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INSTRUMENTALITY OF FICTIVE MOTION
IN COEXTENSION PATHS

Coextension paths are a specific category of fictive motion expressions used to depict spatial configurations of stationary objects in terms of motion over the object's extent. It has been established that the choice of verbs in fictive motion is not insignificant or random, but is motivated by mental simulations grounded in embodied cognition. Employing a corpus-based cognitive approach to language study, this paper demonstrates on the basis of data found in the British National Corpus that verbs used to express coextension paths are subject to an *instrument condition*, which essentially forbids structuring fictive motion with semantic patterns conflating instrumentality. The condition explains why roads typically *run* but not *drive* to destinations. In more general terms, the results indicate that our cognitive ability to mentally simulate the motion implied by the verb plays a key conceptual role in structuring coextension path expressions.

FICTIVE MOTION

Fictive motion (Talmy 1996, 2000; Langacker 2005, 2008a) refers to figurative representations of motion attributed to immobile material objects, states, or abstract concepts, in which the meaning of motion verbs is semantically extended to express relations that do not involve motion *per se* nor change of state. This common linguistic phenomenon, which has been discussed under various labels, e.g. *virtual motion* (Talmy 1983), *subjective motion* (Langacker 1986; Matsumoto 1996), *non-actual motion* (Blomberg/ Zlatev 2014), embraces a range of rather distinct categories (Talmy 2000: Ch. 2), and is related to general linguistic *fictivity* (Langacker 2008a: Ch. 14.2).

Perhaps the most conspicuous category of fictive motion can be illustrated with the following examples (1) and (2) found in the British National Corpus (henceforth, the BNC):

(1) The road goes through the woodlands of the Beinn Eighe Nature Reserve.
(2) This wire fence goes all the way down to the wall at the other end.

Talmy (2000) labels this kind of figurative sentences as *coextension paths*: "A co-extension path is a depiction of the form, orientation, or location of a spatially extended object in terms of a path over the object's extent" (Talmy 2000: 138). Put differently, the described object is stationary and there is no entity traversing the depicted path, however, it is represented as moving along or over its spatial configuration. Talmy notes that explanation of fictive motion in terms of metonymy would be inadequate, since numerous entities described with coextension paths cannot be associated with motion, e.g. *fences* do not move.

According to Talmy (1996, 2000), fictive motion can be explained in terms of a cognitive bias towards *dynamism* in language and cognition: we tend to focus on the dynamic aspects of reality, while the static and unchangeable is less conspicuous. He attributes the discrepancy between the static and the dynamic interpretations of fictive motion expressions to a distinction between *fictive* and *factive* modes of cognition (Talmy 2000: 100–104; see also Waliński 2014). The former is more perceptually salient but less veridical, while the latter is more veridical but less perceptually salient. Since fictive motion is *non-veridical*, the perception and conception of fictive mode requires perceptual veridicality to be overridden, which occurs naturally due to a general preference for dynamism in linguistic, perceptual, and conceptual semantics.

According to Langacker (2008a), both expressions of actual and fictive motion involve mental scanning along a path. In actual motion we conceptualize movement by performing *sequential scanning* of a mover's progress along the path it traverses physically. Langacker (2008a: 529) argues that the conceptualization of fictive motion essentially involves the same mental operations. An analog of the mover is a spatially extended stationary entity, e.g. a road, fence, etc. Instead of tracking the object's movement, the conceptualizer scans mentally along the path, by which he/ she invokes the constitutive locations to build up to a full conception of the object's spatial configuration. Langacker (2005, 2008a: 83, 111–112) proposes to term this more holistic mode of building up gestalts manipulabe as simultaneously available wholes as *summary scanning*.[2] He adds that mental scanning proceeds in a particular direction: the hill can either *rise* from the bank of a river or *fall* to it. However, the direction does not arise from a difference in the conceptual content, but rather from the order in which the spatial configuration of an object is build up by mental summation. Langacker (2005) emphasizes that although fictive motion is imagined, its cognition is *grounded* in experience (see also Matlock (2004a) for a discussion of conceptual motivation of fictive motion).

