### Addendum

### 1. What is Intelligent Design?

This is a more elaborate and differently structured version of chapter 1 of my article "Science by Religious Design. A Critical Analysis of Scientification in the Discourse of Intelligent Design."

### 1.1 The central ideas and arguments of Intelligent Design?

The following five features are central for the characterisation of Intelligent Design as presented by its proponents.

### a. Anti-Darwinism

Intelligent Design defines itself primarily in opposition to Darwinism and the theory of evolution, assuming that there are just two conceivable theories, and evidence against one necessarily is evidence in favour of the other.

### b. Theorization of complexity

The main goal of ID is to show that the kinds of complexities found in nature cannot – logically and statistically – have evolved by selection from pools of random genetic mutations so that we have to conclude that at least at the level of species we have to posit the intervention of an instance capable of purposefully and thus intelligently designing organisms.

The Intelligent Design's only positive scientific work – mostly done by its two major active proponents William Dembski and Michael Behe – lies in the analysis and discussion of the aforementioned types of complexities – called *irreducible complexity* and *specified complexity*, respectively – that cannot develop by natural mechanisms (cf. Hewlett/Peters 2006: 65-69, Scott 2006: 117-122, Isaak 2007: 256-258).

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### c. Absence of scientific practice

Despite the claims made in the two quotes given at the beginning of the original article, Intelligent Design does not seem to have prompted any significant empirical scientific studies (the work on complexities is mostly conceptual in nature). To date, there has just been one peer-reviewed article based on ID, viz. Behe/Snoke (2004) (refuted, however, an issue later by Lynch 2005; cf. Coyne 2006), and another one (Meyer 2004) that was withdrawn after having being published because the outgoing editor had obviously skipped the normal peer review process for the paper (cf. Flank 2007: 179).

### d. Scientification

At least from a superficial point of view, proponents of ID appear to make a conscious attempt to present their ideas and arguments in books and other publications in scientific terms (both linguistically and conceptually). I will discuss this strategy in more depth below and it will also be the major object of the empirical study.

### e. Absence of references to religion

The central concepts of intelligence and design are hardly ever discussed or analysed in any depth probably because proponents of ID are anxious not to make an appeal to metaphysical and supernatural concepts, first and foremost for legal reasons (school curricula are not allowed to contain ideas promoting particular religions; see below). There is the occasional remark that it is possible that the designing agents could be extraterrestrial beings – skipping the question of whether the latter have evolved or have been designed (cf. Dawkins 2006) – but ID would not resonate that well with large parts of the American public if it was not assumed that the intelligent designer is the Biblical God.

To fully appreciate the nature of ID and especially the role of scientification in its conceptual framework, it is necessary to briefly contextualize it historically, legally and culturally and politically. I will discuss these aspects separately in the following, even though there are of course large areas of overlap.

### 1.1 Historical background

Although Intelligent Design deviates from prior frameworks of creationism in style and presentation, it clearly originated in, or at least was motivated by, the latter. A history of ID is thus also a history of creationism, especially of creationism in the USA.

Although the main ideas underlying creationism had been around for a long time, the latter had not featured as an explicit theory about the origins of the natural world up to the 19<sup>th</sup> century for the simple reason that the belief in God's active role in the creation of every detail of nature and the whole universe had been unquestionable common sense. This status was lost after the publication of Charles Darwin's *On the Origin of Species* in 1859 and more literal interpretations of Genesis had come under attack and pressure. So creationism surfaced – particularly strongly in the course of the surge of Christian Fundamentalism in the United States at the beginning of the 20<sup>th</sup> century (for a history of this movement, cf. Bruce 2000: ch. 4, Ruthven 2004: 10-18) – as the attempt to reestablish the orthodoxy.

Even though creationism itself came to be regarded as backward, conservative and simple-minded, especially in the wake of the widely publicized Scopes trial, which liberals used as a test case for overturning legislative initiatives to ban the teaching of evolution, proponents were still successful in backgrounding the issue so that for the next four decades Darwin's ideas did not feature prominently in the lifeworld of Americans (cf. Scott 2004: 96f.).

As a reaction to the advantage that the Soviet Union gained in the area of spaceflight during the first decades of the Cold War, the United States made an effort to improve education in the sciences. This also meant that Darwin's theory of evolution was introduced into curricula for secondary schools all across the country. This, in turn, produced a countermovement by creationism. Being aware that the new challenge could not be countered by religious doctrine, creationists morphed their ideas into Creationist Science, supposed to offer a viable alternative to standard strands of scientific thinking, especially in the area of biology.

Creationist Science resonated well with large portions of the population in the conservative climate of the 1980s. It did, however, not enjoy any

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success in the academic world, being regarded as a clearly religiously motivated ideology concerned with the supernatural rather than the natural, with the metaphysical rather than with the physical, which meant that it was not taken seriously as a scientific theory. Besides, it did not manage to legally suppress the teaching of evolution either (cf. Scott 2004: 97-109).

A new generation of theorists, most of them scholars and academics (though mostly not in any of the fields relevant to the debate) affiliated with the Discovery Institute, a conservative think tank based in Seattle not associated with Creationist Science, took control over the creationist agenda at the end of the 1980s. Intelligent Design was proposed as a scientifically sophisticated theory without any explicit religious association.

The first major step of Intelligent Design was the publication of a high school textbook called *Of Pandas and People* (Kenyon/Davis 1989), which paved the way for the establishment of the concept of design. 1991 saw the publication of *Darwin on Trial* by Phillip E. Johnson (Johnson 1991), who was a professor of law at the University of California, Berkeley. This book marked the ultimate shift from Creationist Science to Intelligent Design, because the book had a specific focus, not dealing with some of the questions that the earlier theory had been concerned with (e.g. the real age of the earth, flood geology, etc.). Being a professor at a prestigious secular university, Johnson brought some academic credibility to the discussion (despite dealing with a field that was not his own).

In 1996, Michael Behe published *Darwin's Black Box* (Behe 1996), in which he introduced the concept of irreducible complexity, thus laying the foundation of the main scientific activities of the Intelligent Design movement, as mentioned above. This was followed by William Dembski's *The Design Inference* two years later (Dembski 1998), which introduced specified complexity as the second genuine ID concept (for the emergence of ID, cf. Scott 2004: 116-124).

<sup>&</sup>lt;sup>1</sup> The only book published by a renowned publisher, viz. Cambridge University Press

The first decade of the 21<sup>st</sup> century saw Intelligent Design reiterating the same points and strategies in their publications, while intensifying their efforts to influence the educational system in the United States (without much success, as will be explained further below).

### 1.2. Socio-cultural and political background

Most ID activities are organized and coordinated by the Center for Science & Culture, a subsection of the Discovery Institute. While ID activities appear to constitute the major work done by the Center, its ultimate goal is to fight materialism, its anti-theistic tendencies and its moral relativism – associated with the ideas of Darwin, Marx and Freud – dominating Western societies today. The so-called Wedge Document, an internal memorandum leaked onto the Internet in 1999 (cf. Coyne 2006: 4), explicitly states that the Center "seeks nothing less than the overthrow of materialism and its cultural legacies" in order "to replace it with a science [and a world view] consonant with Christian and theistic convictions." The document also outlines the main strategy, which is to target the foundation of materialism, namely scientific materialism, and its weakest spot, namely the theory of evolution. Offering Intelligent Design as a "positive scientific alternative to materialistic scientific theories [...] promises to reverse the stifling dominance of the materialist worldview [...]" (all quotes from the "The Wedge" 1999: online)

This anti-materialist agenda does not only explain why the Center for Culture and Science singles out evolution rather than other established theories that could theoretically be doubted and criticized, but also why Intelligent Design proponents are more concerned with secondary education than with academic education or scientific practice. They assume that planting seeds of doubt about evolution in young people firstly will be easier to achieve – after all, convincing 15-year-old high school kids appears to be less challenging than convincing a board of peer reviewers – and secondly will contribute more substantially to establishing anti-materialist ideas. ID has thus been trying to influence conservative and religiously-minded people to introduce anti-evolution aspects into school curricula on the local level. The legal dimensions of these attempts will be discussed in the next section.

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The anti-materialist spirit standing behind the promotion of Intelligent Design often leads to the rhetorical association of very different schools of thoughts and political ideologies. It is thus not uncommon to find arguments connecting the theory of evolution and the theory and practices of Marxism or even holding Darwin responsible for the atrocities of Fascist eugenics. (For a thorough analysis of ID's sociocultural agenda, cf. Forrest/Gross 2007.)

### 1.3. Legal background

With the freedom of religion firmly established, Americans are free to believe in whatever they like, including scientifically controversial theories such as Intelligent Design. The debate only gains a legal dimension if ideas are to be part of the public educational and academic system. Ever since the theory of evolution became part of public school science curricula, creationists of any conviction have tried to include aspects of their theories, too – usually under the heading of "Equal time", i.e. if there are two conflicting theories both must be taught to guarantee scientific fairness – and/or to undermine the evolution, presenting it as a theory not widely accepted and based on swampy grounds – usually under headings such as "Critical analysis [of evolution]" (cf. Matzke/Gross 2006) or "Teach the controversy" (cf. Scott 2006).

The Establishment Clause of the First Amendment to the US Constitution is the crucial factor in the legal battle. It says that the state must not promote or advocate a particular religion. This entails that any attempt to introduce creationist ideas will fail if it can be proved that they are religious in nature (cf. Ravitch 2011: ch. 3.II).

While detecting religious dimensions was fairly easy in the case of Creationist Science, the scientific appeal of Intelligent Design posed a tougher challenge. The crucial test case was *Kitzmiller vs. Dover Area School District*, in which parents sued after a policy had been accepted by the Dover Area School Board in Dover, Pennsylvania, that made sure that pupils see evolutionary theory as a theory not fully supported by the evidence and that they also knew about valid alternatives, ID among them. The case was won as Judge John E. Jones III., a George Bush-

nominated conservative Pennsylvanian district court judge, declared the policy unconstitutional. In his ruling he says (2005: 136),

In making this determination, we have addressed the seminal question of whether ID is science. We have concluded that it is not, and moreover that ID cannot uncouple itself from its creationist, and thus religious, antecedents.

(For details of the case, cf. Ravitch 2011: ch.3, and *Wikipedia* n.d. "Kitzmiller v. Dover Area School District").

In the aftermath of this trial, the ID movement has been intensifying its focus on the critique of evolution without explicitly mentioning any alternatives. They assume that this in itself is a well-established practice in the scientific world and will not be considered to go against the Constitution – it may be 'bad' science and 'bad' pedagogy, though, we may add. (For a more thorough discussion of the legal situation of Intelligent Design, cf. Ravitch 2011).

