ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ИНКЛЮЗИВНОГО ВЫСШЕГО ОБРАЗОВАНИЯ
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КАФЕДРА РОМАНО-ГЕРМАНСКИХ ЯЗЫКОВ

«Утверждаю»
Зав. кафедры романо-германских языков
С. Казиахмедова
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ФОНД ОЦЕНОЧНЫХ СРЕДСТВ ПО ДИСЦИПЛИНЕ

НАУЧНО-ИССЛЕДОВАТЕЛЬСКАЯ РАБОТА Б2.В.01(Н)
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Перевод и переводоведение
наименование программы подготовки

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Составитель: д.и.н., проф., профессор кафедры романо-германских языков Репко С.И.

Фонд оценочных средств рассмотрен и одобрен на заседании кафедры романо-германских языков, протокол № № 1 от «28» августа 2020 г.

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1. Паспорт фонда оценочных средств

по дисциплине Научно исследовательская работа (1)

Таблица 1.

1 курс 1 семестр

№ п/п	Контролируемые разделы (этапы) НИР	Коды компетенций	Оценочные средства - наименование	
			текущий контроль	промежуточная аттестация
1.	Подготовительный	ОК-8 ОК-9	Индивидуальный опрос	
2.	Обзор и анализ информации по теме ВКР.	ОПК-7 ОПК-31	Индивидуальный опрос	
3	Завершающий	ОК-8 ОК-9	Индивидуальный опрос	Индивидуальный опрос

1 курс 2 семестр

№ п/п	Контролируемые разделы (этапы) НИР	Коды компетенций	Оценочные средства - наименование	
			текущий контроль	промежуточная аттестация
1.	Специализированный	ПК-16 ПК-17 ПК-18 ПК-28 ПК-29 ПК-30	Индивидуальный опрос	
2.	Завершающий	ОК-8 ОК-9	Индивидуальный опрос	Индивидуальный опрос

2 курс 3 семестр

№ п/п	Контролируемые разделы (этапы) НИР	Коды компетенций	Оценочные средства - наименование	
			текущий контроль	промежуточная аттестация
1.	Специализированный	ПК-16 ПК-17 ПК-18 ПК-28 ПК-29 ПК-30	Индивидуальный опрос	
2.	Завершающий	ОК-8 ОК-9	Индивидуальный опрос	Индивидуальный опрос

Таблица 2. Перечень компетенций:

Код компетенции	**Наименование результата обучения**
ОК-8	владеть культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владением культурой устной и письменной речи
ОК-9	способность применять методы и средства познания, обучения и самоконтроля для своего интеллектуального развития, повышения культурного уровня, профессиональной компетенции, сохранения своего здоровья, нравственного и физического самосовершенствования
ОПК – 7	способность представлять специфику иноязычной научной картины мира, основные особенности научного дискурса в государственном языке Российской Федерации и изучаемых иностранных языках
ОПК – 31	владеть навыками организации НИР и управления научно-исследовательским коллективом
ПК-16	владеть методикой предпереводческого анализа текста, способствующей точному восприятию исходного высказывания, подготовки к выполнению перевода, включая поиск информации в справочной, специальной литературе и компьютерных сетях
ПК-17	владеть способами достижения эквивалентности в переводе и способностью применять адекватные приемы перевода
ПК-18	способность осуществлять письменный перевод с соблюдением норм лексической эквивалентности, соблюдением грамматических, синтаксических и стилистических норм
ПК-28	уметь работать с основными информационно-поисковыми и экспертными системами, системами представления знаний, синтаксического и морфологического анализа, автоматического синтеза, распознавания и понимания речи, обработки лексикографической информации и автоматизированного перевода, автоматизированными системами идентификации и верификации
ПК-29	владеть методами когнитивного и формального моделирования естественного языка и методами создания метаязыков
ПК-30	владеть современными методиками сбора, хранения и представления баз данных и знаний в интеллектуальных системах различного назначения с учетом достижений корпусной лингвистики
ОК-8	владеть культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владением культурой устной и письменной речи

ОК-9	способность применять методы и средства познания, обучения и самоконтроля для своего интеллектуального развития, повышения культурного уровня, профессиональной компетенции, сохранения своего здоровья, нравственного и физического самосовершенствования
ОПК – 7	способность представлять специфику иноязычной научной картины мира, основные особенности научного дискурса в государственном языке Российской Федерации и изучаемых иностранных языках
ОПК – 31	владеть навыками организации НИР и управления научно-исследовательским коллективом

2. Перечень оценочных средств

Таблица 3.

№	Наименование оценочного средства	Характеристика оценочного средства	Представление оценочного средства в ФОС
1	Разноуровневые задачи	Средство, позволяющее оценить уровень знаний обучающегося путем творческого решения им задания по реферированию и аннотированию аутентичного текста.	Задания для реферирования и аннотирования аутентичных текстов

3. Описание показателей и критериев оценивания результатов обучения на различных этапах формирования компетенций

Таблица 4.

Код компетенции	Уровень освоения компетенции	Показатели достижения компетенции	Критерии оценивания результатов обучения
		Знает	
ОК-8,9; ОПК-7, 31; ПК-16, 17, 18, 28, 29, 30	Недостаточный уровень. Оценка «незачтено», «неудовлетворительно»	Не знает основные элементы системы лингвопереводческого анализа текста, системы предпереводческого анализа, послепереводческого саморедактирования и контрольного редактирования текста перевода.	Допускает много ошибок, недостаточно знает систему предпереводческого анализа текста, послепереводческого саморедактирования текста перевода, не способен на научной основе организовать свою самостоятельную профессиональную деятельность, не способен применять методы и средства познания, обучения и самоконтроля для своего интеллектуального развития.
	Базовый уровень Оценка «зачтено», «удовлетворительно»	Знает некоторые элементы системы лингвопереводческого анализа текста, предпереводческого анализа, послепереводческого саморедактирования и контрольного редактирования текста перевода.	Допускает ошибки и самостоятельно их не устраняет; знает основные элементы системы предпереводческого анализа текста, послепереводческого саморедактирования текста перевода, в основном способен на научной основе организовать свою самостоятельную профессиональную деятельность, способен применять методы и средства познания, обучения и самоконтроля для своего интеллектуального развития.
	Средний уровень Оценка «зачтено», «хорошо»	Знает основные элементы системы лингвопереводческого анализа текста, системы предпереводческого анализа, послепереводческого саморедактирования и контрольного редактирования текста перевода.	Иногда допускает ошибки, но самостоятельно их устраняет; знает основные элементы системы предпереводческого анализа текста, послепереводческого саморедактирования текста перевода; в основном способен на научной основе организовать свою самостоятельную профессиональную деятельность, способен применять методы и средства познания, обучения и самоконтроля для своего интеллектуального развития.
	Высокий уровень. Оценка	Знает систему лингвопереводческого анализа текста, систему предпереводческого анализа,	Не допускает ошибок; в совершенстве знает основные элементы системы предпереводческого анализа текста, послепереводческого саморедактирования текста перевода, в полной степени способен

	«зачтено», «отлично»	послепереводческого саморедактирования и контрольного редактирования текста перевода.	на научной основе организовать свою самостоятельную профессиональную деятельность, способен применять весь комплекс методов и средства познания, обучения и самоконтроля для своего интеллектуального развития.
		Умеет	
	Базовый уровень	В некоторой степени умеет работать с основными информационно-поисковыми и экспертными системами, системами представления знаний, синтаксического и морфологического анализа; умеет осуществлять письменный перевод с соблюдением норм лексической эквивалентности, соблюдением грамматических, синтаксических и стилистических норм	В основном способен работать с частью информационно-поисковых и экспертных систем, с системами представления знаний, синтаксического и морфологического анализа; в основном умеет осуществлять письменный перевод аутентичных текстов, однако допускает ошибки в соблюдении норм лексической эквивалентности, в соблюдении грамматических, синтаксических и стилистических норм
	Средний уровень	В основном умеет работать с основными информационно-поисковыми и экспертными системами, системами представления знаний, синтаксического и морфологического анализа, умеет осуществлять письменный перевод с соблюдением норм лексической эквивалентности, соблюдением грамматических, синтаксических и стилистических норм	В основном способен работать с большей частью информационно-поисковых и экспертных систем, с системами представления знаний, синтаксического и морфологического анализа; в основном умеет осуществлять письменный перевод аутентичных текстов, иногда допускает ошибки в соблюдении норм лексической эквивалентности, в соблюдении грамматических, синтаксических и стилистических норм, однако самостоятельно их устраняет
	Высокий уровень	Умеет работать с основными информационно-поисковыми и экспертными системами, системами представления знаний, синтаксического и морфологического анализа, умеет осуществлять письменный перевод с соблюдением норм лексической эквивалентности, соблюдением грамматических, синтаксических и стилистических норм	В совершенстве способен работать со всем комплексом информационно-поисковых и экспертных систем, с системами представления знаний, синтаксического и морфологического анализа; адекватно умеет осуществлять письменный перевод аутентичных текстов, не допускает ошибки в соблюдении норм лексической эквивалентности, в соблюдении грамматических, синтаксических и стилистических норм.

		Владеет	
	Базовый уровень	Владеет в некоторой степени культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владеет культурой устной и письменной речи; владеет частью методов когнитивного и формального моделирования естественного языка и методов создания метаязыков; владеет навыками организации НИР и управления научно-исследовательским коллективом	Владеет некоторыми элементами методики предпереводческого анализа текста, лингвопереводческого анализа текста, предпереводческого анализа, послепереводческого саморедактирования и контрольного редактирования текста перевода; в основном правильно использует минимальный набор переводческих соответствий, достаточный для качественного устного перевода, однако допускает ошибки; владеет частью методов когнитивного и формального моделирования естественного языка и методов создания метаязыков
	Средний уровень	В основном владеет культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владеет культурой устной и письменной речи; владеет частью методов когнитивного и формального моделирования естественного языка и методов создания метаязыков; владеет навыками организации НИР и управления научно-исследовательским коллективом, в основном владеет современными методиками сбора, хранения и представления баз данных.	В основном владеет навыками организации НИР и управления научно-исследовательским коллективом, владеет культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владеет культурой устной и письменной речи; владеет частью методов когнитивного и формального моделирования естественного языка и методов создания метаязыков; владеет современными методиками сбора, хранения и представления баз данных и знаний в интеллектуальных системах различного назначения с учетом достижений корпусной лингвистики
	Высокий уровень	Владеет культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения; владеет навыками организации НИР; владеет современными методиками сбора, хранения, представления информации и баз данных; владеет современными методиками сбора, хранения и представления	В совершенстве владеет навыками организации НИР и управления научно-исследовательским коллективом, владеет культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владеет культурой устной и письменной речи; владеет всем комплексом методов когнитивного и формального моделирования естественного языка и методов создания метаязыков; владеет современными методиками сбора, хранения и представления баз

		баз данных; владеет культурой устной и письменной речи, методами когнитивного и формального моделирования естественного языка и методами создания метаязыков	данных и знаний в интеллектуальных системах различного назначения с учетом достижений корпусной лингвистики

4. Методические материалы, определяющие процедуры оценивания результатов обучения, характеризующих этапы формирования компетенций

Критерии оценки владения компетенциями ОК-8,- 9; ОПК-7, -31; ПК-16, -17, -18, -28, -29, -30 при ведении научно-исследовательской работы.

