# Discourse on Medically Assisted Procreation, from Legal Institutions to Blogs: A Corpus-based Approach to Variation in the Use of Multiword Terms

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*Abstract*
This corpus-based study investigates variation in the use of multiword terms understood as depositories of specialised knowledge in a system of genres (third-party interventions, judicial opinions, legal summaries, press releases, blogs and a judgment) revolving around the European Court of Human Rights case Parrillo v. Italy. The study framework combines Corpus Linguistics and Critical Discourse Analysis to compare distributional patterns of legal and bioethical multiword terms across the six genres as well as the linguistic representation of the main concept of embryo. The results provide confirmatory evidence of diaphasic variation involving, first, variation in terminological rigour depending on institutional stratification, and, second, "strategic" variation introduced in persuasive genres to enhance a potential reading key.

*Keywords*: European Court of Human Rights, legal genres, linguistic variation, multiword terms.

## 1. Introduction

Scientific, technological and medical developments in the field of medically assisted procreation – concerning methods and techniques for manipulating reproductive cells or for intervening on an embryo or foetus – give rise to a number of ethical and legal questions. These sensitive questions are frequently addressed by the European Court of Human Rights ("ECtHR"), which is the only court that guarantees judicial protection of the bioethical rights of an individual at the supranational level[1]. Its case-law exerts significant

[1] The ECtHR is a regional supranational body operating in Europe. It is the only court of human rights in the world which recognises the right of direct individual petition.

influence on the interpretation and knowledge dissemination of many controversial concepts of bioethics, including those dealing with issues of medically assisted procreation. In addition to their prominence in legal circles, ECtHR cases receive much media attention, which includes multiple overviews as well as discussion on the part of human rights bloggers, who in turn disseminate information contained in the ECtHR judgments.

The aim of this article is to identify and analyse instances of possible variation at the level of multiword terms (Kjær 2007). Specific focus is placed on thematic variation and terminological consistency in multiword patterning in a system of genres (i.e. third-party interventions, judicial opinions, legal summaries, press releases, blogs and a judgment) associated with one of the most controversial recent cases examined by the Court: the case of *Parrillo v. Italy* (application 46470/11). The study combines Corpus Linguistics methods with a CDA-inspired framework to compare distributional patterns of legal and bioethical multiword terms across six different genres, as well as the linguistic realisations of the key concepts.

Given the relevance of the ECtHR rulings to the conceptualisation of the bioethical issues concerned, any terminological variation introduced during the knowledge dissemination process has to be treated with caution. Section 2 presents the theoretical framework used in this study: subsection 2.1 provides an overview of LSP phraseology with a view to defining multiword terms, which represent the main linguistic focus of this work, and subsection 2.2 describes variation in legal genres, introducing the system of genres analysed in this article. Next, Section 3 describes the corpus used for the study as well as the methodology adopted. The results are reported in Section 4, followed by final remarks in Section 5.

## 2. Theoretical framework

### 2.1. Multiword terms and LSP phraseology

Building on Sinclair's interpretation of the Firthian concept of contextual meaning, according to which words enter "into meaningful relations with other words around them" (Sinclair 2004: 25) and do not remain "perpetually independent in their patterning"

(Sinclair 2004: 30), this study attempts to trace variation in the key expressions used across different genres. The specific focus is on terminological multiword expressions, as these mini-patterns – both multiword terms (Kjær 2007) and the terminologico-phraseological environment of single terms – are considered "depositories of knowledge" (Sager 1998: 259). In the relevant literature, these multiword units are known under a variety of labels, including *terminological phrase* (Kjær 1990), *terminological phraseme* (Meyer and Mackintosh 1996), *multiword terminological phrase* (Bergenholtz and Tarp 1995), *multiword term* (Kjær 2007: 509) and *term-forming pattern* (Biel 2014: 180), i.e. "collocates of a generic term which form more specific multiword terms of varying degrees of terminologicality" (Biel 2014: 180).