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[2] Broccias and Hollmann (2007) attacked sequential and summary scanning as a convincing cognitive explanation for structuring complex scenes by demonstrating that complementation patterns of causatives, e.g. get, make, do not seem to reconcile with the two scanning modes. In his reply, Langacker (2008c) admitted that more experimental evidence for the two scanning modes would be desired, but found their argumentation to be invalid.

Moreover, Langacker (2005, 2008a, 2008b) argues that fictive motion reflects subjective imaginative mental constructions used to discuss actual existence of objects in real-life situations. Depending on a particular situational context, it can either be *perfective*, as in (3a), or *imperfective*, as in (3b):

(3) a. The narrow path is climbing steeply up to the fell.
     b. The narrow path climbs steeply up to the fell.

According to Langacker (2005: 176, 2008b: 69–70), the perfective use in (3a) can be attributed to a *global view*, in which the entire configuration of the path is apprehended as a single gestalt, while the imperfective use in (3b) can be attributed to a *local view*, which indicates that the path changes position vis-à-vis the terrain as the conceptualizer experiences a specific stretch of the path. In a largely parallel manner, Matsumoto (1996: 204) distinguishes two types of fictive motion expressions: *Type* I includes sentences in which the motion is arbitrary in the sense that it does not occur at any specific time; *Type* II is associated with an actual experience of motion of the person uttering the sentence. However, Matsumoto (1996: 205) adds that "perspective mode and scope of attention are not necessarily correlated with the distinction between the motion of a particular entity at a particular time and the motion of an arbitrary entity that can be evoked at any time".

CONDITIONS OF FICTIVE MOTION

Matsumoto (1996) pointed out some intriguing characteristics of coextension path expressions from the perspective of a cross-linguistic comparison between English and Japanese. He made a distinction between *travelable paths*, i.e. paths that can be traveled by people, e.g. roads, paths, etc., as in (1); and *non-travelable paths*, i.e. paths embracing objects that do not normally act as media of human motion, e.g. walls, wires, fences, etc., as in (2). Matsumoto (1996: 213–217) reports that while English expresses both these types, in Japanese some non-travelable entities, such as *walls* and *fences*, cannot be described with fictive motion. Some other non-travelable entities, such as *borders* and *wires*, take a restricted set of motion verbs. This is motivated by the fact that certain Japanese motion verbs cannot be used to describe movement of a path that does not involve a sensory-motor basis. Rojo and Valenzuela (2009: Exp. 1) do not observe this distinction to occur as rigidly in Spanish, but detect that it takes longer for Spanish speakers to process fictive motion sentences with non-travelable entities than those with travelable ones.

Moreover, Matsumoto introduced two basic conditions that apply to fictive motion expressions. The *path condition* states that in fictive motion "some prop-

erty of the path of motion must be expressed" (Matsumoto 1996: 194). As illustrated with sentences in (4), coextension paths must always include some path-related information encoded either directly in the verb, as in (4a), or conveyed by an adverbial or adpositional phrase, as in (4b).

(4) a. The road began to *ascend* / *descend*.
     b. The road *runs* along the coast.
     c. ? The road began to *run*. / ? The road *runs*.

Comparing sentences in (4b) and (4c) shows that because the verb *run* does not express any specific property of the path, it requires an additional complementation to be used in fictive motion. However, if the verb includes some information about the path, like verbs *ascend* and *descend* portraying a slope in (4a), no complement is required, which is motivated by the very nature of summary scanning.

Additionally, the *manner condition* states that if a manner-conflating verb is used in a fictive motion expression, the information on manner conveyed by the verb must be related to some specific property of the path. As put by Matsumoto (1996: 194), "no property of the manner of motion can be expressed unless it is used to represent some correlated property of the path". This is illustrated in (5):

(5) a. The path *zigzagged* up the hill.
     b. The road *plunged* downhill.
     c. ? The path *slid* / *rolled* up the hill.