Оценка «ОТЛИЧНО» ставится, если:

- студент в полном соответствии с требованиями осуществил аннотацию и реферирование научного текста, правильно определил ключевые слова научной статьи;

- продемонстрировал полное владение системой предпереводческого анализа текста, послепереводческого саморедактирования текста перевода, в полной степени способен на научной основе организовать свою самостоятельную профессиональную деятельность, способен применять весь комплекс методов и средства познания, обучения и самоконтроля для своего интеллектуального развития; владеет культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владеет культурой устной и письменной речи; владеет всем комплексом методов когнитивного и формального моделирования естественного языка и методов создания метаязыков; владеет современными методиками сбора, хранения и представления баз данных и знаний в интеллектуальных системах различного назначения с учетом достижений корпусной лингвистики.

Оценка «ХОРОШО» ставится, если:

- студент с незначительным отступлением от требований осуществил аннотацию и реферирование научного текста, правильно определил ключевые слова научной статьи;

- в основном продемонстрировал владение системой предпереводческого анализа текста, послепереводческого саморедактирования текста перевода, способен на научной основе организовать свою самостоятельную профессиональную деятельность, способен применять весь комплекс методов и средства познания, обучения и самоконтроля для своего интеллектуального развития; владеет культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владеет культурой устной и письменной речи; владеет основными методами когнитивного и формального моделирования естественного языка и методами создания метаязыков; владеет современными методиками сбора, хранения и представления баз данных и знаний в интеллектуальных системах различного назначения с учетом достижений корпусной лингвистики.

Оценка «УДОВЛЕТВОРИТЕЛЬНО» ставится, если:

- студент с ошибками осуществил аннотацию и реферирование научного текста, недостаточно точно определил ключевые слова научной статьи;

- продемонстрировал владение частью методов предпереводческого анализа текста, послепереводческого саморедактирования текста перевода, способен на научной основе организовать свою самостоятельную профессиональную деятельность, способен применять основные методы и средства познания, обучения и самоконтроля для своего интеллектуального развития; в основном владеет культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, владеет культурой устной и письменной речи; владеет главными методами когнитивного и формального моделирования естественного языка и методами создания метаязыков; владеет современными методиками сбора,

хранения и представления баз данных и знаний в интеллектуальных системах различного назначения с учетом достижений корпусной лингвистики.

Оценка «НЕУДОВЛЕТВОРИТЕЛЬНО» ставится, если: студент :

- с грубыми ошибками осуществил аннотацию и реферирование научного текста, неправильно определил ключевые слова текста научной статьи;

- не смог продемонстрироватть владение основными методами предпереводческого анализа текста, послепереводческого саморедактирования текста перевода, не способен на научной основе организовать свою самостоятельную профессиональную деятельность, способен применять лишь часть методов и средства познания, обучения и самоконтроля для своего интеллектуального развития; плохо владеет культурой мышления, способностью к анализу, обобщению информации, постановке целей и выбору путей их достижения, плохо владеет культурой устной и письменной речи; в незначительной степени владеет методами когнитивного и формального моделирования естественного языка и методами создания метаязыков; не в полной мере владеет современными методиками сбора, хранения и представления баз данных и знаний в интеллектуальных системах различного назначения с учетом достижений корпусной лингвистики.

Критерии оценки (в баллах):

- 50-60 баллов выставляется студенту, если он:

- демонстрирует ограниченное владение методами научно-исследовательской работы;

- с искажением смысла выполнил задание по аннотации, реферированию текстов научных статей, осуществил обобщение информации;

– научно-исследовательская задача не полностью выполнена или выполнена не в полном объеме;

- содержание выполненной НИР не соответствует поставленной в задании задаче;

– допускаются многочисленные ошибки, которые затрудняют понимание результатов НИР.

- 61-75 баллов выставляется студенту, если он:

- демонстрирует владение основными методами научно-исследовательской работы;

- выполнил задание по аннотации, реферированию текстов научных статей, осуществил обобщение информации;

– в основном выполнил научно-исследовательскую задачу;

- содержание выполненной НИР соответствует поставленной в задании задаче;

– допущены ошибкив выполненном исследовании, которые самостоятельно устранены.

- 76-90 баллов выставляется студенту, если он

- демонстрирует владение большей частью методов научно-исследовательской работы;

- выполнил в небольшими погрешностями задание по аннотации, реферированию текстов научных статей, осуществил обобщение информации;

– выполнил научно-исследовательскую задачу;

- содержание выполненной НИР соответствует поставленной в задании задаче;

– **в выполненном исследовании не**

допущены ошибки.

- 91-100 баллов выставляется студенту, если он:

- демонстрирует владение всем комплексом методов научно-исследовательской работы;

- без ошибок выполнил задание по аннотации, реферированию текстов научных статей, осуществил обобщение информации;

– выполнил научно-исследовательскую задачу;

- содержание выполненной НИР соответствует поставленной в задании задаче;

– в выполненном исследовании не допущены ошибки.

5. Материалы текущего контроля и промежуточной аттестации.

Комплект заданий по практике « Научно-исследовательская работа» (1) для аннотации, реферирования, определения ключевых слов научных статей.

Текст 1. Multiplex model of mental lexicon reveals explosive learning in humans

https://www.nature.com/articles/s41598-018-20730-5

Word similarities affect language acquisition and use in a multi-relational way barely accounted for in the literature. We propose a multiplex network representation of this mental lexicon of word similarities as a natural framework for investigating large-scale cognitive patterns. Our representation accounts for semantic, taxonomic, and phonological interactions and it identifies a cluster of words which are used with greater frequency, are identified, memorised, and learned more easily, and have more meanings than expected at random. This cluster emerges around age 7 through an explosive transition not reproduced by null models. We relate this explosive emergence to polysemy – redundancy in word meanings. Results indicate that the word cluster acts as a core for the lexicon, increasing both lexical navigability and robustness to linguistic degradation. Our findings provide quantitative confirmation of existing conjectures about core structure in the mental lexicon and the importance of integrating multi-relational word-word interactions in psycholinguistic frameworks. Investigating relationships between words offers insights into both the structure of language and the influence of cognition on linguistic tasks[1,2]. As a result, cognitive network science is rapidly emerging at the interface between network theory, statistical mechanics, and cognitive science[1,2,3,4]. The field is influenced by the seminal work of Collins and Quillian[5], who assumed that concepts in the human mind are cognitive units, each representable as a node linked to associated elements. These connections represent a complex cognitive system known as the mental lexicon[6]. Extensive empirical research has shown that relationships in the lexicon can be modelled as a network of mental pathways influencing both how linguistic information is acquired[2,7,8,9,10,11], stored[3,6,7,12], and retrieved[3,8,13,14]. The cognitive role of quantifying lexical navigability as distances in a network finds empirical support in several experiments related to word identification and retrieval tasks[5,13,15,16]. For instance, Collins and Loftus[13] showed a correlation between network topology of semantic networks and word processing times: words farther apart in the network require longer identification times, thus indicating higher cognitive effort. More recently, the structural organisation of mental pathways among words was analysed in several large-scale investigations, considering similarity of words in terms of their semantic meaning[3,17,18], their phonology[8,12,19,20,21], or their taxonomy[14,22,23]. Remarkably, all these networks, based on different definitions of relationships between words, were found to be highly navigable: words were found to be clustered with each other and separated by small

network distances (sometimes called small-world networks[24]). This may suggest a universal structure of language organisation related to minimising cognitive load while maximising navigability of words[2,4,25,26]. The above studies, however, have not yet attempted to use multi-relational information for characterising and quantifying the mental lexicon, instead focusing on only one relationship at a time[3,10,11,12,13,17,18,26]. Some researchers have considered the aggregation of several of these relationships into single-layer networks[17] and others have considered multi-relational models but only to capture the syntactic structure of language[23]. The above approaches offer only limited insight into the cognitive complexity that allow individuals to use language[6] with diversity and ease. More information about the lexical structure can indeed be obtained by accounting, simultaneously, for multiple types of word-word interactions. A natural and suitable framework for this purpose are multilayer networks[27,28,29,30,31]. Multilayer networks simultaneously encode multiple types of interaction among units of a complex networked system. Therefore, they can be used to extract information about linguistic structures beyond information available from single-layer network analysis[32]. The usefulness of multiplex representations has recently been shown for diverse applications including the human brain[33,34], social network analysis[35,36,37], transportation[38,39] and ecology[40,41]. Here, on an unprecedented scale and from a multi-relational perspective, we investigate the semantics, phonology, and taxonomy of the English lexicon as a model of distinct layers of a multiplex network (see Fig. 1). We study the evolution of multiplex connectivity over the developmental period from early childhood (2 years of age) to adulthood (21 years of age) also through the use of word attributes (e.g. word frequency, length, etc.) influencing lexical acquisition[6,42,43]. (**a**) Visual representation of a subset of the multiplex lexical representation (MLR) for adults with $N = 8531$ words and four types of word relationships forming individual layers: free associations, synonyms, taxonomic relations, and phonological similarities. (**b**) Multiplex visualisation as an edge-coloured network. (**c**) Using only purple links does not allow navigation of the whole network. Therefore the network is not a viable cluster. Notice, however, that the two nodes with overlapping links constitute the smallest possible viable cluster in a simple graph (which we refer to as “trivial” in the main text). (**d**,**e**) The appropriate addition of one node and three coloured links makes the resulting graph a viable cluster, with paths between all nodes using either only cyan or only purple colours. The proposed multiplex representation provides a powerful framework for the analysis of the mental lexicon, allowing for the capture of sudden structural changes that can not be identified by traditional methods. More specifically, when modelling lexical growth, we observe an explosive emergence of a cluster of words in the lexicon around the age of 7 years, which is not observed in single-layer network analyses. We show that this cluster is beneficial from a cognitive perspective, as its sudden appearance facilitates word processing across connected network pathways across all lexicon layers. This boost to cognitive processing also enhances the resilience of the lexicon network when individual words become progressively inaccessible, such as what may happen in cognitive disorders like anomia[44]. These findings