In general, there are two distinct approaches to phraseology: the traditional *phraseological approach* (Nesselhauf 2004; Granger and Paquot 2008: 29) and the so-called *distributional approach* (Evert 2004) or *frequency-based approach* (Nesselhauf 2004). The phraseological approach lends itself to qualitative research as it focuses on a set of linguistic criteria to define the various types of phraseological units according to their degree of transparency and variability. The distributional approach is particularly suitable for quantitative research, as it concerns primarily the mechanism for retrieval of recurrent patterns, focusing on either n-grams/clusters or co-occurrences. *N-grams* or *n-clusters* are understood as uninterrupted sequences of at least two word forms (Gries 2008: 20) and *co-occurrences* stand for discontinuous combinations of two words (Granger and Paquot 2008: 39).

The choice to analyse multiword terms is linked to the specific status of these items, which could be classified as both phraseological and terminological, because they contain elements of both paradigms. In terms of their retrieval mechanism – under the distributional approach – multiword terms are classifiable as n-grams or clusters. At the same time, they differ from other clusters, n-grams or sequences of words in that they revolve around a term or several terms, which are organised in a phraseological pattern, while a simple cluster may not contain a term. Prototypically, these patterns are structured as [Adj + N] and [N+N]; however, variants with a more complex morphological structure may also occur (Nikitina 2019). Multiword terms have the potential to

convey highly domain-specific meanings, because various single words organised in a frozen pattern increase the specificity of the knowledge conveyed. Consequently, any shifts in the distribution and construction of these patterns within a single case, i.e. under the same factual and legal circumstances, would involve an intentional or unintentional variation in knowledge structure, elicited by a number of variables.

### 2.2. Legal genres and variation

While early studies of legal English treated it as a rather monolithic phenomenon (e.g. Mellinkoff 1963; Crystal and Davy 1973 [1969]), compared to "ordinary" language, more recent studies have started to address the issue of variation within legal discourse (e.g. Tiersma 1999; Mattila 2006; Goźdź-Roszkowski 2011). The heterogeneity of legal discourse has generated multiple taxonomies, where legal documents are subdivided according to the situational contexts (see, e.g. Maley 1994 on judicial discourse, courtroom discourse or the discourse of legal consultation), function (see, e.g. Tiersma 1999 on operative, expository or persuasive texts) or authors/discourse community (see, e.g. Mattila 2006 on the language of judges, advocates, legislators, etc.). Variation in legal discourse could be associated with a multitude of genres embedded in different institutional or professional contexts, which vary by degree of formality and written or spoken mode, as well as by geographical location.

The core genre within the ECtHR system is undoubtedly the judgment. This genre is organised around a number of constant parameters, such as the drafting party (the Court) and crystallised structure (the procedure, the facts – circumstances of the case and relevant domestic law and practice, the law – alleged violation and submissions by the parties, the dispositive part and the separate and dissenting opinions, if any; see White 2009 for details). In terms of language variation, however, it seems wrong to group together judgment and judicial opinions. The latter belong to a separate genre (Ferguson 1990) and involve some degree of stance-taking and disagreement with the majority reasoning, thereby coming to represent an instance of the so-called discourse of dissent (Langford 2009:1). The judgment, on the other hand, represents the

majority reasoning and keeps expository neutrality by maintaining the heteroglossia of all parties involved. Consequently, I consider judicial opinions as a distinct set of texts, even though they are textually presented as part of the judgment.

In general, the notion of *system of genres*, "the interrelated genres that interact with each other in specific settings" (Bazerman 1994: 97), is a useful concept for this study, as all texts considered are interrelated and unified by the same topic and involve a full set of parties. In addition to the judgment rendered by the Grand Chamber – the highest judicial formation of the Court, consisting of 17 judges – and six separate opinions, the case is also the subject of two derivative texts prepared by the ECtHR Registry – the legal summary and the press release. The legal summary is meant for legal professionals and represents a professionally abridged version of the judgment, to be disseminated through monthly reviews and bulletins. The press release has a wider popularising function (Calsamiglia and van Dijk 2004; Garzone 2014) as it is intended for a plethora of journalists, legal bloggers and other interested parties. Consequently, it is an abridged version of the judgment with a clear attempt at simplification (e.g. the legal term "margin of appreciation" is explained as "room for manoeuvre" or "discretion").