In (5a) the information about the manner of motion enables us to infer the overall shape of the path. In (5b) the information about the manner of motion enables us to mentally map the speed associated with the verb *plunge* onto the slope of the path: we infer that the road was very steep. However, the manner of motion encoded in verbs *slide* and *roll* in (5c) is difficult to relate to any specific property of the path, hence they are less natural in such contexts. Rojo and Valenzuela (2009: Exp. 2) do not observe the manner condition to function as rigidly in Spanish, but detect that it takes longer for Spanish speakers to process non-path-related manner verbs than path-related manner verbs in fictive motion sentences.

Given that fictive motion is experientially grounded (Langacker 2005; see also Gibbs/ Matlock 2008), it seems plausible to propose another condition for coextension paths, one related to their instrumentality. Since objects described with fictive motion are stationary and there is no sentient agent capable of making use of a motion instrument, we can reasonably presume that coextension paths must avoid referencing to the semantics of instrumentality. This is exemplified by contrasting sentences for actual motion (6a) and fictive motion for travelable (6b) and non-travelable (6c) paths.

(6) a. *Ann* goes to London <u>by car</u>. / Tom goes to London <u>by train</u>.
     b. ? This *road* goes to London <u>by car</u>. / ? This *track* goes to London <u>by train</u>.
     c. ? This *wall* / *fence* goes all the way down to the river <u>by [car / train, etc.]</u>

The condition appears to be more evident for coextension path sentences depicting *non-travelable paths*, for which it is difficult to come up with any sensible instrument of motion.

However, it has long been recognized that instrument and manner are not easily disentangled because they are closely tied to each other in the action described by the predicate. Essentially, instrument and manner share common conceptual ground and participate in the action described by the verb simultaneously in a coordinate manner (Wierzbicka 1996; Mari 2006). Goddard and Wierzbicka (2009) demonstrate that semantics of physical activity verbs in English, Polish, and Japanese ties the kind of instruments used in the action with the manner in which the instrument is used.

A close relatedness of instrument and manner occurs for motion verbs, too. For instance, the verb *drive* expresses a certain manner of motion, which can be additionally specified by instrumental modifiers, e.g. *drive by car*. However, in sentences such as "Every morning Ann drives to work through the suburbs of London", unless additionally specified, the meaning of *drive* entails instrumentality, since it is generally understood as *traveling by car*. This inextricable relation can be also observed for motion verbs derived from nouns denoting vehicle names, e.g. *bicycle*. They essentially denote the instrument of motion, but at the same time they specify a certain manner in which the motion takes place (*self-propelled overland locomotion* in this case). Hence, it is practically impossible to entirely separate the instrument from the manner of motion, since they form a sort of semantic cline (see also Levin/ Rappaport Hovav 1991; Rappaport Hovav/ Levin 1998).

On these grounds, the purpose of this study is to probe instrumentality of coextension paths from the perspective of *corpus-based cognitive linguistics*, which relies on explanatory notions adopted by cognitive linguistics, but approaches them in such a way that their relevance to a given linguistic phenomenon can be empirically validated in large corpora, frequently with an aid of advanced statistical techniques (Heylen/ Tummers/ Geeraerts 2008; see Gries/ Stefanowitsch 2006; Lewandowska-Tomaszczyk/ Dziwirek 2009 for edited collections of studies). From a broader outlook, an answer to the question if fictive motion expressions can involve instrumentality may be regarded as an indicator whether mental simulation plays a key conceptual role in structuring coextension paths.

FICTIVE MOTION AS MENTAL SIMULATION

Langacker's proposal of summary scanning is largely congruent with theories of *mental simulation* in the process of language comprehension, which have been gaining increased attention over the past 15 years (see Bergen 2012 for

a review). Mental simulation fits into a broader framework of *grounded* cognition (Pecher/ Zwaan 2005; Barsalou 2008), which proposes that bodily states, situated action, and mental simulations underlie cognitive processing. Barsalou (2008: 618) defines mental simulation as "the re-enactment of perceptual, motor and introspective states acquired during experience with the world, body, and mind". He adds that we do not have *direct access*, i.e. we are not consciously aware of the simulation processes that are going on in our minds.