represent the first quantitative confirmation and interpretation of previous conjectures about the presence and cognitive impact of a core in the human mental lexicon[6,22,45,46]. Our multilayer lexical representation (MLR) of words in the mind is a multiplex network[28,30,47,48] made of $N = 8531$ words and four layers. Each layer encodes a distinct type of word-word interaction (cf. Fig. 1(a)): (i) empirical free associations[49], (ii) synonyms[50], (iii) taxonomic relations[50], and (iv) phonological similarities[12]. As shown in Fig. 1(b), different relationships can connect words that would otherwise be disconnected in some single-layer representations. We considered these relationships with the aim of building a representation accounting for different types of semantic association, either from dictionaries (i.e. synonyms and taxonomic relations) or from empirical experiments (i.e. free associations). We also include sound similarities (i.e. phonological similarities) as they are involved in lexical retrieval[8,12]. This set of relationships represents a first approximation to the multi-relational structure of the mental lexicon. Compared to previous work on multiplex modelling of language development[32], our multiplex representation is enriched with node-level attributes related to cognition and language: (i) age of acquisition ratings[42], (ii) concreteness ratings[43], (iii) identification times in lexical decision tasks[51], (iv) frequency of word occurrence in Open Subtitles[52], (v) polysemy scores, i.e. the number of definitions of a word in WordNet, used to approximate polysemy in computational linguistics[9,17] (cf. Methods and SI Sect. 12) and (vi) word length[42]. The analysis of structural reducibility of our multiplex model (cf. SI Sect. 2) quantifies the redundancy of the network representation[53]. Results suggest that no layers should be aggregated, as each network layer contributes uniquely to the structure of the multiplex representation, confirming the suitability of the multiplex framework for further investigation. As already discussed, investigating navigation on linguistic networks has proved insightful[5,13,17]. Hence we focus on analysing the navigability of our multiplex network[39], identifying word clusters that are fully navigable on every layer, i.e. where any word can be reached from any other word on every layer when considered in isolation. An example is reported in Fig. 1 for a representative multiplex network with two layers. In network theory, these connected subgraphs are also called viable clusters[48] (cf. Methods). Notice that the largest viable cluster of a single-layer network coincides with its largest connected component[54], i.e. the largest set of nodes that can all be reached from each other within one layer. In multiplex networks the two concepts are distinct, as viable clusters are required to be connected on *every layer when considered individually*. Removing this constraint of connectedness on every layer leads to the more general definition of multi-layer connected components[39], i.e. the largest set of nodes all connected to each other when jumps across layers are allowed. Figure 1(c–e) conveys the idea that the emergence of viable clusters can be due to the addition of particular links in the network. Our multiplex model contains a single non-trivial (i.e. with more than two nodes) viable cluster composed of 1173 words, about 13.8% of the network size. In the following we refer to this cluster as the largest viable cluster (LVC). For easier reference, we indicate words in the empirical LVC as “LVC-in words” and words outside of the empirical

LVC as “LVC-out words”. Reshuffling network links while preserving word degrees leads to configuration model-layers[54] that still display non-trivial LVCs (cf. LVC Rew. in Table 1). Further, on average $98.1 \pm 0.1\%$ of LVC-in words persist in the viable cluster after rewiring 5% of all the intra-layer links at random. We conclude that the LVC does not break but rather persists also in the case of potentially missing or erroneous links in the network dataset (e.g. spurious free associations or mistakes in phonological transcriptions). In order to further test correlations between network structure and word labels, we also consider a full reshuffling null model (see SI Sect. 4), in which word labels are reshuffled independently on every layer and thus word identification across layers is not preserved. Hence, full reshuffling destroys inter-layer correlations but preserves network topology. Fully reshuffled multiplex networks did not display any non-trivial viable clusters, emphasizing the important role of inter-layer relationships for the presence of the LVC in the empirical data.

Текст 2. Online Political Discourse in the Trump Era

https://arxiv.org/pdf/1711.05303.pdf

The 2016 election featured the two most disliked candidates in modern US presidential election history competing in the context of decades of increasing partisan polarization [23]. In this paper we explore how online political discourse during the election differed from discourse occurring prior to it, in terms of incivility and linguistic complexity. We find that incivility in online political discourse, even in non-partisan forums, is at an all time high and linguistic complexity of discourse in partisan forums has declined from a seventh-grade level to a rst-grade level (Section 3). The election was noteworthy for the high levels of incivility and declining complexity of discourse among politicalelites, particularly Donald Trump [24]. Research has shown that when people are exposed to incivility from political elites that they themselves will respond by using more offensive rhetoric [10, 17]. We explore how Trump’s increasing popularity impacted the civility and complexity of discourse in partisan forums. Our work uncovers a strong correlation between Trump’s rise in popularity and the increasing incivility observed in Republican forums on Reddit (Section 4). In may ways, the 2016 campaign was the logical culmination of two decades of aective polarization that witnessed Democrats and Republicans grow increasingly negative in their feelings about the opposing party. Political scientists have documented the increasing polarization among Americans for quite some time [5]; however, more recent work has emphasized the emotion-based (aective) nature of this polarization. Drawing on social identity theory [26], studies have found that one of the dening features of partisan polarization is the increasingly negative feelings that members of one party have for the other party [16]. We measure the incidence of negative partisanship in political forums and nd a strong correlation with incivility, supporting the theory that partisan identity leads people to experience emotions of both enthusiasm and anger [14, 18]. Anger, in particular, is likely to give rise to

incivility due to its ability to motivate political action [11, 14, 27]. Thus as Americans experience political anger more frequently they are likely to be motivated to go online to engage in political discussions [22]. While we see that the 2016 election was not very dissimilar to 2012 (in terms of incidence of negative partisanship), we nd that negative partisanship has shown an upward trend even after inauguration day (unlike 2012). We also nd that hatred towards political entities of both parties was at an all time high during the 2016 elections, reinforcing the theory that 2016 was the ideal year for a non-establishment candidate (Section 5). The 2016 campaign also witnessed unprecedented rhetoric from a major presidential candidate regarding the credibility of the news media. Additionally, during this time, public distrust of and anger at the political establishment and traditional news media was at an all time high [25]. Taken together, these conditions can lead individuals to engage in partisan motivated reasoning [28], which can fuel the spread and belief of "fake news". We explore how frequently misinformation was shared and discussed online. We nd that during the elections, Republican forums shared and discussed articles from outlets known to spread conspiracy theories, heavily biased news, and fake news at a rate 16 times higher than prior to the election – and more than any other time in the past decade. Our study shows that this misinformation fuels the uncivil nature of discourse (Section 6). The racism (Trump's statements concerning Mexicans, Muslims, and other broad groups), sexism (the Access Hollywood recordings), and general incivility exhibited by the Trump campaign did not have any signicant impact on his presidential run. In fact, recent events (e.g., Charlottesville and other Unite the Right rallies) have shown that these actions have emboldened and brought fringe groups into the mainstream. We investigate partisan forums and nd a signicant overlap between participants in mainstream Republican and extremist forums. We uncover a strong correlation between the rise in offensive discourse and discourse participation from extremists (Section 7). Reddit is the fourth most visited site in the United States and ninth most visited site in the world [3]. At a highlevel, Reddit is a social platform which enables its users to post content to individual forums called subreddits. Reddit democratizes the creation and moderation of these subreddits – i.e., any user may create a new subreddit and most content moderation decisions are left to moderators chosen by the individual subreddit. Subscribers of a subreddit are allowed to up-vote and down-vote posts made by other users. These votes determine which posts are visible on the front page of the subreddit (and, even the front-page of Reddit). Reddit also allows its users to discuss and have conversations about each post through the use of comments. Specically, subscribers of a subreddit can make and also reply to comments on posts made within the subreddit. Like posts, the comments may also be up-voted and down-voted. These votes determine which comments are visible to users reading the discussion. Reddit is an attractive platform for analyzing political behaviour for three main reasons: First, the democratization of content moderation and discussion combined with the ability of participants to use pseudonymous identities has resulted in a strong online disinhibition eect and free-speech culture on Reddit [8]. This is unlike Facebook which has stronger moderation policies and requires accounts to register with their email

addresses and real names (although the enforcement of both are questionable). Second, Reddit enables users to participate in long conversations and complex discussions which are not limited by length. This is unlike Twitter which limits posts and replies to 280 characters (prior to Sep 26, 2017 this limit was 140 characters [21]). Finally, Reddit allows scraping of its content and discussions. This has enabled the community to build a dataset including every comment and post made since the site was made public in 2005. As of October 2017, the Reddit dataset includes a total of 3.5 billion comments from 25.3 million authors made on 398 million posts. We categorize the posts and comments in the dataset into two categories: political and non-political. Posts and comments made in subreddits categorized by r/politics moderators as "related" subreddits 2 are tagged as political. We also tag the subreddits dedicated to all past Democratic, Libertarian, and Republican presidential candidates as political. All other subreddits are tagged as non-political.

Текст 3. On the Problem and Promise of Metaphor Use in Science and Science Communication

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5969428/

Metaphors are pervasive in the language of science. Scientists regularly engage in analogical reasoning to develop hypotheses and interpret results, and they rely heavily on metaphors to communicate observations and findings (1). In turn, nonexperts make sense of, and contextualize, abstract ideas and new knowledge through the use of metaphors. While indispensable heuristic tools for doing, communicating, and understanding science, metaphors can also impede scientific inquiry, reinforce public misunderstandings, and perpetuate unintended social and political messages (2). For these reasons, it is especially important for scientists, science communicators, and science educators to acknowledge the conceptual, social, and political dimensions of metaphors in science *and* adopt critical perspectives on their use and effects. The role of metaphor in scientific thought and communication has been widely considered by philosophers, rhetoricians, and science communication and public understanding of science scholars (2–7). Yet it seems that much of the preeminent work on metaphor in science is still unbeknownst to many scientists, who might benefit from the interdisciplinary insights this body of literature has to offer. This paper draws from several notable publications to highlight the importance of metaphors to scientific reasoning and science communication in the hope of sparking broader interest in, and concern for, the implications of metaphors in the life sciences. Following the tradition of critical studies of science (8–11), we open up the language of science to scrutiny and treat metaphors not just as heuristic and rhetorical devices, but also as social and political "messengers" (2) rooted in cultural dynamics and power relations. The term *metaphor* can be traced to the Greek word *metaphora*, which is derived from *meta* (meaning "over") and *pherein* (meaning "to carry") (12). As I. A. Richards (13)