In sum, Intelligent Design appears to have a socio-cultural agenda, viz. to overcome materialism and establish a form of theism, a pedagogical and political field of action, viz. public schools and their curricula, a clear target, viz. Darwinism and the theory of evolution, and a tool to achieve all this, viz. Intelligent Design and its scientific appearance. As mentioned, I will take a closer look at the scientific appearance of Intelligent Design, examining whether, how and to what extent it is constructed in the discourse of Intelligent Design.

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## 4. Framework-oriented approach

### 4.1. Semantic profiles of the most frequent nouns and verbs

### 4.1.1 Definitions of the semantic categories used

In the quantitative analysis below, only the superordinate categories will be considered. The subcategories and sub-subcategories are intended to show the range of aspects covered by classes and to allow a more distinguished presentation of the data (see below).

- **General:** fundamental to the human conceptualization of the world,<sup>2</sup> covering the following subcategories:
  - **Entities:** individual beings, covering the following subclasses:
    - **Persons:** humans, e.g. *person*, *humans*.
    - **Objects:** non-human, inanimate things or unspecified beings, e.g. *entity*, *thing*, *object*.
  - **Existence:** being and not being (there), e.g. *life*, *existence*, *absence*.
  - **Events:** general processes, actions and agents, e.g. *behaviour*, *action*, *agent*.
  - Place: location and space, e.g. area, direction, including the following subclass:
    - **Movement:** changing or keeping one's position, e.g. *leave*, *come*, *sit*.

<sup>&</sup>lt;sup>2</sup> In full, the definitions of the categories should always start with *concepts* concerned with or related to.

- **Time:** points in time, duration, age, frequency, sequence, etc., e.g. *century*, *age*, *follow*, including the following subclass:
  - **Phase & change:** starting, ending, continuing, and changing, e.g. *start*, *end*, *change*.
- **Possession:** owning, obtaining and losing, e.g. *possess*, *property*.
- **Religion & theology**: religion and religious world views, e.g. *metaphysics*, *Christianity*.
- **Science & natural history:** particular scientific disciplines, covering the following subcategories:
  - Chemistry: e.g. acid,  $CO_2$ .
  - **Geology:** e.g. rock, sediment, sea.
  - **Physics:** e.g. pressure, energy, force, radiation.
  - **Biology:** covering the following subcategories:
    - Species (animals, plants & other organisms): e.g. bacteria, bird, rose.
    - **Body components:** organs and tissues, e.g. *heart*, *blood*, *gall bladder*.
    - **Body components (microlevel):** cytological components, e.g. *chromosome*, *gene*.
- Medicine & healthcare: covering the following subcategories:
  - Pathologies: diseases and other pathological conditions, e.g. illness, hurt.
  - Medical practices: diagnosis and therapy and instruments used in these, e.g. diagnose, treatment, x-ray.
  - Healthcare: healthcare institutions and personnel and processes and relations typically confined to the former (and not covered by "Medical practices"), e.g. doctor, ward, referral
- Scientific practice & metatheory: all aspects relevant to practicing science, viewed from a meta-position, covering the following subcategories.
  - Heuristics: processes involved in trying to solve a problem, including trying and success/failure, searching and finding, applying and using, and the cases in or to which they are applied.
  - Metatheory: further aspects relevant in the abstract conception of science and its practices, e.g. theory, basis, assumption.

- **Disciplines:** science in general and scientific disciplines, e.g. *science*, *biology*, *mathematics*.
- **Institution:** scientific/academic institutions and personnel, e.g. *teacher*, *university*, *colleague*.
- **Specific metatheory (evolution):** specific to the (discussion of the) theory of evolution, e.g. *evolution*, *Darwinist*, *selection*.
- Specific metatheory (Intelligent Design): specific to the (discussion of the) theory of Intelligent Design, e.g. design, designer, creationist.
- **Categorization:** processes, products and principles of categorization and comparison, covering the following subcategories:
  - Categories: categories and classes used in categorization and/or which are the result of categorization, e.g. class, correspond.
  - Membership: exemplification and instantiation, e.g. example, member.
  - **Biological taxonomies:** categories used in biological classifications and chronologies, e.g. *species*, *precursor*, *generation*.
  - **Assemblage:** groups and collectives, e.g. *group*, *row*, *column*.
  - Part & whole: elements and relations of componentiality, e.g. part, complexity, compose.
  - **Relation:** relations, links and connections and concepts implying these, e.g. *relationship*, *bond*, *system*.
  - Comparison & features: relations of similarity and difference and the attributes they are based on, e.g. difference, sameness, attribute.
- Causality: causal relations and elements in such relations and processes and scenarios involving or implying causality, e.g. *cause*, *effect*, *lead to*, *circumstances*, including the following subcategory:
  - **Creation:** process of producing something material or immaterial, e.g. *create*, *make*.
- **Epistemology:** features of truth and probability and processes implying these, e.g. *true*, *right*, *evidence*, *prove*.

- **Quantity:** numbers, amounts, measurements and quantitative relations, e.g. *figure*, *range*, *level*, including the following subcategories:
  - **Measurement:** covering the following subclasses:
    - **Domains:** domain that is measured, e.g. *size*, *height*, *temperature*, *weight*.
    - Units of measurement: units in which the domain is measured, e.g. degree, milligram, centimetre.
    - **Units of temporal measurement:** units in which the domain of time is measured, e.g. *day*, *week*.
  - **Quantitative change:** changes in number or amount, *remains*, *raise*, *decrease*.
  - **Mathematics:** mathematical processes and relations, e.g. *calculation*, *subtract*.
- **Evaluation:** value judgement or assessment implying value judgement, e.g. *value*, *judge*, *assessment*, *risk*.
- **Visual:** visually perceptible attributes, covering the following subcategory:
  - **Shape:** e.g. form, shape.
- **Mental:** aspects related to the mind, covering the following subcategories:
  - **Cognition:** knowing and thinking, e.g. *believe*, *knowledge*.
  - **Emotion & desire:** feelings and needs, e.g. *fear*, *joy*, *need*.
  - **Perception:** active and passive perception, e.g. see, listen.
- **Social:** society, culture, social groups and relationships, e.g. *society*, *public*, *acquaintance*.
- **Communication:** processes, products and media of communication, e.g. *text*, *say*, *information*, also including the following subcategory:
  - Argumentation & debate: argumentations, explanations, discussions, e.g. argue, explanation, reject.

### 4.1.2 Data

## General

**Entities:** 

**Persons:** people (363); man (259); person (229); being (152); self (121); child (110);

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individual (79); woman (77)
Objects: thing (539); entity (102)
Existence: life (1,379); existence (202); survival (121); absence (104); formation (82);
  emergence (71); presence (70); lack (63); death (57); present (55)
Events: process (700); event (437); agent (185); action (174); activity (106); agency
  (95); behavior (81)
Place: place (280); side (230); position (225); space (210); ground (141); area (129);
 direction (113); site (112); region (100); room (81); wall (79); surface (74); center
 Movement & position: motion (81); transport (64); movement (63)
Time: time (979); history (261); century (176); period (107); age (87); past (77);
 decade (65); future (55)
 Phase & change: change (583); end (191); modification (143); beginning (74); turn
Religion & theology
religion (166); faith (103); miracle (91);
Science & natural history
Chemistry: protein (1,218); acid (790); amino (677); DNA (492); earth (312); RNA
  (284); enzyme (280); chemical (280); water (263); oxygen (197); antibody (150);
 hydrogen (144); peptide (114); hormone (113); ATP (107); insulin (104); carbon
 (88); concentration (77); adenine (77); AMP [= adenosinmonophosphate] (60)
Geology: world (646); universe (475); primordial soup (173); atmosphere (91); rock
 (75); air (75); planet (65)
Physics: molecule (506); matter (300); energy (295); power (229); force (199); atom
 (195); entropy (144); electron (93); light (92); quantum (80); mechanics (67)
Biology: nature (809)
 Species (animals, plants & other organisms): fossil (516); animal (392); human
 (254); bird (236); tree (231); bacterium (209); moth (150); finch (122); mammal
 (120); plant (98); monkey (90); Archaeopteryx (85); fish (79); dinosaur (74); fly (70);
 reptile (64); whale (63); fruit (63); mouse (55)
 Body components: organism (550); body (364); eye (340); blood (312); hand (271);
 embryo (200); brain (189); flagellum (152); muscle (148); head (148); bone (144);
 organ (121); membrane (121); heart (121); skin (104); cilium (95); foot (83); wing
 (81); sperm (80); egg (74); face (72); tissue (71); ear (69); nose (67); tail (66); back
 (61); gland (60); kidney (59); nerve (55); beak (54)
 Body components (microlevel): cell (1,187); gene (534); mutation (391); code
 (178); nucleotide (102); genome (65); receptor (56)
Medicine & healthcare
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**Heuristics:** way (775); experiment (285); research (221); pathway (213); record (211); object (188); method (175); study (146); approach (142); target (139); resources

**Pathologies:** disease (78); pain (63) **Scientific practice & metatheory** 

<sup>&</sup>lt;sup>3</sup> Often in combination with fly, i.e. fruit fly.

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(117); observation (115); technique (109); analysis (107); means (101); researcher
(100); discovery (97); use (94); subject (93); attempt (90); task (87); search (82);
course (79); test (77); tool (76); success (76); requirement (75); effort (70); inquiry
(69); measure (65); goal (65); progress (62); practice (62); laboratory (62); control
(61); try (59); technology (58); investigation (57); insight (57)
problem (636); question (629); case (546); issue (154)
```

**Metatheory:** theory (1,903); law (627); idea (444); hypothesis (355); principle (290); model (243); criterion (238); data (209); concept (163); assumption (159); basis (156); logic (139); phenomenon (136); rule (132); theorist (125); definition (119); conception (74); doctrine (73); notion (68); paradigm (62); foundation (61)

**Disciplines:** science (1,513); scientist (749); biology (586); biologist (454); physics (186); philosophy (156); field (139); theology (138); philosopher (126); paleontologist (106); biochemistry (94); chemistry (86); discipline (70); theologian (68); physicist (66); proponent (63)

Institution: student (186); program (160); school (155); university (144); academy (88); professor (75); colleague (70); education (66); grant (56)

**Specific metatheory (evolution):** evolution (1,934); selection (833); Darwinism (646); Darwinist (317); naturalism (261); evolutionist (112); naturalist (98); (big) bang (73); *Neo-Darwinism* (55)

**Specific metatheory (Intelligent Design):** creationist (146); creature (103); creationism (84);

### Categorization

**Categories:** pattern (339); kind (224); type (201); class (159); sort (75); strand (58); branch (57); category (56)

**Membership:** *example* (356); *instance* (81); *member* (80); *element* (76); *icon* (60) **Biological taxonomies:** species (662); origin (634); sequence (509); step (352); ancestor (294); descent (215); order (194); stage (180); line (164); generation (137);

population (135); series (94); ancestry (82); character (78); parent (67); family (66); intermediates (63); precursor (62); offspring (56)

Assemblage: group (323); chain (253); combination (212); set (146); arrangement (70); column (67); row (54)

Part & whole: complexity (1,006); structure (508); part (476); component (210); detail (176); piece (148); aspect (101); section (69); building block (64); content (63); segment (57); complex (56)

**Relation:** system (1,379); relationship (129); bond (114); link (69); interaction (55) Comparison & features: feature (279); variation (192); property (182); difference (182); similarity (126); variety (113); specification (106); analogy (99); contrast (96); replication (95); homology (92); characteristic (90); adaptation (85); diversity (81); comparison (72); distinction (72); alternative (69); standard (68); fitness (65); copy (61); demarcation (58); distribution (55)

### Causality

design (2,352); mechanism (637); function (462); cause (390); reason (379); result (371); designer (357); creation (233); purpose (231); development (215); factor (213); reaction (211); effect (209); condition (196); role (183); source (144); product (136); outcome (116); environment (114); solution (111); scenario (109); implication (91); production (89); reasoning (89); causality (82); consequence (81); creator (76);