The question if comprehension of fictive motion involves mental simulation was addressed in a series of cognitive behavioral studies conducted by Matlock. She started with online experiments examining how long it takes for participants to make a decision about fictive motion sentences (Matlock 2004b). Participants read stories about movement in physical space depicting, for example, fast versus slow movement, short versus long distance, and easy versus difficult terrain. Then, their task was to make a timed decision about fictive motion sentences related to the story. Generally, faster decision times were observed for stories in which travel involved fast rates, short distances, and easy terrains, which suggests that in understanding fictive motion sentences people mentally simulate various aspects of motion, including speed, distance, and the environment in which the movement occurs.

Mental simulation of fictive motion was also investigated with offline experiments in which participants drew pictures representing their conceptions of fictive motion scenes (Matlock 2006). In one experiment, a group of participants was asked to think about and draw non-artistic, free-style representations of sentences depicting scenes described with fictive motion, e.g. "The footpath goes along the creek", while another group of participants thought about and drew representations of the same scenes depicted by sentences without fictive motion, e.g. "The footpath is next to the creek". Overall, testing showed that participants drew more elongated or extended shapes for fictive motion sentences. In another experiment (Matlock, 2006, Study 3), participants drew longer lines for fictive motion sentences with verbs representing fast manners of movement, e.g. "The road *jets* through the city", than with slow manners of movement, e.g. "The road *creeps* through the city". A corresponding trend was observed for actual motion sentences with the same verbs, which indicates that the processing of fictive motion occurs in a manner similar to the processing of actual motion (see also Matlock 2004a).

Further evidence indicating that the cognitive processing of fictive motion includes mentally simulated motion was obtained with eye-movement tracking experiments. In one study (Matlock/ Richardson 2004), participants viewed simple two-dimensional drawings of static spatial scenes while they heard either fictive or non-fictive motion sentences of equivalent length and meaning, e.g. "The palm trees run along the highway vs. "The palm trees are next to the highway". Gaze tracking demonstrated that participants spent more time inspecting figures

described with fictive motion sentences. In another study (Richardson/ Matlock 2007) participants were presented with pictures and descriptions of easy or difficult terrains, and then fictive motion sentences or non-fictive motion sentences. Inspection times and eye movements scanning along the path increased during fictive motion descriptions when the terrain was first described as difficult as compared to easy. Such effects were not observed for descriptions with non-fictive motion sentences.

Furthermore, Matlock, Ramscar and Boroditsky (2005) conducted experiments demonstrating that people tend to take *ego-moving* or *time-moving* temporal perspective depending on the content of fictive motion sentences. It suggests that abstract conceptions of time and comprehension of fictive motion share a common experiential basis derived from the experience of actual motion in space. Taken together, the above-reviewed evidence from decision time latencies, drawing studies, eye-tracking, and the influence on temporal reasoning suggests that people naturally and tacitly engage in embodied simulation of motion when processing fictive motion sentences[3] (see Gibbs/ Matlock 2008 for a review).

However, Blomberg and Zlatev (2014) argue from a phenomenological perspective that neither account for fictive motion in terms of mental simulation proposed by Matlock, nor cognitive linguistic models proposed by Talmy and Langacker adequately explain the experiential and linguistic complexity of the phenomenon. They point out that the view of fictive motion as grounded in mental simulation does not make clear what is actually simulated because different conceptualizations of fictive motion may be motivated by at least three different features of human consciousness: *enactive perception*, *visual scanning*, and *imagination*. Moreover, they argue that fictive motion structuring may be related to *sedimentation of meaning*, understood as the linguistic consolidation of cognitive structures originally given in embodied sense-experience through certain persisting linguistic conceptualizations superimposed by language acquisition and socio-cultural transmission (Woelert 2011). Because explanation of fictive motion in terms of mental simulation obscures these aspects, Blomberg and Zlatev (2014) postulate that the full account for fictive motion should be based on the broader phenomenological-linguistic framework of *consciousness-language interactionism*, which takes into account reciprocal relations between pre-linguistic experience and linguistic meaning.