explains, a metaphor is a comparison between two seemingly dissimilar concepts that involves the "carrying over of a word from its normal use to a new use" (p. 221). Metaphors are crucial in the production of knowledge in that they allow us to make concrete connections between abstract concepts and everyday experiences. A growing body of literature also suggests that metaphors shape the mind, structure our experiences, and influence behavior (14–17). Experimental studies reveal that changes in the framing of policy-relevant issues (such as crime, natural disasters, and climate change) through metaphors can subtly, and covertly, influence the perception of risk, the sense of urgency, and the level of support for proposed "solutions" by acting on pre-existing cognitive schemas and prompting affective responses (15, 18–20). Lakoff and Johnson's (14) theory of conceptual metaphor posits that the nature of human cognition is metaphorical, and that all knowledge emerges as a result of embodied physical and social experiences. Under this view, metaphors are not mere linguistic embellishments. Rather, they are foundations for thought processes and conceptual understandings that function to map meaning from one knowledge and/or perceptual domain to another. When attempting to make sense of abstract, intangible phenomena, we draw from embodied experiences and look to concrete entities to serve as cognitive representatives. For example, in the classic trope, "time is money," our understanding of money, as well as meanings we ascribe to it, are mapped onto a target domain—time. The choice of money as a source domain here is influenced by perceived attribute similarities between it and the target domain concept (time). Subsequently, this linkage between money and time structures our experience with time, in that we conceptualize it as a form of currency that can be spent, invested, valued, and/or wasted (14). Embodied cognition perspectives shed light on the imperative of metaphor in scientific thought and communication. Conceptual frameworks and theoretical models in science are rooted in the same embodied understandings of the world as those unconsciously employed in other day-to-day physical and social interactions (6). Scientific reasoning, then, is situated in what Gerhard Vollmer (21) refers to as the mesocosm, or the "section of the real world we cope with in perceiving and acting, sensually and motorically" (p. 89). Building on Vollmer's work (as well as Lakoff and Johnson's conceptual metaphor theory), Niebert and Gropengießer (17) argue that, because the human perceptual system is not well suited to interpreting macrocosmic (e.g., the biosphere, solar systems, galaxies) and microcosmic (e.g., cells, molecules, atoms) phenomena, scientists regularly turn to metaphors, grounded in mesocosmic experiences, to make sense of observations and communicate ideas. They explain: *Consider the following constructs where scientists make use of everyday experience to explain their theories. Robert Hooke was the first to denote the cell using the term "cell" when an image of a piece of cork under his microscope reminded him of the small rooms, or cells, occupied by monks in monasteries. Kepler developed his concept of planetary motion by comparison with a clock. Huygens used water waves to theorise that light is wavelike. Arrhenius described the greenhouse effect by referring to his experience with hot pots. In ever new variations, scientists employ experiences from everyday life to understand scientific*

phenomena. (17, p. 2) Though the use of metaphorical language in science has been historically criticized by some philosophers of science and scientists on the grounds that metaphors are figurative, ambiguous, and imprecise, their generative potential cannot be ignored. It is, in fact, metaphor that makes theory possible, and a great number of scientific revolutions have been initiated through novel comparisons between natural phenomena and everyday experiences (3).

Metaphors in biology and ecology are so ubiquitous that we have to some extent become blind to their existence. We are inundated with metaphorical language, such as genetic "blueprints," ecological "footprints," "invasive" species, "agents" of infectious disease, "superbugs," "food chains," "missing links," and so on. While we may not be able to conceptualize, or communicate, abstract scientific phenomena without employing such metaphors, we must also recognize their limitations, as well as their potential to constrain interpretations of natural processes. In many ways, the metaphors we rely upon may uphold and reinforce outdated scientific paradigms, contributing to public misunderstandings about complex scientific issues. Take for example the concept of genes as "blueprints," which has guided research in molecular biology for decades (for recent examples of blueprint metaphors in molecular biology publications, see 22–24). Critics argue that conceptualizing the genome as a blueprint (or variations such as codes or instructions) is deterministic, oversimplifies complex gene-gene and gene-environment interactions (10, 25), and is, in many ways, incompatible with recent advancements in the fields of developmental biology and epigenetics (26). If genes really *do* function as blueprints, we should expect a one-to-one correspondence between particular genetic "instructions" and phenotypic outcomes in organisms, with limited input from the environment in structuring variation between individuals. Yet this is not the case. Often, single genes can, and do, direct multiple phenotypic outcomes through epigenetic processes that are responsive to the environment. This concept of variable phenotypic responses to environmental conditions, or *plasticity*, has become an increasingly important framework for understanding not only how organisms develop, but also the role of genes in initiating evolutionary change. Our metaphors, however, have not kept up with recent advances in scientific understandings. Accordingly, this has led some biologists to reject the blueprint metaphor and offer up new ways of conceptualizing the nature of genes (26). Barbara Katz Rothman (25) suggests that envisioning genes as "recipes" is more accurate in that it allows for the incorporation of time, growth and development, and the importance of the environment on the "final product." She writes, *A recipe might make more sense as an analogy. Take bread baking, which combines making something with growth, the growth of the yeast that gives bread its rise. The same recipe under different circumstances gives you different breads. Use a flour from a wheat grown in one part of the country and you have a different mineral composition than that from flour grown somewhere else. Bake on a humid day and you get a heavier bread than you would on a dry day. Bake on a hot day and it rises faster and has bigger airholes. Bake the same recipe every day for a week, and no two loaves will be exactly the same: the web, that distinctive pattern of holes, will vary*

from loaf to loaf. Bake it in different pans or in different ovens and you'll have differently textured crusts. (25, p. 33) While the recipe metaphor is useful in that it provides new ways of envisioning gene-environment interactions, it is not without problems. Some critics point out that it differs little from that of the blueprint metaphor, other than appealing to different personal experiences and triggering different gendered associations (27). Moreover, both recipes and blueprints are essentially a static "set of directions for producing a tangible material product" (28 p. 33) and may be equally constraining when it comes to conceptualizing what genes are and what they do. Survey, interview, and focus-group data collected by Condit *et al.* (27) indicate that genetic metaphors activate diverse, context-dependent meanings (as well as varying degrees of deterministic connotations) amongst different audiences, and they highlight the need for more empirically-grounded research in critical discussions of metaphor use in the life sciences.

Текст 4. Is political correctness damaging science?

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1299305/

Science is hardly unique in relying on peer review to determine merit and success. But for science, the reliance on peers to referee both submissions for publication and applications for grants involves greater dangers than in some other disciplines. It brings the triple risk of conformity, cronyism and plagiarism, which together can smother innovation. At a broader level, there is a tendency for researchers to fall in line with a particular point of view, especially in the more politically charged branches of science such as ecology or climatology. Those who oppose the prevailing orthodoxy risk being branded 'flat earthers' and cast into a wilderness where funding and publications are hard to obtain.According to Bruce Beutler, professor of immunology at the Scripps Research Institute (La Jolla, CA, USA), peer pressure in its various forms is a particular problem for science. "It is not unique to research, but in science it goes very much against the grain of what's trying to be accomplished," he said. Yet scientists themselves must take some of the blame for perpetuating a system that can stifle original thinking, Beutler contends. "Scientists like to present an image to the outside world as being very iconoclastic and sceptical. Yet they have a complete conformity of opinion on certain things, and they do victimize people who differ from them." By way of example, Beutler cited the atmosphere surrounding the recent US presidential election, in which any scientist who argued in favour of George W. Bush attracted severe ridicule. More worryingly though, such political correctness can distort research, with consequences not just for scientific direction but also for public matters such as health policy. "I think the best example of conformity of science is the influenza vaccine," said Tom Jefferson, an independent researcher in the UK who specializes in immunology. A longtime critic of the peer-review process for publication, he said, "On average, only

about 10% of the influenza strains in any year are caught by the vaccine, and yet there is a huge push to immunize children." Jefferson accuses decision-makers of failing to understand the true epidemiology of the disease and engaging in an unholy alliance with pharmaceutical companies eager to find a market for their vaccines. But he also implies that immunologists have been too reluctant to stand up against a policy that is not in the best interests of public health or people vulnerable to influenza. Jefferson argues that the annual flu vaccine gives people a false sense of security because it provides only partial protection against the virus strains that circulate at any one time, and would fail to halt a major epidemic. There will always be scientists like Jefferson who are prepared to take a stance, and some develop a reputation for plain speaking and refusing to toe the party line. Among them is ecologist Jim Brown, Professor of Biology at the University of New Mexico (Albuquerque, NM, USA). "I do occasionally feel the need to speak out when I don't think rigorous scientific theory and data support the currently fashionable, politically correct positions of my establishment peers," he said, citing a recent statement by the Union of Concerned Scientists (2003) that exotic species imported to unfamiliar habitats pose a severe threat to global ecology and biodiversity. Brown refused to sign the statement, arguing that although the biotic exchanges now occurring as a result of human activity are unprecedented, they are not radically different in scale from countless long-distance migrations of species that have taken place naturally throughout evolution. Whether Brown is correct or not, it is important that he airs his scepticism of the prevailing position on exotic species. This applies equally in the even more contentious field of genetically modified organisms (GMOs), which has been severely polarized due to the public debate over environmental risks. Until recently, the pressure was mostly on opponents of GMOs to modify their position, and was driven by the biotechnology industry and institutions that benefit from its funding. Such pressure still exists, as witnessed in the case of Ignatio Chapela, an assistant professor of ecology at the University of California, Berkeley, who reported in 2001 that strains of wild corn in Mexico contained altered genes that could only have arisen through contamination from GM maize grown hundreds of kilometres away in California (Quist & Chapela, 2001). This hotly disputed finding led to fierce debates in GM circles and culminated in Chapela being denied tenure by Berkeley. Whatever the merits of the case, it is clear that Chapela paid a price for his work, although he has become a cause célébre for the anti-GM lobby. A similar sort of polarization in the field of global warming has significant implications for future policies on ecology and biodiversity. As with GMOs, the initial pressure came primarily from an industrial lobby that was anxious to avoid carbon taxes and other measures to enforce more efficient energy production. Since then, sentiment has swung progressively behind the proposition that global warming is a done deal, which has increasingly marginalized those who believe there is still uncertainty over whether it is occurring. According to Philip Stott, professor emeritus of biogeography at the School of Oriental and African Studies at the University of London (UK), the idea that human-controlled emissions of greenhouse gases cause global warming has become an article of faith, and any criticism of this notion is

