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Systematic Metaphors in Norwegian Doctoral Dissertation Acknowledgements

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ABSTRACT

This article investigates patterns of systematic metaphors used to characterize various aspects of the doctoral education period, based on analysis of dissertation acknowledgements (DAs) from doctoral dissertations across academic disciplines and written by researchers from four PhD programs offered by a Norwegian university. The primary research question addressed here asks which metaphors doctoral researchers in Norway use to describe their educational experience as a whole, as well as the assistance they received during their doctoral period. A discourse dynamics approach is applied to the data, allowing for the identification of metaphors employed about these topics followed by the categorization of the identified metaphors into broader categories. The resulting overview of the systematic metaphorical patterns in DAs provides empirical evidence concerning how doctoral researchers view their experiences, useful in mentoring situations as a starting point for addressing attitudes, beliefs and values about the various challenges and rewards involved in doctoral trajectories.

1. Introduction

This article investigates patterns of systematic metaphors used to characterize various aspects of the doctoral education period, based on analysis of a corpus of dissertation acknowledgements from doctoral dissertations across academic disciplines, written by doctoral researchers from four PhD programs offered by a Norwegian university. The primary research question addressed here asks which metaphors doctoral researchers in Norway use to describe their educational experience as they near the end of their doctoral trajectories. This study is grounded in the Conceptual Metaphor Theory (CMT). By this view, metaphor is frequently used as a resource by which we discuss abstract, complex ideas in terms of more concrete entities, whereby certain real or perceived qualities from a (typically concrete) "source" domain are mapped onto a (typically abstract) "target" domain (see e.g., Lakoff & Johnson, 1980). Put simply, metaphors represent a way in which we talk about one thing in terms of another. Cognitive linguists would add that metaphors also represent ways that we actually conceive of the world around us. Metaphors facilitate communication, as they "can be used to persuade, reason, evaluate, explain, theorize, offer new conceptualizations of reality and so on" (Semino, 2008, p. 31).

Identification and analysis of metaphorical language has successfully been employed as a tool investigating a wide variety of fields, including health and politics (e.g., Musolff, 2016; Semino

et al., 2018). Metaphor also functions as a tool shedding light on communication in different contexts: examples include spoken conversations about post-conflict reconciliation (Cameron, 2013) and computer-mediated communication about relationship abuse (Nacey, 2020). Metaphor has also been employed in many studies in the field of education, as it provides a means of gaining access to both implicit and explicit attitudes, opinions, beliefs and values (see e.g., Bager-Elsborg & Greve, 2019; Billot & King, 2015; Kinash et al., 2017; Seung et al., 2015).

The particular focus of the present study is the systematic metaphors produced in a selection of doctoral acknowledgements (DAs), a text type that is at once academic and personal, written towards the end of a long process which—if successful—culminates in the awarding of the highest possible academic degree. While their main purpose is ostensibly to express gratitude to individuals and institutions, they also provide their writers with the opportunity to allow their own personality to shine through in a blend of private and professional identities. In this way, DAs allow for self-promotion of the writers as full-fledged members of an academic club, with the appropriate professional connections. Additionally, DAs offer space for reflection over the demanding investment required by the doctoral education (see Hyland, 2003, 2004).

This study is innovative in that it provides evidence for metaphorical patterns that is solidly grounded in empirical, naturally occurring data and then analyzed using state-of-the-art methods for reliable, transparent and valid metaphor identification and categorization. Insight gained here into the diverse ways in which doctoral researchers think about these issues is particularly intended to help higher education supervisors, counselors, and support staff involved in doctoral programs to recognize the breadth of common conceptualizations used about the doctoral education experience. In this way, the present research contributes towards the development of a metaphor "toolbox" useful for discussing potentially difficult issues with early career researchers as they undergo the various trials and tribulations inherent in academic trajectories. Doctoral researchers themselves may also find this article useful to help them consider and reflect upon alternative ways of framing their current experience, based on findings from people who have recently been in the same position.

Following this introduction, section 2 discusses the background for the present study, outlining previous research about DAs, metaphors in higher education generally, and the doctoral education experience in particular. Sections 3 and 4 then present the primary material and methods for the study, respectively, before sections 5 and 6 move on to the findings and discussion. More specifically, section 5 first explores the metaphors used to characterize the doctoral education experience generally. Section 6 then looks at the metaphors employed with respect to academic assistance (section 6.1), as well as other types of assistance such as that from peer colleagues, family and friends (section 6.2). Finally, section 7 presents concluding thoughts, together with suggested avenues for further research.

2. Background

Previous research relevant to the present study has focused on three main areas: (1) the identifying characteristics of DAs, (2) metaphors related to higher education (HE) generally, and (3) metaphors related specifically to the doctoral education period. In particular, Hyland (2003, 2004) first raised awareness of the text type as worthy of study, recognizing it as a "Cinderella" genre: "a taken-for-granted part of the background, a practice of unrecognized and disregarded value deserving of greater attention" (Hyland, 2003, p. 243). His work focused on identifying the defining features of DAs, centering on rhetorical moves and patterns in the communicative function of DAs' constituent elements. Working with MA and PhD dissertations from Hong Kong as his primary data, Hyland (2004) documented a three-move structure underpinning the text type, as follows:

(1) Reflecting (e.g., introspection);
(2) Thanking (e.g., general introduction, thanking for academic assistance, resources, moral support);
(3) Announcing (e.g., accepting responsibility, dedications).

While all DAs include thanks for academic assistance, the remaining moves and sub-moves are optional (2004, p. 313), with the "Announcing" move being the least common.

Research exploring metaphors in higher education (HE) discourse has looked into the perspective of the lecturers, the students and/or the institution. For instance, Bager-Elsborg and Greve (2019) investigated conceptualizations of HE teaching through a bottom-up discourse analysis of the metaphorical patterns in interviews with Danish HE lecturers who were asked about teaching. Their findings highlight the diversity in metaphor use, ranging from metaphors that occur often in all or almost all interviews to those that occur in only a single interview. Moreover, they find that some informants employ metaphor far more than others. Kinash et al. (2017), by contrast, asked post-graduate Australian students to draw or describe their university experiences. From this data, they identified a wide variety of metaphors about both individual HE experiences (e.g., as adventurers, athletes, rollercoaster riders) and collective HE experiences (e.g., journey with fellow travelers). Creed and Nacey (2020, 2021) investigated HE metaphors from the institutional perspective, identifying all metaphor use in a sample of testimonials from promotional videos from HE institutions in Australia and Norway. Here they focused on the potential usefulness of metaphor for vocational counseling, also bringing in cross-linguistic perspectives.

