The Humanities in Public: A Computational Analysis of US National and Campus Newspapers

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A B S T R A C T

Academic defenses of the humanities often make two assumptions: first, that the overwhelming public perception of the humanities is one of crisis, and second, that our understanding of what the humanities mean is best traced through a lineage of famous reference points, from Matthew Arnold to the Harvard Redbook. We challenge these assumptions by reconsidering the humanities from the perspective of a corpus of over 147,000 relatively recent national and campus newspaper articles. Building from the work of the WhatEvery1Says project (WE1S), we employ computational methods to analyze how the humanities resonate in the daily language of communities, campuses, and cities across the US. We compare humanities discourse to science discourse, exploring the distinct ways that each type of discourse communicates research, situates itself institutionally, and discusses its value. Doing so shifts our understanding of both terms in the phrase "public humanities." We turn from the sweeping and singular conception of "the public" often invoked by calls for a more public humanities to the multiple overlapping publics instantiated through the journalistic discourse we examine. And "the humanities" becomes not only the concept named by articles explicitly "about" the humanities, but also the accreted meaning of wide-ranging mentions of the term in building names, job titles, and announcements. We argue that such seemingly inconsequential uses of the term index diffuse yet vital connections between individuals, communities, and institutions including, but not limited to, colleges and universities. Ultimately, we aim to show that a robust understanding of how humanities discourse already interacts with and conceives of the publics it addresses should play a crucial role in informing ongoing and future public humanities efforts.

Michael Bérubé and Jennifer Ruth begin their 2015 book *The Humanities, Higher Education, and Academic Freedom* by identifying "an iron law of American journalism": "no one is permitted to write the word 'humanities' in a sentence that does not also include the word 'decline.'"[1] This association in journalistic discourse of the humanities with crisis is deeply familiar to many humanists. The popular narrative of American higher education over the last fifty years, Bérubé and Ruth emphasize, is that "students have abandoned the humanities in droves."[2] While they

go on to argue that the real crisis in the humanities is not declining undergraduate enrollments but rather a crisis in "graduate education and professional employment" within higher education, the point remains that the humanities are often portrayed in the news in the language of crisis.[3] This framing affects how humanists view their own disciplines, too, and it has inspired many to pen both public and academic defenses of the humanities. Such pieces seek to advocate for the value of the humanities, but they also usually take the crisis framing for granted. As Edward L. Ayers puts it, "the language of crisis [has become] engrained in the self-perception of the humanities."[4]

As we will demonstrate, although this way of talking about the humanities is perhaps the most readily identifiable, it is not the most common. "Everyday" news articles reporting on the day-to-day activities of humanities faculty, celebrating students in humanities classes, and announcing humanities events are far more plentiful in US news discourse. Humanities scholars have a tendency to miss or ignore these kinds of articles when writing pieces about the crisis in the humanities or arguing for the relevance of the humanities. When Helen Small writes in *The Value of the Humanities*, for example, that "[t]he primary aim of the following pages is to examine the most commonly proffered reasons why the study of the humanities has distinctive purpose and value," the phrase "most commonly proffered" refers mainly to the frequent surfacing of specific arguments advocating for the value of the humanities within the pages of "well worn" academic texts.[5] Exchanging the traditional lineage of august defenses of the humanities often cited by scholars for a much larger corpus of relatively ordinary contemporary journalism, we focus instead on discussions of the humanities that emerge from a more expansive sense of the "common" – as in, quotidian and widely-circulating news articles.[6] How might an emphasis on often unremarkable journalism not only alter our justifications for the humanities, but also expand our very understanding of what the humanities are?

This article answers this question by examining newspaper articles containing the word "humanities" (as well as other select keywords for comparison purposes). This data is a subset of the data collected by the WhatEvery1Says: The Humanities in Public Discourse (WE1S) project, which was funded by the Andrew W. Mellon Foundation.[7] Our corpus includes 147,204 documents from 624 unique mainstream and student newspapers from across the United States published during the years

1998-2018.[8] We see these sources as offering an important, though not exclusive, window on contemporary public discourse related to the humanities.[9] As WE1S recognizes, other keywords, like the names of individual disciplines, figures, or texts, can also be markers of humanities discourse. But because "there is no predefined, bounded set of media documents for studying public discussion of the humanities," it makes sense as an initial aim to study "a strategically chosen subset of materials mentioning the literal word 'humanities.'"[10] Indeed, as we will show, this method captures both "specialized academic discourse" around particular humanistic disciplines, concepts and ideas as well as "wider, fuzzier public discussion" of the humanities as part of everyday life and general culture.[11] To get a handle on this discourse, we utilize methods in exploratory data analysis including simple counting, hypothesis testing, supervised and unsupervised forms of modeling, and comparisons of word frequency data. The claims we make rely on generalizations drawn from this analysis, but they also rely on close readings of many individual articles that our computational analysis brought to our attention as significant. Our methods are intended to investigate the diversity of ways of talking about the humanities that exist in public discourse.[12]