taken almost as blasphemy. This, he argued, has led to major decisions by governments on the basis of immature science, while the case for global warming is still unproven (Stott, 2004). Whether one accepts Stott's arguments—additional evidence in favour of the anthropomorphic global warming proposition has arisen since he wrote the article—it is hard to dispute his assertion that the arguments deployed by a growing number of climate-change scientists use language that tends to be authoritarian and religious in nature, designed to silence those who question man's role in global warming. Having identified how the course of science can be diverted or hindered by the weight of peer pressure, the question arises as to what can be done to ensure that researchers are not penalized. The issue came to the fore in Canada last year when a panel of medical researchers commissioned by the Canadian Association of University Teachers (CAUT, 2004) warned that the integrity of up to 20,000 clinical staff was at risk because of external pressures. The report cited the case of Nancy Olivieri, a professor of medicine at the University of Toronto, who discovered unexpected risks in a new drug for the treatment of thalassemia (Olivieri et al, 1998). When she informed patients who were enrolled in clinical trials of her concerns, the pharmaceutical company sponsoring the research terminated the trial and threatened her with legal action for breaching a confidentiality agreement. Olivieri turned to the university and the hospital for help, to no avail. It transpired that the University of Toronto had been engaged in negotiations with the same company for what would have been a major donation to the university for a new medical building. In light of such cases, CAUT's medical panel made several recommendations, in particular that Canadian clinical researchers should be granted the security of tenure with guaranteed income and the explicit protection of academic freedom. Security of tenure helps to preserve the freedom to publish controversial work, according to William Muir, professor of genetics at Purdue University (West Lafayette, IN, USA). Without it, Muir believes, he would have lost his job. “My work on the Trojan gene ... would have got me fired from the university if I had not had tenure—the outgoing dean told me so,” he said. Muir's Trojan gene hypothesis suggested that transgenes that are engineered into an organism can cause a population to become extinct if they reduce survival fitness (Muir & Howard, 1999). It was controversial partly because it cast doubt on the wisdom of many prevailing practices in agriculture, horticulture and fish farming. The paper led to Muir being verbally abused at conferences, but he emphasized that the university has since rallied round him and featured his research in its publications. “That helped give me the support I needed to face the adverse peer pressure.” Peer pressure is most commonly exerted through the ubiquitous peer-review process that virtually all scientists must contend with... Not many researchers come under the kind of pressure Muir faced, but few scientists are totally immune to it. Peer pressure is most commonly exerted through the ubiquitous peer-review process that virtually all scientists must contend with if they are to progress in their careers. Peer-review pressures are not usually sinister, but scientists often feel compelled to play to their audience, making minor changes to their papers in the hope of pleasing the people they know, or suspect, will review their work. A number of researchers, journal editors and others

have therefore sought ways to reduce the weaknesses of peer review while amplifying its strengths, such as the ability to eliminate technical errors and improve clarity. Jefferson, for example, has written and edited books about peer review and has helped generate ideas for improving the process. These will be submitted at the International Congress on Peer Review and Biomedical Publication in Chicago in September 2005, but Jefferson declined to discuss them in advance—he too, as he ruefully admits, must play by the rules and not break embargoes. But he did point out that some enlightened editors help to make the peer-review process operate better, for example by treating reviewers more as consultants who offer advice rather than referees who pass absolute judgements. The physics community is testing another possible way forward: pre-publication of papers on the internet before submission to a journal, which opens up the review process to anyone who wishes to contribute. But for this practice to become widespread, leading journals would have to change the rules that discourage public dissemination of results prior to formal publication. Some scientists advocate abandoning the peer-review process altogether, but the question is what to put in its place. In biomedical research in particular, there is a need for a process that distinguishes between good and bad work before the results reach other scientists, decision-makers and the general public. This is the view of Silvia Cavagnero, assistant professor of physical chemistry at the University of Wisconsin, Madison, USA. “It is not a perfect system, but it ensures that only good quality science emerges into good journals.” Cavagnero admits that bias on the part of peer reviewers can retard publication of good work, but urges scientists to be persistent in such cases and they will eventually prevail. “The unavoidable biases of the peer-review process may somewhat slow down the process of divulging good quality work, but, most importantly, they do not suppress it,” she said. The hope that the defects of the peer-review system are not fatal also applies to the grant application process, according to Stenbjörn Styring, professor of molecular biology at Uppsala University in Sweden. Styring admits that when applying for grants, particularly for projects funded by the European Union, it is essential to know how to phrase the proposal and use the kind of language that reviewers want to hear. “But the application has to be good too,” he added. In any case, Styring suggests that the scientists who are most adept at applying for grants or even moving into politically acceptable fields tend also to be the most original researchers, and succeed in overcoming bias. It is the lesser scientists who go by the book whose careers are more likely to suffer from the pressure to be politically correct or play to the audience, Styring believes. “I think we must accept the problems of the system and get on with it,” says Bill Rutherford, a research director at the French Atomic Energy Commission (CEA; Saclay, France). Rutherford agrees that improvements are needed, and that scientists who do review also need to be wary of the system. A particular problem for reviewers, says Rutherford, comes from ultra-sensitive scientists who consider themselves above criticism. His advice is to decline to review their articles: “That way you can save all that tedious looking in the rear-view mirror and checking under the car for booby traps.” It seems certain that peer pressure cannot be fully eliminated when it comes to publication and

grant approval. Even with free licence to publish and pursue whatever research they like, scientists can never be totally immune to the pressure of their peers, whether it is exercised at conferences or through influence. Scientists must cope with these pressures, and in some cases need courage to pursue lines of enquiry or seek publication for results that confront prevailing orthodoxies or offend commercial sponsors.

Текст 5. Euphemism and political discourse in the British regional press

https://www.researchgate.net/publication/287593086_Euphemism_and_political_discoursein_the_British_regional_press

Politicians resort to euphemism as a "safe" way to deal with unpleasant subjects and criticize their opponents without giving a negative impression to their audiences. In this regard, it is my purpose to gain an insight into the way euphemism is used by politicians from Norfolk and Suffolk both at word and sentence level using a sample of the regional newspaper Eastern Daily Press, published in Norwich (UK). To this end, I will rely on the frameworks of critical-political discourse analysis (Van Dijk 1993, 1997; Wilson 2001), pragmatic theory, par-ticularly politeness and facework (Brown and Levinson 1987), and Cognitive Metaphor Theory (Lakoff 1993). The results obtained reveal that euphemism plays an important role in the "self-promotion" of regional politicians, who em-ploy euphemism – mostly by understatement, litotes and underspecification – for a variety of purposes, namely sensitivity to audience concerns, avoidance of expressions that can be perceived to marginalize socially disadvantaged groups, polite criticism and mitigation – even concealment – of unsettling topics. Language is a vital element in the daily life of politicians. To find the right kind of language and the right choice of words to address particular audiences is key not only to give a positive image of themselves but also of the parties they repre-sent. We should not forget that political language1 is "purpose-oriented": politicians use language to achieve consensus, maintain support, influence people's thoughts and attract potential voters. In fact, political actors do not use language at random: their speeches and public comments are consciously and carefully constructed with a particular aim in mind. The way politicians approach delicate or unpleasant subjects is of vital importance. It is the convention in politics to appear polite and sensitive to people's concerns while, at the same time, to try to win their favour or attack a political opponent. Political actors tend to avoid words or expressions that may have un-pleasant associations in order not to give a negative impression to their audiences. To this end, they resort to euphemism, i.e., the process whereby a distasteful con-cept is stripped of its most inappropriate or offensive overtones, providing thus a "safe" way to deal with certain embarrassing topics without being politically incorrect or breaking a social convention. Granted that political language is, by definition, "polite" language use (i.e.,

characterized by conflict avoidance out of concern for the feelings of the audience), it is my contention that evasive vocabulary and other euphemistic strategies may reflect the politicians' sensitivity to audience concerns. The focus of attention in this paper is on the positive (or at least non-negative) dimension of euphemism which arises out of concern for the addressees' feelings. There is also, however, a dark side to euphemism in the political sphere. When euphemism is purposefully used to conceal real facts from people, that is, when words are deliberately used to mislead and deceive, euphemism becomes a per-nicious form of communication that Lutz (1987, 1999) calls doublespeak2 and Allan and Burridge (1991: 13) refer to as deceptive euphemism. These types of euphemism perform two fundamentally different functions in discourse, namely to mitigate face threat (interpersonal function) and to project a self-interested ver sion of reality (ideational function) that Luchtenberg (1985) refers to as veiling (verschleierns) and concealing (verhüllens) respectively. My purpose here is therefore to gain an insight into the way euphemism is used by regional politicians from the counties of Norfolk and Suffolk using a sample of the regional newspaper Eastern Daily Press (henceforth EDP), edited in the city of Norwich (UK). To this end, I will rely on the theoretical framework of critical-political discourse analysis (Van Dijk 1993, 1997; Chilton and Schäffner 1997; Wilson 2001). In addition, the analysis of the metaphors encountered in the corpus will be embedded in Cognitive Metaphor Theory (Lakoff and Johnson 1980; Lakoff 1993) in line with studies which regard metaphor both as a cognitive and as a pragmatic phenomenon in the field of discourse analysis (Molek-Kozakowska 2014). In this paper, euphemism will be contextualized within pragmatic theory, particularly as an instantiation of facework. I will not only pay attention to lexis, the most surface level on language in which, as Rodríguez (1992: 38) notes, "the 'euphemized' or dissimulated object and its effects are easier to notice by the addressee". I will also consider euphemistic tactics that take place at sentence level. Within the body of research on political discourse, euphemistic strategies have received considerable attention (Hoggart 1986; Lutz 1987, 1999; Rodríguezs González 1992; Burridge 1998; Fraser 2009). To these studies we should add oth-ers devoted to "politically correct" (henceforth PC) language as a manifestation of euphemism in political discourse (Burridge 1998; Allan and Burridge 2006: chapter 4; Halmari 2011). However, to the best of my knowledge, no study so far has been devoted to the way local and regional politicians, usually unknown out-side their city or region – in contrast to political elites – use euphemism in their speeches and public comments. I think that the modes of verbal attenuation used by politicians from the counties of Norfolk and Suffolk may be significantly dif-ferent from those used by political elites insofar as local councillors and regional MPs are supposed to be more "visible", closer to the citizens and more concerned with their everyday worries than national politicians. In fact, by drawing on a corpus of Norfolk and Suffolk politicians' speeches and public comments, what constitutes politics in the present study is halfway between what Chilton and Schäffner (2002: 6) refer to as "institutional" politics (i.e., parliamentary debates, party conference speeches, etc.) and "everyday politics" (i.e., everyday issues and conflicts of a

social and political nature). Therefore, as political euphemism may be expected to vary in these forms of political activity, the linguistic analysis of euphemism used by local and regional politicians undertaken here seems to be justified. After briefly dealing with euphemism in the political sphere and its relationship with face concerns, I will consider the theoretical paradigms on which this study relies. Then I will present the corpus data and the methodology followed. Next, I will analyse the cases of euphemism (both at word and sentence level) encountered in the sample, which constitutes the core of the paper. The conclusions and final remarks will bring this study to an end.