```
designing (64); circumstances (62); situation (61); causation (59)
Epistemology
evidence (1,115); fact (771); chance (590); probability (375); possibility (293); coin
  (180); truth (166); reality (155); necessity (136); odds (127); right (79); proof (75)
number (568); figure (342); bit (319); level (254); rate (78); range (56)
Measurement:
  Domains: amount (132); size (119); temperature (60)
 Units: degree (118); percent (113)
  Temporal units: year (598); day (261); second (76); hour (72); week (57); minute
Quantitative change: rest (79); growth (70)
Mathematics: calculation (88)
Evaluation
ability (138); difficulty (132); value (113); advantage (99); status (79); failure (65);
  error (64)
Visual
Shape: form (551); shape (184)
Mental
Cognition: knowledge (557); intelligence (384); view (321); mind (177); conclusion
  (162); belief (150); understanding (121); thought (84); ignorance (73); attention (63);
 interest (62)
Emotion: need (136); desire (75)
Perception: experience (112); vision (77); sound (73);
Social
community (128); establishment (90); public (84); culture (64); society (54)
Communication
information (899); book (528); word (401); chapter (399); sense (269); letter (219);
  story (202); textbook (196); message (156); journal (141); article (139); literature
  (119); author (114); reader (103); signal (102); sentence (97); text (95); reference
  (94); review (91); statement (90); name (85); page (74); language (72); essay (71);
 meaning (66); expression (54)
Argumentation & debate: explanation (579); argument (500); point (412); inference
  (230); critic (174); claim (162); term (157); answer (142); account (128); criticism
 (119); debate (89); discussion (89); challenge (86); doubt (80); controversy (66);
  rejection (65); consideration (62); objection (60); defense (58); skepticism (54)
Unclassified
work (665); material (338); machine (255); paper (239); door (215); state (206);
 computer (176); synthesis (169); base (156); food (140); picture (120); support (109);
  table (100); appearance (95); drawing (90); filter (85); watch (84); car (77); motor
```

The coin is exclusively used in connection with tossing the coin as the prototypical event for explaining mathematical probability so that in the context of ID it functions as a symbol of this concept rather than as monetary unit.

(72); gap (70); war (63); job (63); gift (61); mousetrap (59); black box (55); resistance (54)

Table 1: Semantic profile of the 500 most frequent nouns in the ID corpus.

### General

### **Entities:**

**Persons**: child (1,422); man (1,251); woman (1,219); people (1,027); adult (588); male (445); infant (428); individual (314); worker (308); female (256)

**Existence**: presence (1,207); death (1,005); life (747); absence (694); formation (660); survival (452); birth (414); lack (325); recurrence (311)

**Events:** activity (2,021); process (1,006); behaviour (742); incidence (696); event (571); agent (529); action (438)

**Place**: area (2,232); region (1,851); site (1,579); surface (1,514); side (722); position (675); place (574); centre (566); space (476); north (464); country (431); distance (422); south (389); base (375); direction (353); zone (349); wall (342); edge (282); ground (268)

**Movement & position:** movement (480); transition (443); motion (379); motility (314); transit (266)

**Time**: time (3,650); age (1,915); period (1,523); history (624); interval (545); follow(-) up (528); duration (454)

**Phase & change**: change (2,207); end (740); phase (685)

### Science & natural history

Chemistry: acid (2,748); concentration (2,588); DNA (2,099); protein (1,959); serum (1,205); water (1,147); bile (1,067); antibody (1,065); enzyme (672); RNA (616); molecule (599); gastrin (549); polymer (489); gas (478); synthesis (478); absorption (456); insulin (441); calcium (419); mineral (413); glucose (410); alcohol (410); oxygen (399); polymerase (381); cholesterol (380); sodium (343); cDNA (337); peptide (330); particles (328); ethanol (323); hydrogen (293); amino (284); salt (279); oil (268)

**Geology**: rock (714); sea (471); sediment (462); air (456); earth (402); world (336); soil (324)

**Physics**: pressure (1,319); energy (836); wave (761); fluid (579); mass (551); radiation (466); force (404); electron (403); emission (335); light (269); ion (260) **Biology**: nature (442)

**Species (animals, plants & other organisms):** animal (1,331); pylori (1,096); rat (795); plant (704); mouse (560); grain (442); bird (407); forest (401); tree (385); virus (383); fossil (377); insect (370); organism (320); larvae (278); bacteria (274);

**Body components:** blood (1,328); tissue (1,238); mucosa (1,019); body (990); bowel (986); arm (977); liver (888); gall (849); platelet (798); secretion (766); bladder (650); colon (644); muscle (555); membrane (462); oesophagus (456); brain (437); contraction (428); egg (424); shield (414); heart (413); spine (382); tentacle (381); disk (368); stomach (345); papillae (335); pore (333); intestine (299); hand (295); vein (285); organ (281); metabolism (269); shell (264); epithelium (263)

**Body components (microlevel):** cell (2,363); gene (1,577); plasma (632); antigen (455); receptor (421); chromosome (344); mutation (342); plasmid (280)

#### Medicine & healthcare

**Pathologies:** disease (4,282); health (2,199); cancer (1,273); infection (1,267); symptom (1,138); ulcer (1,097); tumour (1,007); colitis (992); mortality (802); lesion (584); pain (538); carcinoma (468); reflux (462); abnormality (446); syndrome (425); diabetes (398); hepatitis (387); disorder (385); diarrhoea (380); stricture (311); pancreatitis (311); injury (297); hypertension (290); strain (284); inflammation (282); stress (272); oesophagitis (262); illness (261)

**Medical practices:** treatment (3,338); care (1,975); drug (1,183); diagnosis (926); biopsy (925); diet (744); surgery (658); therapy (525); infusion (360); endoscopy (346); injection (322); placebo (300); intake (282); screening (281); gastritis (309)

**Healthcare:** patient (13,706); hospital (1,694); practitioner (908); doctor (745); clinic (524); staff (488); referral (406); ward (348); consultant (293); nurse (283); bed (266); admission (272)

### Scientific practice & metatheory

Heuristics: study (5,895); control (2,269); analysis (2,029); test (1,732); solution (1,694); sample (1,606); subject (1,575); way (1,304); practice (1,286); use (1,280); technique (1,079); method (1,041); finding (1,039); procedure (916); experiment (907); trial (822); research (798); probe (731); examination (692); management (679); approach (654); assessment (645); lane (567); observation (529); assay (521); operation (495); investigation (483); tube (473); laboratory (446); record (421); preparation (419); course (359); mode (341); resources (335); success (317); measures (313); application (304); survey (296); detection (289); means (281); intervention (279); evaluation (279); attempt (271) problem (1,663); case (1,621); question (515); issue (315)

**Metatheory**: data (2,112); model (832); theory (648); index (526); basis (488); variable (403); criteria (370); principle (330); idea (280); hypothesis (261)

Disciplines: field (978); domain (340); medicine (300);

Institution: programme (585); student (576); authority (531); association (479); department (405); training (350); teaching (346); school (328); education (315); colleagues (276); committee (268); teacher (264)

### Categorization

**Categories**: species (2,228); type (1,843); pattern (1,124); class (624); kind (337); category (286)

**Membership**: specimen (1,111); example (706); element (594); spectrum (436); member (433)

**Biological taxonomies:** sequence (1,490); population (1,315); line (961); family (928); stage (894); series (660); layer (431); parent (370); origin (346); mother (314); generation (298); order (258)

**Assemblage:** group (3,072); chain (649); band (552); combination (467); pair (454); set (435)

**Part & whole:** section (1,473); part (1,382); structure (823); component (710); fragment (704); complex (628); segment (497); detail (481); content (480); fraction (380); aspect (300); selection (392)

**Relation**: system (1,852); relationship (567); interaction (567); relation (352); junction

(281)

Comparison & features: difference (2,018); feature (793); distribution (771); variation (755); comparison (581); contrast (557); property (464); boundary (384); standard (378); variety (331); symmetry (319); characteristic (312); character (257)

#### Causality

result (3,333); effect (3,148); condition (1,511); function (1,406); development (1,215); response (1,190); factor (1,123); product (817); reaction (811); role (801); mechanism (776); source (771); reason (644); cause (562); production (519); correlation (503); environment (455); situation (378); signal (345); outcome (344); sign (329); stimulation (317); consequence (310); output (305); stimulus (256)

### **Epistemology**

evidence (1,462); fact (651); possibility (328)

#### Quantity

number (2,856); figure (2,232); rate (2,167); level (1,870); range (1,402); dose (1,025); scale (651); extent (457); prevalence (441); score (400)

#### **Measurement:**

**Domains of measurement**: temperature (1,129); size (1,045); frequency (925); weight (843); ratio (806); volume (723); proportion (685); length (681); grade (505); density (474); diameter (401); parameter (391); velocity (344); intensity (265)

**Units**: mm (1,241); ph (793); measurement (792); cm (751); ml (615); degree (597); mg (575); m (481); per (cent) (415); min (344); g (299); km (282); percentage (271)

**Temporal units**: *year* (3,593); *day* (1,746); *month* (1,434); *hour* (1,292); *week* (1,255); *minute* (976); *second* (295)

**Quantitative change**: increase (1,063); amount (761); growth (727); loss (607); reduction (595); rise (394); depth (341); proliferation (314); addition (284)

**Mathematics**: equation (797); vector (406); EQN [= equation] (337)

### **Evaluation**

value (1,903); risk (1,306); failure (559); quality (478); importance (465); difficulty (453); damage (445); complication (412); benefit (341); significance (329); ability (315); advantage (302); severity (279); skill (256)

### Visual

**Shape:** form (1,428); cycle (419); curve (400); curvature (308); shape (271);

### Mental

Cognition: knowledge (380); interest (369); learning (361); attention (295); decision (284); choice (262)

Emotion: need (607); inhibition (283)

Perception: experience (391); sensitivity (319)

### **Social**

community (850); culture (561); administration (301); )

### Communication

fig. (1,495); information (1,053); expression (939); report (724); chapter (390); editor (379); author (336); contact (282)

**Argumentation & debate**: point (1,240); discussion (599); conclusion (475); view (280); explanation (263); term (924)

### Unclassified

```
service (1,325); unit (906); material (870); plate (830); flow (800); state (784); work
  (781); stone (745); promoter (701); food (626); paper (532); cost (481); exposure
  (451); transcription (438); table (428); sex (426); marker (401); introduction (373);
  release (357); ice (351); meal (300); gel (291); crypt (291)
```

**Table 2:** Semantic profile of 500 most frequent nouns in the BNC<sub>scimed</sub>.