As far as the study of metaphor and the doctoral education experience is concerned, Mantai and Dowling (2015), who investigate DAs to shed light on the range of support types and support providers that help doctoral researchers succeed, find a prevalence of "representations of the PhD process as a journey, albeit one with challenges […] described, for instance, as: 'hard adventure', 'path of my life', 'leisurely but costly trip', 'educational endeavor' […]" (p. 113). Although they thus provide empirical evidence to support their claim of the doctoral experience being understood as an arduous journey, they offer no analytical framework justifying why phrases such as "educational endeavor" could be said to manifest a JOURNEY conceptualization.[1]

Other researchers, by contrast, make assertions only. Consider Lee and Green (2009, p. 617), for example, who claim the following in their article concerning how the concept of supervision functions as a metaphor:

> Mentors, masters, slaves, coaches, friends, authors, disciples, apprentices, sisters, fathers and midwives appear frequently in the literature on doctoral supervision, along with more idiosyncratic figures such as cooks, gardeners and mountaineers. The landscape of supervision is populated with bridges, chasms, mountains and archways, and traversed by a plenitude of journeys, punctuated by juggling and balancing, marked by rites and rituals, and filled with darkness and light.

Although the authors thus specify source domains that are frequent in the literature, they provide no supporting evidence for their contention. Nevertheless, we find their statement cited in McCulloch (2013, p. 57), for instance, who goes on to criticize the JOURNEY conceptualization in particular by explaining that it is "too simple a metaphor for research education" (p. 56). The problem, as he sees it, is that the JOURNEY metaphor implies a predictable structure for what is a very messy process in reality. He goes on to propose the QUEST as a more suitable alternative, as it takes "account of the doctorate's complexity, the uncertainty involved, the extent to which research involves the unknown, the fact that multiple actors are involved and the emotional ups and downs of the experience" (p. 60).

McCulloch is not alone in proposing "better" metaphors for the doctoral education. An earlier example is Bartlett and Mercer (1999), who criticize the master/disciple metaphor for the supervisory relationship, which they characterize as "the traditional model of isolation, insecurity and individualism" (p. 371). They suggest three alternatives, all of which are "are unabashedly to do with

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[1]Capitalized terms (e.g. JOURNEY) indicate a conceptual metaphor. By contrast, italicized capital terms (e.g. *JOURNEY*) indicate a systematic metaphor, identified through a bottom-up process of discourse analysis (see section 4). Although systematic metaphors may result from the existence of conceptual metaphors, no claims are made about universal cognitive knowledge.

pleasure" (p. 371): creating in the kitchen, digging in the garden, and bushwalking. Finally, Hughes and Tight (2013) criticize the JOURNEY metaphor along similar lines as McCulloch (2013), explaining that the metaphor is overused. They propose that the doctorate could more advantageously be conceived of as a form of work, a notion that "holds within it the serious commitment that is necessary for doctoral study, rather than the erring toward vacation that the journey metaphor implies" (p. 766).

Others, by contrast, praise the JOURNEY metaphor as a means of promoting reflection about the educational process among students, independent of academic discipline (e.g., Amran & Ibrahim, 2012; Miller & Brimicombe, 2004). Indeed, Stubb et al. (2012), find that doctoral researchers who are more process-oriented than product-oriented experience less education-related stress and anxiety, and might thus be less likely to drop out—that is, process-related understandings (such as viewing the doctoral education as a journey) might function "as a protective factor against possible problems in the thesis process" (p. 452).

3. Material

The primary data for the present study consists of a corpus containing acknowledgements from publicly available doctoral dissertations produced between 2014 and 2019 for four programs at a Norwegian university. Between them, these programs cover academic disciplines in the HASS disciplines (e.g., literature, educational sciences), and the STEM disciplines (e.g., applied ecology).[2] The acknowledgements were written immediately prior to submission of the dissertations for evaluation determining whether they were worthy of defense. They were thus produced as part of an especially positively laden significant event in the academic careers of the researchers, towards the end of their doctoral trajectory.

As the boxplot to the left right in Figure 1 shows, 24 of the texts are written in English, ranging from 243 to 1,100 words in length, with an outlier at 1,322 words (median 514; mean 613). Two of the English texts were written by candidates whose first language is English, while the rest were written by people who are second-language speakers of English. From the right-hand boxplot, we see that 25 of the texts are written in Norwegian. They range in length from a minimum of 133 words to a maximum of 875 words, except for an outlier of 1,056 words (median 479; mean 490). Twenty-three of the authors of the Norwegian DAs are Norwegian, whereas the two remaining authors are Danish.
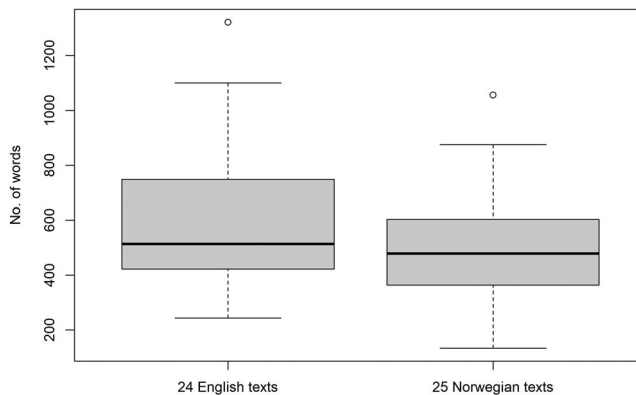

Figure 1. Word length of DAs.

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[2]The acronym "HASS" represents Humanites, Arts and Social Sciences, while "STEM" represents Science, Technology, Engineering and Mathematics.

