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WHODUNIT? TRACING CULPABILITY IN ANIMAL-KILLING CONSTRUCTIONS

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ABSTRACT

Linguistic distancing strategies have been well documented for accounts of human-on-human violence, but relatively little empirical work has been undertaken on the discursive representation of animal-killing. This paper takes inspiration from Givón's (1983) basic concept of referential distance to measure the syntactic distancing of agents (killers) and patients (victims) from the predicator of a killing construction. Using Sealey and Pak's (2018) thematic corpus of animal-related discourse, and generating a manually annotated dataset of 1,682 instances of killing constructions across 14 verbs, this work represents an empirical approach to identifying distancing strategies in discourses of animal-killing. The findings indicate a correlation between high referential distance and human agency, as well as a demonstrable distancing effect from the use of the passive voice. Animal victims, unlike other patient types, are more likely to be highly distanced from acts of killing, and verbs with higher levels of polysemy (less semantic predictability and weaker association with killing) were less typical in their agent/patient distancing behaviours.

KEYWORDS

Discourse analysis; referential distance; killing; human–animal studies; semantic types

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Whodunit? Tracing Culpability in Animal-Killing Constructions

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1. Introduction

The state of human–animal relations has been described as a "war", in which animals are not combatants but civilians (Wadiwel, 2015). Despite the rate of animal-killing being higher now than ever before (Faunalytics, 2025), such acts of killing are highly obscured and placed at a deliberate distance from the public, out of sight. Slaughtering practices are successfully concealed by a variety of means, including the geography and infrastructure of slaughterhouses (Pachirat, 2011), the use of advertising and media (Glenn, 2004; Linné, 2016), and the discourses and laws that surround animal-exploiting industries (Aranceta-Reboredo and Almiron, 2024; Brookes and Chałupnik, 2024). Beyond the "agricultural iron curtain" (Kingery, 2012) of industrialised slaughter, there are other spaces in which animals find themselves deontologised, utilised, and killable (Mazhary, 2021), or their killing otherwise made more palatable.

This paper takes inspiration from Givón's (1983) concept of referential distance, which involves counting the number of clauses between mentions of a referent. While Givón originally used this metric in a different way to study topic continuity in discourse, the technique also proves useful in measuring the syntactic distancing of agents (killers) and patients (victims) from an act of killing. Distance, which can be difficult to define, quantify, and satisfactorily demonstrate in many theoretical contexts, is approached here in a straightforward and pragmatic way: the number of clause boundaries traversed in search of the perpetrator — or the victim — of an act of killing represents a physical and measurable distance. This analysis makes use of a thematic corpus of around nine million words (Sealey and Pak, 2018) and compares the syntactic and referential behaviour of 14 verbs related to human- and animal-killing. As well as adapting referential distance for this study, the analysis also implements the concept of semantic types (cf. Hanks, 2013) and records the use of active and passive voice in killing constructions.

In the following section, some brief context is given on pertinent work in Critical Animal Studies and Linguistics, and the concept of referential distance is introduced. Next, the methodology section details the data, the annotation process, and the adaptation of referential distance for this study. The findings are laid out and discussed after that, and the paper concludes with a short summary.

2. Research Context

2.1. *Acts of killing*

Animal slaughter, once a public and highly visible practice, has since become an "invisible, exiled, almost clandestine activity" (Vialles, 1994: 5), through what Beirne terms a "strategy of invisibilisation" (Beirne, 2014: 53). In response to this strategy, Pachirat's (2011) autoethnography of slaughterhouse work engages with a politics of sight: even within the walls of the slaughterhouse, Pachirat finds that mechanisms are in place to maintain a division between those engaged in different roles in the animal-killing process, partly done for reasons of hygiene and efficiency but also for control of visibility (Pachirat, 2011). In fact, in a plant of 121 workers, Pachirat found that only one — the "knocker" — was held as responsible for the killing of the animals amongst the other workers, a phenomenon he named "the 120 + 1 argument" (Pachirat, 2011: 160). There is an obvious distancing from and "mythologizing" of the knocker (Pachirat, 2011: 159), who does the "dirty work" (Thompson, 2009: 61).

Animal-killing generally elicits a response of disgust, even among seasoned animal farmers and slaughterhouse workers (cf. Tayob, 2019; Wilkie, 2010). Slaughterers develop strategies to distance and desensitise themselves from their actions (Hamilton and McCabe, 2016), while animal product marketers go to lengths to portray farmed animals as happy, willing participants in a benign and 'natural' process (Borkfelt et al., 2015; Brookes and Chałupnik, 2024; Linné, 2016; Moore, 2014; Stibbe, 2001). Even everyday language choices, such as referring to animals as 'meat' and 'stock', have the effect of erasing the animals by ontologising them as objects, a phenomenon termed by Adams (1990) as the 'absent referent'. Absence, erasure (cf. Stibbe, 2020) and silence (cf. Wicks, 2011) are all central devices to the concealment and distancing of animal-killing, both materially and discursively.

2.2. *Discourses of killing*

A reasonable amount of attention has been given to the discursive representation of killing and violence concerning humans. Distance and obfuscation are consistent themes in the literature, whether the subject of analysis is news reports (Bunnag and Chaemsaithong, 2023; Hart, 2013; Trew, 1979; Williams et al., 2023), personal accounts of violence (Coates and Wade, 2004; Henley et al., 1995), or the dehumanising language of violent regimes that places ontological distance between the perpetrators and their victims (Bolinger, 1980; Lifton, 2000; Savage, 2007). In his essay, 'How to Kill People', Turner concludes that "we will allow ourselves to kill only those whom we have set at a *maximum distance* from ourselves by means of that most powerful of human tools, the power of misdescription" (Turner, 2002: 61, emphasis mine).

Van Leeuwen (1996) notably argues that distance can be strategically achieved in discourse through 'suppression' and 'backgrounding', particularly through the passive voice, which can simultaneously 'passivate' (diminish the agency of) victims while background-

ing, or even eliding, the responsible party. In a study of the use of the active and passive voice when reporting violence, psychologists Henley et al. (1995) find that the passive voice "is used for violent crimes because it offers psychological distance" (1995: 70), and that the passive leads to "lower attributed harm and perpetrator responsibility" (1995: 79), also corroborated by Coates and Wade (2004). Bolinger (1980) considers that the decision on whether to use the active or passive voice is often given little thought, and that it may be driven by phraseological norms as much as it is by latent ideology. However, he also concedes that the passive "is a handy way of serving up prejudices as if they were universal truths" (1980: 85-86).

Nonhumans are steadily being incorporated into critical discourse studies, aided by the scholarly "animal turn" (Weil, 2010). A number of scholars have examined the linguistic strategies used to objectify animals and justify their killing and commodification, with particular focus on lexis but with some attention also given to grammatical choices (e.g. Adams, 1990; Aranceta-Reboredo and Almiron, 2024; Beirne, 2014; Glenn, 2004; Mitchell, 2007; Stibbe, 2001, 2012, 2020). Kahn's (2006) study of vivisection discourse, for example, describes a "passive, soulless voice" that excludes any mention of the 'doer' of the deeds, instead awarding the "traditional position of responsibility, the head of the sentence", to the animal victims (2006: 242). Mazhary (2021) analyses distancing from animal death through a geographical lens, and concludes that justifications for killing are highly influenced by space and place. However, there is still a great deal to be done to redress the lack of empirical linguistic research into animal-killing discourse. Dunayer's (2001) work on language and speciesism is groundbreaking in its originality and mission, but is not underpinned by linguistic data. Jepson (2008) and Trampe (2017) similarly offer promising-sounding analyses on the euphemistic language of killing, but both employ vague and unsystematic approaches that cannot be validated nor replicated.

2.3. Referential distance in discourse

Givón and colleagues' (1983) work on topicality has little to do with animals and killing. However, in seeking to measure and systematically account for topic continuity — how persistent a topic referent is across clauses, and the distance between links in these coreferential chains — Givón developed a simple but effective method for tracking the progress of a discourse actor. Incidentally, Givón and colleagues found animacy, particularly human animacy, to be a significant predictor of topicality in discourse. In written English, human/animate references were also found to have lower referential distance (a shorter distance between coreferential noun phrases), higher topic persistence (longer coreferential chains) and lower 'ambiguity' (less potential interference from other candidate references in the surrounding clauses) than non-human/inanimate references. The differences between human and nonhuman construal are described as "huge", but "not surprising", since "humans are what we talk about" (Brown, 1983: 323-324).