As the case dealt with in this article generated high social resonance, multiple observations of *amicus curia*, or "friends of the Court", were filed (unfortunately, only three of which in English). These interventions are explicitly persuasive in nature, as the third parties argue their position in respect of the case, specifically, concerning the legitimacy of embryo donation for research purposes. Interestingly, the pleadings in English were consonant with the applicant's position, so they are markedly slanted towards a positive representation of embryo donation. Unfortunately, the Government's position in this system of genres is not included in the corpus, since it is expressed in French.

Finally, the system of genres analysed here includes posts on *legal blogs* or *blawgs* (Garzone 2015). Legal blogs have attracted the attention of linguists only relatively recently, and the literature on this genre is still limited (Garzone 2014, 2015; Tessuto 2015). The genre serves the needs of legal professional communication (Garzone 2014: 167) and is a vehicle for expressing the opinion of bloggers (Tessuto 2015: 85), since the linguistic, textual and discursive re-elaboration

of specialised knowledge is often accompanied by an increased level of subjectivity, evaluation and stance (Myers 2010b). As a result, this genre also belongs to the persuasive type; indeed, not only do bloggers review the case, they also encourage the readership to form an opinion concerning their understanding of the situation.

## 3. Materials and methodology

The materials for this study are the texts from six different genres associated with the ECtHR case *Parrillo v. Italy*. Adopting a genre perspective (Bhatia 1993; Swales 1990) on linguistic variation in legal discourse, this study looks at how the language associated with a particular discipline varies according to the level of institutionality, together with the profile of drafters and their goals (expository or persuasive). The choice of topic was determined by the controversy and high social resonance of this case, where, for the first time in its history, the ECtHR had to rule on the question of the donation of surplus embryos for scientific research purposes sought by Adelina Parrillo. The embryos created by Parrillo and her partner through in vitro fertilisation treatment were left unused in cryopreservation, as Parrillo's partner died before the embryos could be implanted. She complained about not being able to donate them to research, since Italy had passed a law prohibiting experimentation on human embryos, including for research purposes.

The case resulted in the ECtHR Grand Chamber judgment, accompanied by six separate opinions rendered by 11 judges out of 17. One joint and two individual opinions largely agree with the majority (the so-called concurring opinions). In addition, two partially dissenting opinions – one individual and one joint –disagree with the majority on the extent of their judgment, though they agree with the underlying legal reasoning. Finally, Judge Sajó voted against the majority judgment and expressed his view in a dissenting opinion that completely disagreed with the rest of his colleagues. As the ECtHR judges are elected in respect of different Council of Europe member states, they have different legal and linguistic backgrounds, which may exert some influence on the linguistic patterns used in separate opinions. Only one opinion (the joint partly concurring opinion of Judges Casadevall, Raimondi, Berro, Nicolaou and Dedov) was originally drafted in French and translated into English by the Court's

translation services[2], with the rest of the documents being drafted directly in English by judges who are not native speakers of English.

In addition to the institutionally produced documents (including the derived genres of press release and legal summary mentioned in the previous section), I have also collected three documents belonging to the occluded genre of written pleadings (Nikitina 2018a), categorised as third party interventions. In terms of blog coverage, I collected 10 posts from legal blogs overviewing the case from websites like Lexis Nexis Blogs, Bioethics Observatory, BioNews, UK Human Rights Blog, Turtle Bay and Beyond, using the case name as the search parameter. All blog posts were produced by legal professionals, and most of the bloggers had a significant background in bioethical matters. All blog posts were written shortly after the judgment.

The corpus used for this study amounts to 74,458 words (see Table 1). It is relatively small, as it was created using the strict thematic (only one case) and linguistic (English only) criteria. The constituent parts of the corpus are referred to as "text sets". I have merged together the two shortest texts (legal summary and press release, referred to collectively as "derivatives") to simplify the quantitative analysis, as the content and distribution of different multiword items within the two texts were very similar.

