is atelic, where the adjunct is interpreted as the activity leading up to the telos denoted by the main verb. Together the matrix and adjunct clauses express a complex event, an accomplishment or a specific class of achievements.

18 Aspect shift: Active accomplishments

The analysis I propose for place PPs is adapted from that in Truswell, where both account for argument-like behaviour from an adjunct specifically in situations where it can fill in a gap in the event structure of a predicate in order to saturate a complex event.

Central to both our analyses are Vendler's four Aktionsart classes introduced in section (15). For Truswell, the resulting complex event is an accomplishments or a specific kind of achievement. In my analysis, the complex event that results from an aspect shift and is termed an 'active accomplishment'. The four classes and their feature specifications are repeated below.

a) States: Durative, Static, Atelic

b) Activities: Durative, Dynamic, Atelic

c) Achievements: Non-durative, Dynamic, Telic

d) Accomplishments: Durative, Dynamic, Telic

Every verb has a basic aktionsart type, however it can shift classes via the introduction of new syntactic material, in particular certain types of place PPs (Walkova, 2012, p.506; Verkuyl, 1972; Van Valin and LaPolla, 1997, p.99; Fong, 1997, p.63; Levin and Rappaport-Hovav, 1995, p.95). The alternation that is most important to this thesis that between activities and accomplishments.

Activities and Accomplishments differ only in terms of one feature specification: the former is [-telic] while the latter is [+telic]. Moreover, the diagnostics in section (6) identified some directional classes as [+telic] and

others are [-telic]. Indeed the latter are likely more accurately [0 telic] as their inert status suggests they are unspecified for telicity.

Motion verbs are fundamentally activities (Fong, 1997, p.63), however when a motion verb occurs with a PP that is [+telic] the result is a class shift from (b) activity to (d) accomplishment. Consider the examples in (241) and (242) that illustrate that the same verb, *run*, can have more than one aktionsart interpretation (taken from Van Valin and LaPolla, 1997, p.99).

(241)   He walked to the park.

(242)   He walked in the park.

The motion verb *run* has shifted from activity to accomplishment in (241) since it now has a specific goal which defines a terminal point (Van Valin and LaPolla, 1997, p.99; Levin and Rappaport-Hovav, 1995, p.95; Fong, 1997, p.96). This goal is provided by the PP *to the park* which is [+telic]. Accordingly (241) can be termed an 'active accomplishment' (Van Valin and LaPolla, 1997, p.100). In contrast, the PP in (242) is [-telic] since *in the park* does not specify a terminal point, therefore (242) remains an activity.

18.1   Telic pair representation

As mentioned, both Truswell and I account for argument-like behaviour from an element when it can occupy an event position of a telic pair to express a complex event. For Truswell this complex event corresponds to an accomplishment or achievement, while in my analysis I propose that the resulting complex event is an active accomplishment.

Consider the active accomplishments in examples (243) and (244), the former is taken from Higginbotham (1999, p.2) and the latter from Zwarts (2006, p.4).

(243)   I flew my spaceship to the morning star.

(244)   The man walked into the cave.

Both (243) and (244) describe active accomplishments that have been derived from the activities *fly* and *walk* with the PPs *to the morning star* and *into the cave*, respectively. Recall that an active accomplishment is a complex event that licenses the bipartite structure ⟨e1,e2⟩ consisting of two sub-events: ⟨e1⟩ is the activity of motion *fly* or *walk* that leads up to ⟨e2⟩, the culminating

state of being 'at the morning star' or 'in the cave'.

Motion verbs belong to the class of activities, and activities are not complex events that decompose into telic pairs. However, (243) and (244) demonstrate that a motion verb can undergo aspect shift via the addition of a [+telic] PP to become an active accomplishment, in which case it does describe a complex event that can be represented by a telic pair. Accordingly, for activity verbs that can undergo this alternation I suggest that their event templates contain the position of ⟨e2⟩ in their active accomplishments realization.