In total, the entire corpus contains nearly 27,000 words for analysis, divided across 49 DAs: 14,708 words of English and 12,302 words of Norwegian. In addition, eight texts contain words from languages other than English or Norwegian. This total of 721 words was disregarded for analysis.[3]

4. Methods

This study adheres to a discourse dynamics approach to metaphor identification and analysis, (Cameron, 2010; Cameron et al., 2010; Cameron & Maslen, 2010). This process involves a three-step procedure, consisting of (1) identifying linguistic metaphors (so-called "metaphor vehicles"), (2) sorting the identified vehicles into vehicle groups, and (3) linking the vehicle groups with their topics. Note that linguistic metaphors constitute the actual words that are metaphorically used, held by the CMT to be linguistic realizations of underlying conceptual metaphors. Linguistic metaphors are also known as metaphor vehicles because they "carry" the metaphorical meaning from one semantic domain to another.

The topic of this study—metaphors about doctoral education—was *a priori* defined. Consequently, rather than identifying all metaphors in the DAs, only those metaphors relating to the topics of the doctoral experience as a whole and the assistance received during that period were identified, following a close reading of each text. Metaphor identification (step 1) was conducted by employing the Metaphor Identification Procedure Vrije Universiteit (MIPVU) for English and the Scandinavian version of MIPVU for Norwegian Steen et al., 2010; Nacey et al., 2019, respectively). The procedure identifies "indirect" and "direct" metaphors. Indirect metaphors consist of those words where there is a contrast between the basic and contextual senses, where that contrast may be attributed to a relationship of comparison. As an example, consider the italicized word *milestone* in (1), where a PhD researcher reflects on the doctoral process:

(1)   The Ph.D. is an important *milestone* in one's life. (ID28)

The basic meaning of *milestone* (that is, its most concrete, specific and human-oriented sense in the dictionary) is "a stone at the side of a road that shows the distance to a particular place", the second sense entry for the noun in the online version of the *Macmillan Dictionary* (MM2).[4] By contrast, its contextual sense is the dictionary's first sense entry for the noun: MM1 "an event or achievement that marks an important stage in a process". These two senses are both sufficiently distinct (i.e., represented by different sense entries) and related through comparison whereby we understand achieved progress in a long process in terms of physical distance.

In direct metaphors, an underlying cross-domain metaphorical comparison is triggered through "direct" language use, by words where there is no contrast between the contextual meaning and a more basic meaning. We find this, for example, in similes that are introduced by metaphorical flags such as *like* and *as if*, as well as in constructions such as metaphorical analogies that are not necessarily overtly marked as figurative language.

All identified metaphors were then sorted into vehicle groups (step 2), coherent sets connected through semantic links between the basic meanings of the identified metaphor vehicles. Attempts were made to label each such group at the "right" level of generalization: "the label should cover all the vehicles included in the set and, as far as possible, only those" (Cameron et al., 2010, p. 124). The process is necessarily hermeneutic, both flexible and iterative: initial labels adhere closely to the

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[3]A full list of the published dissertations and internal ID numbers (ID 1-49) is available as supplemental material in an online data repository; see the Data Availability Statement at the end of the article. This repository also contains replication data for the article, as well as the R code for the analyses and figures (R Core Team, 2020). Note that each specific illustrative example cited in this article is followed by the ID number corresponding to the text where it is found. While Norwegian examples are followed in the article by idiomatic translations, more complete translations adhering to the Leipzig Glossing Rules for interlinear morpheme-by-morpheme glossing (https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf) are also available as supplemental material online. All quotations from DAs are presented as originally produced, including any possible mistakes/errors.

[4]https://www.macmillandictionary.com/.

actual wording, to remain grounded in the empirical evidence. Once several vehicles have been grouped together, however, the initial coding may be revised in ways that better reflect the data.

To illustrate, the linguistic metaphor *milestone* in (1) was initially categorized into a vehicle group labeled *MILESTONE*. Upon a second sweep of the data, however, this metaphor was moved into the wider category of *JOURNEY*, a category identified in many earlier cognitive studies of metaphor (see e.g., Charteris-Black, 2004; Semino, 2008): a *MILESTONE* group is so narrow as to be uninformative, and physical milestones readily fall into a more enlightening journey scenario, i.e., road travel. This work adhered to the principles of "compositional coding" (Kimmel, 2012), where each linguistic metaphor was coded separately for topic and vehicle group (here, the doctoral education experience and *JOURNEY*, respectively). Data analysis was conducted using the Atlas.ti Qualitative Data Analysis software program.[5]

This process resulted in the 40 vehicle groups shown in Table 1, where they are numbered by alphabetical order.

Table 1. Vehicle groups.

Group ID no.	Vehicle group	Group ID no.	Vehicle group
1	*ACTION*	21	*LIVING CREATURE*
2	*BODY*	22	*LOCATION*
3	*BUILDING*	23	*MACHINE*
4	*CLEANING*	24	*MOVEMENT*
5	*CONFLICT*	25	*MYTHOLOGY*
6	*CONNECTING*	26	*NARRATIVE & THEATER*
7	*CONTAINER*	27	*OBSTACLE*
8	*DIRECTION*	28	*PERSONIFICATION*
9	*DISTANCE*	29	*PHYSICAL ENVIRONMENT*
10	*DREAM*	30	*PHYSICAL QUALITY*
11	*ENERGY*	31	*SIGHT*
12	*FAMILY*	32	*SIZE*
13	*GARDENING*	33	*SOUND*
14	*GROWTH*	34	*SPORTS & GAMES*
15	*HEALTH*	35	*STRENGTH*
16	*HEIGHT*	36	*TASTE*
17	*JOURNEY*	37	*TEMPERATURE*
18	*LIGHT*	38	*TOUCH*
19	*LINES*	39	*TRANSFER*
20	*LIQUID*	40	*VALUE*

A more informative version of Table 1, including illustrative examples of the vehicle groups and information concerning the number of observed instantiations in the data, may be found as supplemental information online (see Data Availability Statement at the end of the article). This extra information also includes explanatory notes about how many of these groups were operationalized, given the semantic overlap between some of the categories. When it comes to the distinction between *CONFLICT* and *SPORTS & GAMES*, for instance, Ritchie (2003, p. 135) writes that:

> [i]t appears that our culture has a large, complex, and densely interconnected conceptual field, a set of schemas for competition and conflict ranging from friendly, low ego-involvement games through highly competitive games, shouting matches, fisticuffs, brawls, all the way to full-scale war.