```
Existence: become (458); evolve (369); exist (365); arise (226); live (79); survive (51);
 appear (316)
Events: act (167); happen (361); occur (311)
Place: locate (43); place (75)
  Movement & position: come (514); go (453); turn (272); put (220); leave (205);
  change (203); move (200); carry (130); bring (129); run (80); drive (50); enter (48);
 descend (38)
Time: follow (253)
  Phase & change: begin (237); start (170); continue (115)
Possession: take (646); give (568); get (440); keep (208); hold (177); possess (50)
Scientific practice & metatheory
Heuristic: use (841); find (808); require (630); try (215); determine (209); fail (175);
  discover (144); define (122); apply (105); detect (100); establish (88); identify (88);
 test (77); accomplish (66); control (60); perform (49); achieve (48)
Institution: teach (104)
Categorization
Categories: form (375); represent (142); constitute (111); correspond (46)
Part & whole: contain (369); include (188); involve (130); consist (75); clot (43)
Relation: refer (140); bind (111); relate (57); connect (53); interact (49);
Comparison & features: specify (192); replicate (109); compare (91); fit (80);
  resemble (50); share (49); distinguish (41); inherit (34)
Causality
cause (240); base (209); support (157); depend (141); account (111); imply (93);
 function (80); serve (62); derive (37)
Creation: make (1,372); produce (560); design (416); create (363); provide (318);
 develop (180); build (121); synthesize (69); compose (62); break (55); construct (51);
  reproduce (43); bear (39)
Epistemological
show (573); seem (462); exhibit (164); demonstrate (84); confirm (66); prove (62);
 indicate (60); illustrate (58); tend (54); reveal (48)
Quantity
```

Quantitative change: remain (243); add (167); increase (128); fall (94); eliminate (90); attach (70); lose (62); reach (62); maintain (61); preserve (57); avoid (50); limit (38); prevent (36); replace (36); charge (35); grow (33)

### Mental

**Cognition:** know (944); think (503); consider (358); believe (274); assume (222); suppose (174); imagine (141); conclude (135); attribute (119); expect (119); infer corpus.

**Existence:** become (1,421); exist (368); arise (227); die (197); appear (916)

Events: occur (2,216); act (112); happen (98)

**Time:** *follow* (1,182)

**Phase & change:** change (348); improve (200); continue (119); start (114); stop (108)

**Place:** place (277); locate (148)

**Movement & position:** carry (619); come (343); go (266); move (241); leave (214); transfer (129)

Possession: give (2,965); take (2,496); obtain (1,317); receive (718); get (134); hold (122); keep (104)

### Medicine & healthcare

treat (939); undergo (254); diagnose (180); administer (100); screen (99)

### Scientific practice & metatheory

**Heuristic:** use (5,347); find (3,186); require (1,424); determine (882); identify (875); assess (799); perform (785); study (762); detect (692); achieve (547); define (534); record (491); establish (475); examine (464); investigate (403); apply (354); analyse (338); test (320); ensure (269); control (262); undertake (152); subject (140); review (135); expose (113)

Institution: teach (101);

Categorization

<sup>&</sup>lt;sup>5</sup> Suggest has a causal and a communicative sense, but the two can often not be clearly distinguished. This is why I have refrained from categorizing the word.