Given what we know about the tendency for certain actors to be 'suppressed' and syntactically distanced, referential distance offers a useful approach to an empirical study of the traceability (or invisibility) of actor referents in discursive representations of killing. In a clause, the verb — or more accurately the predicator — acts as the pivot, with agents and patients arranged around this Tesnièrean 'root', the centre of an event (Hanks, 2013). Referential distance can therefore be used in a novel way to measure the physical distancing (across clauses and sentences) between the naming of a perpetrator and their actions. The following section details how referential distance was adapted for this study, as well as the data used and the verbs selected.

3. Methodology

3.1. Data

To examine a sufficient number of animal-killing instances from a breadth of contexts, a specialised, animal-themed corpus was used as a source of authentic language data. The People, Products, Pests and Pets (PPPP) Corpus (Sealey and Pak, 2018) is a thematic, specialised corpus of approximately nine million words consisting of texts related to animals, created for the purposes of the *'People', 'Products', 'Pests' and 'Pets'* project (PPPP, 2016). The corpus was constructed by a variety of means: interviews and focus groups were carried out with a diverse range of people, such as hunters, vegans and wildlife broadcasters; text was downloaded from websites, news articles, legislative documents and scientific journal articles on the theme of animals; and additional linguistic data was successfully obtained from other research projects. The creators obtained 19 transcripts of interviews carried out with dog owners, and were also given 103 written entries from a Mass Observation project which included a directive on animals and humans (Sealey and Charles, 2013). Although the corpus was built through a thematic interest in animal-related terms, the corpus also naturally contains texts that are not exclusively about animals. The corpus composition details are given in Table 1.

	Subcorpus	**No. of texts**		**No. of tokens**		**% of PPPP Corpus**	
Written text	Broadcasts	4389	83	7975112	614378	91.97	7.08
	Campaign literature		470		306680		3.54
	Legislation		843		627127		7.23
	Food websites		258		87118		1.00
	Journal articles		1609		5698531		65.72
	News		1023		466340		5.38

	Subcorpus	No. of texts		No. of tokens		% of PPPP Corpus	
	Contributions to Mass Observation Project		103		174938		2.02
Spoken text	Focus groups	55	19	696442	229059	8.03	2.64
	Interviews with text producers		17		157664		1.82
	Interviews with guardians/keepers of dogs		19		309719		3.57
	Total		4444		8671554		100

Table 1: *The composition of the PPPP Corpus, adapted from Sealey and Pak (2018)*

To derive a suitable sample, 14 killing verbs were selected as seed terms from which to create a killing verb dataset (henceforth the KVD). These verbs were identified through a thorough, systematic process that consulted 20 English-language lexical resources (listed in Table 4 in the Appendix), followed by a manual compiling of killing-related verbs from the PPPP corpus, starting with a list of 2,871 POS-tagged verbs. Drawing on all of these sources, an initial 420 unique English killing terms were identified. This number was reduced to 370 through standardisation of orthography, and then narrowed down to 14 based on a combination of metrics: term popularity (number of lexicons featuring the term); frequency in the PPPP corpus; and frequency in the British National Corpus (BNC; Burnard, 1995), a robust reference corpus for general language use; see Franklin (2020) for a comprehensive breakdown of this shortlisting process. Care was taken to include some verbs that represented the killing of humans as well as the killing of animals, so as to be able to draw meaningful comparisons. The final verbs that constitute the basis of the KVD are *butcher*, *cull*, *destroy*, *dispatch*, *euthanise*, *exterminate*, *harvest*, *kill*, *murder*, *put down*, *put to sleep*, *sacrifice*, *slaughter* and *wipe out*. Some of these are also ambiguous terms in that they do not always refer to acts of killing, and this was a deliberate decision so as to identify – across the full set of studies – the blurred boundaries between killing and non-killing senses of verbs.

Concordance lines were generated for all hits of each verb in the PPPP corpus, and these lines were amassed into one spreadsheet with a total of 1,682 lines. These lines were manually annotated for a range of features, and altogether this constitutes the killing verb dataset (KVD). The verbs and their frequencies are listed in Table 2.

Term	Frequency (as a verb)
sacrifice	212
harvest	211
put down	211
slaughter	208
kill	201
destroy	197
cull	170
wipe out	62
put to sleep	57
euthanise	48
dispatch	35
murder	29
butcher	27
exterminate	14
Total	1,682

Table 2: *Selected killing verbs and their frequencies in the KVD*

3.2. Methods

This research was undertaken as part of a wider project involving other studies on animal-killing verbs using the KVD, and the full methodological process can be found in Franklin (2020). For the purposes of this paper, it is relevant to detail the annotation of just a few features: semantic type, referential distance, and active/passive voice. All lines were annotated by the author, and then an inter-annotator agreement test involving a second annotator was performed on a random sample of 100 lines across four verbs. The final agreement score — an average of the chance-corrected agreement scores — was 0.88, with a standard deviation of 0.06[1].

1 See Franklin (2020) for full details of the inter-annotator agreement exercise.

3.2.1 Semantic type (agents and patients)

Following Hanks and Pustejovsky (Hanks, 2013; Hanks and Pustejovsky, 2005), the annotation process for this study involved categorising lexical items into logical constructs that can be arranged in a hierarchical semantic ontology. In such an ontology, the node at the highest level might be ANYTHING, followed by the nodes ENTITY, EVENTUALITY, GROUP, PART and PROPERTY at the next level, with those nodes then expanded further into more specific types underneath, such as PHYSICAL OBJECT > ANIMATE > HUMAN. Hanks and colleagues built a data-driven ontology of semantic types as part of the *Disambiguation of Verbs by Collocation* (DVC) project, based on data from the original BNC. This served as a guide for creating the bespoke ontology used in this research, which was based on the data in the PPPP corpus (specifically the KVD). Both ontologies reflect the corpora on which they were built; the DVC ontology is broader in scope, while the PPPP ontology is more animal-orientated. For the purposes of this study, it suffices to say that the ontology used here was the bespoke PPPP ontology (see Franklin [2020]), and that this facilitated the labelling of noun phrases as semantic types, such as HUMAN, ANIMAL, or EVENTUALITY.

For example, given the construction, *the mice were **sacrificed** one week after the 12th injection*, the agent, though elided in this particular clause, is resolved as HUMAN, while the patient is clearly ANIMAL. In *the pesticide companies are **killing** skylarks*, the agent semantic type is INSTITUTION, and again the patient is ANIMAL. Establishing this semantic information can involve inference and, in some cases, looking ahead and behind to the neighbouring clauses to establish the actors' identities. If an actor is entirely absent from the text and is not safely inferable, it is labelled as X.

3.2.2 Agent and patient referential distance (ARD and PRD)

Inspired by Givón (1983), the distance between participant references in the text was recorded by counting clauses. The hypothesis in this case is that the greater the referential distance, i.e. the further one has to read in order to successfully identify an actor, the greater the conceptual distancing from the action, given that the predicator represents the discursive nexus of the event. A low referential distance in this study might therefore be considered an act of foregrounding, and a high referential distance an act of backgrounding.

The Agent Referential Distance (ARD) here is the number of clause boundaries between the predicator (e.g. *killed*) and the closest sufficiently disambiguating mention of the agent (e.g. *the farmer*). This is only loosely inspired by Givón's original version of referential distance for topic continuity, which was not so interested in the explicitness of references but how continuous or persistent they were, and so accepted coreferential markers such as pronouns (e.g. *he*) as valid referential tokens. However, in this study, a referent is resolved only once a *sufficiently disambiguating* reference is reached. A coreferential noun phrase is sufficiently disambiguating if it provides enough explicit evidence for the annotator to decide on a semantic type. For example, the phrase *the cattle* unam-

biguously implies the semantic type ANIMAL, but the word *they* does not provide enough information for the annotator to make a decision without further investigation. First- and second-person pronouns (*I*, *you*, *we*) were considered to refer unambiguously to humans by default, unless there was evidence to the contrary.

In line with Givón's approach to syntax, clause boundaries are defined in an "adaptive compromise" between discourse-pragmatic function and propositional-semantic information (Givón, 2001: 19). Clauses are considered here to be a subject and a predicator, even where the subject is not explicitly marked, or has not changed, due to coreferential cohesion (a zero-anaphor). Clause delimitation is demonstrated in Examples 1-6. If the identity of the agent is made explicit in the immediate clause, the score given here is '0' (for Givón, the minimum score was '1' since he was measuring continuity). Givón also only used 'lookback', while I use both 'lookback' and 'lookahead', with a maximum window of five clauses either side of the node. Five clauses is an arbitrary but practical distance; initial experimentation with this method found that, beyond this distance, the identity was very rarely made explicit within the text and attempts to uncover them were unrealistically time-consuming for a study of this size.