Since not all directional classes are [+telic] they do not all participate in active accomplishments. Only those classes that are [+telic] can occupy an empty event position as the e2 of a telic pair, thus only these PPs will pattern as arguments. In contrast, PPs that are [-telic] cannot occupy the e2 position as no such position exists. This is because when a [-telic] PP occurs with a motion verb the resulting event remains an activity, and activities are simplex events that cannot be represented with telic pairs. The issue that not all directional classes participate in active accomplishments is addressed in the next section.

18.2 Restrictions on active accomplishments

In every instance of an active accomplishment, an atelic verb becomes telic (Van Valin and LaPolla, 1997, p.179). I follow Fong (1997, p.76), Kracht (2002, p.195) and Bowers (2010) in assuming that a non-directional PP as in (245) does affect the aspectual interpretation of the predicate.

(245)   Syd biked in the woods.

The example above illustrates a PP of the Locative class *in the woods*. The addition of such a PP to the motion verb *bike* does not result in an active accomplishment. Accordingly *in the woods* cannot occupy a position in a telic pair, because the activity in (245) cannot be decomposed into sub-events.

Regarding directional PPs, Fong suggests that all directionals encode a result location, therefore whenever they occur with a motion verb the result is an aspect shift from activity to (active) accomplishment (p.63). This effectively means that all directionals should be classified as [+telic] since, for Fong, they all have the force of creating a telic predicate. She makes this conclusion based on a consideration of the PPs *into* and *out of*. I agree that both of these PPs are indeed telic, however I also examine a wider variety

of directionals, arguing in contrast to Fong that they do not all specify an endpoint and therefore are not all [+telic].

In particular, I propose three directional classes of Goal, Path and Ambiguous PPs, such that only the Goal and Ambiguous (goal-reading) classes are [+telic], therefore only they can participate in active accomplishments. Consider the following examples of PPs that do not have this ability, those from the Path (246) and Ambiguous (path-reading) (247) classes.

(246)   The plane flew towards London.

(247)   a. Maude strolled through the garden.
         b. Lane ran from the house.

The Path (246) and Ambiguous (path-reading) (247) classes do not specify a culmination therefore they are [-telic]. Accordingly, the examples above do not describe active accomplishments, rather they are activities. The activities in (246-247) describe simplex events that cannot be represented in terms of telic pairs, thus there is no event position of ⟨e2⟩ for the PPs *towards London*, *through the garden* and *from the house* to occupy.

In contrast, the Goal and Ambiguous goal-reading PPs in (248) and (249) are [+telic] as they do encode a terminal point.

(248)   Eliza skiied to the cabin.

(249)   a. Harry biked through the park.
         b. The train rolled out of the station.

These examples are active accomplishments since they describe events that decompose into the extended activities of *skiing*, *biking* and *rolling* and the resulting locations specified by the PPs. In each case this can be represented a a telic pair, where the PP occupies the ⟨e2⟩ to express a complex event.

18.3   Connections to argumenthood

In my analysis of place PPs I suggest that a telic PP can occupy the empty ⟨e2⟩ of a telic pair thereby saturating the event template of a motion verb to yield a complex event. In the resulting active accomplishment, the PP's essential incorporation is reflected in its status as an argument.

Fong and Folli and Ramchand (2005, p.4) also note that adding a telos can have an effect on a verb's argument structure. For Fong, an aspect shift

from activity to (active) accomplishment makes available a 'result location' position for directional PPs to occupy (1997, p.97). I propose that not simply any directional PP can occupy this type of 'result' position, due the fact that not all directionals can alter telicity. Only those the telic Goal and Ambiguous (goal-reading) classes can fill this slot, thus only those specific classes pattern as arguments.

I will now illustrate how this analysis works for the four classes of place PPs proposed in section (3). Beginning with the Locative class, followed by those of Goal and Ambiguous (goal-reading) and Path and Ambiguous (path-reading), I demonstrate that the argument status of a PP depends on its ability to occupy an event position to express a complex event: an active accomplishment. This accounts for the results in table (18.3.0).