```
Assemblage: isolate (117); combine (114)
Part & whole: contain (1,652); include (1,307); involve (568); consist (290); divide
 (186)
Relation: relate (667); refer (367); bind (294); link (125); correlate (119)
Comparison & features: compare (1,615); differ (342); characterise (151); distinguish
 (134); distribute (129); vary (114)
Causality
cause (960); base (952); affect (586); induce (584); result (555); derive (423); depend
 (349); support (297); influence (286); account (120); imply (119)
Creation: make (2,403); provide (1,495); produce (1,352); develop (960); design (157);
 generate (154); compose (141); bear (118); construct (113)
Epistemological
show (6,066); seem (1,386); indicate (1,170); confirm (406); reflect (280); prove (268);
 demonstrate (198); tend (194); illustrate (159)
Quantity
measure (982); range (109)
Quantitative change: increase (1,173); reduce (1,013); measure (982); remain (924);
 remove (414); reach (275); exclude (266); introduce (255); add (252); prevent (232);
 separate (228); avoid (204); extend (204); lose (191); raise (188); confine (171);
 preserve (171); cut (158); fall (138); attach (131); contribute (129); replace (128);
 limit (118); maintain (115); restrict (115); range (109)
Evaluative
approve (101)
Mental
Cognition: know (1,387); associate (1,352); consider (1,135); expect (497); think
 (471); calculate (440); evaluate (308); believe (275); understand (240); assume (228);
 estimate (215); select (153); draw (conclusion) (149); choose (135); attribute (118);
 learn (109); interpret (104)
Emotion & desire: need (982)
Perception: see (2,704); observe (674); note (312); look (226); regard (205); recognise
 (200); monitor (107)
Social
help (254);
Communication
describe (1,452); report (1,070); mean (530); express (515); say (483); present (421);
 call (387); publish (179); propose (164); ask (151); admit (150); mention (135);
 recommend (132); write (132); respond (112); label (108)
Argumentation & discussion: explain (508); discuss (367); argue (108)
Unclassified
suggest (2,079); lead (931); allow (840); work (366); activate (297); cover (262);
```

incubate (260); prepare (224); collect (209); mediate (194); let (188); set (164); play (148); accompany (128); release (127); encounter (114); feed (104); pass (98)

Categories: form (882); represent (740); correspond (320); classify (137)

### 5. Framework-guided approach

### 5.1. Positivism

#### ID

nonsense (23); non-living (17); non-functional (10); non-deterministic/ally (8); nonnaturalistic (8); non-biological (5); non-circular (5); non-historical (5); non-life (5); non-scientific (5); non-teleological/ly (5); non-existent (4); non-human (4); non-science (4); non-cognitive (3); non-equilibrium (3); non-linear (3); non-negotiable (3); nonphysical (3); non-biogenic (2); non-design (2); non-functioning (2); non-identical (2); non-kin (2); non-local (2); non-proteineous (2); non-reductive (2); non-repeating (2); non-repetitive (2); non-scientist (2); non-supernaturalist (2); non-advantageous; nonbalanced; non-being; non-binding; non-biologist; non-brittle; non-coding; noncomplex; non-conforming; non-conformist; non-convergent; non-designer; determinacy; non-determinism; non-digestible; non-diplomat; non-dividing; nondogmatic; non-dominant; non-dualistic; non-entity; non-enzymes; non-evidence; nonexistence; non-facit; non-fiction; non-fused; non-independent; non-indexed; nonlactating; non-lethal; non-literalist; non-locality; non-logical; non-materialistic; nonmechanistic; non-molecular; non-overlapping; non-partisan; non-pep; non-positivistic; non-productive; non-purposive; non-random; non-regular; non-reli; non-selective; nonself; non-sexual; non-specialized; non-starter; non-sterile; non-technical; non-telic; non-theist; non-toxic; non-verbal; non-viable; non-volatile; non-white; non-zero

### BNC

non-specific/ally (110); non-diabetic/s (84); non-insulin (81); non-Hodgkin('s) (75); non-linear/ly (65); non-steroidal (47); non-invasive/ly (46); non-smokers (44); nonmedical/ly (37); non-zero (36); non-inflammatory (35); non-deglutitive (33); non-Maori (30); non-parametric (28); non-fundholders (22); non-responder (20); non-fundholding (19); non-insulin-dependent (18); non-uraemic (18); non-empty (17); non-turbulent (17); non-ulcer (17); non-cardiac (16); non-randomised (16); non-toxic (16); nonvesicular (16); non-colinear (15); non-significant (15); non-communicable (14); nonfatal (14); non-infected (14); non-linearity (14); non-b (13); non-human (13); nonoperative (13); non-polar (13); non-absorbable (12); non-bleeding (12); nonconstipated (12); non-ideal (12); non-manual (12); non-muscle (12); non-scalar (12); non-user (12); non-adherent (11); non-associative (11); non-obese (11); nonpropagated (11); non-standard (11); non-methanogenic (10); nonsense (10); nonalcoholic (9); non-cholinergic (9); non-dilated (9); non-epileptogenic (9); nonhomosexual (9); non-progressive (9); non-surgical/ly (9); non-template (9); nonadrenergic (8); non-compliance (8); non-detectable (8); non-functioning (8); nongastrointestinal (8); non-migratory (8); non-smoking (8); non-bonding (7); noncaseating (7); non-denaturing (7); non-dimensional (7); non-integrin (7); non-negative (7); non-resectable (7); non-selective (7); non-sequential (7); non-solvent (7); nonaligned (6); non-curative (6); non-ethanolic (6); non-fusion (6); non-gravitational (6); non-malignant (6); non-marine (6); non-peristaltic (6); non-structural (6); nonsufferers (6); non-transgenic (6); non-verbal (6); noncalcareous (5); non-colonised (5); non-combinatorial (5); non-complex (5); non-data-ink (5); non-elective (5); nonenzymatic (5); non-functional (5); non-genetic (5); non-hygienic (5); non-ionic (5); nonketotic (5); non-neuronal (5); non-permissive (5); non-physiologic/al (5); non-polyposis (5); non-relapsing (5); non-secretor (5); non-starch (5); non-sustained (5); nontoxigenic (5); non-tumour (5); non-urgent (5); non-variceal (5); non-breeding (4); nondirective (4); non-doctor (4); non-drinker (4); non-existent (4); non-ferrous (4); nonfluid (4); non-fluorescent (4); non-flying (4); non-haemorrhagic/-al (4); nonhomogeneous/ly (4); non-immune (4); non-industrial (4); non-integer (4); non-parallel (4); non-penetrance (4); non-pharmacological (4); non-porous (4); non-primate (4); non-radioactive (4); non-random (4); non-relativistic (4); non-response (4); nonrotating (4); non-singular (4); non-teaching (4); non-thoracotomy (4); non-uniform (4); non-unit (4); non-vascular (4); non-viral (4); non-activated (3); non-affected (3); non-anon-b (3); non-appendicular (3); non-blocking (3); non-cervical (3); non-clinical (3); non-coding (3); non-colitic (3); non-consultant (3); non-covalently (3); non-destructive (3); non-equilibrium (3); non-euclidean (3); non-expressing (3); non-fat (3); nonhepatic (3); non-mydriatic (3); non-neural (3); non-overlapping (3); non-pancreatic (3); non-penetrant (3); non-psychiatric (3); non-Q (3); non-reduced (3); non-reducing (3); non-resonant (3); non-retractile (3); non-small-cell (3); non-steroid (3); non-stimulated (3); non-stochastic (3); non-unique (3); non-volatile (3); non-abundant (2); non-acid (2); non-active (2); non-aggressive (2); non-AIDS (2); non-anaemic (2); non-antigen (2); non-asthmatic (2); non-attainment (2); non-attendance (2); non-attenders (2); nonbiological (2); non-cardiovascular (2); non-chaotic (2); non-coeliac (2); noncommercial (2); non-commutative (2); non-conformity (2); non-coral (2); non-cross (2); non-degradation (2); non-demented (2); non-dependent (2); non-deposition (2); nondiagnostic (2); non-diploid (2); non-enzymically (2); non-exclusive (2); non-explicit (2); non-familial (2); non-fetal (2); non-flowering (2); non-fluoridated (2); non-function (2); non-fundamental (2); non-gene (2); non-government (2); non-homologous (2); nonhydrostatic (2); non-immunised (2); non-invertible (2); non-labelled (2); non-local (2); non-luminescence (2); non-luminescent (2); non-magnetic (2); non-melanoma (2); nonmetastatic (2); non-neoplastic (2); non-normal (2); non-operated (2); non-organic (2); non-paired (2); non-parasitised (2); non-pathogenic (2); non-periodic (2); nonprescribed (2); non-preventive (2); non-professional (2); non-projected (2); nonpropulsive (2); non-radical (2); non-recoverable (2); non-reducible (2); non-removable (2); non-renal (2); non-resistant (2); non-resonance (2); non-responsive (2); nonruminants (2); non-segmental (2); non-seminoma (2); non-sensory (2); non-specialist (2); non-standardised (2); non-starter (2); non-therapeutic (2); non-transformed (2); non-treatment (2); non-trivial (2); non-tumorigenic (2); non-ulcerated (2); non-viable (2); non-voluntary (2); non-white (2); non-abelian; non-abrasive; non-absolute; nonabsorbed; non-absorbent; non-academic; non-acute; non-adenocarcinoma; nonadenoidectomy; non-adherence; non-adhesive; non-adjusted; non-adult; non-AGTA; non-alcohol-related; non-ambulant; non-ambulatory; non-anaesthetist; non-anomalous;

non-antibiotic; non-antibody; non-antigen-specific; non-antral; non-apnoeic; nonappearance; non-aquatic; non-associated; non-auriferous; non-availability; nonbasaltic; non-behavioural; non-beneficial; non-bile; non-biliary; non-biomedical; nonbiotinylated; non-bloody; non-BNF; non-bonded; non-boussinesq; non-bran; nonnon-calcareous; non-cancer; non-carbonate; brecchia; non-bursate; cardioselective; non-causality; non-causating; non-cellular; non-cerebral; non-CF; non-chinese; non-cholera; non-cholestatic; non-committal; non-commuting; noncompact; non-compliant; non-confidential; non-consenting; non-conserved; nonconstant; non-constitutive; non-contiguous; non-contingent; non-contractile; noncontributory; non-controlled; non-controversial; non-cooperation; non-cooperative; non-covalent; non-Crohn's; non-culturable; non-cumulative; non-cyclosporin; nondefinitional; non-degenerate; non-deleted; non-depressed; non-described; non-diabetes; non-discriminatory; non-dispersing; non-dispersive; non-DNA-binding; non-dominant; non-draining; non-drug; non-eddy; non-elderly; non-electrical; non-electrolyte; nonelemental; non-emergency; non-empirical; non-endemics; non-endocrine; non-English; non-enterotoxigenic; non-entitlement; non-environmentally; non-epsilon-toxinproducing; non-eradicated; non-essential; non-established; non-Ethiopian; nonevaluable; non-even; non-expelled; non-expert; non-exposed; non-fasting; non-flowing; non-flyer; non-foliating; non-fortuitous; non-fuel; non-gall; non-gastroenterological; non-GC; non-genomic; non-genotoxic; non-germinal; non-glacial; non-glutitive; nonglycosylated; non-governmental; non-GPC; non-granular; non-graphitic; non-H; nonhaematopoietic; non-haemolytic; non-harmful; non-health; non-hepatotoxic; nonheritable; non-histological; non-histone; non-HLA; non-hospital; non-hybridisation; non-hydrogen; non-hydroxylated; non-hypoglycaemia; non-iatrogenic; non-identified; non-IGE-mediated; non-imbricating; non-immunocompromised; non-incontinent; nonincorporated; non-indigenes; non-indigenous; non-inducible; non-inertness; noninfarct; non-infarcted; non-infectious; non-infective; non-infinitesimal; non-inflamed; non-informative; non-injectable; non-inpatient; non-insulin-treated; non-intensive; noninteracting; non-interactive; non-interventional; non-intra-aortic; non-intrusive; nonirradiated; non-irritative; non-islet; non-isotropic; non-leached; non-lethal; non-living; non-lymphocytic; non-lymphoid; non-mammalian; non-Mendelian; non-metropolitan; non-mining; non-modified; non-mutated; non-necrotising; non-negrito; non-nervous; non-Newtonian; non-nosocomial; non-nucleoside; non-nutritious; non-obligate; nonobligatory; non-oesophageal; nono-iodinated; non-optimal; non-organ; non-oxidative; non-oxynit; non-parenchymal; non-parenteral; non-pelagic; non-perfused; nonperfusion; non-permeability; non-perturbed; non-planar; non-pleuritic; non-polio; nonpolymeric; non-polymorphism; non-polypoid; non-pregnant; non-producers; nonproliferating; non-prompted; non-propagating; non-protein; non-PSC; nonpsychiatrist; non-pulsatile; non-quadratic; non-qualifying; non-quantitative; non-qwave; non-reactive; non-real; non-reciprocal; non-recognition; non-redundant; nonreferral; non-reflex; non-relevant; non-repetitive; non-replicating; non-replicative; nonresearching; non-responsiveness; non-retractility; non-rheumatic; non-rhythmic; nonrigorous; non-rocky; non-ruminant; non-s; non-school; non-seam; non-seasonal; nonsecretable; non-segmented; non-selected; nonsensical; non-serious; non-sexual; nonshivering; non-significance; non-significantly; non-sinusoidal; non-small; nonspecificity; non-specimen-bearing; non-spherical; non-sphincteric; non-starters; nonstricturing; non-sudden; non-suppressed; non-symptomatic; non-synaptic; non-synchronous; non-systematic; non-taker; non-target; non-tautologousness; non-taxable; non-technical; non-terminal; non-territorial; non-thermal; non-training; non-transfected; non-transmissible; non-transmitted; non-transplant; non-traumatised; non-treated; non-tree; non-trust; non-tuberculous; non-UK; non-uniformity; non-universal; non-usable; non-vacuum; non-vagal; non-vanishing; non-vertebrate; non-visualisation; non-volcanic; non-x

**Table 5:** Words featuring the negative prefix non- in the ID corpus and the BNC $_{\text{scimed}}$ .

### 5.2. Technologization

### **ID Corpus**

Biology:	122 types/3,478 tokens
Disciplines & practitioners:	biology/biological/-ly/biologist biochemistry/biochemist/biochemical/-ly/biochemical-like (331); embryology/-logist/logical (62); physiology/-logist/-logical (26); paleoanthropology/-logist/-logical (18); zoology/-logist/-logical (18); non(-)biological/-biologist (14); ecology/ecologist/ecological (10); microbiology/-biologist (9); biophysics/-physicist/-physical (8); biogeography/geographical (7); paleobiology/-logist/-logical (6); bioinformatics (4); ornithologist (4); sociobiology (4); proteomics (2); biohistorical; bioscience; entomologist
Paleontology:	paleontology/-logist/-logical (134); archaeopteryx (85); hominid (14); archaebacteria (10); triceratops (10); archaeoraptor (7); australopithecine (3); basilosaurus (3); australopithecus (2); mycoplasma (2); anthropoid; archeocete; centipedes; eohippus; hyracotherium; ichthyostega; megakaryocytes; mesohippus; microfossils; miohippus; theromorphs; tyrannosaurus
Microorganisms:	euc/karya/-karyote/-ic (42); microbes/-bial (31); microorganism (20); bacteriophage (10); eubacteria/-bacterial (4); lysogenic (2); macrophages (2); angiosperm; chromobacterium; mesorhizobium; saccharomyces
Evolution & taxonomy:	phylogeny/-genist/-genic (52); phylogenetic/-geneticist (28); macro(-)mutation/-al/-alist (25); macro(-)evolution/-ary (22); biogenesis/ bio(-)genetic/biogenic (20); ontogeny/-genic (18);

	micro(-)mutation/-al (16); orthogenesis/-genetic (13); pseudogene (10); genealogy/-logical/-ly (9); abiogenesis (5); ontogenetic (3); morphogenesis/-genetic (2); phylogenomics (2); pan-reductionism; pan-selectionism; polymorphism; polyphyletic  octopus (8); melanogaster (4); chronospecies (3); ectotherms (3); monophyletic (3); phylotypic (3); arthropod (2); monotremes
Cytology:	genome/genomic (91); ribosome/-somal (63); cytosine (43); chromosome/-al (42); lysosome/-somal (26); multi(-)celled/-cellular (26); cytoplasm (15); phenotype/-typical/-ly (15); genotype (13); polynucleotide (12); deoxyribose (10); cytochrome (5); endoplasmic (5); lymphocytes (4); meiosis/meiotic (4); granulocytes (3); deoxynucleotides (2); erythroblast (2); heterozygosity (2); neutrophil (2); oligonucleotides (2); centromere; cyto-architectural; cytodifferentiation; cytokine; hemocytoblast; iso-1-cytochrome; phagocytosis; spermatocyte
Other:	anthropic (32); parasite/parasitic (17); insecticide (12); biofilm (11); ecosystem (11); biosynthesis/-synthetic (10); symbiogenesis/symbiogenetic/symbiogenic (9); embryogenesis (3); biosystems (2); nonbiogenic (2); biocentricity; biodiversity; phytogeny; spermatozoa
Chemistry	105 types/2,038 tokens
General:	amino(-)acid (684); synthesis/synthesis/synthesize/synthetic (279); oxygen/-ic (212); hydrogen (146); glycine (43); polymer/-meric/-merize/-merization (37); lactose (29); hydroquinone (20); macro(-)molecule/-molecular (18); lysine (16); polypeptide (16); carbohydrate (15); isomer/-ize (15); leucine (15); monomer (13); histidine (10); isoleucine (10); prote(i)noids (10); glucose (9); hydrate/-tion (9); hydrophobic (9); carboxyl/-ic (8); poly(-)sacc(h)arides (7); hydrolysis/hydrolyze (6); formaldehyde (5); hydrocarbon (5); hydrophilic (5); hydrochloric (4); auto(-)catalytic (3); tricycle (3); allolactose (2); formyl/ formylating (2); galactose (2); mannose-6-phosphate (2); multi-protein (2); ribotide (2); aminobutyric; cellophane; chloroform; cyanohydrin; deoxygenate; dioxide-nitrogen; electrolyte; endothelin-2; glyceraldehyde; glycolysis; histamines; histidine; homochirality; hydrochloride; hydroxyl; laminoimidazole; micromolecules; monosaccharides; monosodium; monoxide; tricarboxylic; triphosphate

Biochemistry:	melanin/-ism (52); hemoglobin (44); fibrinogen (43); polymerase (36); plasminogen (23); ribozyme (23); biomolecule/-molecular (17); myoglobin (11); endorphin (9); biomacromolecules (8); dehydrogenase (8); immunoglobulin (5); adenylosuccinate (4); collagen (4); telomere (4); bradykinin (3); endocrine (3); erythropoietin (3); galactosidases (3); merocrine (3); amidophosphoribosyl(y) (2); autoinduce/-er (2); carboxylase (2); cyclohydrolase (2); deoxyribonucleic (2); glucagon (2); photopigment (2); thrombomodulin (2); thromboplastin (2); topoisomerase (2); aldosterone; biopolymers; chlorophyll; cholecystokinin; cyclase; formyltransferase; glycogen; glycosidase; hexokinase; hydrolase; lipase; lysozyme; melatonin; neurochemicals; somatostatin; succinocarboxamide; triiodothyronine
Physics, mathematics & technology	49 types/634 tokens
Physics:	micro(-)states (45); astronomy/astronomer/-ical/ically/ (34); thermodynamics/-dynamic/-ally (33); crystallography/-graphic (15); electromagnetic (7); asteroid (6); astrophysics/-physicist (4); electrode (4); electrostatic (3); aerodynamic; metallurgist
Geology:	geology/-logist/-logical/-ly (116); atmosphere/atmospheric (97); geographic/-al (28); geosynclines/-synclinal (22); geo(-)chemist/-chemical (8); geophysics/-physicist/-physical (6); biosphere (3); eocene (3); orogeny/-genies (3); carboniferous; stratigraphic; topography
Mathematics & measuring	logarithm (16); symmetry/-metrical/-ly (12); diameter (11); geometry/-metric/-ally (10); cybernetics/-ally/cybernetic (9); macroscopic (8); triangle/-angular/-angulator (8); centimeters (3); microsecond (3); multitrillion (2); kilogram/ kilogram²; kilometer; logico-algebraic; logico-arithmetical; logico-deductive; logico-telic; multi-ton; rectangular; rectilinearity
Technology	technology/-logist/-logical/-ly (82); astronaut (11); bioengineering (3); biotechnology (2); aeronautics; cosmonaut; microchip
Medicine	39 types/131 tokens
Disciplines & practitioner:	neurology/-logical (14); immunology/-logical/-logist (9); pathology/-logical (5); cardiology (2); endocrinology (2); hematology (2); neurobiology (2); phrenology (2); biomedical; gerontology; oncology; orthodontics

Pathology:	melanics/melanic (30); menopause (11); hemophilia (5); psychopaths (5); hemorrhage (4); anterobithorax (3); appendicitis (2); andropause; arteriosclerosis; dermabrasions; dyslexia; encephalitis; epileptics; exocytosis; hepatitis; hypoglycemia; hypothermia; lymphoma; meningitis; mononucleosis; neurodegenerative; paranoia; paraphernalia
Therapeutic:	psychoanalysis/-analyst/-analytic (3); appendectomy
Diagnostics:	diagnosis/diagnose/diagnostics/diagnostic (8); biopsy
Anatomy & physiology	39 types/261 tokens
Anatomy:	micro(-)tubule/-tubular (67); morphology/-logic/-al (50); gastrointestinal (18); pancreas (13); esophagus/-phageal (10); pentadactyl (8); isomorphic/-morphism (6); epidermis/-dermal (5); microfilaments (5); musculoskeletal (5); chloroplast (4); cytoskeleton (4); hemisphere (3); tetrapods (3); biometric (2); cephalopod (2); diaphragm (2); ectodermal (2); hypodermis (2); photoreceptors (2); axonemal; cerebrospinal; exoskeleton; genuflection; microstructure; microvilli; pseudopods; quadrupedal; stereocilia
Physiology:	photosynthesis/-synthetic (24); biorhythm (5); autotroph/trophy (2); haemostasis (2); bioluminescence; biotrophical; hemolymph; neurophysiology; omnivorous; phototaxis
Theory & scientific practice	26 types/974 tokens
	hypothesis/hypothesize/hypothetical/-ly (368); methodology/logical/-ly (137); extrapolate/-ation (32); taxonomy/-nomist/-nomic (13); parameter (12); dialectic/-al/-ly/dialectica (5); topology/-logical (2); hypothetico-deductive; propaedeutic; typology
	homology/-logue/-logous/-logy (170); equivalence/-valency/-valent (89); paradox/-ical/-ly (33); dichotomy (8); homogeneous/-genize (7); disanalogy/-analogical (3); idiosyncratic (3); heterogeneous
	microscope/-scopic/-scopist/-scopy (72); telescope (6); spectrometry (3); gyroscopes (2); microarrays (2); micrographs; seismometer; thermometer
Linguistics & textual	23 types/181 tokens
	dialogue (42); paragraph (29); tautology/-logical/-ly (28); monograph (14); diagram (12); terminology (9); soliloquy (7);

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	typography/-graphic/-al (6); autobiography/graphical (5); bibliography (5); acronym (4); hieroglyphics/-glyphic (4); paraphrase (3); biography/-graphical (2); Indo-European (2); orthographic (2); dialect; eulogy; euphemism; heteronym; histograms; multilingual; palindromic
Social	21 types/148 tokens