If the distance is greater than the maximum of five clauses either side, or if the identity is never revealed and/or inference is required to identify the agent, it is marked 'NF' (not found). In Examples 1-6, the predicator node is in bold, the disambiguating agent reference is underlined, clause boundaries are marked //, and zero-anaphors are marked Ø.

(1) *I took him to <u>the vets</u> // and they* **put** *him* **down**. (ARD = 1)

(2) *New Zealand and Australia today called for <u>a Japanese whaling fleet</u> // Ø to return to port a day after // it set off for the southern ocean whale sanctuary // Ø vowing // Ø to* **slaughter** *more than 1,000 whales.* (ARD = 4)

(3) *Around 1.3 billion pigs are* **slaughtered** *annually for meat worldwide.* (ARD = NF)

Given that slaughtering is *typically* carried out by slaughterhouse workers, we can assume that this is the intended referent in Example 3. However, this isn't specified in the wider text and such an inference requires world knowledge about industrial animal-killing practices, as well as assumptions about the precise nature of the slaughtering. Since the aim of this exercise is to assess the visibility of explicit surface references, examples such as this are marked 'NF'. As shown in (2), catenative chains (e.g. *vowing to slaughter*) were not grouped together but broken down into their distinct processes.

The same process was carried out for patients to establish the Patient Referential Distance (PRD); see Examples 4-6, patient NPs underlined.

(4) *They thought // <u>the bird</u> was a witch // and Ø had summoned the tempest // so they* ***killed*** *it.* (PRD = 2)

(5) *<u>Both Arctic Foxes and Red Foxes</u> are* ***murdered*** *by anal electrocution.* (PRD = 0)

(6) *Four years ago, in one particular glen, we counted 1,000 deer. // Now there is none... // I know of // stalkers being ferried around by helicopter // in order to Ø* ***cull*** *as many as possible.* (PRD = 4)

Referential distance was annotated for both the agent and the patient in all 1,682 lines of the Killing Verb Dataset (KVD). For ease of analysis, referential scores were then graded as 'low' (no clauses or one clause), 'medium' (two to four clauses), or 'high' (five clauses or more / not found).

3.2.3 Voice (active or passive)

To bolster the analysis and provide insights into the effect of the use of active and passive voice in killing constructions, each instance in the KVD was also annotated as being either 'active' or 'passive'.

4. Findings

In this section, the findings for Agent Referential Distance (ARD) and Patient Referential Distance (PRD) are examined separately, first with the data presented 'at a glance' and then with a more detailed exploration of these results and how they interact with specific verbs and text types. Finally, voice (active/passive) is taken into consideration, followed by a summary of all findings.

4.1. ARD at a glance

Figure 1 shows the overall findings from the Killing Verb Dataset (KVD) in terms of Agent Referential Distance (ARD). Each 'slice' represents a semantic type in the role of agent, and is divided into three segments: one in solid colour, representing high ARD scores (five clauses or more) for that Agent; one in stripes, indicating medium ARD scores (two to four clauses); and another with grid squares which represents low ARD scores (zero or one).

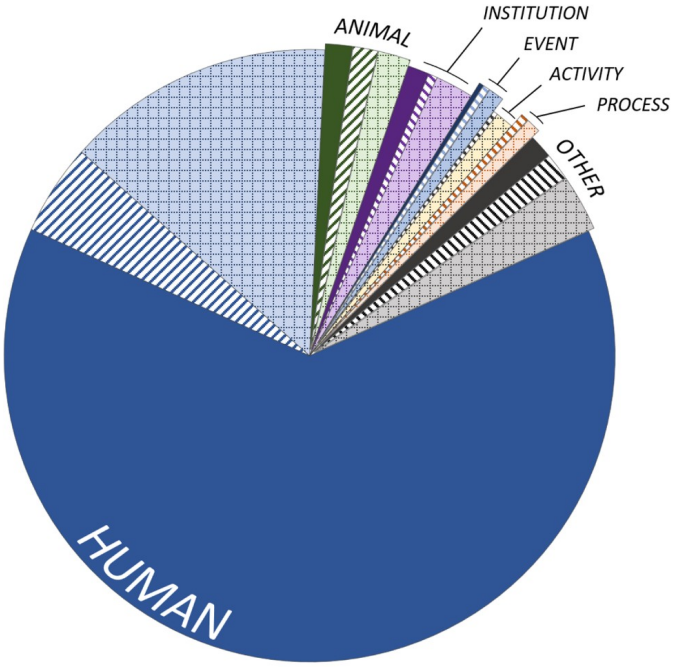

Figure 1: *The proportions of the most commonly occurring types of agents and their Agent Referential Distance (ARD). Solid colour indicates a high ARD, stripes a medium ARD, and grid squares a low ARD.*

Pie charts certainly have their pitfalls for data visualisation and this chart is not intended as a means of comparing the precise proportions of the smaller segments. Instead, Figure 1 demonstrates the clear dominance of HUMAN as an agent, and within HUMAN the dominance of high ARD scores. The semantic type HUMAN makes up the vast majority of all agents in the data — 83% — while the next most frequent type, ANIMAL, features as the agent in a very small proportion of the data: just 4% of instances. This emphasis on human agency is perhaps to be expected, given what we know about human dominance in topicality (Givón, 1983; Brown, 1983).

Most striking in the chart is the contrast between agent types in terms of their distribution of high, medium and low ARD scores. The exceptions to this are ACTIVITY and PROCESS, for which there were no instances of high ARD, only medium and low. Three-quarters (77%) of the HUMAN agent instances entail a high ARD, whereas score labels are far more evenly distributed for other agent types. In fact, HUMAN is the only label — other than X, the label assigned in the event of total elision of the agent NP — for which the majority of ARD scores are high.

Fig. 1 tells us that wherever an agent was HUMAN, the disambiguating agent referent was most likely to be either absent or otherwise hard to locate (four clauses or more away), often due to agentless passive constructions, and the same could not be said for any other agent type. One possible explanation is that the KVD, like the PPPP corpus from which it was sampled, is heavily skewed in favour of journal article texts. Academic writing, particularly scientific journal article writing, is known for its impersonal tone,

achieved through use of the passive voice and omission of the agent — typically humans, as they are the ones conducting the experiments and writing the articles — which might explain why there are so many HUMAN agent instances in the KVD and also why so many of these have a high ARD score. Figures 2 and 3 show the breakdown of ARD proportions for all agents across text types in the KVD, first as a proportion of that text type (Fig. 2) and then in real terms (Fig. 2).

Figures 2 and 3 show that the journal article data does indeed feature a very high proportion of high ARD instances — as do legislative texts — and they also constitute a large part of the overall dataset: 40%. This could explain the predominance of HUMAN agents in the KVD as well as their tendency to have a high ARD score. To test this theory, all journal article instances were removed from the data, leaving 1,008 concordance lines, and the same chart produced again. Figure 4 shows the proportions of agents and their ARD when journal article texts are excluded.