TABLE 1
Corpus composition

| Corpus | Tokens | Types | Texts |
|---|---|---|---|
| Judgment | 19,872 | 2,255 | 1 |
| Separate opinions | 20,094 | 2,671 | 6 |
| Written pleadings | 18,627 | 2,565 | 3 |
| Legal summary and press releases (derivatives) | 4,110 | 833 | 2 |
| Blogs | 12,375 | 1,960 | 10 |
| Total | 75,078 | 4,944 | 22 |

[2] See Brannan 2009 for the description of the procedural steps undertaken by the in-house translators of the Council of Europe and the ECtHR.

The research methodology can be defined quantiqualitative as it combines methods of corpus linguistics and critical discourse analysis (Fairclough 1995). The CDA framework is chosen to map the variation of discursive practices associated with different genres according to the sociocultural preferences and institutional contexts of the drafting party. Different authors of legal texts can address the same issue quite differently depending on the context of situation (Halliday and Hasan 1989), i.e. the part of the reality negotiated (field of discourse), the linguistic practices used to convey a certain meaning (mode of discourse) and the relations between the participants (tenor of discourse). Consequently, I draw on variation theory (Biber 1988; Halliday and Hasan 1989) and focus on functional (Halliday and Hasan 1989: 41) or diaphasic variation determined by genre specificity. In particular, this study looks at the phraseo-terminological level of variation across different text sets in order to address the two complementary research questions:

RQ1: Do different text sets dealing with the same case use bioethical and legal multiword terms in the same way?

RQ2: Are key concepts realised through the same multiword expressions?

I used the *TermoStat 3.0* software (Drouin 2012) for single and multiword candidate term extraction, based on the statistical and linguistic criteria. The software was created for domain-specific information retrieval and uses an in-built reference corpus of non-specialised texts taken from the BNC and journal articles. The selection of multiword terms is primarily based on their specificity score as compared to TermoStat's non-specialised reference corpus, which is calculated directly by the software. In other words, the software generates lists of keywords, "based on the assumption that a technical corpus contains a set of lexical items that are closely related to its subject and subject area" (Drouin 2003: 1-2). I also tried out different statistical measures, as the software also allows one to order the multiword terms by log-likelihood or $\chi^2$ score. Given the unequal size and composition of the text sets, I worked with ranks and log-likelihood parameters rather than raw or normalised frequencies. I also used *WordSmith Tools 6.0* (Scott 2015), and in particular its Concord, Patterns and Clusters functions, for lexical and textual searches.

The starting point for the study is an overview of recurrent multiword terms, which are then manually sorted into different

thematic categories. For the qualitative part, the methods of discourse analysis and, specifically, critical discourse analysis, are employed. It is assumed that linguistic choices and variation are not neutral (van Dijk 1998; Fairclough 2014; Garzone 2018). Consequently, special attention is dedicated to ideological implications, which cannot be avoided in discourses dealing with such fundamental yet elusive issues.

## 4. Results

### 4.1. Multiword terms across the text sets

As multiword terms could indicate the domain-specific units of discourse in a more transparent way than single terms (e.g. compare "technology" vs. "reproductive technology" or "line" vs "cell line"), these have been chosen as a starting point to measure variation across different text sets. For the first quantiqualitative part of the analysis I used TermoStat 3.0 (Drouin 2012) to create lists of multiword nominal terms in every text set. I then sorted them by log-likelihood and selected the top 50 items for further qualitative assessment in terms of their domain specificity. Based either on the overall meaning or on a combination of meanings of at least two words forming a multiword term, I manually assigned each phrase to one of four thematic categories. First, *legal* specificity ("margin of appreciation", "European Convention"), second, *bioethical* specificity, i.e. those belonging to the medically assisted procreation topic ("cell line", "embryonic stem cell"), and third, *ambiguous* terms, i.e. those that could be classified as belonging to both categories (e.g. "private life", "human dignity"). Fourth, I uncovered some expressions of general use, which cannot be assigned out of context ("sensitive and controversial question").