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[3] Additional support for the hypothesis of mental simulations involved in comprehending fictive motion sentences comes from brain studies using fMRI (Wallentin et al. 2005; Saygin et al. 2010) and TMS (Cacciari et al. 2011) techniques.

INSTRUMENTALITYOF FICTIVE MOTION

This study approaches the problem of instrumentality in fictive motion expressions from the perspective of *cognitive corpus-based linguistics*,[4] which combines the descriptive framework of cognitive linguistics (Croft/ Cruse 2004; Evans 2012) with the methodological workbench of corpus linguistics (Biber/ Conrad/ Reppen 1998; McEnery/ Hardie 2012). Essentially, it focuses on investigating how speakers actually use language in natural contexts, rather than studying what is theoretically possible in language.

Recent years have seen a number of scholars postulating that cognitive linguistics should put a stronger emphasis on applications of empirical data derived form corpora (see papers in Glynn/ Fischer 2010). Yet, there are cognitive linguists who see introspection as the central method in this domain of research. For example, Talmy (2000: 4–6, 2007) argues that cognitive semantics is a branch of phenomenology, and states explicitly that corpus research "cannot directly yield many abstract linguistic patterns" (Talmy 2007: xix). Glynn (2010) addresses this reservation by pointing out that, despite limitations, the patterns of natural language usage observed through language corpora provide a rich source of knowledge for working out how people use language. Fischer (2010) adds that cognitive semantics involves four different aspects of meaning: conceptualization, usage, world knowledge, and reference. They interact with one another in immensely complex ways and lend themselves to examination with quantitative methodologies to different degrees. While conceptualization is relatively inaccessible to direct scientific probing, what can be investigated with collections of natural language samples included in corpora is *usage*.

Semanticians working with corpora try to reconcile phenomenological and empirical approaches to cognitive language study by emphasizing that empirical research is not meant to replace introspection. It is rather that introspection serves to propose hypotheses, which can then be analyzed in empirical studies designed to attest such proposals (see Geeraerts 2010; Gries/ Divjak 2010). This study demonstrates an application of this approach in practice by employing a large corpus of natural language to test a theory about structuring fictive motion. It is based on the BNC, which is a 100 million word collection of samples of written and spoken contemporary British English from a wide range of texts, not limited to any particular subject field, genre, or register (Aston/ Burnard 1998; see www.natcorp.ox.ac.uk for more information).

Fictive motion expressions are problematic to pick out from corpora because at the syntactic level they are practically indistinguishable from actual motion expressions (see Waliński 2013a). For that reason, searching for instrumentality

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[4] This paper uses the term corpus-based in opposition to corpus-illustrated, following the distinction made by Tummers, Heylen and Geeraerts (2005; see also McEnery/ Hardie 2012: 150–151).

in coextension paths was executed by looking for combinations of landmarks that can potentially feature in coextension paths with an ample selection of instrumental motion verbs.

Selecting suitable landmarks followed observations that coextension paths typically describe extended or elongated stationary spatial entities (Langacker 2005; Matlock 2004a). Starting with a few prototypical ones, such as "road", "wire", "fence", "coast", etc., the online version of *WordNet* 3.1 (Fellbaum 2006; see wordnet.princeton.edu for more information) was consulted to review hyponyms, meronyms, and sister terms in order to identify other spatially extended objects potentially fit for description with coextension paths. For the purpose of the present study the following four categories of landmarks were selected:

(1) *Travelable paths*: "alley, artery, avenue, boulevard, bridge, flyover, footpath, highway, lane, motorway, overpass, passage, passageway, path, pathway, pavement, railway, road, roadway, route, street, subway, thoroughfare, track, trail, tunnel, underpass, viaduct, walkway, way". These spatial entities are distinguished by Matsumoto (1996) as paths intended for traveling by people.

(2) *Travelable environmental entities*: "beach, canyon, cliff, coast, coastline, crag, desert, escarpment, field, forest, glacier, glen, grassland, gulf, gully, hill, island, land, littoral, meadow, mountain, plateau, ravine, ridge, scarp, seashore, shore, valley, wasteland, wilderness". These typically extended or elongated landmarks can also be traveled, however, they were not built intentionally for this purpose.