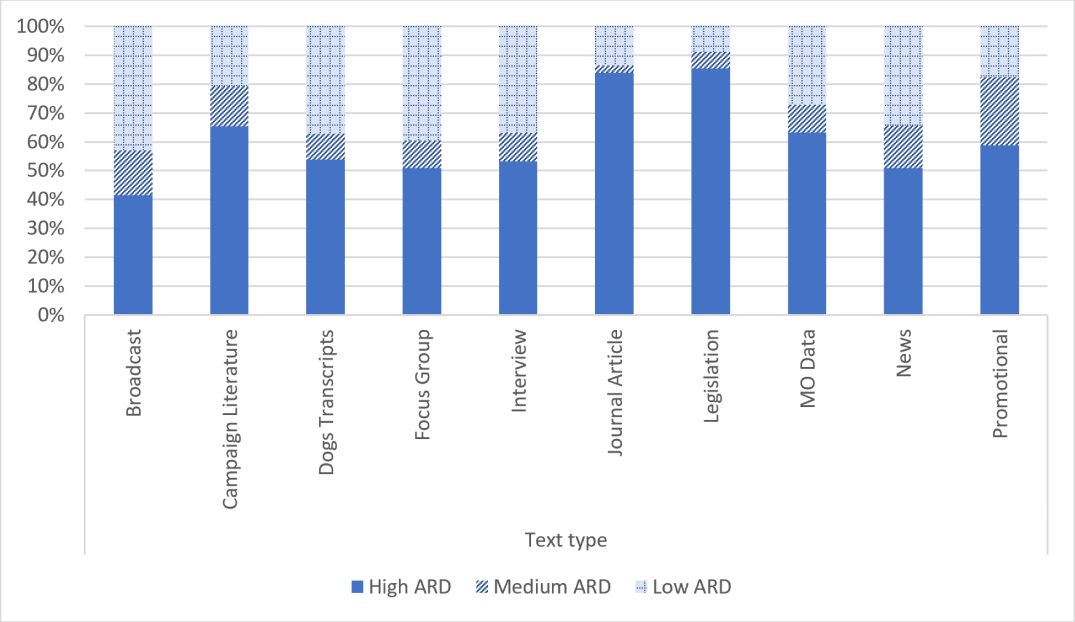

Figure 2. *Proportions of high, medium and low ARD (for all kinds of agents) by text type*

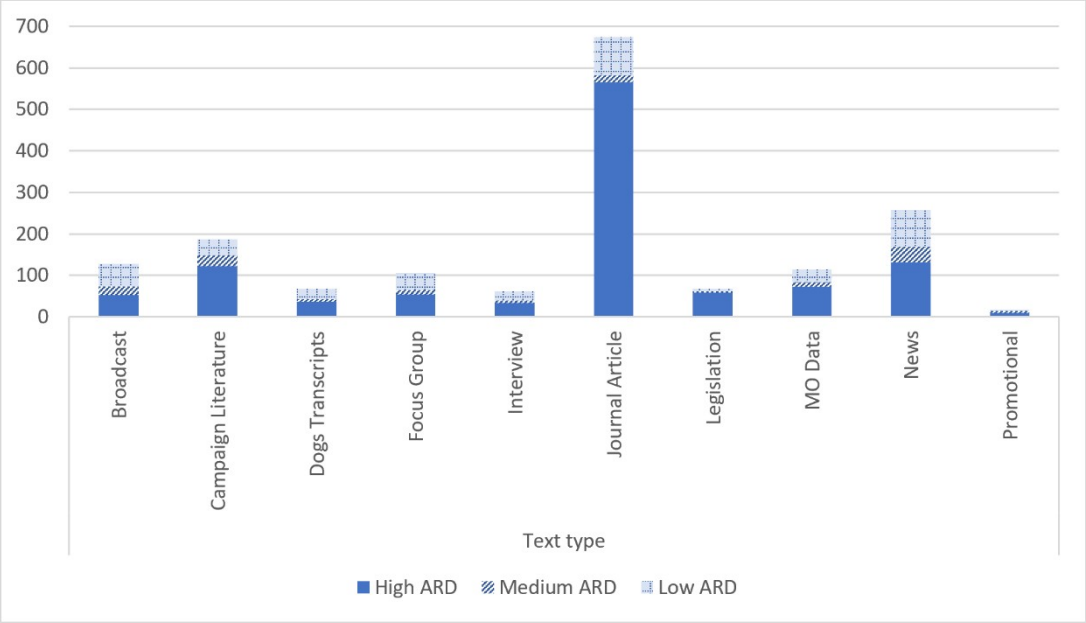

Figure 3. *Incidence of high, medium and low ARD (for all kinds of agents) for each text type*

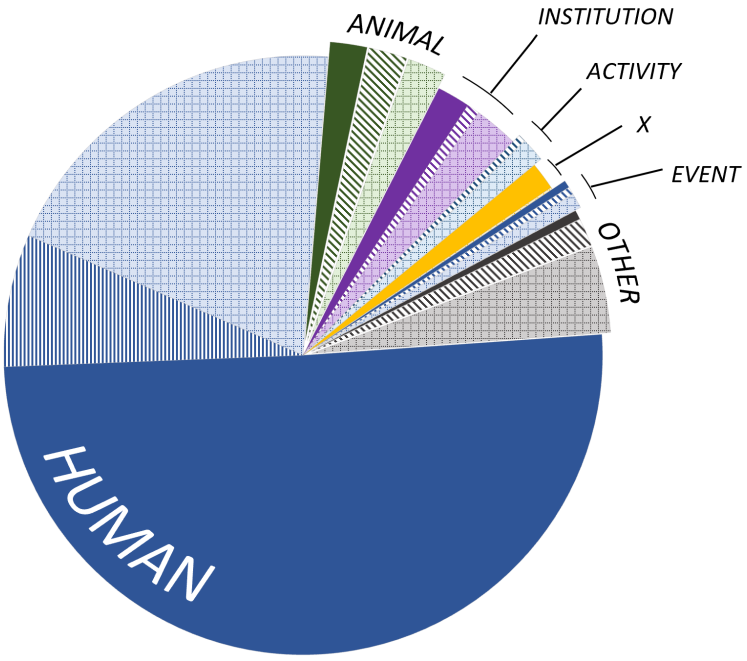

Figure 4. *The proportions of the most commonly occurring agent types and their ARD when journal article texts are excluded from the data*

Though removing all journal article instances makes a difference, we can see that the 'high ARD' segment for HUMAN (in solid fill) still accounts for the majority (65%) of all

HUMAN agent cases, and once again HUMAN is the only agent type, other than X (i.e. no agent), to have a majority of high ARD scores. Humans now comprise 77% of all agents — down from 83% — meaning that the high proportion of journal article texts does play some role in the dominance of HUMAN agents, as well as some tendency to be highly distanced, but does not satisfactorily account for it.

4.2. ARD across killing terms

Returning to the full dataset and looking at the results from a different angle, verb by verb, we see a similar picture emerging: the proportion of HUMAN agents is moderately positively correlated (R^2 = 0.58) with the proportion of high-ARD cases, as shown in Figure 5.

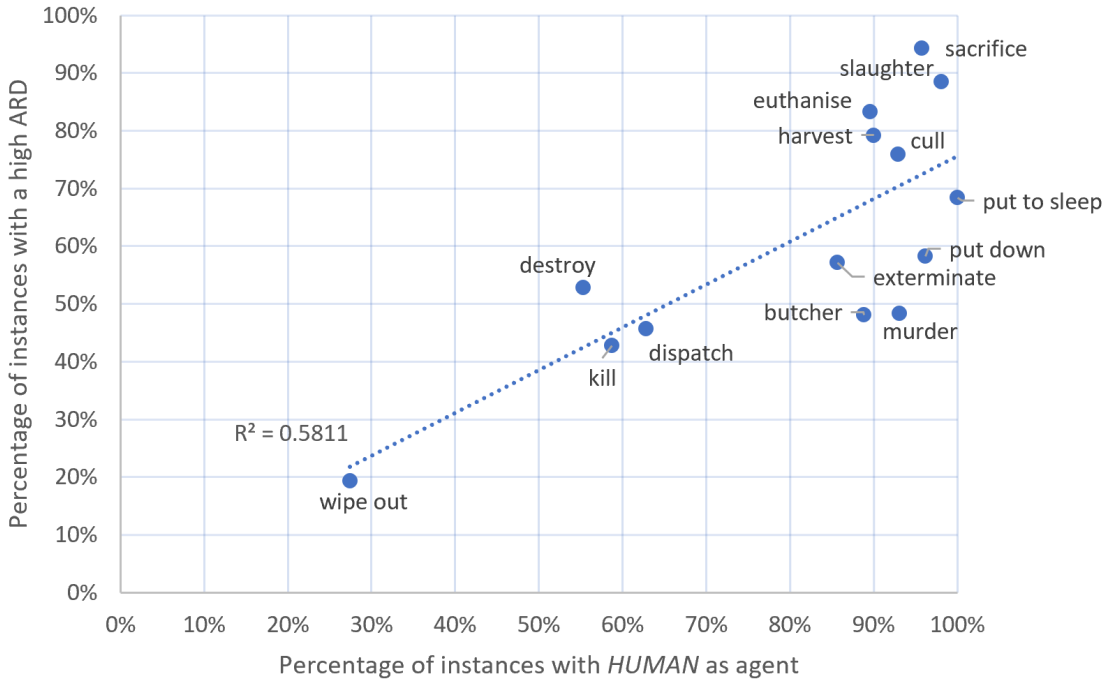

Figure 5. *Relationship between the percentage of HUMAN agents and the percentage of high ARD instances across all killing terms*

It appears that, generally speaking, as the proportion of HUMAN agents increases, so too does the proportion of agents with high referential distance scores. For some terms, the proportions of human-as-agent and high ARD are almost equal, e.g. *destroy* (55% HUMAN, 53% high ARD), *euthanise* (90%, 83%) and *sacrifice* (96%, 94%). In other cases, the proportions are very different, e.g. *butcher* (89%, 48%), *exterminate* (86%, 57%), *murder* (93%, 48%), *put down* (96%, 58%) and *put to sleep* (100%, 68%).