Текст 6. Analyzing Public Discourse: Using Media Content Analysis to Understand the Policy Process

https://www.tc.columbia.edu/cice/pdf/03_Green-Saraisky-CICE-18.pdf

A prominent form of content analysis is media analysis because media are generally acknowledged to play a key role in interpreting and disseminating ideas about public policy. Media content analysis can be an economical form of data collection, since much media data is available online or, for the academic researcher, through subscription search services. Given the ubiquity of electronic data and archives, it is fairly easy to locate and collect primary data. Though social media are undoubtedly profoundly changing the way education policy communication happens (see Supowitz, Daly, & Del Fresno, 2015), this article focuses on the analysis of traditional print media (newspapers), in both their print and electronic forms, as these media have been the source of most comparative education media analysis to date. Media Content Analysis Media are recognized in the policy studies literature as playing an important, perhaps key, role in the policy process, as both purveyors of information and as ciphers for competing ideas. Media are usually accorded a prime role in the process of policy agenda setting. Hallin and Mancini (2004) caution that most research about the media and the policy process treats media as a monolith, one that operates similarly in all contexts, when in fact the media are rooted in specific political and economic contexts and behave according to those local logics. Research has demonstrated the key role that media play in political agenda setting by choosing which stories and issues are reported on, and then how those issues are covered (McCombs & Shaw, 1974; Gamson & Modigliani, 1989; Gamson, 1992). Media coverage is theorized to both reflect and create public policy and public opinion. While research suggests varying degrees to which media actually influence the policy process,2 it is clear that media do affect how issues come to be understood as public issues, reflecting broader cultural, historical and institutional affinities. Media operate in at least two ways to define public problems. The first is through framing. Framing refers to the ways in which issues are organized and understood in the public

arena; that is, frames are the organizing ideas, words, images and themes that are used to describe and structure information about a public policy issue. Issue framing is a key element of political discourse and policymaking, and has been shown to have an impact on attitudes and policy preferences amongst voters, politicians and journalists (Chong & Druckman, 2007). The concept of framing is analytically useful in illuminating how ideas are generated, diffused and mobilized (Benford & Snow, 2000). The second way media influence the policy process is in playing a gatekeeping role in whom is given status to comment on public problems and prescribe solutions. The conferral of status is captured in the concept of standing. As Ferree, Gamson, Gerhards & Rucht (2002) note: "[Standing] refers to gaining the status of a regular media source whose interpretations are directly quoted. Standing is not identical to receiving any sort of coverage or mention in the news; a group may appear when it is described or criticized but still have no opportunity to provide its own interpretation and meaning to the event in which it is involved. Standing refers to a group being treated as an actor with voice, not merely as an object being discussed by others." (p. 13) An analysis of standing views actors as signifying agents who are actively engaged in constructing meaning about social ideas. Standing, sometimes also referred to as 'voice,' is an essential component of policy discourse since it determines which actors have legitimacy and power. Standing can also reflect media convention, or editorial priorities, as well as media savvy. Not every actor has an equal chance of gaining standing; some actors are "better prepared and motivated to speak out on a particular topic, but the customary practices of news gathering make some speakers highly salient to the media while others are less so." (Ferree, et.al, 2002, p. 86) Media content analysis in comparative education research Recently comparative education scholars have turned to media analysis as a route to understanding the ways in which historical, institutional, cultural and political contexts combine to influence education policy. For instance, as international assessment has become a topic of scholarship in comparative education, several researchers have turned to media analysis to expand their understanding of how, why and under what conditions international assessments are used across varying national contexts. Much of this work has focused on one specific assessment, the Program for International Student Assessment (PISA). PISA is an international assessment administered every three years by the Organisation for Economic Cooperation and Development (OECD) to a representative sample of 15-year old students from participating countries. The assessment measures student performance in three subject areas, mathematics, and reading and science literacy. For instance, Takayama (2010) uses media articles and other textual sources to examine how Japanese politicians and education actors use the media to construct an education "crisis" in Japan. Takayama, Waldow and Sung (2013; 2014) draw on media accounts in three countries to provide a comparative analysis of the responses to PISA results in Australia, Germany and South Korea. A team of European researchers used media accounts, along with other sources, to compare the effects of international assessments across six different country contexts (www.knowandpol.eu), and other recent work (e.g., Martens and Niemann (2010); Fladmoe (2011);

Dixon, Arndt, Mullers, Vakkuri, EnglomPelkkala, and Hood (2013); Dobbins and Martens (2012) also analyzes press responses to rankings on PISA. The research findings are mixed, but each accentuates the role of the press in PISA reception and the analyses generally show the importance of national education politics and culture in shaping the press coverage of PISA. In order to illustrate how a researcher might conduct a media content analysis and what such an analysis might expose, this section uses specific examples from my own work on a media content analysis of American media regarding the Programme for International Student Assessment (PISA) (Green Saraisky, 2015). This project sought to understand the process of reception; that is, how PISA, as an internationally developed and administered assessment instrument, is understood in a local (in this case, national) context. The research grows out of the aforementioned academic literature that suggests that rankings and performance indicators can shape national education discourse in important ways. I was interested in evaluating how PISA is used in education policy debate, and in whether or how PISA has influenced American education policy. The media analysis must first be located within a theoretical framework that situates the research questions and also provides a rationale for why media content analysis is an appropriate method for answering those questions. In this case, the research aimed to understand the ways in which PISA results were being used in American education discourse: who uses PISA, and to what end? When are references to PISA being activated? How are ideas about educational success constructed in the public arena? These research questions were based in theory from political science and political sociology, as well as an interpretive framework about reception from comparative education (Steiner-Khamsi, 2014). They provided the scaffolding for the analysis and guided the development of the coding protocol, which incorporated variables that captured both framing and standing elements. Given the emphasis on understanding reception in a single country context and the focus on policy, media content analysis is a useful tool. While newspapers are not the only textual sources that could have been used, they are excellent sources for understanding public discourse. This is particularly true in the U.S., where journalists may play a stronger role in interpreting policy than in Europe, for instance, where political parties can have more influence on the discourse (Hallin and Mancini, in Ferree, et. al., 2002, p. 81). Developing a coding scheme A prior literature review of research on PISA reception informed the research questions and the construction of the coding scheme. Neuendorf (2002) argues that in order to minimize research bias, categories must be developed fully before the coding of data commences. However she suggests performing a literature review and a preliminary reading of a sample of texts to capture important variables before the codebook/codesheets are finalized. A similar process was used in the development of the codesheet for the analysis of PISA references in the American media. After reading the relevant scholarly literature (both theoretical and empirical), a list of variables for coding was developed. Then I scanned a small number of media articles to see if the initial list resonated, and if there were other important themes that had been inadvertently excluded and added them to the coding scheme. It is

important to note that the coding categories discussed herein are by no means exhaustive, either relative to this specific project or with regard to media content analysis in general. All aspects of the research design, from theory to conceptualization to operationalization and sampling, are specific to the research questions and the researcher's interests. The brief overview here is meant to merely be suggestive of the types of questions and categories one might ask when conducting media content analysis in a comparative education setting.

Текст 7. The strength and pattern of natural selection on gene expression in rice

https://www.nature.com/articles/s41586-020-1997-2

To investigate the strength and pattern of selection on gene expression, we assessed transcriptome variation in two rice populations (Supplementary Tables 1–4)—one consisting of 136 varietal group 'Indica' accessions (comprising the indica and circum-aus subgroups) and the other of 84 varietal group 'Japonica' accessions (comprising the japonica and circum-basmati subgroups)—in a field experiment in the Philippines3. Replicates of each population, with three individuals per accession, were planted in a continuously wet paddy and a field that imposed intermittent drought (Fig. 1a, Extended Data Figs. 1–3). We used 3′-end mRNA sequencing (Methods) to measure mRNA levels in leaf blades of the 1,320 plants at 50 days after sowing, corresponding to 17 days after withholding water in the dry field. We observed genetic variation in the levels of 15,635 widely expressed transcripts15 (a broad-sense heritability of about 0.08 to about 0.95, false discovery rate (FDR)-adjusted $q < 0.001$) (Fig. 1b, Extended Data Figs. 2, 3, Supplementary Text, Supplementary Tables 5–8 provide overviews of genetic, environmental and interactive effects). We focused our analyses on the Indica population, which is the predominant rice population grown globally3. We applied phenotypic selection analysis to measure the strength and pattern of selection on the levels of all 15,635 transcripts4,5, using several complementary approaches. We initially measured total (direct and indirect) selection, and calculated univariate linear (S) and quadratic (C) selection differentials; these differentials estimate directional and stabilizing or disruptive selection, respectively, on the basis of the relationship between the trait value (transcript abundance) and fitness4,5. We considered total lifetime fitness through two multiplicative fitness components16: (i) flowering success, defined as flowering and producing filled grains before the end of the season6,11,12 (which was only relevant under drought, owing to stress-related flowering delay and spikelet sterility)11,12; and (ii) fecundity, which was quantified as the numbers of filled grains produced (and which was relevant for both fields)6,11,12 (Fig. 1a, Extended Data Fig. 1, Supplementary Tables 2, 9, Supplementary Notes 1, 2). In wet conditions, selection on expression appeared to be weak. Transcriptome-wide selection strength was $|S|_{median} = 0.035$, with very few transcripts showing $|S| > 0.1$, which suggests that—for most genes— variation in expression is (nearly) neutral (Fig. 1c); this is similar

to the distribution of selection strengths for higher-level organismal traits[4,17]. Directional selection (S) showed an overall bias for stronger and more-prevalent positive selection (a greater fitness with greater expression) than for negative selection (a lower fitness with greater expression) (7,973 versus 7,569 transcripts, with $S_{median} = 0.0361$ (for positive selection) and $S_{median} = -0.0345$ (for negative selection), respectively; Mann–Whitney U-test, $z = 2.38$, $P = 0.0173$). By contrast, C was negative (consistent with stabilizing selection) for the majority of transcripts (8,070 transcripts with $C < 0$ and 7,472 transcripts with $C > 0$)—although when C was positive, it tended to be stronger (Mann–Whitney U-test, $z = -3.28$, $P = 0.001$) (Fig. 1d, e, Supplementary Tables 10, 11). However, none of the transcript levels covaried significantly with fitness, for either S or C, after Bonferroni correction ($P < 3.2 \times 10^{-6}$). This suggests that—at microevolutionary timescales—variation in gene expression is (nearly) neutral or exhibits very weak stabilizing selection. This contrasts with stronger directional and stabilizing selection at larger evolutionary timescales[18]. Selection was stronger ($|S|_{median} = 0.1367$) under drought conditions than under wet conditions (Mann–Whitney U-test, $z = 99.99$, $P < 0.0001$) (Fig. 1c). Although no individual transcript breached the Bonferroni threshold, S and C exhibit more extreme values under drought conditions, indicating drought-induced shifts in both the strength and pattern of selection (Kolmogorov–Smirnov test, $D = 0.327$ (for S) and $D = 0.269$ (for C), $P < 0.0001$) (Fig. 1d, e, Extended Data Fig. 4, Supplementary Text show results for fitness components under drought conditions). We examined selection on expression across environments and found patterns of antagonistic pleiotropy (S exhibits opposite directionality between environments) for 6 transcripts (about 0.04%) and conditional neutrality (significant S in one environment) for 443 transcripts (2.83%) (Fig. 1f). Compared to expectations that are based on chance alone, conditional neutrality appears much more common than antagonistic pleiotropy under our conditions[6] (Supplementary Table 12). This result indicates a general lack of trade-offs at the gene-expression level, and suggests a mechanistic explanation for the lack of yield penalty on drought tolerance in modern rice breeding lines[12]. To identify factors that shape rates of microevolutionary change in gene expression, we performed partial correlation analysis with factors that influence macroevolutionary rates of expression divergence[7,8,19,20,21] (Supplementary Table 13). We focused on $|S|$ because this value is directly proportional to the response to selection[5], which is a measure of microevolution[22]. Relative expression level and stochastic expression noise were negatively correlated with $|S|$ (Pearson's partial $r < -0.119$, $P < 5.13 \times 10^{-48}$) (Fig. 2a, b, Supplementary Table 14), suggesting fitness is buffered—to some extent—for expression variation in highly expressed genes, as well as for high stochasticity in transcript abundance[9]. However, we observed that accessions with higher genome-wide levels of expression stochasticity tend to have a lower fecundity[23,24] (Spearman's $\rho < -0.174$, $P < 0.05$) (Fig. 2c, Extended Data Fig. 5, Supplementary Table 15). $|S|$ also correlated positively with tissue specificity τ (Pearson's partial $r > 0.024$, $P < 0.01$) (Fig. 2a, b), and for fecundity with expression plasticity (differential gene expression between the two