(3) *Non-travelable connectors*: "cable, conduit, conveyor, duct, hose, line, pipe, pipeline, tube, wire". These elongated objects, which are typically used for transmitting energy or transporting substances over long distance, are classified by Matsumoto (1996) as *non-travelable paths* because they are normally not traveled by people.

(4) *Non-travelable barriers*: "barrage, barricade, barrier, dam, fence, hedge, hedgerow, palisade, rampart, wall". These spatially extended entities are not normally used for traveling, but they often stretch over a relatively substantial distance.

Altogether, 80 landmarks were selected for analysis, including 60 items for travelable paths and 20 items for non-travelable paths. This selection seems to be reasonably adequate for the purpose of investigating instrumentality in coextension paths. The range of objects that can be described with coextension path expressions is practically unlimited, thus enumerating all landmarks that can potentially feature in this context is impossible.

A selection of English motion verbs conflating instrument was taken from Levin (1993: Ch. 51.4), who labels them as *verbs of motion using a vehicle*. They express instrumentality by describing movement using a vehicle (see also Clark/ Clark 1979). Levin notes that these verbs describe motion of an entity, but no specific direction of motion is implied unless there is an explicit directional phrase present. They belong to two basic classes:

a) *Verbs that are not vehicle names*: "cruise, drive, fly, oar, paddle, pedal, ride, row, sail, tack". Levin (1993: Ch. 51.4.2) notes that these verbs are not directly derived from vehicle names, but some of them are zero-related to nouns that name parts used in propelling these vehicles.

b) *Verbs that are vehicle names*: "balloon, bicycle, bike, boat, bobsled, bus, cab, canoe, caravan, chariot, coach, cycle, dogsled, ferry, gondola, helicopter, jeep, jet, kayak, moped, motor, motorbike, motorcycle, parachute, punt, raft, rickshaw, rocket, skate, skateboard, ski, sled, sledge, sleigh, taxi, toboggan, tram, trolley, yacht" As noted by Levin (1993: Ch. 51.4.1), they are zero-related to nouns that are vehicle names and mean approximately "to go using the vehicle named by the noun".

Altogether, 49 verbs of motion were selected for analysis. The list for verbs that are vehicle names is far from being exhaustive. Clark and Clark (1979, List 8A) provide an alternative list of instrumental motion verbs, which includes, among others, verbs derived from proper names of transportation vehicles, e.g. *Buick, Concorde,* as well as common carriers, e.g. *Greyhound, TWA*. They note that it is impossible to enumerate all instrumental verbs of motion because, in principle, any vehicle name can be used as a verb of this type. A discussion which other motion verbs also conflate instrument in their semantics exceeds the scope of this study.

The search for instrumentality in coextension paths was implemented by looking for combinations of the above-listed landmarks with third-person singular simple present and past forms of the above-listed motion verbs, using the following pattern:

LANDMARK (noun sing.) +
INSTRUMENTAL MOTION VERB (3rd sing. present/ past tense)

This pattern yields 7840 different variants for the selected landmarks, including 6240 combinations for the verbs that are vehicle names (80 landmarks x 78 verb forms), and 1600 combinations for the verbs that are not vehicle names (80 landmarks x 20 verb forms).

SUMMARY OF RESULTS

Corpus queries based on the above pattern returned 97 matching concordance lines for the *verbs that are vehicle names* from the BNC. The resulting concordance set was reviewed to exclude coincidental matches. Instead of the expected noun+verb pattern, the retrieved sentences included compound nominals, e.g. *barrage balloons, cable trams, coastline boats, island buses, island ferries, line coaches, mountain bikes, railway cabs, road coaches, trail bikes*, etc. In the outcome, no examples of coextension path sentences including the verbs that are

vehicle names were identified in the corpus. This is not to claim, however, that they are non-existent in English, or even in the BNC. It just states that they could not be found with the above-described procedure.