The first thing to note about these high-discrepancy terms is that they tend to have smaller sample sizes. *Exterminate*, *butcher* and *murder* have the smallest sample sizes of all

the verbs in this study, with 14, 27 and 29 concordance lines, respectively. These could therefore be interpreted as i) potentially unreliable (anomalous) results due to a lack of sufficient data, perhaps owing to the fact that the main source of data was scientific journal writing, a genre that does not favour such terms as *exterminate*, *butcher* and *murder*; (ii) a result of the semantic nature of the verbs themselves; or (iii) a combination of these. *Put down* and *put to sleep* are both highly euphemistic killing terms, typically reserved for pets and other animals being killed in seemingly regrettable circumstances. Space does not permit a full examination of these terms here, but they are both notable for their softening of, i.e. high *semantic* distancing from, the act of killing, which may explain the relatively low syntactic distancing.

4.2.1 Exterminate, butcher and murder

The verb *exterminate* overwhelmingly entails a HUMAN agent. Of the 14 *exterminate* instances, 12 have the agent of HUMAN; of the remaining two, one is attributed to an EVENT (Example 7) and the other to X, i.e. no inferable agent (Example 8). Eight lines out of the total 14 have an ARD of 'NF' ('not found'), meaning that the disambiguating reference is either further than five clauses from the predicator, or is not mentioned at all. These small frequencies make it difficult to comment authoritatively on *exterminate*, but it could be that in the six cases where there is a low or medium ARD (as in Example 9), this short referential distance has the purpose of making the perpetrator more visible, and perhaps the reader is being intentionally reminded of the agency of those responsible.

(7) *But 65 million years ago, a great disaster overtook the Earth. Whatever its cause, a great proportion of animal life was* ***exterminated****.* (broadcast)

(8) *The gharials that we filmed with their babies were nearly* ***exterminated*** *in the 1970s when they lost most of their natural habitat.* (broadcast)

(9) *As the environment changes increasingly quickly, are we to* ***exterminate*** *every species that strays from its traditional and allotted boundaries and thrives in the new environment?* (campaign literature)

Butcher and *murder*, like *exterminate*, are predominantly HUMAN-enacted: 93% for *murder* and 89% for *butcher*. In the case of *murder*, it could be argued that the short distance between the agent tokens (as in Examples 10 and 11) was, as with *exterminate*, a deliberate attempt to draw attention to the killer(s) for their behaviour.

(10) *Mindless thug Jason Trevor Godsiff* ***murdered*** *the seals while he was on his way home* (news)

(11) *A CRAZED teen held a sick Facebook party just hours after* ***murdering*** *his parents with a hammer* (news)

For *butcher*, there are other factors at play. One is that *butcher* does not necessarily imply killing, but can also refer to the carving up of already-dead animals, which has different moral implications; even when *butcher* is used to mean 'to kill [a living animal]', it can also be interpreted as meaning 'to cut up [a carcass]'. That this ambiguity is of presum-

ably little or no concern to most users of English might demonstrate an example of speciesism inherent in our language, a collective indifference to the status of the *butchered* animal as either a living being or an inanimate object. Another consequence of this semantic vagueness is a subtle, almost imperceptible distancing of the killer from their actions. Did the actor doing the 'butchering' kill an animal, or did they merely cut the animal's carcass into pieces?

Far from being considered taboo, *butchering* is often presented as a respectable and wholesome vocation (see Examples 12 and 13). This creates a somewhat contradictory picture: *butcher* being used negatively to express brutality and immorality in some instances (cf. Jepson, 2008), and *butcher* being used neutrally — or perhaps even positively — to describe a standard business practice in others. *Butcher* was even found to be used in a rare, intransitive sense, meaning 'work as a butcher' (n=2, seen in Example 14).

(12) *we decided to take the plunge and set up our own farm butchery to* ***butcher*** *and sell our own cattle.* (promotional)

(13) *The carcasses are hung properly (at least 3 weeks in the case of the beef) and then* ***butchered*** *with care* (promotional)

(14) *I'm 42 and I've been* ***butchering*** *since I was 15* (focus group)

Using *butcher* intransitively, even when there is an undeniable entailment of another actor, effectively erases the patient from the event. The animal being *butchered* has gone from being ontologised as a thing — a body part — to being de-ontologised altogether, an example of Adams' (1990) 'absent referent'.

It is worth noting, however, that in around half of the lines for *butcher* (13 out of 27), the ARD is still 'high', and the majority of these enacted by HUMAN agents. In some cases, those who might wish to present this event as morally neutral, e.g. butchers, still opt to remove the agent altogether by using the passive voice (e.g. Example 13). It is difficult to gauge whether such examples are attempts at distancing, or whether the author is simply conforming to norms of describing standard manufacturing processes, betraying an indifference to the violence inherent to such a product.

4.3. PRD at a glance

In the same way as for ARD, Fig. 6 shows the proportions of the most commonly occurring patient types as well as their Patient Referential Distance (PRD) distributions. The same key is used as before: solid colour segments for 'high' PRD, striped segments for 'medium' PRD and gridded segments for 'low' PRD.

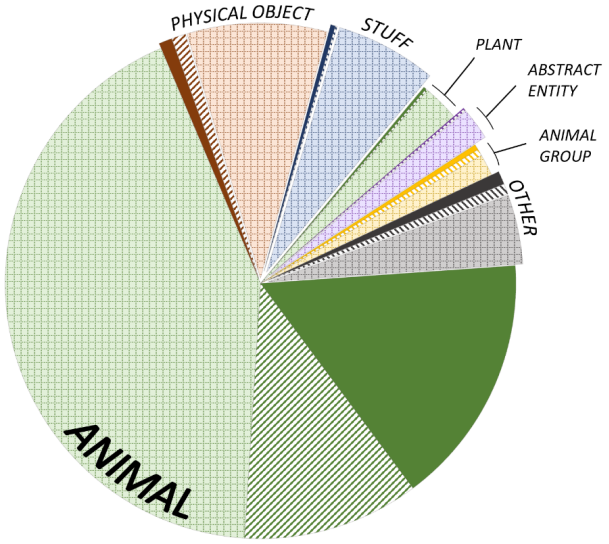

Figure 6. *The proportions of the most commonly occurring types of patients and their PRD as found in the KVD. Solid colour indicates a high PRD, stripes a medium PRD, and grid squares a low PRD.*

As seen in Figure 6, the results for patients and their referential distance are very different from those of the agents and their ARD scores. ANIMAL is the patient in 70% of all instances, and the majority of these (61%) have a low PRD. There is a similar trend across the other main patient types, though with an even stronger tendency towards low PRD (gridded segments): 84% for PHYSICAL OBJECT, 94% for STUFF, 89% for PLANT, and 92% for ABSTRACT ENTITY. ANIMAL GROUP has a similar PRD distribution to ANIMAL, with a 'low PRD' majority of 67%. ANIMAL and ANIMAL GROUP also have similar 'high PRD' proportions, greater than those of the other patient types: 23% and 17%, compared with 8%, 4%, 7% and 3% for PHYSICAL OBJECT, STUFF, PLANT and ABSTRACT ENTITY, respectively. Given the nature of the corpus and the verb selection, we should expect that the patients in these instances will be mainly ANIMAL victims in acts of killing (by way of comparison, HUMAN patients make up just 1.9% of all instances). However, this chart also shows that — after the killing of animals — events affecting PHYSICAL OBJECT and STUFF are the next most common, indicating non-killing events (as in Examples 15 and 16). Despite selecting verbs on the basis that they (usually) refer to acts of killing, non-killing senses accounted for 21% of all instances in the KVD, with varying levels of polysemy across verbs but notably for *put down*, *harvest* and *destroy*.

(15) *So I do occasionally* ***put*** *poison* ***down***. (focus group)

(16) *In contrast, some foxes* ***destroy*** *a wooden block to splinters in weeks* (journal article)

The proportions of PRD across text types are quite different to those of ARD; Fig. 7 gives the ARD and PRD proportions side by side, using the same 'high', 'medium' and 'low' formatting as before (solid, striped, gridded).