(18.3.0)

| | Locative | Goal | Path | Ambiguous | |
				goal-reading	path-reading
Telicity:	atelic	telic	atelic	telic	atelic
Argumenthood:	ADJ	ARG	ADJ	ARG	ADJ

18.3.1   Non-directionals: The Locative class

I connect the argumenthood and telicity results of place PPs beginning with the non directional class of Locatives. Section (6) established that PPs of this class are atelic (inert), and the diagnostics in section (11) indicated that they are adjuncts. Consider the Locative PPs in (250-251).

(250)   Julian drove [in London].

(251)   John walked [in the field].

These sentences do not encode an endpoint or express a change of location. In (250) the bracketed PP asserts that the event of Julian's driving took place *in London*, while in (251) it maintains that John's walking is located *in the field*. Crucially, what these PPs do *not* do is delimit the *driving* or *walking* by contributing a terminal point to the motion. Accordingly, when PPs of this class are combined with the activity predicates in (250) and (251) the resulting event is still an activity.

Since activities are simplex events that cannot be decomposed into subevents, it is not appropriate to represent (250) or (251) as a telic pair $\langle e1,e2 \rangle$.

Following the description of telic pairs in section (18.1), this notation is only available for complex events such as active accomplishments. Locative PPs do not participate in active accomplishments, illustrated by the activity predicates in (250) and (251). Therefore, a Locative PP cannot occupy the ⟨e2⟩ position in the verb's event template since no such position exists. The PP's status as an adjunct reflects the fact it has not been fundamentally linked with the verb in this manner.

18.3.2 Directionals: The Goal and Ambiguous (goal-reading) classes

I turn now to the directional classes of Goal and Ambiguous (goal-reading) which are identified as telic and argument-like in sections (6) and (11). A Goal PP is shown in (252), while (253) and (254) illustrate PPs of the Ambiguous class with a goal-interpretation.

(252)   The plane flew [to Paris].

(253)   Arthur skied [out of the woods].

(254)   Buster ran [through the park].

The bracketed PPs in (252-254) occur with the motion verbs *flew*, *skied* and *ran*, respectively. Although these are basic activity verbs, in the examples above they occur as active accomplishments. This is illustrated by (252) where the PP *to Paris* encodes a terminal point to the motion of flying, such that a change is expressed where the plane goes from 'not being in Paris' to 'being Paris'. Accordingly, (252) described complex event decomposable into an extended activity (flying) leading up to a culmination (to Paris), a structure that is characteristic of active accomplishments.

The active accomplishment in (253) also describes a complex event derived from a simple activity predicate *ski*. The Ambiguous (goal-reading) PP *out of the woods* encodes a terminal point to the extended activity of *skiing*, such that a change is described where Arthur goes from being 'in the woods' to 'out of the woods'.

The same is true for (254), where the PP *through the park* denotes Buster's traversal of entering on one side of the park and exiting on the other. Therefore the activity of *run* with an Ambiguous (goal-reading) PP corresponds to the complex structure of an extended preparatory phase *running* and a culmination- Buster being fully 'through' the park.

Since (252-254) are active accomplishments it is appropriate to represent their complex structure using telic pairs, ⟨e1,e2⟩. In each case, the PP occupies the ⟨e2⟩ position, providing a telos to the temporally extended activity of ⟨e1⟩.

The PPs in (252) *to Paris*, (253) *out of the woods* and (254) *through the park* occur with the activity verbs *fly*, *ski* and *run*, respectively. These verbs can occur in an active accomplishment structure represented by telic pairs, ⟨e1,e2⟩. *Fly*, *ski* and *run* license both these positions, but only occupy in the first, ⟨e1⟩. Thus their event structure templates have an unoccupied position corresponding to a culmination, represented as ⟨e2⟩ . The PPs in (252-254) denote such a culmination therefore they can be identified in the aforementioned unoccupied event position of the verb. The result is a complex event, ⟨e1,e2⟩, where *fly* describes the activity ⟨e1⟩ leading up to the culmination ⟨e1,e2⟩ encoded by the PP.