environments; Pearson's partial $r > 0.017$, $P < 0.05$) (Fig. 2a, Extended Data Fig. 5). This is consistent with previous reports that tissue specificity can minimize pleiotropic constraints on selection[21], and expression plasticity can affect the efficacy of selection[19,20]. Supporting the importance of plasticity, accessions that induce expression of more genes under drought conditions experience fitness benefits (Spearman's $\rho = 0.15$, $P = 0.041$) (Fig. 2d, Supplementary Table 16). Gene expression is regulated through networks of transcription factors that interact with *cis*-regulatory DNA elements[9], and these relationships have been shaped by past selection. Highly connected transcripts in regulatory networks should be controlled by more transcription factors[9,25,26] and have evolved to reduce the effects of expression variation on fitness, contributing to robustness[9]. Supporting this hypothesis, fitness was less strongly associated with the expression of genes with higher connectivity (Kruskal–Wallis test, $H \geq 18.94$, $P < 0.001$), numbers of known *cis*-regulatory DNA elements and transcriptional regulators (Mann–Whitney *U*-test, $z \geq 2.74$, $P < 0.05$) (Fig. 2e, f, Extended Data Fig. 5, Supplementary Table 17). Because interactive network effects appear to curb the strength of phenotypic selection on gene expression, we hypothesize that genetic correlations between multivariate suites of transcripts may constrain the outcome of selection. We performed dimensional reduction of the transcriptome data using principal component (PC) analysis, and considered the principal components that explain >0.5% of overall variance as suites of transcripts in a multivariate selection analysis[5] (Supplementary Table 18). We estimated linear (β) and quadratic (γ) selection gradients, which together measure the strength and pattern of direct (instead of total) selection on a trait[4,5]. Quadratic selection was generally weak, but PC7 showed significant positive directional selection under wet conditions ($PC7_{wet}$ $\beta = 0.017$, $P = 1.44 \times 10^{-6}$). Under drought conditions, PC6 displayed positive directional selection for flowering success ($PC6_{dry}$ $\beta = 0.025$, $P = 0.023$), and was marginally non-significant for total lifetime fitness ($\beta = 0.032$, $P = 0.07$) (Fig. 2g, Extended Data Tables 1, 2). Furthermore, fecundity selection under drought conditions was positive for PC4 ($PC4_{dry}$ $\beta = 0.017$, $P = 0.014$), whereas selection for flowering success had the opposite effect—albeit marginally non-significant ($\beta = -0.019$, $P = 0.07$) (Fig. 2g). We can predict the outcomes of selection and evolutionary constraints on gene expression using the breeder's equation[10]. Although the principal components as multivariate suites of transcripts were uncorrelated at the phenotypic level, they genetically covaried given that individual plants were accompanied by two additional genetically identical plants in the population. Despite stronger selection under drought conditions, evolutionary responses to stress were weak owing to constraints (as evidenced by the opposite signs of the direct and indirect responses to selection) that arose from genetic correlations between gene groups (Fig. 2h, Extended Data Table 1).

Текст 8. Animal-research data show effects of EU's tough regulations

https://www.nature.com/news/uk-absolutely-committed-to-reducing-animals-used-in-research-1.14688

The use of animals in scientific research seems to be declining in the European Union, according to statistics gathered by the European Commission. The figures come from the first report on the state of animal research in the bloc since the introduction of tougher regulations 7 years ago. The report — published on 6 February — reviews the impact of an animal-research directive, legislation that was designed to reduce the use of animals in research and minimize their suffering. The directive, which came into effect in 2013, is widely considered to be one of the world's toughest on animal research. According to the report, 9.39 million animals were used for scientific purposes in 2017 — the most recent year for which data have been collated — compared with 9.59 million in 2015. From 2015 to 2016, however, there was a slight increase, to 9.82 million. More than 60% of the animals used in 2017 were mice, 12% wer "It is the broadest, most comprehensive approach to collecting and publishing animal statistics in the world," says Stefan Treue, who heads the German Primate Center in Göttingen. He suggests it is a model that other countries could follow, although he notes that the complex reporting requirements put a high administrative burden on scientists and their organizations. In addition to gathering data on the number and species of animals used in research, member states must now collect information on the number of times each animal is used, the purpose, and the 'severity' of experimental procedures animals experience. A spokesperson for the European Commission says that such detailed data "allow us to identify far more effectively where best to target resources to help reduce the number and suffering of animals". e rats, 13% were fish and 6% were birds. Dogs, cats and non-human primates made up just 0.3% of the total. British ministers insisted today that they are still committed to reducing the number of animals used in research, but warned that this might not mean a reduction in the overall number of scientific procedures involving animals. Science minister David Willetts told reporters in London that the government was "absolutely committed" to the so-called 3Rs of reducing, replacing and refining the use of animals. "This is about the scientific community doing its best whenever possible to reduce and replace the use of animals," he added. "This isn't about a numerical target." The number of scientific procedures involving animals in the United Kingdom reached a peak of around 5.5 million in the 1970s before dropping to just over 2.5 million in 2000. Since then, however, it has increased to more than 4 million in 2012, and despite the government's promise in 2010 to "work to reduce the use of animals in scientific research". Today's action plan pledges support for the London-based National Centre for the 3Rs (NC3Rs); to encourage data sharing between animal researchers to minimise duplication; and to increase the role of government inspectors of animal research in promoting the 3Rs. For example, inspectors will give more guidance to researchers on alternative lab technique that do not require lab animals. Norman Baker, the Home Office minister responsible for animal research, insisted that there was no other country doing as much as the UK to reduce the use of lab animals. He said that the government had already backed work — such as developing non-animal tests for detection of toxins in commercial shellfish — that had led to reductions.

Had such work not been done, he added, “we would have a higher number than we’ve currently got”. Echoing Willetts, Baker said it would be “artificial” for the UK to try and set an overall target for the number of animal experiments, given the global nature of science. UK animal-rights groups criticised today's announcement. The Nottingham-based Fund for the Replacement of Animals In Medical Experiments said it was disappointed by the lack of targets, while the London-based British Union for the Abolition of Vivisection said it showed that the government was abandoning its 2010 pledge. Mark Walport, the government’s chief scientific adviser, cautioned that the increase in animal-research procedures seen in official statistics was mainly down to an increase in the breeding of genetically-modified animals — whose births are counted as procedures — and not to what might more generally be considered ‘experiments’, which have remained roughly stable at 2 million per year in the past decade. Walport said that scientists were increasingly transparent about their use of animals, and increasingly sophisticated in how they used them. Vicky Robinson, chief executive of the NC3Rs, welcomed the report and said progress was being made. “Most people are starting to get it [3Rs] isn’t a regulatory tick-box. It’s about how we do the best science,” she told *Nature*.

Текст 9. Biotechnology.

https://greentumble.com/advantages-and-disadvantages-of-using-biotechnology-in-agriculture/

We are often inspired by nature, from art and literature to engineering and medicine. The science of biotechnology also looks up to processes in nature to transform living systems and organisms and develop new (perhaps better) products out of them. According to the UN Convention on Biological Diversity, biotechnology is “any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use .” One of the earliest applications of biotechnology, in its simplest form, was in agriculture. For centuries, farmers manipulated plants and animals through selective breeding in order to create and enhance desired traits. As the science of plant breeding was further developed, the 20th century saw a big change as we were able to more quickly pick out traits such as increased yield, pest resistance, drought resistance, and herbicide resistance. But our technology has since then The growth of agricultural biotechnology, also known as agritech, was such that by 2003, seven million farmers were utilizing biotech crops, with more than 85% of these farmers located in developing countries. Is agritech a technological revolution which we should be welcoming or are there hidden risks of artificially changing foodstuff? The clear difference between agritech and traditional practices used by farmers to enhance beneficial traits is the fact that scientific tools and techniques, including genetic engineering, molecular markers, molecular diagnostics, vaccines, and tissue culture, are used to modify living organisms. In other words, it is the fact that this is considered

a scientific and very invasive process compared to traditional practices, moved even further, which resulted in first food product produced through plant biotechnology in 1990. But as the Economist noted in a recent article, “If agriculture is to continue to feed the world, it needs to become more like manufacturing.” And this is what agritech allows for. With population rising, it is estimated that by 2050 we will be heading for a great food crisis, as the world will need at least 70% more food. The 9.7 billion inhabitants of planet Earth will not only require more food by 2050, but also better food, as by then most are likely to have middling incomes. Agritech can help address this by increasing the productivity of crops and thereby meeting our nutrition needs. The use of biotechnology in the field of agriculture does not only allow for crops to grow more and under more difficult circumstances, it can literally make them better. In other words, science allows us to introduce specific genes to increase the nutritional value of crops. This has been attempted with rice, one of the world’s most eaten food, where scientists used genetic engineering to produce rice rich in vitamin A. What scientists noticed is that while rice already contains the genes that produce vitamin A, these get turned off as the rice grow; so what the scientists did was to reverse the process so that the vitamin A genes get activated during the growth. As such, agritech can help in resolving hunger but also malnutrition. This is therefore not a solution we can afford to ignore when so many hundreds of people, many young children, suffer from malnutrition. Proponents of agritech, however, believe that their technology can introduce truly sustainable farming practices and even reduce the environmental impact of agriculture. For example, genetically modified seeds can have improved resistance to germination failure. This allows farmers to plant these seeds without having to till the soil, which is a practice that disturbs beneficial soil organisms, results in the loss of nutrients from soils by bringing them to the surface from where they get washed off by the rain, and releases carbon trapped in the soil organic matter. What is more, supporters of agritech also believe that their technology can also reduce waste and optimize the food available to us in supermarkets. This is because genetically modified produce can be given properties that allow it to be harvested when ripe but then the ripening process can be stopped which means consumers can have access to fresher produce with a longer shelf life. This also minimizes the amount of food that could go back before even reaching retailers. But if there are so many benefits of agricultural biotechnology, what is holding back further pick-up of these practices by farmers? This is particularly important given the increased frequency of extreme weather phenomena as well as the difficult conditions under which many nations need to grow food. One example of biotechnology products could be the development of drought resistant crops. By changing the genes of some crops, it is possible to grow them in unfavorable conditions and different types of soil, which means that countries that suffer from drought might be able to expand their agricultural activities as well as use land where it was previously not possible to cultivate anything. Even with all the evidence on the table, it is difficult to take a firm decision about the application of biotechnology in agriculture. What is certain is that we need to remain vigilant regarding the health and

environmental implications. If agritech companies are truly committed to helping people around the globe to escape hunger and support sustainable farming practices, then they should certainly acknowledge the need to ensure that biotechnology products deliver on that without compromising our environment or health.