The existence of fully discrete vehicle groups is thus an ideal, as many semantic domains are interrelated, sometimes forming a continuum. While there may therefore be no definitive, undisputed list of vehicle groups, the main point here is that the groups reflect the data in ways that are empirically grounded and transparent, thus providing a valid means of making sense of the discourse.

Finally, the vehicle groups are linked to their topics (step 3), a process termed by Silvestre-López (2020) as "metaphor reconstruction". This step is relatively simple, given the employment of

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[5]https://atlasti.com/.

compositional coding when assigning vehicle groups to the identified metaphors for a given topic. When it comes to *milestone* in (1), for instance, we are left with the systematic metaphor *DOCTORAL EDUCATION EXPERIENCE IS A JOURNEY*.

As a whole, the discourse dynamics approach allows for the identification of sets of related linguistic metaphors employed by different people about the same topics (that is, "systematic metaphors"; see Cameron et al., 2010), as well as metaphors that are less commonly employed about these topics (e.g., "one-shot" metaphors). Further, analysis may shed light on metaphor valency (see Goatly, 2011), i.e., how a particular vehicle group may be used for more than one topic, or how a single topic may correspond to more than one vehicle group. Finally, given the nature of the data in question, fairly equally divided between Norwegian and English discourse, the analysis has the potential for revealing cross-linguistic similarities and differences. Although this article focuses primarily upon the systematic metaphors used in relation to the doctoral education period, some of these remaining areas are also touched upon.

5. Findings Concerning Metaphors About the Doctoral Experience

Figure 2 shows the normalized frequencies of the observed instantiations of the 40 different metaphor vehicle groups. The numbers labeling each data point correspond to the group identification numbers in Table 1, with the labels for the eight most frequent categories (to a point at which the frequencies begin to bottom out) listed in the figure's internal table for the sake of convenience. This internal table also provides data concerning the number of texts in which these metaphors are found, indicating their dispersion.
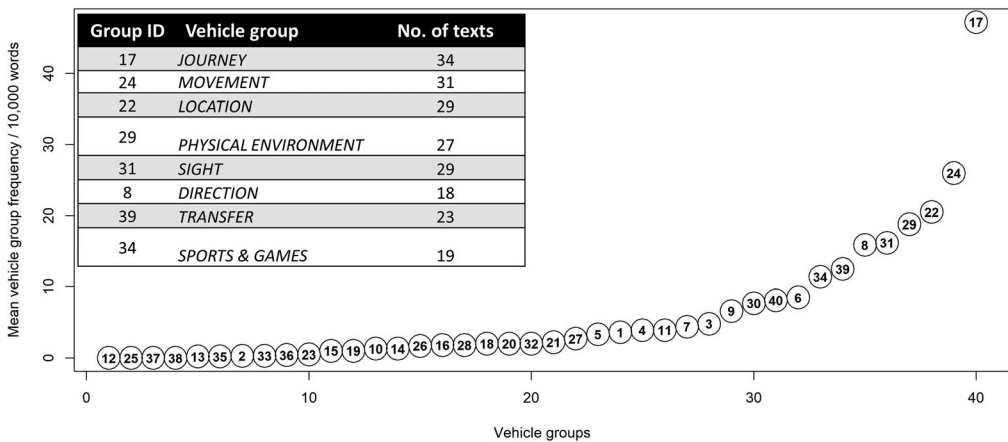

Group ID	Vehicle group	No. of texts
17	JOURNEY	34
24	MOVEMENT	31
22	LOCATION	29
29	PHYSICAL ENVIRONMENT	27
31	SIGHT	29
8	DIRECTION	18
39	TRANSFER	23
34	SPORTS & GAMES	19

Figure 2. The doctoral education experience is … .

As Figure 2 shows, the *JOURNEY* group is the most frequent metaphor category in the DAs, thereby lending support to previous literature discussing its predominant role with respect to conceptualizations of doctoral education (see section 2). Indeed, the crucial role of the journey schema has also been recognized in the cognitive linguistics literature. Forceville (2021, p. 24), for instance, recognizes it as highly productive and adds "it may well be the single most important metaphor (Western?) human beings use to conceptualize their personal and professional goals in life." Charteris-Black (2004, pp. 93–94) explains that the JOURNEY metaphor is frequently used with respect to goal-oriented activities. It provides a fruitful source for conventional ways of talking about progress towards a goal, where the purposes are conceptualized as the destinations of travelers. The metaphor is usually positive-laden, implying worthwhile goals, and also highlights the need for patience. Reaching one's final destination takes time.

In the DA data, the *JOURNEY* group is instantiated through the metaphorical uses of the lexeme *journey* (Norwegian "reise"), seen in (2) and also in (3) where the "journey" is explicitly flagged as

figurative through the addition of a topic domain signal (see Goatly, 2011, p. 182): here, the inclusion of *PhD* in the phrase *PhD journey* signals the actual discourse topic, thereby triggering a metaphorical interpretation of the following noun. In example (3), we also see that the PhD student was not "traveling" alone, but was accompanied by a supervisor who acted as a guide.

(2)   I am also deeply appreciative to her father […] who has been alongside me every *step* of the *journey*. (ID19)

(3)   His advice and invaluable *guidance* has been incredible throughout my *PhD journey*. (ID44)

Such uses align with Charteris-Black's (2004, p. 95) contention that because there are no clear maps on figurative journeys, a traveler may be lost without knowledgeable guidance.

Various types of paths are also denoted in the DA data, e.g., *course, track, road,* and *way* [example (4)], along with their Norwegian equivalents [example (5)]. Some metaphors also refer to a particular part of a path, either some specific point as with *milestone* in (1) or more generally, as we see with the use of Norwegian *underveis* "underway" in (5). The means of transport alluded to, however, may vary: for instance, we read allusion to journeys by foot [*step* in (2)], by car [*blindvei* "dead end" in (5)], and by train [*sidesporene* "sidetracks" in (6)].