I now repeat the previous examples used to illustrate PPs of the Goal (252) and Ambiguous goal-reading (253-254) classes.

(252) The plane flew [to Paris].

(253) Arthur skied [out of the woods].

(254) Buster ran [through the park].

The PPs of these two classes pattern as argument according to several of the diagnostics in section (11), which I connect to fact these are also the two classes identified as telic in section (6). Since only the Goal and Ambiguous (goal-reading) classes are telic, this means that only PPs of these classes can occupy an empty e2 position to saturate the event structure of an activity predicate to yield a complex event: an active accomplishment. Since the Goal and Ambiguous (goal-reading) classes have been linked with the main verb via this event-structural identification, this is reflected in their status as arguments.

18.3.3 Directionals: The Path and Ambiguous (path-reading) classes

According to the telicity and argumenthood diagnostics in sections (6) and (11), Path and Ambiguous (path-reading) PPs were identified as atelic (inert) adjuncts. Consider the examples of Path (255) and Ambiguous path-reading (256-257) PPs presented below.

(255)   The train travelled towards Miami.

(256)   Kim ran from the woods.

(257)   Lucy strolled though the garden.

Given that the PPs *towards Miami*, *from the woods* and *through the garden* are atelic, the motion described in sentence (255-257) does not encode a change that culminates in a result location. The PP *towards Miami* in (255) does not specify the final location of *the train*, i.e. (255) does not say that the train goes from 'not being in Miami' to 'being in Miami'. Instead, it express that the movement of *travelling* is directed towards Miami without necessarily reaching it. Accordingly, (255) is not a complex event that decomposes into an activity and culmination representable by a telic pair.

Similarly, in (256) the Ambiguous (path-reading) PP *from the woods* indicates that Kim began at some point near the woods and through the motion of *running* becomes further distanced from it. It does not require that Kim is initially located 'in the woods' and ends up in the result location of 'outside of the woods', which was the case in (256) for the Ambiguous (goal-reading) PP *out of*.

Finally, in (257) the Ambiguous (path-reading) PP *through the garden* encodes that the motion of *strolling* extends along a route that is fully contained 'inside the garden', not the strolling culminates in a state of Lucy being located 'through the garden'.

The above examples demonstrate that Path and Ambiguous (path-reading) PPs do not delimit the *travelling*, *running* or *strolling* by contributing a terminal point to the motion. Therefore, when these PPs are combined with the activity verbs in (255-257) the resulting event remains an activity. Since activities are simplex events that cannot be decomposed into sub-events, it is not appropriate to represent (255-257) using telic pairs $\langle e1,e2 \rangle$. Accordingly, a Path or Ambiguous (path-reading) PP cannot be identified in the main verb's event template as the $\langle e2 \rangle$ of a telic pair, given that no such a position exists. The inability of these PPs to occupy this event position is reflected in their adjunct status, as they have not been fundamentally incorporated with a motion verb in the mutual expression of a complex event.

18.4 Summary

I argue that the essential integration of a telic PP into the event structure of a motion verb is reflected in its status as an argument, as it has been fundamentally linked in such a way that than an atelic PP has not. This analysis is based on Truswell, where argument-like behaviour from an adjunct was accounted for under the condition that it could be event-structurally licensed by the main verb to describe a complex event. Due to their telic nature only the Goal and Ambiguous (goal-reading) classes pattern as arguments, because only they can fill the empty $\langle e2 \rangle$ position of a motion verb, where verb and PP are unified in the expression of a complex event: an active accomplishment. In contrast, the nondirectional class of Locatives and the directional classes of Path and Ambiguous (path-reading) are atelic (inert), therefore they cannot occupy such an event position. This contributes to their status as adjuncts.