We are thus concerned in this article, broadly speaking, with what is often called the "public humanities."[13] However, our approach destabilizes both terms in this phrase.[14] We begin from the premise that any discussion of the humanities in public must take into account the many overlapping publics that interact with the humanities and with ideas about the humanities on an ongoing, daily basis. The construction of our corpus turns from the sweeping and singular conception of "the public" often invoked by calls for a more public humanities to the multiple, specific publics addressed by the sources we examine.[15] These publics include those constituted by mainstream US newspaper discourse and by student newspapers located on college and university campuses across the United States.

Additionally, the term "humanities" in our analysis turns protean. Humanities scholars and professionals often use the term to refer to particular administrative formations or academic disciplines (including English, history, philosophy, etc.), and thus the humanities are often viewed, especially in the United States, as distinct from the arts. However, in the news articles we examine, the humanities are associated with a wide range of things including interpretive and scholarly activities,

institutional and administrative formations, pedagogical practices, artistic or creative endeavors, and, as we discuss in the article's final section, traces of public life, or the implicit and often inchoate connections between individuals, communities, and institutions. We are interested not in adhering to or arguing for any one definition of the humanities, but rather in showing how the term operates in contemporary newspaper discourse. Our methods allow us to examine the words, ideas and practices with which the term "humanities" is commonly associated, associations we might miss if we were searching for a particular definition of the term or seeking to redefine it. For us, then, the phrase public humanities means an attempt to understand how the term "humanities" resonates in the daily language of communities, campuses, and cities across the US, albeit perhaps not in ways that scholars in the humanities always recognize.[16]

In what follows, after describing our data in more detail, we explore two different groupings of public discourse related to the humanities. We call the first "public discourse about the humanities." It centers on articles that take specific humanistic disciplines or the concept of the humanities more generally as their main topic. We pay particular attention to how such humanities discourse constitutes its own publics, either through explicit invocations of the humanities as a public good or through the embedding of public perceptions within an article's structure. We find that while the crisis in the humanities is part of the explicit framing of articles detailing justifications for particular majors or bemoaning unwelcome administrative decisions, this framing fades substantially in articles about humanities events, classes, and accessible resources. To bring public discourse about the humanities into sharper relief, we compare articles about the humanities to articles about science.[17] While discussions of the humanities and discussions of science share some common features, we find that articles about the humanities communicate research differently, invoke audiences associated with different institutions, and discuss values in more abstract ways than articles about science.

We call the second grouping of public discourse related to the humanities "humanities public discourse." The removal of the word "about" in our phrasing is important; the articles that constitute this category contain the word "humanities," but they aren't about the humanities per se.[18] Instead, these articles include incidental mentions of this term in, for example, the name of a building, the title of a

professorship, or the listing of an event. These kinds of articles outnumber articles about the humanities in our corpus by a factor of 11. Despite their relative prevalence, however, articles like this are often excluded from discussions of the humanities, for the obvious reason that they are not "about" the humanities. Yet, as we will see, such articles have a lot to tell us about how the concept of the humanities operates and is valued today. They provide a view of how the humanities – as an administrative formation, as a disciplinary tradition, as a set of interpretive and creative activities, as a group of pedagogical practices, and more – are embedded in everyday life, even when this embedding isn't explicitly conceptualized as such.

Humanities Publics: Our Data

Table 1 displays breakdowns of the approximately 147,200 documents in our corpus by publication date and source distribution. As we can see there, most of the articles in our corpus were published between 2005 and 2018, and the distribution of articles among our sources is uneven. The top 20 sources overall account for nearly 40% of the total number of documents in the corpus, while the bottom 300 sources account for only 5% of the total number.

Grouping	Number of documents (percentage share of total documents)
Total (all groupings)	147,204 (100%)
Published between 1998-2004	13,593 (9%)
Published between 2005-2018	133,611 (91%)
Top 20 sources	57,051 (39%)
Top 100 sources	105,318 (72%)
Bottom 300 sources	7,795 (5%)

Table 1: Numbers of documents grouped into categories corresponding to when they were published and to top or bottom contributing sources.