TABLE 2
Thematic component for the 50 top-ranking multiword terms

| Thematic component | Written pleadings | Opinions | Blogs | Judgment | Press release and summary |
|---|---|---|---|---|---|
| Bioethical | **31 (62%)** | **26 (52%)** | **22 (44%)** | 21 (42%) | 15 (30%) |
| Legal | 10 (20%) | 16 (32%) | 20 (40%) | **24 (48%)** | 26 (52%) |
| Ambiguous | 9 (18%) | 8 (16%) | 5 (10%) | 5 (10%) | 6 (12%) |
| General | – | – | 3 (6%) | – | 3 (6%) |

Table 2 shows frequencies and percentages for 50 top-ranking terms in the bioethical, legal, ambiguous and general multiword item categories. The terms were selected based on the log-likelihood and specificity scores. The data show an interesting division of the texts into two large groups according to their mode of discourse: persuasive (written pleadings, judicial opinions and blogs) and expository (judgment[3], press release and legal summary). The persuasive documents tend to dedicate greater attention to the bioethical terms, as these represent the controversy of the case. The expository documents, on the other hand, demonstrate a preference for legal multiword clusters. The most balanced texts in terms of the combination of bioethical and legal expressions are the blogs and the judgment, i.e. the texts with respectively the highest and lowest degrees of institutionalisation. This suggests that bloggers might have used the judgment as a source, or else aimed to achieve a similar degree of balance between the bioethical and legal components.

An interesting juxtaposition emerges between written pleadings and the press release/legal summary: the pleadings use the most bioethical bundles (62%) and the least legal bundles (20%), with the opposite tendency observable in the derivatives (30% of bioethical bundles vs. 52% of legal bundles). It can be argued that the legal professionals who drafted the documents perceived their focus differently. Submissions of the third-party interventions took the legal argument almost for granted and attacked the Government's position on the scientific front, using such technical expressions as "human oocytes", "somatic cell nuclear transfer (SCNT)", "hESC-derived cardiomyocytes" or "retinal pigmented epithelium" to highlight various technologies or research uses of the potentially donated embryos, while overviewing relevant legislation in other countries. At the same time, the lawyers who drafted the press release can be hypothesised to be pursuing their popularising goal through

[3] The ECtHR judgment contains motivated and argumentative parts, which are clearly delineated by the recurrent subtitle "the Court's assessment". However, these parts amount only to 33% of the text, with the rest of it being expository. In addition, the judgment is heteroglossic as it presents the positions of all the parties concerned, which distinguishes it from the persuasive texts that tend to present only one point of view. Consequently, I grouped it here together with expository texts, although I acknowledge that the judgment has some persuasive parts.

reduction of the most challenging elements, which according to the data above equates to the bioethical component.

One might speculate about the lay figure in this context. Traditionally research on legal discourse associated lay persons with non-legal participants, such as clients, defendants or witnesses. The increased interdiscursivity of bioethical legal discourse and its cross-fertilisation with scientific medical and biotechnical discourse makes it problematic to identify a lay figure. On the one hand, the Court and the lawyers have an indisputable advantage with regard to legal expertise. On the other hand, associations specialising in bioethical, and even more specifically, reproductive questions speak with an authoritative voice, and therefore have an upper hand in the technical side of the issue, which could tip the balance of power in their favour. Following Fairclough (1995: 77), it would seem that the choice to concentrate prevalently on the scientific aspects, while at the same time overviewing existing legislation, could have been a power move, made with the intention of dominating the less bioethically competent party, which in this context is the Court. Consequently, this variation between Court lawyers and lawyers-bioethicists has a certain strategic flavour.

### 4.2. Variation in linguistic representation of the key concept of *embryo*

The data generated by the software provide evidence that "embryo(s)" is the key concept for all the genres as it invariably occupies top positions among the lexical words in all wordlists retrieved either by WordSmith Tools 6.0 or by TermoStat 3.0 (see Table 3). While the ranking is similar, the statistical weight of the word differs somewhat across the text sets. The main focus of this section is on the biggest four genres token-wise (written pleadings, judgment, opinions and blogs – see Table 1 on p.9). Shorter texts (legal summaries and press releases, i.e. derivatives) are retained in the table below for the sake of informational completeness. The overall distribution highlights that "embryo(s)" has the highest prominence in third-party interventions (shown as "written pleadings" in the Table), which confirms the tendency of these documents to show a high frequency of bioethical bundles identified in the previous section. Interestingly, "human embryo(s)" is a more frequent term in judicial opinions.