(4)   My friends and family also deserve credit for the support that they have given me along the *way*. (ID 27)

(5)   Avhandlingsarbeidet har så absolutt ikke bare gått "*raka vegen*" – isteden har jeg *underveis* vært innom både en og annen *blindvei*. (ID42)

     The doctoral work has definitely not taken the '*straight path*' – I have instead been down several *dead ends on the way*.

(6)   Jeg har en kopp der det står at det er "*omveiene*, forsinkelsene og *sidesporene* som beriker ens liv". Dette er også en god beskrivelse av mitt Ph.d.-arbeid. (ID26)

     I have a cup where it says that there are "*detours*, delays and *sidetracks* that enrich one's life". This is also a good description of my Ph.d. work.

Looking at the other frequent metaphor vehicle groups in Figure 2, some connections become readily apparent, keeping in mind the complexity of the journey metaphor: "This image schema provides a way of metaphorically constructing goals as destinations, ways of reaching goals as movement forwards, problems as obstacles to movement, and success or failure as reaching, or failing to reach, a destination" (Semino, 2008, p. 92). As discussed in section 4, discrete categories such as those employed through the discourse dynamics approach are an ideal, and do not capture the full complexities and connections between potential metaphorical mappings: reality is messy. Rather, many of the vehicle groups listed in Table 1 may be linked, something the journey schema readily illustrates.

First, journeys involve movement of various kinds, i.e., different ways of physically changing one's location. *MOVEMENT* metaphors are typically realized by verbs of motion as seen in (7) with its use of the verb *komme* "come".

(7)   Det er mange å takke for at jeg endelig har *kommet* i mål … (ID30)

     There are many people to thank for having finally *reached* (literally 'come') my goals …

Generic verbs of motion such as *come, go, approach* and *reach* comprise the most common manifestations of the *MOVEMENT* group, but there are also instances of verbs that imply a certain position, e.g., *pursue* [the PhD] and *follow* [courses]. Journeys also involve *DIRECTION*, as is illustrated by the use of *forward* in (8), implying that the metaphorical destination of a completed doctoral dissertation lies somewhere ahead on a figurative path.

(8)   Thank you for giving me so much trust and pushing me *forward*! (ID48)

In the DA data, paths may for example be *raka* "straight" [example (5)] or *kronglete* "crooked", or have *ups and downs*, but ultimately lead the authors to a certain location. This final destination is often characterized as something like *the **end** of my journey* (ID23), or more simply as *here* in (9).

(9)   I can honestly say that I would not be *here* today without your guidance and help. (ID28)

Prototypical journeys also cover a certain distance, often characterized as *lang* "long" (10) or *further*, the latter term implying both distance and direction.

(10)   Dette har vært en *lang* og givende prosess. (ID49)

This has been a *long* and rewarding process.

Finally, obstacles may be encountered while traveling: six of the 49 DAs make such reference, illustrated in (11).

(11)   I remember […] the times when I was struggling against the *bumps* on my research road. (ID14)

As a whole, the *MOVEMENT*, *JOURNEY*, and *LOCATION* vehicle groups are the three most frequent in the DAs, with *DIRECTION* also featuring among the most common metaphors. *DISTANCE* (vehicle group ID 9) is less frequent, albeit featuring in 21 of the total 49 DAs. The least frequent of the vehicle groups linked to the journey schema is *OBSTACLE* (vehicle group ID 27). That more mention was not made of obstacles may be due to the point at which these DAs were written, an optimistic moment when success—while not yet ensured—seems close at hand. In sum though, there can be no doubt that the journey schema dominates as a systematic metaphor used to describe the overall doctoral education of earning a doctoral degree.

That said, other metaphor vehicle groups are also common, such as *PHYSICAL ENVIRONMENT*. In particular, the doctoral process takes place in a particular *environment* into which the candidate has been initiated. But candidates also express thanks for having been led into, for instance, the **world** of statistics (ID19), they navigate *ukjent **terreng*** "unknown **terrain**" (ID41), and their work occurs in *phases* (a word whose basic sense concerns the shape of the moon or a planet which changes according to a regular pattern).

When it comes to *SIGHT*, the authors write about e.g., *looking, finding,* or being *shown* something, gaining *innsikt* "insight", having the opportunity to *focus*, and *seeing* issues in different ways. TRANSFER involves moving something from one place or person to another, metaphorically used with respect to abstract concepts. In the DAs, the doctoral process involves "giving" as in the use of Norwegian *givende* in the previously cited example of (10),[6] but also "taking". The latter term is found primarily in the Norwegian DAs, partially because authors discuss how they **tar en doktorgrad** "**take** a doctoral degree", a common collocation in Norwegian. Creed and Nacey (2020) discuss a similar example in their data from transcripts of university promotional videos, maintaining that overtly highlighting the metaphorical implications of such uses could prove valuable in career guidance situations.

Finally, the most frequent realization of the *SPORTS & GAMES* vehicle group is employed to refer to the end of the doctoral process, i.e., the *goal* (Norwegian "mål"). Yet the Norwegian data in particular inflates the numbers of instantiations of this vehicle group, because a conventional term for an educational process is *løp* "race", as in *doktorgradsløp* "doctor.degree.race". The "PhD as race" metaphor is not found in the English data beyond a single reference in one DA to *the finishing line* (ID39). Other than that, the data contains an instance of the doctoral process being characterized as a *maratonløp* "marathon.race" (ID46), also bringing forth connotations of distance (and effort), while a single author referred to a part of her experience as *my **roller coaster** in R* (ID9), ostensibly highlighting the achievement (= ups) and setbacks (= downs) involved in statistical programming.

6. Findings Concerning Metaphors About Assistance

In addition to coding for metaphors about the doctoral education period generally, the data was coded for metaphors about the assistance the doctoral researchers received during that time. *Assistance* as a topic was further divided into three sub-categories, following Hyland's (2003) findings

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[6]While the idiomatic translation of *givende* is "rewarding", its literal translation is "giving".

regarding the "Thanking" move in DAs (see section 2), where people thank others for either academic assistance, resources, or moral support. The present study has therefore operated with three subcategories: (1) *academic assistance*, (2) *other assistance*, and (3) *social support*.