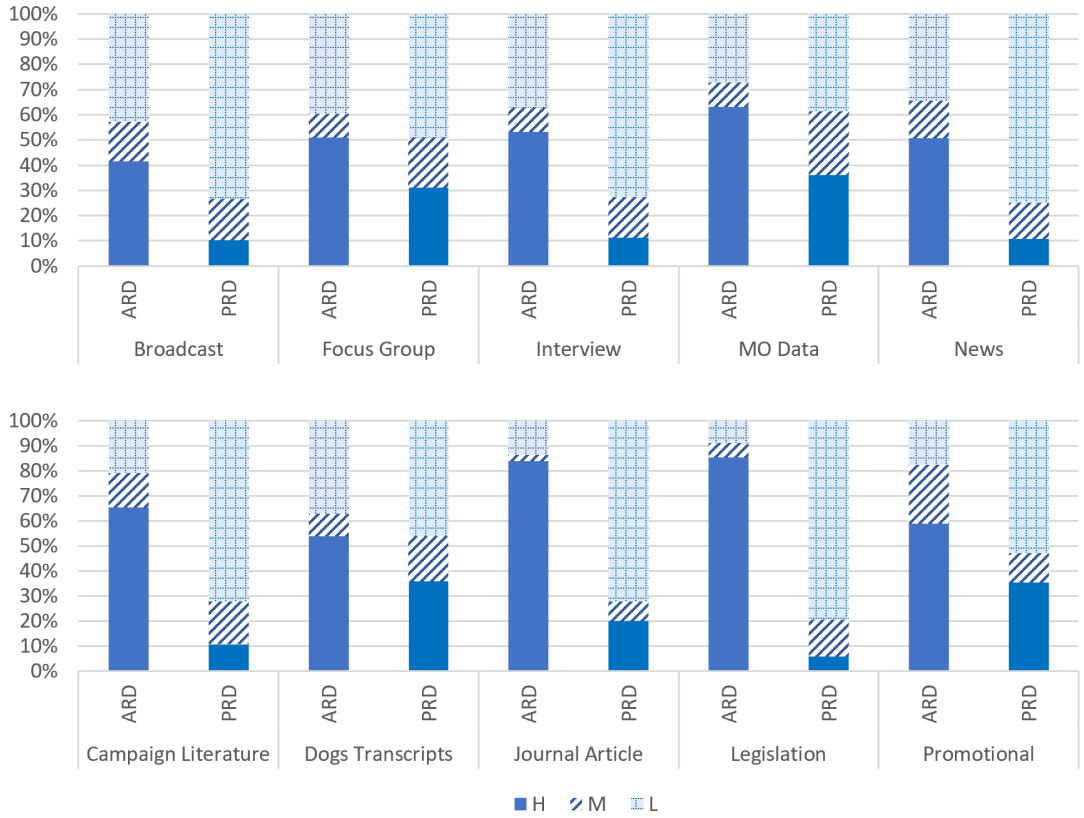

Figure 7. *Proportions of ARD and PRD scores across text types; solid colour indicates 'high', stripes indicate 'medium' and gridded squares indicate 'low' scores.*

For some text types, there appears to be something of an inverse relationship between ARD and PRD. This might suggest that, in some cases, where there is a large proportion of high ARD instances we might also expect to find a similar proportion of the data with low PRD scores. This appears to be true for the campaign literature, journal article texts, legislative texts, and, to a lesser degree, the promotional texts (shown on the bottom row of Fig. 7). However, the same cannot be said for the reverse: a greater proportion of low ARD scores does not seem to entail a greater proportion of high PRD scores for that text type. For the five text types across the top of Fig. 7, an R^2 coefficient test found no correlation between proportion of high ARD and low PRD, but for the five text types across the bottom, there was a strong positive correlation ($R^2 = 0.78$). This relationship — if it is a relationship — could be attributed to i) recurrent grammatical constructions common to particular text genres (see Section 4.5.1); ii) certain types of events commonly reported in particular discourses; iii) certain types of agent–patient dyads that tend to occur in those texts; or iv) some other factor. However, given that this correlation applies only to some of the text types and not to others, it is difficult to say with confidence whether ARD and PRD are dependent variables at all.

4.4. PRD across killing terms

To take a closer look at the behaviour of the patient type ANIMAL, its average PRD was tracked across the 14 killing terms. Table 3 shows the ANIMAL average compared against the average for all patient types for each term. The 'difference' score was obtained by dividing the ANIMAL average by the overall average and subtracting 1; a negative (-) score indicates a lower-than-average result and a positive (+) score a higher-than-average one.

Term	No. of patient types	Average PRD score (all patient types)	Average animal PRD score	Difference score
wipe out	9	1.10	0.90	-0.18
butcher	3	2.19	1.85	-0.16
dispatch	8	2.20	2.14	-0.03
cull	4	1.67	1.65	-0.01
euthanise	2	1.83	1.83	0.00
exterminate	2	0.79	0.79	0.00
slaughter	3	1.19	1.20	+0.01
put to sleep	2	3.47	3.50	+0.01
kill	8	1.70	1.81	+0.07
sacrifice	5	1.92	2.06	+0.07
murder	2	0.93	1.11	+0.19
put down	8	2.27	2.98	+0.31
destroy	15	1.08	1.66	+0.54
harvest	7	0.84	1.82	+1.17

Table 3. *Number of patient types, average ANIMAL PRD score, and average PRD score for all patients across the killing terms, ordered by 'difference' score.*

Looking at Table 3, we can see that in most cases the average ANIMAL PRD differs very little from the average for all patients — likely because ANIMAL is generally the most common patient type and will heavily influence the overall average PRD — but there are some cases in which ANIMAL has a higher-than-average PRD: *harvest*, *destroy,* and, to a lesser extent, *put down.* Although the ANIMAL PRD scores for *harvest* and *destroy* are higher than the average PRD for all patient types in those particular verb samples, they are not particularly high compared with the average ANIMAL PRD scores across the

board. In other words, it is not that the ANIMAL patients have an especially high PRD in the *harvest* and *destroy* samples, but that there are other senses and, consequently, other patient types associated with these verbs which entail relatively low PRD scores, bringing down the average for that verb. In fact, the *harvest* and *destroy* samples have the smallest proportions of killing instances out of all the terms in this study: 49% for *harvest* and 34% for *destroy*. This is due to patients such as STUFF and PHYSICAL OBJECT being *harvested* and *destroyed* in non-killing senses.

4.5. Voice

The most direct route to a high or low referential distance is through the use of voice, notably the use of the passive to dislocate (or 'suppress') the agent from their actions and, in some cases, to bring the patient to the fore by making them the topic and grammatical subject. This section summarises the main findings in terms of active and passive voice.

4.5.1 Active and passive voice at a glance

The passive/active ratio of all KVD instances is illustrated in Figure 8, broken down by text type.