TABLE 3
Log-likelihood of "embryo(s)" and "human embryo(s)" across the texts

| | Written pleadings | Judgment | Opinions | Derivatives | Blogs |
|---|---|---|---|---|---|
| Embryo(s) | 3747 | 2036 | 2188 | 785 | 2203 |
| Human embryo(s) | 724 | 576 | 750 | 236 | 486 |

Curiously enough, the concordance lines and the most frequent collocates of "embryo(s)" (see Table 4) demonstrate its convergent and divergent framing across the different genres.

TABLE 4
Log-likelihood of collocates of "embryo(s)" across the texts

| | Pleadings | Blogs | Opinions | Judgment | Derivatives |
|---|---|---|---|---|---|
| Surplus e. | 36 | 38 | 35 | **129** | 16 |
| Abandoned e. | 59 | – | – | – | – |
| Unwanted e. | – | 25 | – | – | – |
| Spare e. | 24 | – | 23 | – | – |
| Non-implanted e. | – | – | 47 | 12 | – |
| Cryopreserved e. | **238** | 38 | 71 | 71 | 17 |
| Frozen e. | – | **108** | 20 | 31 | – |
| Use of (human) e. | **119** | 38 | **200** | **111** | 30 |
| Donation of e. | – | 51 | 23 | 47 | 60 |
| Destruction of (human) e. | 59 | **85** | 23 | **129** | 45 |
| Embryonic cell | – | 46 | 42 | 111 | 69 |
| Embryonic stem cell | **356** | 64 | **211** | 71 | 15 |
| Fate of (surplus) e. | – | 38 | 47 | 24 | **45** |

First of all, it is interesting to observe how "embryo(s)" is premodifed. The Encyclopedia of Bioethics states that "[s]cientifically the product of conception is called an *embryo* until eight weeks of gestational age, when the name changes to *fetus*" (2004 [1951]: 713). The Encyclopedia uses the premodifier "surplus" to refer to embryos left over from infertility treatment (2004 [1951]: 713). Most texts choose the term "surplus embryo" to refer to this type of embryo. From the terminological point of view, the institutionally embedded expository texts (judgment, press release and summary) use this multiword term in the most consistent way. Persuasive texts use different premodifiers to express the same concept along the standard variant: "spare", "unwanted", "non-implanted" or "abandoned" (see examples below). The latter is a direct calque from Italian as indicated by the explanation in brackets in one of the submissions.

(1) The European Court of Human Rights rejected an Italian woman's wish to donate *unwanted embryos* to scientific Research in the Case of Parrillo v Italy. [Blogs][4]
(2) The creation of embryos with gametes donated for the purpose of stem cell procurement is ethically unacceptable, when *spare embryos* represent a ready alternative source. [Opinions]
(3) In this case, the law states that the embryos produced and frozen before its enactment must be kept in their actual state at the expense of the couple, or they must be declared "*abandoned*" or "neglected" (*in stato di abbandono* is the expression used in the law). [Written pleadings]

Generally speaking, the above premodifiers could be defined as synonymous, but they introduce additional connotations when compared to "surplus". Whereas "surplus" is explained as "what remains over and above what has been taken or used; an amount remaining in excess" in the OED[5], "abandoned" or "unwanted" – and to a certain extent "spare" – have a connotation of lack of use and undesirability, which introduces ideological variation.

[4] Emphasis is added in all examples.
[5] "surplus, n. and adj.". OED Online. Oxford University Press. http://www.oed.com.pros.lib.unimi.it/view/Entry/194992?rskey=MenzFs&result=1&isAdvanced=false (accessed June 05, 2018).

As for the state of cryopreservation, most texts use two alternative options: "cryopreserved" and "frozen", with the former prevailing. While institutionally-embedded texts use both terms in a convergent way, non-institutional texts present variation. The written pleadings use only the official term "cryopreserved embryos", while blogs, in contrast to the rest of the texts, blatantly prefer a more transparent lay epithet – "frozen" – which suggests a lower degree of scientific accuracy and a higher level of popularisation.