	economy/economics/economic/-ally (23); democracy/crat/cratic (17); monopoly/-polize/-polist/-ic (13); autonomy/nomous (10); demographics/-graphic (5); homosexual/-ity (4); monogamy/-gamous (4); polygamy (3); homicides/-cidal (2); stereotype/-typical (2); Anglo-Saxon; Franco-Russian; metropolitan; multiculturalism; multinational; multiregional; patriarchy
	anthropology/anthropologist (30); arch(a)eology/-logist/logical (25); sociology/sociologist/sociological (2); pedagogy
Art	5 types/32 tokens
	architect (18); symphony (8); iconography (4); lithography; pantomime
Philosophy & world view	43 types/1,315 tokens
	philosophy/-sopher/-sophic/-al/-ly (428); theology/-logian/-logical/-ly (300); neo-Darwinism/-Darwinist/-Darwinian (159); teleology/-logist/-logic/-al/-ly (103); cosmology/-logist/-logical/-ly (58); orthodoxy/-dox (56); ontology/-logical/-ly (39); ideology/-logical/-ly/-logist (34); micro(-)evolution/-ary (22); nomological/-ly (14); eugenics/eugenic (13); pan(-)spermia (12); non(-)teleological/-ly (8); omnipotence/-potent (8); Jud(a)eo-Christian (5); panentheism/-entheist/-ic (5); anthropomorphic/-morphism/morphize (4); astrology (4); omniscience/-scient (4); phenomenological (4); dysteleology/-logical (3); heliocentric (3); pantheism/-theist (3); bioethics/-ethical (2); monotheistic (2); neopositivist/-ic (2); neopragmatism/-ist (2); pangenesis (2); teleo-nomological/-ly (2); calisthenics; cosmogony; cosmo-theology; decalogue; euthanasia; geocentrism; hagiography; neo-Laplacian; neoplatonic; ontic-nomothetic; panpsychism; science-theology; teleomechanists; totipotent
Everyday items	13 types/83 tokens
	telephone (28); television (14); automobile (11); photograph/grapher/-graphic (6); binocular (5); autopilot (4); helicopter

	(4); telegraph (3); hydraulic (2); microphone (2); microwave (2); echolocation; trifocals
Undefined	40 types/233 tokens
	psychology/-logist/-logical/-ly (64); extraterrestrial (40); cryptography/-grapher/graphic (19); sympathy/sympathize/sympathizer/sympathetic/-ally (17); pseudo(-)science/-tist-ic/ (15); steganography/-graphic/-grapher (15); multipart (9); cryptosystem (5); equivocating/-vocation/-vocal (4); holocaust (4); multifaceted (3); multilayered (3); steganalysis (3); holographic (2); multitasking (2); monotonic/-tonous (2); polymath; pseudo(-)copy (2); pseudo-knowledge; spatiotemporal (2); bioessays; chronological; cryptanalysis; endogenously; equidistance; exogenously; histocompatibility; micro-innovation; multifarious; multipronged; multipurpose; multi-sided; multisubunit; multiworld; panchronic; panoramic; proprioceptors; taxidermists; telepathy; theometer

 Table 6: Neoclassical compounds in the ID corpus.

## Corpus of textbooks on headaches & migraines

Biology:	53 types/240 tokens
Disciplines & practitioners:	biology/-ical/-ly (22)
Microorganisms:	cryptococcus/-al (17); streptococcus/-al (7); enterovirus (4); pseudomonas (3); hemophilus (3); mycobacterium/-ial (3); enterobacteriaceae (3); staphylococcus (2); meningococcal (2); monocytogene (2); bacteriological; spirochete; macrophages; microbial; bacteroid; fusobacterium; microbiological; pneumococcal; propionibacterium; peptococci;
Cytology:	chromosome (36); mitochondrial (23); autosomal (13); erythrocyte (11); antiphospholipid (11); phenotype/-ic (7); antigen (7); anticardiolipin (6); mononuclear (4); mononucleosis (3); genotype (3); adenosine (3); osmiophilic (2); mycoplasma (2); polymorphonuclear (2); monoclonal (2); dizygotic; nucleotide; adenine; phagocytosis; haemosiderin; mononucleotide; multinucleated; axoplasmic; cytosine; glucosemononuclear; monozygotic
Other:	bioavailability (12); pesticide; heterophil; parasitic;

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	bioequivalence;
Chemistry	199 types/1,921 tokens
General:	tricyclic (47); colloid (23); histamine (23); monoxide (13); nitroglycerin (10); benzodiazepine (9); lipophilic/-ity (6); monosodium (6); monoamine (5); lipoic (4); dioxide (3); glycerol (3); acetylcholine (3); nitrogen (2); oxygen/-ate/-tion (2); benzoate (2); bicarbonate (2); electrophoresis (2); amino acid (2); glucuronide (2); alpha-2-adrenergic (2); carboxylic; hydrogen; alpha-lipoic acid; aerosol; glutamate; hydroxide; benzocycloheptathiophene; cyclodextrin; carbohydrate; electrochemical; g-aminobutyric; micromolecular; monophosphate; nanomolecular; trimagnesium; trimethobenzamide; tetracyclic
Biochemistry:	(o)estrogen (69); corticosteroid (64); phosphodiesterase (57); steroid (35); serotonin (33); cyclooxygenase (21); progestogen (16); gonadotrophin (13); neurotransmitter/mission (13); neurokinin (12); oxyh(a)emoglobin (12); calcitonin (10); melatonin (9); pharm(ac)okinetic/-s (9); anhydrase (6); biochemical (6); collagen (5); electrolyte (5); carboxyh(a)emoglobin (5); neurochemical (5); endocrine (4); noradrenergic (4); dopaminergic (4); endorphin (4); testosterone (3); immunoglobulin (3); dextran (2); progesterone (3); hemoglobin (3); ornithine (2); prolactin (2); metanephrine (2); transcarbamylase (2); oligoclonal (2); polypeptide (2); neuropeptides (2); thromboplastic; plasminogen; dehydrogenase; polymerase; hydrase; norepinephrine; beta-glucuronidase; cyclase; dinucleotide; epinephrine; phosphatase; aldosterone; p-glycoprotein; photopsin; immunesorbent; isoenzyeme; methemoglobin; chemoreceptors; cholecystokinin; haemoglobin; flavoenzymes; neuroendocrine; urokinase; peptidergic; monoaminergic;
Pharmacology:	nortriptyline (273); analgesia/-ic (174); indomethacin (86); opioid (74); acetaminophen (48); amitriptyline (46); metoclopramide (39); dihydroergotamine (36); prochlorperazine (29); pharmacology/-ical (27); non(-)steroidals (27); prednisone (23); vasodilation/-or/-ory (19); pharmacotherapy/-eutic (18); chlorpromazine (17); carbamazepine (16); acetazolamide (16); non(-)pharmacological (15); parenteral/-ly (15); dexamethasone (14); antibiotic (13); diuretic (11); cyproheptadine (9); antinociception/-tive (8); theophylline (8); phenobarbital (8); prednisolone (8); protriptyline (6); erythromycin (6); sulfamethoxazole (6);

	methylprednisolone (6); neuroleptics (5); methotrexate (5); estradiol (5); pharmaceutical (5); tetracycline (5); phenothiazine (5); immunosuppression/-suppressant (5); isometheptene (5); nalidixic (5); beta-adrenergic (5); diphenhydramine (5); paroxetine (4); dichloralphenazone (4); antihistamine (4); methadone (4); anticholinergic (4); fentanyl (3); pseudoephedrine (3); isotretinoin (3); medoxyprogesterone (3); methylenedioxymethamphetamine (3); bromocriptine (3); autoinjector (3); hydrocodone (3); itraconazole (3); betamethasone (3); pyridoxine (2); methylxanthines (2); ethinylestradiol (2); spironolactone (2); methamphetamine (2); minocycline (2); troleandomycin (2); aminoglycoside (2); antiretroviral (2); glyceryl trinitrate (2); propoxyphene; nicardipine; amoxycillin; antianxiolytic; antineoplastic; thiazide; tranylcypromine; hyoscine; antiserotonin; non-pharmaceutical; trisalicylate; pentobarbital; phenoxybenzamine; polypharmacy; hydralazine; hydrobromide; isoniazide; metaiodobenzylguanidine; mucoevacuant; benztropine; cyclobenzaprine; fenfluramine; benzylpenicillin; allopurinol; omeprazole; hydroxyzine; nitrofurantoin; azathioprine; dimenhydrinate; doxylamine; fluphenazine; cortisone; antiemetic
Physics, mathematics	20types/68 tokens
& technology	201, pcs/00 tokens
	radiofrequency (15); electrode (4); hydrostatic (2); technology; asteroid; crystalloids; electromagnetic; ferromagnetic;
& technology	radiofrequency (15); electrode (4); hydrostatic (2); technology; asteroid; crystalloids; electromagnetic;
& technology Physics:	radiofrequency (15); electrode (4); hydrostatic (2); technology; asteroid; crystalloids; electromagnetic; ferromagnetic;
& technology Physics:  Geology:  Mathematics &	radiofrequency (15); electrode (4); hydrostatic (2); technology; asteroid; crystalloids; electromagnetic; ferromagnetic; atmospheres  diameter (15); symmetric/-al (7); milligram (4); asymmetric/-al (4); perimetry (3); barometric (2); milliliter (2); geometry;

dermatologists; haematological; teratology; toxicology; neuropsychiatric

#### Pathology:

syndrome (343); neuralgia/-ic (159); h(a)emorrhage (148); meningitis (122); h(a)ematoma (87); hemiplegia/-ic (76); photophobia (73); arteritis (71); epilepsy/-ic/-ica (65); hydrocephalus (63); epidemiology/-ical (60); pathology/-ical (60); neoplasia/-plasm/-plastic (52); papill(o)edema (52); idiopathic (49); hypothyroidism (48); phonophobia ceph(al)algia (43);pheochromocytoma (42);pseudotumor(u)r pathophysiology/-ical (36);(35);metastasis/-static/-stasize (34);(34);encephalitis neuropathy/-ic (33);encephalopathy/ic (30);vasoconstriction/-ive/-or (30); allergy/-ic/-ist (30); glaucoma (29); orthostatic (28); edema (28); diarrh(o)ea (27); <u>ataxia/-</u> <u>ic</u> (27); <u>sclerosis</u> (26); <u>allodynia/-ic</u> (25); <u>apn(o)ea/c</u> (24); tachyphylaxis (24); nociception/-ive (23); bipolar (22); diplopia (19); scotoma (19); hypoxia/-ic (19); apoplexy (19); hemiparesis/-tic (19); menopause (18); ophthalmoplegia/-ic (18); meningioma (18); arthritis/-ic (17); dysphasia/ic (17); xanthochromia/-ic (16); pleocytosis (15); anorexia (15); vasospasm (15); pathogenesis/-genic (14); adenoma (14); neuritis (14); angiotensin (13); oedema/-tous (13); astrocytoma (13); carcinoma (13); prodrome (12); dystonia/-<u>ic</u> (12); necrosis/-tize (12); hypoparathyroidism (12); etiology/-ic/-ical (11); lymphoma (11); otitis (11); vasculitis (11); carcinomatosis/-atous (11); rhinosinusitis (11); cellulitis (11); rhinorrh(o)ea (10); spondylosis/-ic (10); erythematosis/ous (10); neuralgiform (9); angiopathy (9); glioma (9); osteopath/-y/-ic (8); radiculopathy (8); carotidynia (8); rheumatoid (8); angiitis (8); hypertrophy (8); neurotoxic/-ity/toxins (8); ependymoma (8); polyp (8); choriocarcinoma (8); leukoencephalopathy (8); macroadenoma (8); bradycardia (7); melanoma (7); hypoglyc(a)emia (7); tachycardia (6); claustrophobia/-ic (6); hemianop(s)ia (6); medulloblastoma (6); *photopsia* (6); *demyelinate/ion* (6); *ectopia/ic fibromyalgia* (6); sarcoidosis (6); dyspepsia (6);osteoarthritis/-ic (6);phaeochromocytoma (6): pneumocephalus (6);thrombocytopenia/-penic (6);osmophobia (5); oligodendroglioma (5); perimenopause/-al/ly (5); arteriopathy (5); encephalomyopathy/-ic (5);neurosis/-ic (5); rhinitis/-ic *epidermoid* (5); (5);(5);meningoencephalitis (5);granulomatosis/ous neurofibromatosis (5); polymyalgia (5); atherosclerosis/-ic (5); autoimmune (5); homocystinuria (5); lymphocytosis (5); toxoplasmosis (5); hyperacusia/-is (5); hypox(a)emia (5); menorrhagia (4); myelopathy (4); myopathy (4); neuroma (4); plexopathy (4); schwannoma (4); coagulopathy (4); dysmenorrh(o)ea (4); empyema (4); hypernephroma (4); <u>mastoid</u> (4); <u>paralysis/-ic</u> (4); <u>myositis</u> (4); <u>aphasia</u> (4); <u>dysplasia</u> (4); <u>endocarditis</u> (4); myasthenia/ic