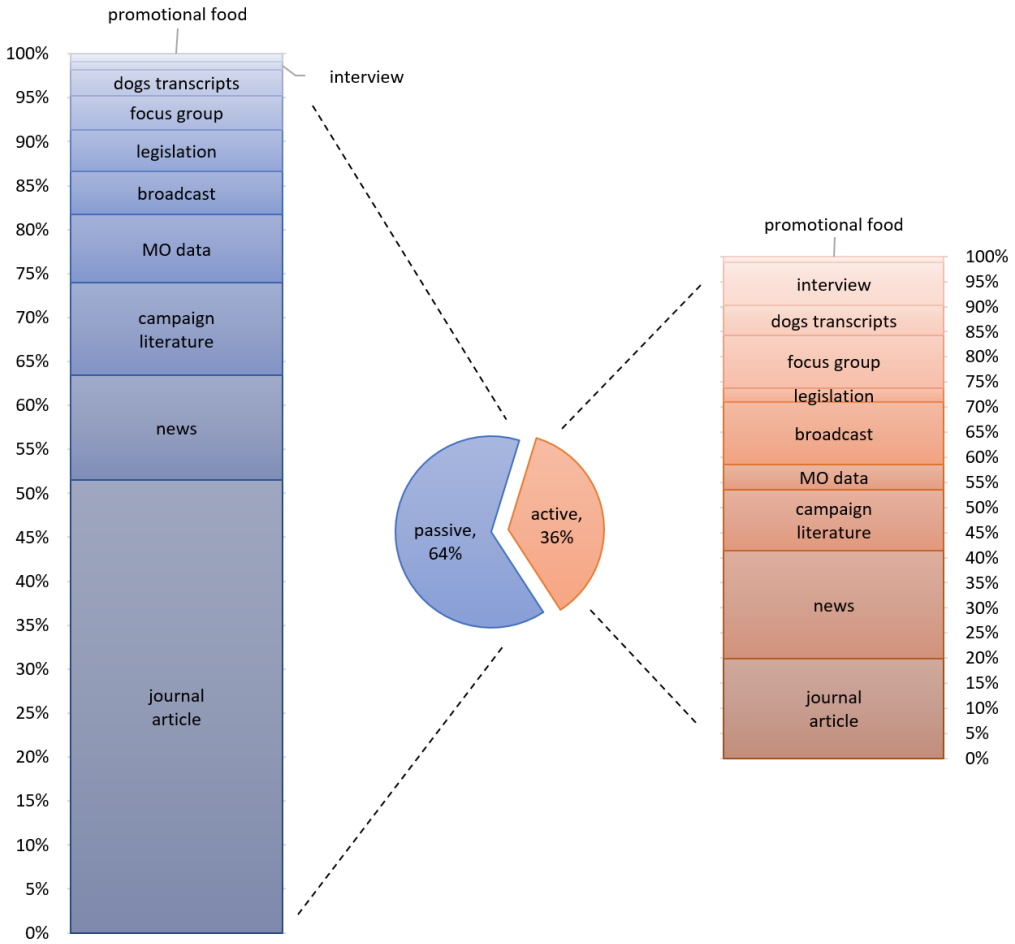

Figure 8. *The proportions of active and passive use in the KVD, broken down by text type*

As shown in Fig. 8, the majority (64%) of all instances in the KVD are expressed in the passive voice, and around half of these come from journal article sources. If we remove the journal article data from the calculation, for comparative purposes, the passive/active ratio across all data becomes almost equal: 52% to 48%. As predicted, the academic texts are dense with passive constructions, and this explains the high ARD scores for those texts.

4.5.2 Voice and referential distance

The relationship between (passive) voice and (high) ARD is illustrated in Figures 9 and 10, first across text types and then across killing terms.

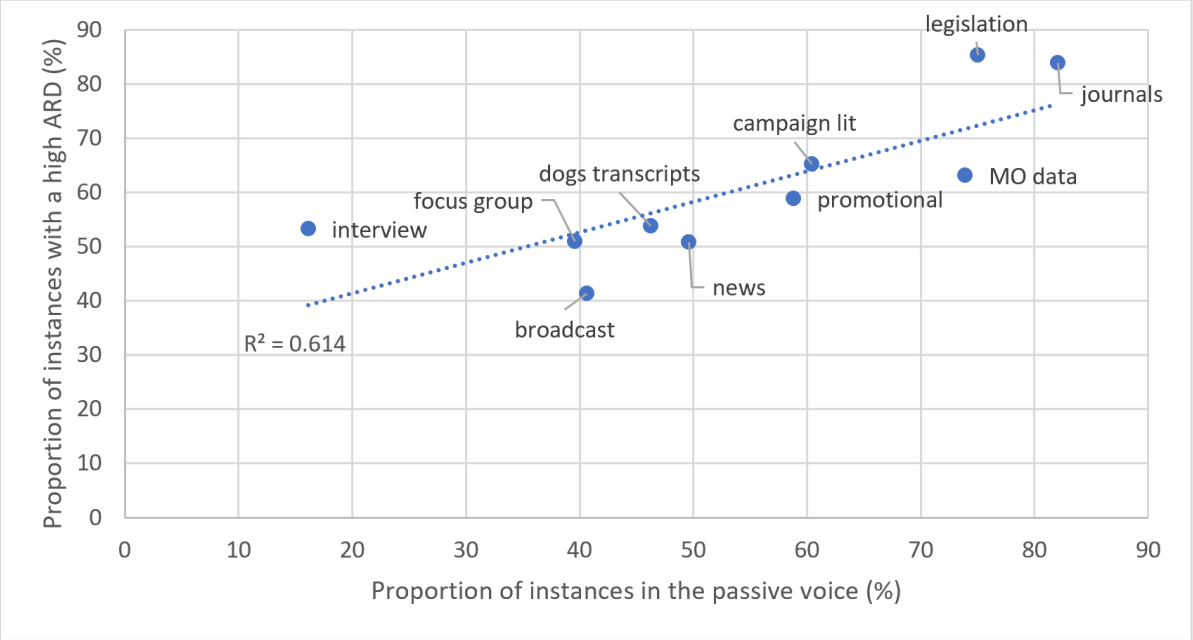

Figure 9. *The relationship between (passive) voice and (high) ARD across text types*

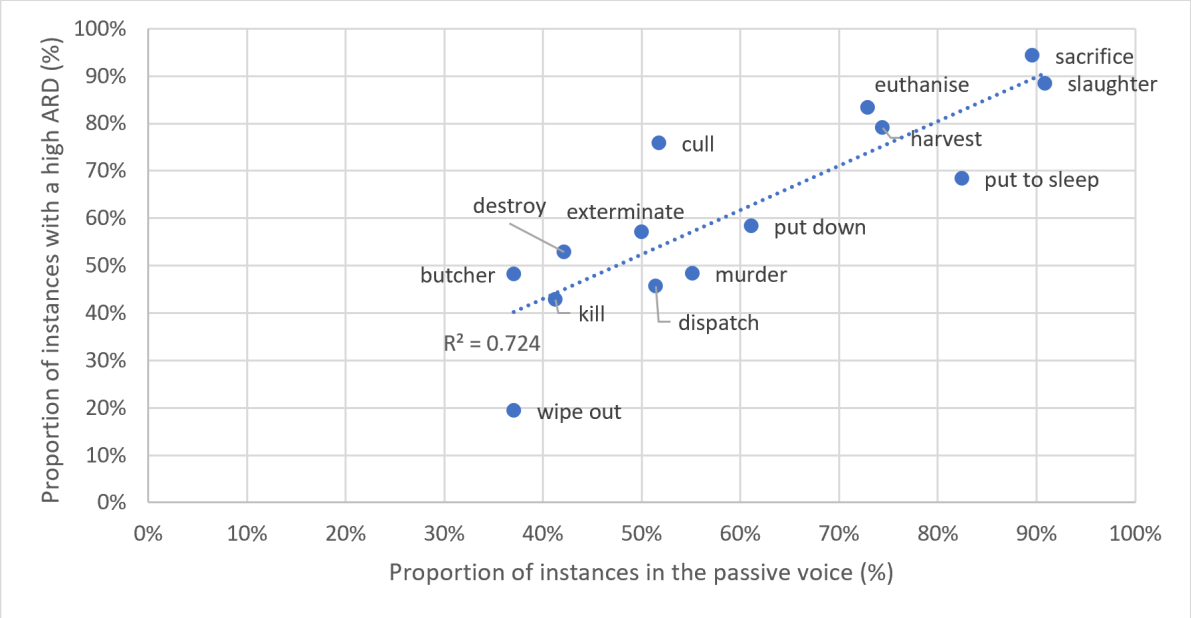

Figure 10. *The relationship between (passive) voice and (high) ARD across killing terms*

Looking at Figures 9 and 10, we can see that there is a moderate positive correlation (R^2 = 0.61) between use of the passive voice and incidence of high ARD for text types, and a strong positive correlation (R^2 = 0.72) between these variables when it comes to killing terms. This suggests that passive voice does indeed increase ARD, together with agent backgrounding and suppression. When the same graphs were plotted for use of passive voice and incidence of high PRD, on the other hand, there was no correlation (R^2 = 0.01 and 0.08 for text types and killing terms, respectively). This suggests that while the passive voice is a reliable measure of agent explicitness (or lack thereof), it does not have any consistent effect on the patient in terms of explicitness of identity and emphasis. To explore this further, the following section takes four killing terms as short case studies and examines their incidence of active and passive voice, and how these might contribute to, or account for, distance.

4.5.3 Kill and wipe out

Kill and *wipe out* are unusual killing terms: they are both more likely, in the KVD, to be used in the active voice (58% active for *kill*; 63% for *wipe out*) and they have the lowest average ARD scores of all verbs in this study; in other words, their agents are more explicit. Both terms are used to refer to the killing of humans as well as animals, and they can also be used in non-killing senses. However, in the KVD, all but two lines of *kill* referred to acts of literal killing, and all lines of *wipe out* referred to acts of (mass) killing.