It is interesting to look at the actions associated with the embryos, as the texts exhibit significant variation in this regard. The choice is between expressions that are rather neutral, e.g. "use of (human) embryos", are slightly negatively tinged, e.g. "destruction of (human) embryos", or are slightly positively tinged, e.g. "donation of embryos". Remarkably, convergent choices are observable between a) the judgment and the blogs ("destruction"), b) the opinions and the pleadings ("use") and c) between the press release/ legal summary and blogs ("donation"). For the sake of precision, it must be stated that "destruction" and "use" are quite evenly distributed in the judgment; however, the former prevails. In blogs this operation is also most frequently represented as "destruction of (human) embryos"; however, "donation of embryos" is prominent, too, probably signalling the co-existence of opposing views among the bloggers (see examples below).

(4) Furthermore the case serves to underline that autonomy/self-determination are fundamental legal and ethical principles, but not absolute and that the permissive approach to *donation of embryos* for laudable research purposes generally accepted by many in the UK, is not mirrored in many of the other member states of the ECHR. [Blogs]
(5) The *destruction of embryos* in vitro is not necessary to protect a comparable, concurrent right, such as the right to life of the mother. [Blogs]

This dichotomy reflects a peculiar collocational tendency: "destruction of human embryos" does not collocate with "research purposes", while "donation of (human) embryos" and "use of human embryos" almost exclusively collocate with "research purposes". Arguably, the variation between these two options portrays a different picture of the situation. It is quite surprising to note that "donation of embryos" is the most recurrent choice in

the derivative texts, which could suggest an ideologically positive reading of the situation by the drafters of those texts, distancing themselves from the source judgment.

It is remarkable that "embryo*" collocates with "cell" or "stem cell" most often in the written pleadings, which supports the initial assessment of its closer focus on the scientific bioethical aspect of the case, hypothesised in 4.1. The variation between "cell" or "stem cell" can also be easily traced: the judgment and the legal summary clearly prefer the former version, whereas the written pleadings, the opinions and the blogs are inclined towards a more complete term "embryonic stem cell".

Finally, it is peculiar how most texts conceptualise the potential future of embryos – cf. "fate of embryos", an expression most frequently used in blogs and in opinions, either to criticise the applicant's actions or the Court's legal reasoning.

(6) The Court has now ruled, for the first time, that such matters as 'deciding *the fate of*' or 'making use of' human embryos fall within an individual's right to respect for private life. [Opinions]

The complete absence of this "fatalistic" phrase in written pleadings in addition to the abundance in collocates of "stem cells" suggests a different portrayal of embryos, more cell-like and less succinctly evoking an image of a human being, which under a sociocultural perspective of language may be interpreted as an ideological slant.

### 4.3. Discussion

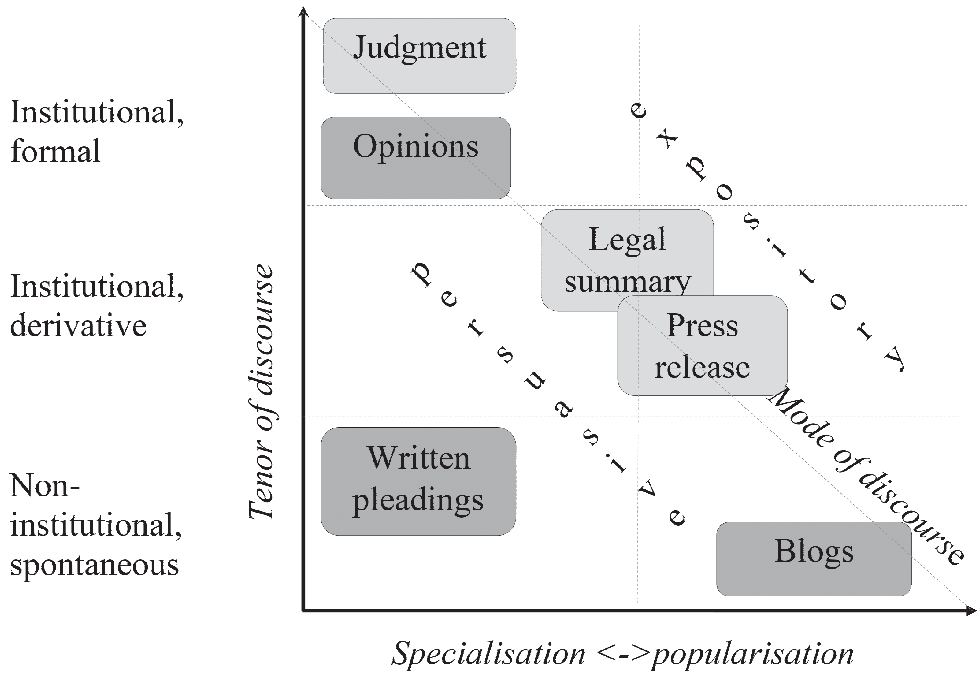
The findings analysed in the previous sections made it possible to trace some regularities in variation along different coordinates, schematically represented in Figure 1.

The texts belonging to the same field of discourse display stratification in terms of specialisation along the horizontal cline of specialisation-popularisation, unifying such text sets as judgment, opinions and pleadings vs. blogs and legal summary/press release[6]. Stratification was also present in terms of major or minor institutionality

[6] Similar observations were already made when analysing a different corpus dealing with bioethical judgments and blogs, see Nikitina 2018b.

and the formality of texts along the vertical axis of tenor of discourse, which revealed three different levels: the most formal (judgment and opinions); institutional and derivative (legal summary and press release) and non-institutional (written pleadings[7] and blogs). Finally, a net separation was traced along the diagonal cline of mode of discourse into persuasive texts (opinions, pleadings and blogs), which demonstrated a greater variety and freedom and less consistency in premodification and conceptualisation of embryos, and the expository texts (judgment, press release and legal summary), which exhibited a higher degree of terminological consistency and rigour[8].

FIGURE 1
Diaphasic variation in the corpus




[7] For the level of institutionality of written pleadings produced by different parties in the dispute, see Nikitina 2018a.

[8] The use of persuasive techniques in blogs overviewing the Parrillo case, often bordering on discursive manipulations and illusions, is addressed in a forthcoming paper, see Nikitina (2018d-manuscript submitted for publication).

Any movement along different coordinates involves some re-elaboration of specialised knowledge. Judges, for instance, who have to operate in a formal setting, make recourse to formal legal codification tools and, at the same time, introduce bioethical concepts into the legal matrix. The drafters of third-party interventions are also characterised by a high level of specialisation but since they are not placed within institutionally tight constraints, they are able to emphasise a different aspect of the case, leading to a variation in the scientific focus.

## 5. Final remarks

Bioethically charged legal discourse is created by the cross-fertilisation of scientific and legal discourses, where bioethical concepts are encoded in the texture of the typically legal generic matrix. This study has followed a prevalently descriptive goal of overviewing terminological variation in this highly specialised domain. The focus was placed on variation caused by different tenor of discourse (institutional context), stratification by specialisation as opposed to popularisation, and subdivision by the mode of discourse (as represented in Figure 1). The quantitative results interpreted through the lens of critical discourse analysis confirm the existence of informational asymmetries in various text sets caused by movements along the coordinates.

Different genres overviewing the Parrillo case vary in the use of bioethical and legal multiword terms, which is surprising given the same field of discourse. The probable cause of variation in scientific focus may be attributable to different power relations inherent in a more or less institutional context and a higher or lower degree of bioethical expertise, raising the issue of combination of expertise necessary for bioethically charged legal discourse and the role of experts: legal and bioethical.

Apart from the technical expertise, terminological variation depends on the degree of institutionality and on the drafter's stance. It can be concluded that the higher the institutional context and the more expository (less markedly ideological) the text, the more consistent the use of multiword expressions. At the same time, the persuasive and non-institutional genres introduce alternative ways of representing the key concept of surplus embryos and identifying their "fate". It would thus seem that some instances

of variation are at least intentional, and aim to convey a certain hidden reading key.

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