Academic assistance includes metaphors used in connection with supervision, co-authorship, academic opposition, and other help that clearly affected the academic content, together with metaphors about the people who contributed to these activities. *Other assistance* relates to technical and financial support, library assistance, editorial support and assistance related to data collection (from e.g., informants or research assistants). *Social support* includes metaphors used when thanking friends and family. Note, however, that the borders between these three sub-categories are fuzzy. As an example, colleagues were often characterized as friends, and were thanked for the type of "coffee break" chats that, in turn, could provide a catalyst for further academic progress. This type of assistance was categorized under *other assistance*—that is, fostering an academic environment that promoted progress.

6.1. Academic Assistance

Figure 3 provides an overview of the frequency of the 40 vehicle groups used in relation to the topic of *academic assistance*, following the same format as Figure 2 in section 5.
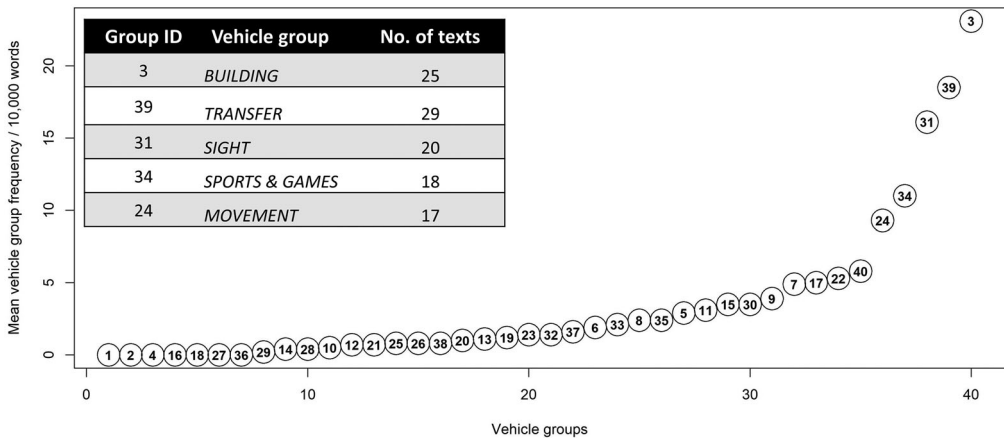

Group ID	Vehicle group	No. of texts
3	*BUILDING*	25
39	*TRANSFER*	29
31	*SIGHT*	20
34	*SPORTS & GAMES*	18
24	*MOVEMENT*	17

Figure 3. Academic assistance is … .

Whereas the journey schema predominated with respect to the doctoral process, only a single one of the journey schema vehicle groups appears in the most common groups describing academic assistance: *MOVEMENT*. While academic assistance is sometimes characterized by general verbs of motion—e.g., *du har(…) **kommet** med presise kommentarer* "you have (…) **come** with precise comments" (ID17)—more specific terms are also frequent, as in (12).

    (12)   Thank you for giving me so much trust and *pushing* me forward. (ID8)

Doctoral students are thus not alone on their academic journey, but are rather accompanied by academics who actively contribute to a (hopefully) successful outcome.

The most frequent vehicle group characterizing academic assistance, however, is the *BUILDING* category. Charteris-Black (2004) explains that building metaphors typically involve reification, as we "build" abstract goals. In many respects, the *BUILDING* and *JOURNEY* metaphors are similar: both concern activities that take place in stages towards a predetermined goal, benefit from planning and expert advice (guide/architect), take place over extended periods of time, and imply "more coverage"—horizontal coverage for journeys and vertical coverage for buildings—with the underlying concept that MORE IS BETTER. Both *BUILDING* and *JOURNEY* metaphors are also positively laden, with valued outcomes (pp. 95-96).

Two particular features of BUILDING may contribute towards it being more frequently employed than JOURNEY to characterize academic assistance, despite the many conceptual similarities between the two. First, BUILDING strongly implies social cooperation, as buildings are rarely constructed by individuals on their own. This corresponds closely to the notion that a doctoral dissertation cannot be the product of just one person, without input from others. Second, Charteris-Black (2004, p. 97) posits an isomorphic relationship between our knowledge of buildings and valued social goals. Building involves increasing a surface vertically, and we know that "whatever is to endure in an upright position must have a stable basis to prevent it from falling." This view dovetails neatly with the DA data, as all 25 texts with *BUILDING* metaphors rely on the same lexical realization: *support* (Norwegian "støtte"), in its nominal or verbal forms: see (13) for a prototypical example.

(13)   Thank you (…), for the fantastic guidance as my main advisor, for your continuous engagement and *support*. (ID22)

Specifically, the basic meaning of the noun *support* is MM2 "something that holds the weight of an object, building or structure so that it does not move or fall", used figuratively in the DAs to signify MM1 "help and approval that you give to a particular idea, politician, organization, etc."[7] By this metaphor, supervisors and others contribute to the stability and structure of the doctoral dissertation, without which the work could not have been properly realized.

Other frequent metaphors characterizing academic support include *TRANSFER* and *SIGHT*. "Transfer" indicates (at least) two parties: the transferor and the transferee. Supervisors and other academic helpers act thus as agents of knowledge transfer in education scenarios, and are thanked for their work as such. The two most frequent linguistic realizations of the *TRANSFER* vehicle group are *sharing* and *giving*, both illustrated in (14).

(14)   … you would always find the time to answer my questions, *share* your ideas and *give* constructive feedback (ID11)

The *SIGHT* vehicle group is realized either in terms of properties possessed by supervisors (such as *perspectives, reflections,* or *viewpoints*) or to describe supervisors' actions, as when an advisor is thanked for having made something (metaphorically) visible: consider the use of *showed* in (15).

(15)   … he *showed* the way, often in directions I hoped to avoid but he always got me there in the end. (ID12)

Here, the doctoral education period is referred to in terms of a path heading in different directions that the supervisor brought into view.

That the *SPORTS & GAMES* vehicle group appears among the most frequent groups characterizing academic assistance is due to the overwhelming preponderance of the Norwegian lexeme *innspill*, illustrated in (16).

(16)   Tusen takk for masse motivasjon og gode *innspill* underveis! (ID1)

Thank you for loads of motivation and good *contributions* along the way!