For the above-listed *verbs that are not vehicle names*, 29 matching concordance lines were retrieved from the BNC. A review of the resulting concordance revealed that most of them included compound nominals, e.g. *forest drives, forest rides, hedge rows, island cruises, trail ride*s, etc., instead of the expected noun+verb pattern. However, one sentence in the set was recognized as a valid example of coextension path expression. It is presented in a wider context in (7) below:

> (7) Charlotte took her ticket, and went on into the enclosure of Aurae Phiala. Once round the low barrier of the gatehouse and the prefabricated museum building, with her back turned on the plateau along which the <u>road cruised</u> towards distant Silcaster, the shallow, silver-green bowl of the book-jacket opened before her, wide and tranquil.

The above passage[5] is the only example of the coextension path expressed with an instrumental motion verb found in the BNC with the implemented procedure. For comparison, a parallel search for *road runs/ ran* yields 37 valid coextension path examples from the same corpus. Queries employed for this research are listed in Appendix, which provides for immediate replicability of this study (see also Waliński 2013b for a full listing of concordances retrieved from the BNC).

INSTRUMENT CONDITION FOR COEXTENSION PATHS

Results obtained in this research indicate that instrumental motion verbs, at least those analyzed in this study, are not normally used in coextension path expressions. This may be somewhat surprising for common verbs of motion, such as *drive* or *ride*, given that they are naturally associated with travelable paths, such as *roads* and other sorts of ways. Despite that apparent relatedness, such usages were not found in linguistic performance of British speakers reflected in the BNC.

Additionally, taking into consideration that instrumental motor adverbials, such as *by car*, *by train*, etc., do not fit conceptually into descriptions of neither travelable nor non-travelable paths, which was discussed for examples in (6), it allows us to argue for an *instrument condition* of fictive motion. The condition essentially forbids structuring fictive motion with semantic patterns conflating instrumentality. However, because the semantic aspects of instrument and manner are inextricably linked to one another, the instrument condition overlaps,

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[5] The passage comes from the short story "City of Gold and Shadows" written by Ellis Peters, published by Macmillan in 1973.

at least to some extent, with the manner condition put forward by Matsumoto (1996: 194). For that reason, it should be stated less restrictively to propose that no property of motion instrument can be expressed in a coextension path, unless it is used to represent some specifically correlated property of the path.

This is exemplified by the passage in (7). An association of the verb *cruise* with instrumentality cannot be denied, but it obviously relates to the manner of motion conflated by the verb, as well. Even in the wider context provided by the whole passage it is hard to decide to what extent the use of *cruise* in this particular case relates to the manner, i.e. smooth and slow movement, and to what extent to the instrumentality of motion associated with vehicles traveling the road. For that reason, instead of being an unequivocal piece of evidence for instrumentality of fictive motion, the example in (7) rather demonstrates that for verbs of motion, or at least some of them, it is not viable to entirely separate the semantics of manner from instrument.

Moreover, the passage in (7) allows for some speculation on additional circumstances that may contribute to overriding the instrument condition. Firstly, it indicates that instrumental verbs of motion are more likely to appear in sentences that involve an experiential basis for a conceptualization of fictive motion (Langacker 2005: 175–176, 2008b: 68–69). In such cases fictive motion is experiential in the sense that it reflects what a person experiences through a *local view* while moving along the path or scanning it visually at a given moment (cf. *Type II* in Matsumoto 1996; *local frame* in Talmy 2000: Ch. 2). Curiously enough, in (7) the viewer is not the protagonist, but the narrator of the story, who uses the mind's eye to depict a spatial scene for the reader. It demonstrates that perspective mode and scope of attention are not necessarily correlated in fictive motion (cf. Matsumoto 1996: 205).

Secondly, although the instrument condition pertains both to travelable and non-travelable paths, it is plausible to assume that it applies more rigorously to the latter category. As demonstrated in (6c), for non-travelable paths it is much harder to find an experiential association between the depicted path and any sensible instrument of motion. Thirdly, the lineament of the passage in (7) indicates that overriding the instrument condition may be more characteristic of creative writing, rather than everyday speech situations, where the use of fictive motion is likely to be strongly affected by the sedimentation of meaning (Blomberg/ Zlatev 2014; Waliński 2013a; 2014).