Текст 10. Conquering Space.

https://www.universetoday.com/14841/how-long-does-it-take-to-get-to-mars/

The National Aeronautics and Space Administration's (NASA) automated spacecraft for solar system exploration come in many shapes and sizes. Each spacecraft consists of various scientific instruments selected for a particular mission, supported by basic subsystems for electrical power, trajectory and orientation control, as well as for processing data and communicating with Earth. NASA uses both electrical power and solar energy. Rechargeable bat-teries are employed for backup and supplemental power. A subsystem of small thrusters is used to control spacecraft. The thrusters are linked with de-vices that maintain a constant gaze at selected stars. Just as Earth's early sea-farers used the stars to navigate the oceans, spacecraft use stars to maintain their bearings in space. Between 1959 and 1971, NASA spacecraft were dis-patched to study the Moon and the solar environment; they also scanned the inner planets other than Earth - Mercury, Venus and Mars. For the early planetary reconnaissance missions, NASA employed a highly successful se-ries of spacecraft called the Mariners. Between 1962 and 1975, seven Mariner missions conducted the first surveys of our planetary neighbors in space. In 1972 NASA launched Pioneer 10, a Jupiter spacecraft. Interest was shifting to four of the outer planets - Jupiter, Saturn, Uranus and Neptune. Four NASA spacecraft in all - two Pioneers and two Voyagers - were sent in the 1970s to tour the outer regions of our solar system. Because of the dis-tances involved, these travellers took anywhere from 20 months to 12 years to reach their destinations. NASA also developed highly specialised spacecraft to revisit our neighbors Mars and Venus in the middle and late 1970s. Twin Vi-king Landers were equipped to serve as seismic and weather stations and as biology laboratories. Two drum-shaped Pioneer spacecraft visited Venus in 1978. A new generation of automated spacecraft - including Magellan, Gali-leo, Ulysses, Mars Observer and Cassini - is being developed and sent out into the solar system to make detailed examinations that will increase our un-derstanding of our neighborhood and our own planet. In 1969 Mariner - 9 flight to Mars required only 139 days. Viking 1 (1976) – 335 days. Viking 2 (1976) – 360 days. Mars Reconnaissance Orbiter (2006) – 210 days. Phoenix Lander (2008) – 295 days. Curiosity Lander (2012) – 253 days. It’s proposed that a nuclear rocket could decrease the travel time down to about 7 months. Just 10 milligrams of antimatter would be needed to propel a human mission to Mars in only 45 days. But then, producing even that minuscule amount of antimatter would cost about $250 million. Using traditional chemical rockets, a trip to Mars – at quickest — lasts 6 months. But a new rocket tested

successfully last week could potentially cut down travel time to the Red Planet to just 39 days. The Ad Astra Rocket Company tested a plasma rocket called the VASIMR VX-200 engine, which ran at 201 kilowatts in a vacuum chamber, passing the 200-kilowatt mark for the first time. “It’s the most powerful plasma rocket in the world right now,” says Franklin Chang-Diaz, former NASA astronaut and CEO of Ad Astra. The company has also signed an agreement with NASA to test a 200-kilowatt VASIMR engine on the International Space Station in 2013.

The tests on the ISS would provide periodic boosts to the space station, which gradually drops in altitude due to atmospheric drag. ISS boosts are currently provided by spacecraft with conventional thrusters, which consume about 7.5 tons of propellant per year. By cutting this amount down to 0.3 tons, Chang-Diaz estimates that VASIMR could save NASA millions of dollars per year. The VASIMR has 4 Newtons of thrust (0.9 pounds) with a specific impulse of about 6,000 seconds. To make a trip to Mars in 39 days, a 10- to 20-megawatt VASIMR engine ion engine would need to be coupled with nuclear power to dramatically shorten human transit times between planets. The shorter the trip, the less time astronauts would be exposed to space radiation, and a microgravity environment, both of which are significant hurdles for Mars missions.

Текст 11. Information Society

https://affairscloud.com/india-ranks-138-measuring-information-society-report-2016/

Measuring the Information Society Report is published annually since 2009. It shows significant ICT data and tools to measure the information society. The 2016 report measures ICT development in 175 economies worldwide and compares progress with respect to the base year 2015. The report highlights the role of ICTs in achieving Sustainable Developments Goals. 2016 edition of the Measuring the Information Society Report was launched on 22 November 2016 during the World Telecommunication/ICT Indicators Symposium (WTIS) 2016 held from 21 November to 23 November 2016 in Botswana, South Africa by UN International Telecommunication Union (ITU). India has been ranked 138th in global rank Index 2016 with a score of 2.69 while it has been ranked 26th in the Regional Rank Index 2016. India is among 9 countries in the region which falls within the least connected countries LCC in the ranking. It was ranked 135th in the global rank Index 2015 with a score of 2.50 The ITU index was topped by the Republic of Korea with a score of 8.84. The Sub-Saharan Africa’s Niger with a score of 1.07 ranked lowest. Nearly all countries improved their ICT Development Index (IDI) values over the last year, but great difference continue to exist between more and less connected countries. The Republic of Korea tops the IDI rankings in 2016 for the second consecutive year.There has been greater improvement in ICT use than its access. Countries from around the world showed strong

improvements in performance. South Korea got the highest 8.88 points. 5. UK got 8.57 7. China got 8.46 points. 11. Japan got 8.37 points. The ICT Development Index (IDI) is an index published by the United Nations International Telecommunication Union based on internationally agreed information and communication technologies (ICT) indicators. This makes it a valuable tool for benchmarking the most important indicators for measuring the information society. The IDI is a standard tool that governments, operators, development agencies, researchers and others can use to measure the digital divide and compare ICT performance within and across countries. The ICT Development Index is based on 11 ICT indicators, grouped in three clusters: access, use and skills. The access sub-index captures ICT readiness, and includes five infrastructure and access indicators. a. fixed-telephone subscriptions/100 inhabitants b. mobile-cellular telephone subscriptions/100 inhabitants c. international Internet bandwidth (bits/s) per user d. percentage of households with a computer e. percentage of households with Internet access. The use sub-index captures ICT intensity, and includes three ICT intensity and usage indicators. a. percentage of individuals using the Internet b. fixed (wired)-broadband subscriptions per 100 inhabitants c. Wireless broadband subscriptions per 100 inhabitants (includes satellite, terrestrial fixed, and active mobile with a minimum download of 256 kbit/s). The skills sub-index captures ICT capability or skills as indispensable input indicators. It includes three proxy indicators and is given less weight in the computation of the IDI compared with the other two sub-indices. a. adult literacy rate (% population 15 and older who can read and write simple statements with understanding and do simple arithmetic calculations) b. gross enrollment ratio secondary level (total enrollment in a specific level of education as a percentage of all eligible) c. gross enrollment ratio tertiary level (total enrollment in a specific level of education as a percentage of all eligible).

Контролируемые компетенции: ОК-8,- 9; ОПК-7, -31; ПК-16, -17, -18, -28, -29, -30

Оценка компетенций осуществляется в соответствии с Таблицей 4.

Вопросы зачета с оценкой (1 семестр)

1. В чем состоит актуальность исследуемой вами проблемы?
2. Как вы оцениваете степень изученности исследуемой проблемы в научной литературе и статьях?
3. Каково, по вашему мнению, содержание теоретически и практически нерешенных и дискуссионных проблем в сфере вашего исследования?
4. Как вы оцениваете степени теоретической изученности исследуемой проблемы?
5. Чем характеризуется общее состояние объекта и предмета исследования?

Вопросы зачета с оценкой (2 семестр)

1. Каковы цели и задачи ВКР?
2. Что выступает в качестве объекта и предмета проводимого исследования?
3. В чем заключается актуальность выбранной темы?
4. Каково современное состояние изучаемой проблемы?
5. Каков методологический аппарат, который предполагается использовать?
6. Перечислите основные литературные источники, которые будут использованы в качестве теоретической базы исследования?

Вопросы зачета с оценкой (3 семестр)

1. Какие статьи по теме выпускной квалификационной работы опубликованы?
2. Опишите кратко основное содержание опубликованных статей по теме исследования.
3. В работе каких научно-практических конференций вы приняли участие?
4. Какие основные проблемы по теме научного исследования вы можете выделить?

Критерии выставления зачета с оценкой

Оценка «**Отлично**» ставится в случае, когда магистрант предоставляет полный, развернутый письменный отчет о результатах НИР за семестр, в ходе устной защиты промежуточных результатов научного исследования грамотно и аргументировано формулирует значимость проделанной работы, демонстрирует отличное знание библиографии по исследуемому вопросу, методологических подходов и принципов научного исследования, понимание специфики научных текстов.

Оценка «**Хорошо**» ставится в случае, когда магистрант предоставляет полный, развернутый письменный отчет о результатах НИР за семестр, в ходе устной защиты промежуточных результатов научного исследования достаточно грамотно формулирует значимость проделанной работы, демонстрирует хорошее знание библиографии по исследуемому вопросу, методологических подходов и принципов научного исследования, понимание специфики научных текстов.

Оценка «**Удовлетворительно**» ставится в случае, когда магистрант предоставляет достаточно полный письменный отчет о результатах НИР за семестр, в ходе устной защиты промежуточных результатов научного исследования формулирует значимость проделанной работы, демонстрирует знание библиографии по исследуемому вопросу, но иногда затрудняется дать необходимые пояснения, демонстрирует знание методологических подходов и принципов

научного исследования, допуская при этом незначительные ошибки, понимание специфики научных текстов.

Оценка «**Неудовлетворительно**» ставится в случае, когда магистрант предоставляет неполный письменный отчет о результатах НИР за семестр, в ходе устной защиты промежуточных результатов научного исследования с трудом формулирует значимость проделанной работы, демонстрирует плохое знание библиографии по исследуемому вопросу, затрудняется дать необходимые пояснения, демонстрирует незнание методологических подходов и принципов научного исследования, допускает существенные ошибки в понимании специфики научных текстов.

Составитель: д.и.н., проф., профессор кафедры романо-германских языков Репко С.И.
(подпись)
«___» _____20__г.

Утверждено на заседании кафедры романо-германских языков от « »_____20 г.
Протокол № ___

Зав. кафедры романо-германских языков
С. Казиахмедова