The most likely explanation for the low rate of passive voice and the (consequential) low ARD scores for *kill* and *wipe out* is that they are not very *specific* killing terms; connotations of (im)morality are dependent on context. Animals *kill*; humans and institutions *kill*; and processes *kill*, too (Example 17). *Killing* is more palatable and less nuanced

than, say, *murdering*. Sometimes it is even desirable; the decision to *kill* a virus, for instance, does not pose a moral problem. *Wiping out* can be softened, too; humans and events don't *wipe out* animals or other humans, so much as animal *groups* and human *groups*, deindividuated mass patients. When this is considered a negative situation, it makes sense to expose the participants with little referential distance (Example 18). When *wiping out* is not considered to be a moral issue, the necessity to create distance might not be felt (19).

(17) *this killer gene is selective for* ***killing*** *cancer cells," said Professor Vivek Rangnekar* (news)

(18) *We should not* ***wipe out*** *entire species as has happened in the past.* (MO data)

(19) *when they start eating trees and this, that and the other, the Forestry Commission will come in and just* ***wipe out*** *as many as necessary* (focus group)

Given that they are less specific, *kill* and *wipe out* are also enacted by a wide range of agents. *Kill*, *destroy* and *wipe out* have the greatest diversity of agents, with 18, 15 and 14 different agent types, respectively (compared with <6 for other verbs). As we have already seen, HUMAN agents tend to invoke high ARD scores, so if there is competition from other semantic types for the 'agent' slot then it is plausible that the average ARD might be lower as a result.

4.5.4 Sacrifice and slaughter

Sacrifice and *slaughter* are the two verbs with the highest average ARD scores and the highest proportions of passive voice (90% passive for *sacrifice*, 91% for *slaughter*). *Sacrifice*, unlike *slaughter*, features some (n=14) examples of non-killing senses in the PPPP sample, e.g. Examples 20 and 21. Overall, however, the vast majority (93%) of the *sacrifice* sample denotes killing, specifically the killing of animals by humans in a research setting. In all but two of these instances, the ARD was 'NF', the absent agent being inferred to be either a researcher (n=188) or a commercial slaughterer (n=8) from the broader context. Although Examples 22 and 23 have sufficient disambiguating information in their immediate contexts to infer the identity of the killer (i.e. HUMAN), it is telling that in these examples *sacrifice* features in postmodifying clauses that form part of the larger NP (underlined) of which the animal patient is head. In other words, the act of killing is syntactically backgrounded.

(20) *By developing a shell, tortoises inevitably* ***sacrifice*** *speed* (broadcast)

(21) *flavour was* ***sacrificed*** *for profit* (promotional)

(22) *ELISA was standardized to know the status of Map in larger number[s] of buffaloes* ***sacrificed*** *in these slaughterhouses.* (journal articles)

(23) *the animals* ***sacrificed*** *at cottage slaughterhouses were driven from farmers' herds in the Agra region* (journal articles)

(24) *As soon as hens pass their peak and start laying fewer eggs than before, they are* ***slaughtered****.*
This happens to all hens, including free-range and organic (campaign literature)

Most of the time (87%), *slaughtering* is presented as a standard process carried out by professional slaughterers, researchers or farmers, with a highly distant or entirely elided agent in the passive voice. Given what the literature had to say on slaughtering and slaughterhouses, perhaps it is unsurprising that the killer is as elusive in text as in the slaughterhouse itself. Even in non-academic writing, where there are not the same constraints of genre and style, *slaughtering* is an overwhelmingly passive phenomenon with almost no named culprits. Perhaps *slaughter* simply has such specific connotations that it is not considered necessary to name the killer, in the same way that the construction 'HUMAN was sentenced' does not require the clarification 'by a judge' (Hanks, 2013: 285). Even pro-animal campaign literature (e.g. Example 24) suppresses these *slaughtering* agents, even if this is likely done with the intention of foregrounding the victims. Authors of these texts are probably unaware that they are obfuscating the agent and construing deliberate acts of violence as something that *happens*.

5. Conclusion

Givón's measure of referential distance was not originally intended to be employed in the way it is here, and the differences in approach and research interests have naturally produced different findings. We know from the literature that we should not be surprised to find a predominance of HUMAN agents. Less predictable is the high referential distance associated with HUMAN agents and ANIMATE patients, whom we might expect to have lower referential distance and therefore lower ambiguity, despite the unconventional application of the metric. However, this study is less invested in comparing findings with those of Givón and colleagues than in applying referential distance in a novel way for the purpose of measuring discursive ambiguity. The findings suggest that referential behaviour is not necessarily inherent to semantic types themselves, but is also potentially attributable to the processes in which these actors participate, as well as the text type, which strongly interacts with incidence of passive voice. This is difficult to establish, however, without undertaking a more comprehensive comparison of different participants involved in a range of events of varying kinds.

ARD and PRD were found to behave very differently as features, sometimes even inversely, and this reflected the unequal relationship between HUMAN, which accounted for the vast majority of agents, and ANIMAL, which constituted the vast majority of patients. ANIMAL was, on the whole, found in positions of greater PRD than inanimate patients were, and this has the result of detracting from their victimhood, in the same way that HUMAN agents in positions of high referential distance are literally and figuratively distanced from their actions. Conversely, cases where agents and patients have lower referential distance might be perceived as attempts to be deliberately explicit: to expose the intentions of the agent and draw attention to the suffering of the patient. This could ex-

plain why the same verb, being used in the same sense, might be deployed with varying degrees of referential distance to meet the ideological needs of the speaker or writer. Some cases, however, are arguably driven by the norms and constraints of the text domain and genre, such as conventions of style in academic writing. In other cases, it may simply be that the speaker does not feel the need to mitigate or soften such events, and this can manifest as either a low referential distance — i.e. an explicit, immediate mention of an unproblematic agent or patient — or as a high referential distance, such as in the form of a truncated passive construction whose absent agent requires no explanation.

Space has not permitted a detailed examination of all 14 verbs and their semantic patterns here, but the interactions between referential distance, semantic type, verb, text type and voice present a picture in which humans not only routinely kill other animals in a variety of contexts and ways, but also describe these acts in vague, distant and ambiguous language. That genre conventions might absolve the killer from being named should not be automatically discounted as benign. Use of the passive voice, Bolinger (1980) reminds us, need not be nefariously premeditated to have potentially harmful effects; language, *the loaded weapon*, affords a great deal of power in the shaping and reproducing of self-serving, speciesist ideologies. Unsurprisingly, the distance and concealment that surrounds animal killing also manifests in various linguistic forms of distancing, some of which are less obvious, and potentially more powerful, than others.

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Appendix

Source	Author(s) and year	Terms
The Oxford Thesaurus	Urdang (1991)	78
Oxford Dictionaries Thesaurus [online]	Oxford Dictionaries (2018)	43
Collins Thesaurus [online]	Collins Dictionary (2018)	63
Thesaurus.com [online]	Dictionary.com (2018)	106
Bloomsbury Thesaurus	F. Alexander (1997)	125
Longman Synonym Dictionary	Urdang (1986)	109
Roget's Thesaurus [online]	Roget.org (1999)	27
The Macmillan Dictionary and Thesaurus [online]	Macmillan Dictionary (2009-2018)	10
The Nuttall Dictionary of English Synonyms and Antonyms	Elgie Christ (1943)	15
Webster's New Dictionary of Synonyms	Merriam Webster (1973)	13
The Macmillan Dictionary of Synonyms and Antonyms	Urdang and Manser (1995)	11
Roget's Thesaurus of English Words and Phrases	Dutch (1962)	104
Kind Words: a Thesaurus of Euphemisms	Neaman and Silver (1990)	17
The Faber Dictionary of Euphemisms	Holder (1989)	99
The Oxford Dictionary of Slang	Ayto (1998)	43
The Wordsworth Thesaurus of Slang	Lewin and Lewin (1995)	90
Stone the Crows: Oxford Dictionary of Modern Slang	Ayto and Simpson (2008)	39
Dictionary of Contemporary Slang	Thorne (2007)	35
Beth Levin's Verb Classes: murder, poison, destroy	Levin (1993)	33

Source	Author(s) and year	Terms
WordNet [online]	Princeton University (2018)	70
Total unique 'killing' terms		370

Table 4: Resources used and number of terms extracted from each lexicon consulted.