pineoblastoma (4); polycystic (4); syringomyelia (4);barotrauma (4); cardioembolic (4); craniopharyngioma (4); hypercalc(a)emia (4); eosinophil/-ic (3); mucocele (3); adenopathy (3); ophthalmodynia (3); sarcoma sonophobia (3); angioma (3); cardiomyopathy (3); hygroma (3); teichopsia (3); postdrome (3); mycosis/-ic amenorrhoea/-ic (3); psychosis/-tic (3); sarcoid acephalgic (3); anosmia (3); atrophy (3); dyskin(a)esia (3); hepatitis (3); hypophysitis (3); leukocytosis (3); mastoiditis (3); melanomatosis (3); hiv-seropositive (3); neurosyphilis (3); pachymeningitis (3); pilocystic (3); polyneuropathy (3); encephalomyelitis (3); gastroparesis (3); glioblastoma (3); thromboembolism/-embolic (3); immunocompromised (3); microbleeds (3); pseudoseizures (3); porphyria hyperadrenergic (3); ankylosis/-e (3); hypercarotenemia (3); hyperparathyroidism hypercholesterolemia (3);(3): hypophosphatemia (3); leuk(a)emia (3); psychogenic (2); epileptogenic (2); iatrogenic (2); myalgia (2); neurilemoma (2); non(-)nociceptive (2); odontalgia (2); schizophrenia (2); trophoblast (2); arthropathy (2); bronchiectasis chordoma (2); cryptococcoma (2); galactorrhea (2): granuloma (2); lymphadenopathy (2); macropsia (2);metamorphopsia (2); micropsia (2); teleopsia (2);thrombolysis (2); cysticercosis (2); migralepsy (2);pharyngitis (2); adenoid (2); pancreatitis (2); pansinusitis (2); postmeningitis (2); proteinuria (2); sphenoiditis (2); spondylitis/-ic (2); synovitis (2); arachnoiditis (2); colitis (2); dysphagia (2); dyspnoea (2); ethmoiditis (2); halitosis (2); tonsillitis (2); pneumothorax (2); cytomegalovirus (2); episcleritis (2); microemboli (2); mononeuropathy (2); monosymptomatic (2); neurosarcoid (2); neurosarcoidosis polycyth(a)emia ophthalmoparesis (2);pseudomigraine (2); psychosomatic (2); pseudopapilledema (2); pyelonephritis (2); blepharospasm (2); hepatotoxicity (2); hyperhydrosis (2); unipolar (2); minibouts (2); cholinergic (2); erythema (2); anhidrosis (2); hypocalc(a)emia (2); hypokal(a)emia (2); hypomagnes(a)emia (2); hyponatr(a)emia (2); psychotropic; pyogenic; somatoform; teratogen/-ic/-ity; thrombophilia; porencephaly; hemolysis; heterophoria; heterotropia; neutropenia; normochromic; aerophagia;

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amyotrophy; areocele; pneumocele; encephalamyopathy; myopia; neoplasm; nonhemorrhagic; oligemia; oliguria; osteomas; otalgia; papillomas; paragangliomas; polyopia; vestibulopathy; xerostomia; agoraphobia; stomatodynia; tachypnea; tuberculoma; zoonosis; zoopsia; zygoma; achromatopsia; akinetopsia; angiomatosis; arthralgias; atheroma/-tous; dermatome; dermatopathy; dysnociception; epidemiologic; germinoma; glossalgia; glossodynia; hemangioma; hemoglobinopathy; keratopathy; lipoma; oscillopsia; oscilloscopia; palinopsia; toxemia; platybasia; lymphoid; diathesis; retinoids; fibrositis; nephrotic; panarteritis; panuveitis; paranoid; paraplegia; periarteritis; perichondritis; pericoronitis; phenylketonuric; prolactinoma; prosopagnosia; retromastoid; septicemia; tendonitis; ventriculitis; anorgasmia; aponeurosis; blepharitis: borreliosis; cerebritis; cholecystitis; conjunctivitis; dermatitis; <u>dyslexia</u>; <u>dysuria</u>; <u>exocytosis</u>; <u>hyperplasia</u>; <u>hyperpnea</u>; hypervitaminosis; <u>hypochondriasis</u>; <u>hypoplasia</u>; <u>hypovitaminosis</u>; <u>lactacidosis</u>; <u>listeriosis</u>; <u>lymphomatosis/-ous</u>; mediastinitis; thyroiditis; sympathoinhibition; pathognomonic; haemopericardium; hepatomegaly; mucopurulent; myoclonic; normocytic; normotensive; canalolithiasis; aminoacidurias; carcinoembryonic; carcinogenicity; microangiopathy; monoparesis; mucormycosis; myxedema; nephrolithiasis; neuroblastoma; neutrocytosis; oligohydrosis; osteochondritis; osteomyelitis; osteonecrosis; osteoporosis; polyarteritis; polyradiculopathy; sternocleidomastoid; psychopathology; radiculoneuritis; sialolithiasis: stomatopyrosis; tuberosclerosis; venoconstrictor; adenocarcinoma; broncospasm; chondrosarcoma; choriomeningitis; chorioretinitis; coccidiomycosis; craniostenosis; gangliocytoma; gastroenteritis; encephaloceleatresia; glossopyrosis; hemangioblastoma; hemangiopericytoma; hemarthrosis; immunodeficiency; lipoatrophy; lymphohistiocytic; macroglobulinemia; macroprolactinomas; texoplasmosis; thrombocythemia; thrombocytosis; thyrotoxicosis; hemiclonic; agenesis; parasomnias; agnosia; uremia; cirrhosis; hydroxyurea; hyperbilirubinemia; hyperemia; hyperglyc(a)emia; hyperlipidemia

### Therapeutic:

acupuncture/-ist (60); biopsy (42); biofeedback (40); homeopathy/-ic (22); prognosis/-tic (22); radiology/-ical/-ist (13); radiograph/-ic/-ical (10); hypnosis/-tic (10); dialysis (9); endarterectomy (8); miniprophylaxis (8); isometric (7); chemotherapy/-ic (7); craniotomy (6); rhizotomy (6);

	radioisotope (4); neurotomy (3); post-craniotomy (3); stereotactic (3); radiotherapy (3); ergonomics (2); reflexology (2); craniectomy (2); laminectomy (2); prostheses (2); self-hypnosis (2); thermocoagulation (2); psychotherapy (2); radio(-)surgery (2); microsurgery (2); neurostimulation (2); septoplasty; neurolytic; autogenic; angioplasty; autopsy; hemispherectomy; hysterectomy; mastectomy; neurectomy; oophorectomy; post-endarterectomy; stapedectomy; tonsillectomy; transphenoidal; non-acupuncture; electroacupuncture; immunotherapy; acupoints; acupressure; gangliorhizolysis; haemodialysis; hypnotherapist; monotherapy; physiotherapy; polytherapy; psychoanalysis; venipuncture; biobands; neuro-aids
Diagnostics:	diagnosis/-gnose/-gnostic (565); angiogram/-graphy/-ic (58); neuroimage/-ing (47); tomography (27); aetiology/-ical (25); arteriography/-gram (23); misdiagnosis (20); venography/-gram (14); myelography/-gram (13); electroencephalogram/graphy/-ic (13); electrocardiography/-ic/-gram (9); echocardiogram/-graphy (8); spectrophotometry (6); fundo/uscopy/-ic (5); ultrasonography (5); undiagnosed (5); neuroradiological/-ist (4); cisternography (3); endoscopy/-ic (3); audiogram (2); histology (2); spectroscopy (2); magnetoencephalography (2); indotest (2); overdiagnose (2); electronystagmogram; thermography; otoscope; tonometry; arthrotomy; pyelogram; cryptogenic; audiometric; CT-myelography; cysternography; densitometry; serology; cardiography; encephalography; fluoroscopy; gonioscopy; postmyelography; rhinoscope; roentgenogram; psychometricians; electromyogram/-graphy; immunofixation; autoradiographic; counterimmunoelectrophoresis; iophendylate
Anatomy & physiology	
Physiology:	homeostasis (6); sympathomimetic (5); electrophysiological; proprioceptive; haematopoiedic;
Anatomy:	trigeminal (214); unilateral/-ly/-ity (164); bilateral (124); ipsilateral (89); subarachnoid (73); gastrointestinal (32); arteriovenous (31); cervicogenic (30); cardiovascular (27); cerebrospinal (23); sphenoid (22); sympathetic (22); lymphocyte/-ic (21); temporomandibular (19); ophthalmic/-al (18); bifrontal (18); leptomeninges/-eal (18); myofascial (17); glossopharyngeal (16); physiology/-ic/-al/-ly (15); parasympathetic (15); hemisphere/-ic (15); frontotemporal (13); neurogenic (12); ethmoid (12); cerebrovascular (12);

<u>arachnoid</u> (11); <u>parenchyma/-al</u> (9); contralateral myocardium/-ial (8); neutrophil/-ic (6); interhemispheric (6); bifurcation (6); atrioventricular (6); vasoactive (6); bitemporal (6); pachymeningeal (6); hematological (5); ventriculoperitoneal (5);vertebrobasilar (5);trigeminovascular (5); endometrium/-ial (4); styloid (4); <u>choroid</u> (4); <u>fibromuscular</u> (4); sphenopalatine (4);cervicomedullary (4); colorectal (4); vasomotor (4);sensorineural (4); perimesencephalic (3); pterygoid (3); craniosacral (3); cervico(-)thoracic (3); endovascular (3); lumboperitoneal (3); microvascular (3); nasopharynx/-geal (3); oromandibular (3); posterolateral (3); trigemino(-)cervical (3); zygapophyseal (3); anterolateral (3); anteroposterior (3); temporalorbital (3); esophageal (3); otogenic (2); hyoid (2); cribiform (2); hematogenous (2); oesophageal (2); extraarachnoid (2); diaphragm/-atic (2); encephalic (2); pterygopalatine (2); atlantoaxial (2); bifronto/altemporal (2); gastroesophageal (2); nasociliary (2); nasolabial (2); neuromuscular (2); neurovascular (2); orbitofrontal (2); isodense (2); temporofrontal (2); auriculoautonomic (2); rhinogenic; oculocephalics; otolith; cnociceptor; diarthrodial; exteroceptive; myogenous; otological; vasogenic; endogenous; arthrogenous; stylohyoid; otoconia; hypodermic; mesenteric; endaurally; supraclinoid; psychomyogenic; quintothalamic; secretomotor; spheno-ethmoidal; trifurcation; polysynaptic; microvasculature; carpopedal; auriculotemporal; craniocervical; craniovascular; meningovascular; adrenocortical; vasovagal; ventrobasal; binasal; bioccipital; cardiorespiratory; cerebellopontine; cervico(al)-trigeminal; endothelium; genitourinary; encephalotrigeminal; homolateral; nasogastric; nasotracheal; neuroectodermal; occipitocervical; occipitofrontalis; occipitonuchal; oropharyngeal; oropharynx; ouchaboccipital; paratrigeminal; parietooccipital; sinonasal; stylomandibular; subendocardial; urogenital; vestibulocochlear; anterosuperior; electrodermal; antidromic;

# Theory & scientific practice

### 14 types/114 tokens

<u>analysis/-lyz/se</u> (27); <u>meta-analysis</u> (11); <u>paradoxical/-ly</u> (11); neuropsychological (9); <u>parameter</u> (7); <u>hypothesis/-ical/-ize/</u> (6); <u>methodology/-ical</u> (4); multidisciplinary (4); neurobiology/-ical (2);

	<u>analogue/-uous/-logy</u> (11); stereotype/-ical (9); <b>heterogeneity/generous</b> (8); prototypical (3); idiosyncratic
	(2);
Linguistics & textual	7 types/14 tokens
	homonymous (7); neuro-linguistic (2); eponym; monograph; pseudonym; diagram; synonym
Social	8 types/110 tokens
	autonomic (74); socio(-)economic (9); economic (7); psychosocial (7); suicide/-al (6); demographic/-s (5); noneconomic; biopsychosocial
Art	1 type/2 tokens
	architecture/-al (2)
Philosophy & world view	1 type/4 tokens
	philosophy/-ical (4)
Everyday items	7 types/33 tokens
	monocular (11); telephone (9); television (6); arthroscopy/-ic (2); telescope (2); binocular (2); photograph
Undefined	35 types/91 tokens
	condylar(in)ergic (13); oculomotor (7); multi(-)centre/-ed (7); exogenous (6); bidirectional (5); monophasic (4); neonate/-al (4); multiphasic (3); equivocal (3); multisystem (3); panorama/-ic (2); manometer (2); uniform (2); androgen (2); autologous (2); synthesis/-ic (2); somaesthetic (2); multifocal (2); multimodality (2); neurobehavioral (2); synergistic (2); anterograde; phosphene; gyriform; empathetic; pseudo-isochromatic; psychodynamic; radiolabeled; somatosensory; polymorph; isointense; multiforme; multiplex; multicountry; multilevel

**Table 7:** Neo-classical compounds in a corpus of textbooks on headaches & migraines.