19 Discussion

19.1 Differences from Truswell

There are three important differences between Truswell's (2007) analysis and the one that I adopt in this thesis. Our analyses are parallel semantically, such that in order for the element (secondary clause or place PP) to be argument-like it must be event-structurally-licensed by the main verb as part of a complex event. However, they differ according to the syntactic grounds on which this same semantic information is realized.[2] For Truswell, the complex event must be constructed out of a telic main verb and an atelic adjunct, however in this thesis I suggest an opposite construction in which the verb is atelic and it is the 'adjunct' PP that contributes the telos. Consider how the example from Truswell in (258) contrasts with that in (259) of place PPs.

(258)   What did John cut himself [carving *t*]?

(259)   Jill drove to the store.

Although in both (258) and (259) the resulting event structure is identical, such that both encode a saturated telic pair $\langle e1, e2 \rangle$, syntactically it is a dif-

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[2]Thank you to Rob Truswell for pointing this out to me.

ferent element that fills each position. In Truswell's example in (258) the matrix verb *cut* occupies the $\langle e2 \rangle$ position to describe the culmination where the result is that John has cut himself, while the adjunct clause fills the $\langle e1 \rangle$ position that corresponds to the causing activity leading up to this result.

In contrast, in my analysis of place PPs the main verb corresponds to $\langle e1 \rangle$, not $\langle e2 \rangle$. For example, in (259) the verb *drove* describes the extended activity ($\langle e1 \rangle$) that leads up to the terminal point encoded by the PP *to the store*. The PP specifies the result, therefore it is the element that occupies the $\langle e2 \rangle$ position.

A second difference is that Truswell's analysis concentrates on relations between matrix and secondary clauses, whereas my analysis of place PPs is somewhat simpler in that I am only concerned with the relationship among elements within a single clause.

Finally, a third difference between our analyses is that in this thesis I propose that the placing of a PP into an empty event position is what licenses it as an (intermediate) argument. In contrast, Truswell uses the same observation simply to explain argument-like behaviour, he does not argue that transparent adjunct clauses which allow for wh-extraction are now 'arguments'.

Regardless of these differences, both analyses share a common core where unexpected behaviour on certain argument diagnostics is encountered when the element can be identified within the event structure of the main predicate. This points to a relationship between event structure and argumenthood, such that if the addition of an adjunct yields a 'saturated' event containing an extended preparatory period and a punctual change of state, this could account for its argument-like behaviour as it has been located within an event position in the lexicosemantic representation of the verb. Findings from this thesis and from Truswell seem to suggest that this is true regardless of whether it fills the gap as the activity leading up to the event's culmination (Truswell) or as the culmination of a previously unbounded activity (Goal and Ambiguous goal-reading PPs).

19.2 Alternative explanations

Macdonald (2010) argues for a different analysis of place PPs, where she maintains a purely structural account for the telicity and argumenthood consistencies. She notes that while a goal PP can make an activity telic, a static location PP cannot affect the aspectual interpretation of the predicate. She

also notes that only the latter is grammatical in a 'do so' construction, while the former is not.

Macdonald ties these findings together by suggesting that the ungrammaticality of goal PPs in the 'do so' test indicates that they merge low in the VP, consequently below AspP, and thus can influence the telicity of a predicate. In contrast, the fact that static location PPs are grammatical in a 'do so' construction suggests that they likely join at or above vP, and as a consequence above AspP, therefore they cannot alter aspectual interpretation.

The analysis argued for in this thesis is different in that it appeals to semantic factors to account for argumenthood performance. Additionally, Macdonald specifically considers the 'do so' test with goal and location PPs only, whereas I investigate several other types of place PPs and other diagnostics in addition to 'do so' .