CONCLUSION

The absence of instrumentality in coextension path expressions found in the BNC indicates that besides the *path* and *manner* conditions stated previously by

Matsumoto (1996), fictive motion is additionally subject to the *instrument* condition, which constrains structuring fictive motion to verbs that do not conflate instrument in their semantics. This condition seems to explain to some extent why roads typically *run*, but not *drive* to destinations. In more general terms, the corpus-based findings presented in this study fit into the broader cognitive framework of mental imagery and cognitive simulation (Bergen 2012). The avoidance of instrumentality in coextension path expressions can be motivated by embodied cognitive simulation, which assumes that we naturally and tacitly engage in simulations in a variety of cognitive tasks, even in situations that are physically impossible (Gibbs/ Matlock 2008). Our cognitive ability to mentally simulate motion implied by the verb appears to plays a key conceptual role in structuring fictive motion. The inherent cohesion of simulation processes precludes the use of instrumental semantics in the absence of a sentient agent capable of making use of motion instruments.

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APPENDIX

Listings of corpus queries

A vertical bar symbol (|) indicates logical "AND". For example, the query "road runs|ran" substitutes for two separate queries "road runs" and "road ran".

a) Search for coextensions paths including motion verbs that are vehicle names:

```
alley|artery|avenue|boulevard|bridge|flyover|footpath|highway|
lane|motorway|overpass|passage|passageway|path|pathway|pavement|
railway|road|roadway|route|street|subway|thoroughfare|track|trai
l|tunnel|underpass|viaduct|walkway|way|beach|canyon|cliff|coast|
coastline|crag|desert|escarpment|field|forest|glacier|glen|
grassland|gulf|gully|hill|island|land|littoral|meadow|mountain|
plateau|ravine|ridge|scarp|seashore|shore|valley|wasteland|
wilderness|cable|conduit|conveyor|duct|hose|line|pipe|pipeline|
tube|wire|barrage|barricade|barrier|dam|fence|hedge|hedgerow|
palisade|rampart|wall  balloons|ballooned|bicycles|bicycled|bikes
|biked|boats|boated|bobsleds|bobsleded|buses|bused|cabs|cabbed|
canoes|canoed|caravans|caravanned|chariots|charioted|coaches|
coached|cycles|cycled|dogsleds|dogsleded|ferries|ferried|gondo
las|gondoled|helicopters|helicoptered|jeeps|jeeped|jets|jeted|
kayaks|kayaked|mopeds|mopedded|motors|motored|motorbikes|motorbi
ked|motorcycles|motorcycled|parachutes|parachuted|punts|punted|
rafts|rafted|rickshaws|rickshawed|rockets|rocketed|skates|skated|
skateboards|skateboarded|skis|skied|sleds|sledded|sledges|sledged
|sleighs|sleighed|taxis|taxied|toboggans|tobogganed|trams|trammed
|trolleys|trolleyed|yachts|yachted
```

b) Search for coextensions paths including motion verbs that are not vehicle names:

```
alley|artery|avenue|boulevard|bridge|flyover|footpath|highway|
lane|motorway|overpass|passage|passageway|path|pathway|pavement|
railway|road|roadway|route|street|subway|thoroughfare|track|
trail|tunnel|underpass|viaduct|walkway|way|beach|canyon|cliff|
coast|coastline|crag|desert|escarpment|field|forest|glacier|glen|
grassland|gulf|gully|hill|island|land|littoral|meadow|mountain|
plateau|ravine|ridge|scarp|seashore|shore|valley|wasteland|
wilderness|cable|conduit|conveyor|duct|hose|line|pipe|pipeline|
tube|wire|barrage|barricade|barrier|dam|fence|hedge|hedgerow|
palisade|rampart|wall cruises|cruised|drives|drove|flies|flew|oars|
oared|paddles|paddled|pedals|pedaled|rides|rode|rows|rowed|sails|
sailed|tacks|tacked
```

c) Search for coextensions paths that depict the spatial entity "road" with the verb "run":

```
road runs|ran
```