The basic sense of the noun *innspill* "contribution" (literally "in_play") derives from games such as soccer, defined as NOAB1[8] "pasning fra ytterside mot midten" (pass from the outer side towards the middle). It is here used in its conventional figurative sense, NOAB2 "fremstøt, idé, forslag (utenfra) i en sak som skal utredes eller behandles; (ny) tanke" ("push, idea, suggestion (from outside) about a case that will be reported on or discussed; (new) thought"). By this metaphor, comments from supervisors are understood in terms of kicking a ball towards the middle of the field in a competitive team sport. Conventional ways of expressing this notion in English are either non-metaphorical (e.g., *comments*) or linguistic metaphors belonging to a different vehicle group than SPORTS &

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[7]Parallel analyses may be conducted for the verb *support*, as well as for Norwegian nominal and verbal *støtte*.
[8]"NOAB" stands for "Det Norske Akademis Ordbok", the Norwegian online dictionary used for identifying basic and contextual senses, following the Scandinavian version of MIPVU (see section 4): https://naob.no/.

GAMES. In five of the English DAs, for example, supervisors and other scholars are thanked for their *feedback*, a metaphor sorted in the *SOUND* vehicle group (Group ID 33) because it has a more basic sense relating to sound: MM2 "the high loud noise that electrical equipment makes when part of the sound it sends out goes back into it". The examples of *innspill* and *feedback* provide a reminder that although there may be many similarities between metaphors produced in DAs in different languages, differences may also arise affecting the overall findings.

6.2. Other Assistance and Social Support

Although there are a number of metaphor vehicles that are relatively frequently employed in connection with *academic assistance*, there are fewer vehicle groups that are commonly used to characterize either *other assistance* from librarians, funding institutions, informants, research assistants, etc. or *social support* from family and friends. Figure 4 presents an overview of the metaphor vehicle groups used with respect to *other assistance*, while Figure 5 does so for s*ocial support*. In both cases, we find that only two groups predominate: *TRANSFER* and *BUILDING*, albeit in inverse order for the two topics.
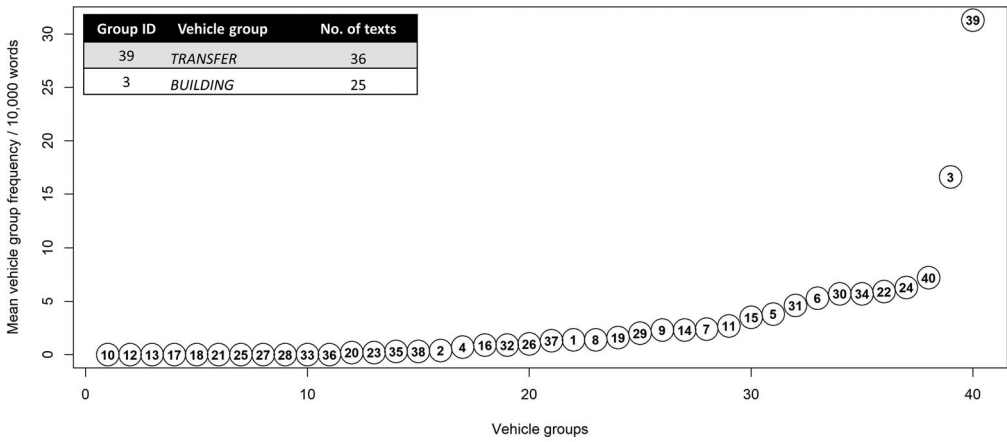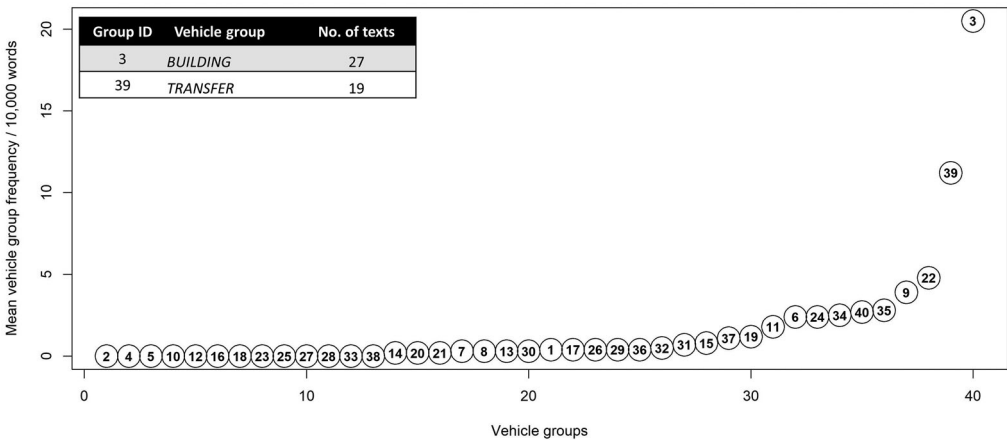
Figure 4. Other assistance is … .

Figure 5. Social support is …

TRANSFER metaphors are primarily realized by *giving* (or *providing*) and *sharing*, as was true of *academic assistance*. When it comes to *other assistance*, institutions are thanked for having *given* the candidate a valuable opportunity or the confidence to conduct research, as are key staff members. Research assistants are thanked for having *provided* data, and peer colleagues are thanked for having *shared* various moments that are integral to a vibrant academic environment, etc. As for *social support*, family members and (non-colleague) friends are thanked primarily for *shared* special moments and for having *given* the candidates the needed support and/or time to complete such a massive task, as well as—in some cases—having *provided* a wider perspective, reminding them that there is more to life than a doctoral degree. *BUILDING* metaphors are realized by the lexeme *support* in nearly all instances, similar to the metaphors regarding academic assistance.

In sum, the overall picture is positive, with assistance as a whole being characterized as supporting, giving and sharing, etc. Supervisors and other academics contribute in additional ways such as *SIGHT* and *MOVEMENT*, adding their reflections, insight and focus, while pushing, pulling or leading candidates towards their goals. Earning a doctoral degree is thus recognized as a process entailing a high degree of collaboration on different levels, contrary to the myth of the solitary academic ensconced in an ivory tower.