19.3   Summary

In sum, some directional PPs combine with simple events to describe a single complex event, therefore they exhibit more argument-like behaviour because they have been more deeply incorporated into the event structure of the predicate. Telic directional PPs turn an activity predicate into an active accomplishment by providing the terminal point required to shift from a simple to a complex event. This is represented event structurally using a telic pair $\langle e1,e2 \rangle$, where the telic PP occupies the $\langle e2 \rangle$ position that corresponds to the result location of the motion described by $\langle e1 \rangle$. Only the telic classes of Goal and Ambiguous (goal-reading) PPs can occupy this position since only they encode the required culmination. This is reflected in their argument status, since only these PPs can be event-structurally licensed by the main verb in a joint expression of a complex event: an active accomplishment. In contrast, non-directional Locative PPs and directional Path and Ambiguous (path-reading) PPs are adjuncts. They do not encode an endpoint, therefore their addition to a simple predicate does not yield a complex event. Accordingly, there is no $\langle e2 \rangle$ position for them to occupy that would lead them to be fundamentally linked with the verb.

20   Conclusion

In conclusion, this thesis discusses place PPs in light of a number of argumenthood tests, arguing that directional PPs pattern more as arguments than static location adjuncts. It has been suggested that the argumenthood of these PPs is related to their ability to contribute a telos to an atelic event, however the results from a number of traditional telicity diagnostics demonstrate that not all directionals have this telos-adding ability. Accordingly, I propose a telicity-based classification of place PPs into the four classes of Locative, Goal, Path and Ambiguous PPs, where only the Goal and Ambiguous (goal-reading) classes can alter the aspectual profile of a predicate. I argue that this grouping is justified based on the the fact that the different classes pattern differently in terms of their argumenthood, such that the Locative, Path and Ambiguous (path-reading) classes are adjuncts, in contrast to the Goal and Ambiguous (goal-reading) classes which are arguments.

Adopting an event-structural account based on Vendler's (1957) Aktionsart classes, I show that the argument status of such PPs depends on the ability of the PP to occupy an event position by contributing a telos, producing a complex event (cf. Truswell 2007). A telic directional PP provides an endpoint to an activity verb that was previously lacking a culmination, thereby shifting an activity to an active accomplishment. The resulting active accomplishment is a complex event that decomposes into an extended preparatory phase and an endpoint. This is represented event structurally as a telic pair, where the motion verb and PP correspond to the ⟨e1⟩ and ⟨e2⟩ positions, respectively. This essential integration of a telic PP into the event structure is reflected in its status as an argument, as it has been fundamentally linked to the verb in such a way that than an atelic PP has not. Since the latter PP is incapable of occupying a position in the verb's event template, it is an adjunct. Therefore due to their telic nature, the directional classes of Goal and Ambiguous (goal-reading) are arguments.

I suggest that perhaps this type of incorporation into a predicate's core event structure could be what distinguishes adjuncts from arguments more generally. Indeed, the argumenthood diagnostics that identify telic PPs as arguments might be testing for some type of event-structural property rather than testing directly for argumenthood. Often the two happen to converge, however this convergence is not required. In cases where they do not align, it seems likely that this happens only in one direction, such that there can be elements which participate in event structure without being arguments,

however the opposite, that there are arguments which cannot participate in the event described by the predicate, seems on the surface to be more improbable.

In terms of the implications for this thesis, the patterning of directional PPs could be a case of the former, where the finding that the telic classes are arguments is simply due to the fact that the argumenthood diagnostics are picking up on the event-structural participation of these PPs. In this case, the 'argument' results obtained for the Goal and Ambiguous (goal-reading) classes do not necessarily reflect the fact that theses PPs are truly arguments, instead it stems from the fact that they are involved in the core event structure of the predicate, a property to which these tests appear to be sensitive. In particular the two tests that I suggest are most likely of this are the pseudo-cleft and VP anaphora tests, as they reveal the most striking differences in argumenthood according to a PP's telicity.

A full analysis of this is beyond the scope of this thesis, however I argue that regardless of whether or not these diagnostics are testing uniquely for argumenthood, ultimately the findings presented here support the claim there is a tight link between a telic PP (Goal or Ambiguous goal-reading classes) and a motion verb that is absent when the PP is atelic, as is the case with PPs of the Locative, Path or Ambiguous path-reading classes.