7. Concluding Thoughts

This article has focused on the most frequent metaphors employed in reference to the doctoral education experience generally and to the assistance that candidates receive, by identifying and analyzing metaphors produced in doctoral dissertation acknowledgements. The research is thus grounded in empirical data, and uses Cameron and Maslen's (2010) discourse dynamics approach to uncover the systematic metaphorical patterns evident in both English and Norwegian DAs in a transparent and theoretically valid manner. Comparing the findings here to previous assertions regarding common metaphors related to the doctoral education experience (see section 2), we find clear differences. Most importantly, of the metaphors that purportedly "populate" the landscape of supervision (cf. Lee & Green, 2009), only those related to the journey schema appear in any great frequency in the present data. Other metaphors that *are* commonly used about academic assistance, such as BUILDING and SIGHT have been overlooked in previous research, as is the possibility that metaphors about the doctoral experience may vary by language and culture.

While no metaphors of masters and slaves, etc. were observed, this study thus shows that the journey schema *is* a frequent means of discussing the doctoral education, thus agreeing with Mantai and Dowling's (2015) observations from their investigation into DAs. The prevalence of this metaphor is a premise for McCulloch (2013) and Bartlett and Mercer (1999), for example, who criticize the metaphor as "overused" and either too frivolous or not sufficiently frivolous (respectively), and therefore proffer "better" metaphors. Some researchers thus concern themselves with the aptness of the *JOURNEY* metaphor, a question that has not been directly addressed by the present study, with its focus on uncovering the varying systematic metaphorical patterns that are evident in actual discourse. Still, from a cognitive perspective, it is counterintuitive to posit that such a metaphor is inappropriate. Metaphor allows us to explain abstract, complex processes (such as education) in terms of more concrete, universal processes or entities so as to promote greater understanding. The *JOURNEY* metaphor, which appeals to a near universal experience, also has the advantage of existing in myriad forms—anything from spring break fraternity trips to spiritual quests undertaken in solitude. It can thus successfully help to shed light on individual experiences of more abstract goal-oriented activities.

If in proposing "better" metaphors, scholars hope to *prevent* the widespread use of the *JOURNEY* metaphor with respect to the education process, then they are, in effect, tilting at windmills. Different metaphors are valuable to different people at different stages of a process; there can be no one-size-fits-all image that works well for everyone at all times. Advocating for the widespread use of one particular (obscure) metaphor over the use of another (preponderant) metaphor is unlikely

to be productive. On the other hand, having a battery of metaphors at the ready could prove useful in supervisory settings as a means of facilitating discussions about possible alternative ways of viewing a challenging situation. This is one premise of the "Metaphor Menu", for example—a selection of different metaphors from people who have experienced cancer, designed as a resource for talking and thinking about the illness.[9] The same logic may be applied to other topics, such as education. Overt discussion of metaphors and their logical entailments allows hitherto implicit attitudes to become explicit, thereby better allowing us to address and/or challenge beliefs that may be detrimental to success in favor of those that may promote success. As an example, consciously reflecting on aspects of *BUILDING* that may relate to the pheonomenon of academic supervision may foster greater awareness of the positive, collaborative sides of the doctoral process, a reminder that doctoral researchers are not alone and isolated with their work.

Important to note is that cognitive linguists often distinguish "between metaphors that seemed to be used deliberately and metaphors that occurred because that was 'just the way to say it'" (Cameron, 2003, p. 100). Most of the metaphors identified in the DAs bear no signs of having been deliberately intended as metaphor (see Reijnierse et al., 2018). There is thus no claim made here that when doctoral researchers employ words such as *support* or *innspill* "contributions" (literally "in_play") that they are consciously activating semantic domains of BUILDING or SPORTS & GAMES. Such metaphors are what Müller (2008) calls "entrenched" in the linguistic systems of the languages in question, conventionalized and transparent. Rather, identification and analysis of the linguistic metaphors provides indications of *underlying*, systematic patterns that may influence our thought and actions. However, even such conventional metaphors have the potential of being (re)activated; exploration of the various entailments of such embedded metaphors may prove especially beneficial in mentoring situations precisely because they are readily recognizable and familiar.

The findings discussed in the present study concern the systematic metaphors in DAs, which are produced at a particular point in the doctoral trajectory: that is, just as the dissertation is nearing completion and about to be submitted for evaluation. The dissertation submission represents a huge milestone, along with some expectation of success—a promising time, after years of work. The metaphors here thus comprise a snapshot image towards the completion of the doctoral process when the end is in sight. One may therefore question the extent to which the systematic metaphors identified here may be representative of metaphors for the *entire* PhD project period. As noted in section 5, for instance, the DAs in this study include relatively little reference to obstacles encountered, even though previous research indicates that many doctoral researchers suffer from stress, exhaustion and insecurity as a consequence of their studies (e.g., Appel & Dahlgren, 2003; Pappa et al., 2020). Further, emotions swing from positive to negative and back again in connection with differenct significant events in the doctoral period (Weise et al., 2020). Metaphors in DAs that highlight the positive over the negative may consequently be at odds with prevalent metaphors from earlier points in the education period.

Future research is thus called for to gain a more thorough empirically based picture of metaphors related to the entire doctoral trajectory. Such studies need not limit themselves to having only doctoral researchers as informants, but could also investigate the metaphors employed by other relevant agents, such as supervisors, administrators, etc. Further, although the primary focus of the current study has been on systematic metaphorical patterns in the material as a whole, some differences in the metaphors used in the English and Norwegian texts have been noted. Future studies could therefore also have greater focus on similarities and differences in systematic metaphors arising from varying linguistic and cultural contexts. And while frequently occurring metaphor patterns such as those focused on in this article provide access to general understandings, greater exploration of less frequent metaphors employed in relation to the doctoral education would also be valuable to bring forth more of the individual differences of the doctoral experience.

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[9]http://wp.lancs.ac.uk/melc/files/2019/10/Metaphor-Menu-for-People-Living-with-Cancer-A4-Leaflet.pdf.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Data Availability Statement

Replication and supplemental data that support the findings of this study are openly available in the online data depository DataverseNO at https://doi.org/10.18710/95QQ2W.

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