Another way of understanding our data is to categorize it by source type. As we see in Table 2, our corpus includes articles from the 15 top-circulating newspapers in

the United States as of 2019 and from 609 student newspapers from colleges and universities located mainly in the United States.[19] We have significantly more data from student newspapers: just over 2/3 of the articles in our corpus are from this source type, while about 1/3 are from top-circulating newspapers. Viewing our corpus in this way highlights the two overlapping audience groups, or the two publics, the articles we have collected address and therefore constitute. Discussions of the public humanities often turn on distinctions between "academia" and "the public," which are usually presented either implicitly or explicitly as mutually exclusive realms. As we mentioned above, however, the campus communities addressed by student newspapers are other kinds of publics; they are not somehow "not public" because they are composed of people who are enrolled in or who work for colleges or universities. Furthermore, faculty and administrators often write or contribute to articles that appear in mainstream newspapers.[20] While these communities are distinct, the boundaries between them are more porous than discussions about the public humanities commonly assume. Table 2 also displays another way of dividing our data. We can separate it into 3 keyword categories: articles containing the words "humanities" or "liberal arts" (our humanities keyword data), articles containing the words "science" or "sciences" (our science keyword data), and articles that do not contain the word "humanities" (our comparison keyword data).[21] These keyword categories cut across both source types described above.

Grouping	Number of documents (percentage share of total documents)
Total (all groupings)	147,204 (100%)
Top newspapers (15 unique sources, all keywords)	44,589 (30%)
Student newspapers (609 unique sources, all keywords)	102,615 (70%)
Humanities keywords (both source types)	34,744 (24%)
Science keywords (both source types)	96,846 (66%)
Comparison keywords (both source types)	15,614 (11%)

Table 2: Numbers of documents by source type and keyword category

However, as we mentioned in the introduction, the inclusion of a specific keyword does not guarantee that an article is about the concept that keyword appears to name; an article may include the word "humanities" but not actually be about the humanities, a point we describe in more detail in the article's final section. To zero in on public discourse specifically about the humanities or about science, we built classifiers designed to predict if a newspaper article is about the humanities or about science. For our purposes, an article "about" the humanities or science was one in which the main topic or central focus of the article was either a specific humanistic or scientific discipline or the concept of "the humanities" or "science" itself.[22] Our classifiers were able to detect differences between articles about the humanities and articles not about the humanities more easily than they were able to detect differences between articles about science and articles not about science, although they differentiated both categories with relatively high degrees of accuracy (Table 3). As we can see in Table 4, our classifier predicted that our corpus includes over four times as many articles about science than articles about the humanities. Articles about the humanities constitute a small percentage not only of our corpus overall but also, perhaps more surprisingly, of our humanities keyword data. Of the over 34,700 articles in our corpus that include humanities keywords, our humanities classifier predicted that only about 7% of these articles are about the humanities. This is also true of our science keyword data: about 10% of documents that contain science keywords were classified as being about science.

Group A	Group B	F1 score	Precision	Recall
Articles about the humanities	Articles not about the humanities	0.92	0.97	0.88
Articles about science	Articles not about science	0.82	0.89	0.77

Table 3: Pairwise comparisons of our classification models using a logistic regression classifier. Scores show how well Group A was predicted in comparison to Group B. Scores are averages over 10 runs.

Grouping	Number of documents (percentage share of specified grouping)
Total classified as being about humanities, all keyword groupings	2,815 (2% of all documents)

Total classified as being about the humanities, humanities keyword grouping	2,324 (2% of all documents, 7% of humanities keywords documents)
Total classified as not being about the humanities, humanities keyword grouping	32,420 (22% of all documents, 93% of humanities keywords documents)
Total classified as being about science, all keyword groupings	10,324 (7% of all documents)
Total classified as being about science, science keyword grouping	9,323 (6% of all documents, 10% of science keywords documents)
Total classified as not being about science, science keyword grouping	87,523 (59% of all documents, 90% of science keywords documents)

Table 4: Number of documents by classification and keyword category. Classifications are not exclusive across all categories (percentages do not add up to 100%).

While the articles we have collected address two overlapping publics – readers of campus newspapers and readers of top-circulating newspapers – our data also reveal fault lines between these publics. Table 5 shows that the majority of articles classified as being about the humanities are from student newspapers (91%), while only a small portion of articles classified as being about the humanities are from top newspapers (9%). Likewise, the majority of articles classified as being about science are also from student newspapers (79%), although a slightly larger portion of articles about science (as compared to those about the humanities) are from top newspapers (21%). These numbers suggest that student newspapers are more likely to publish articles about either science or the humanities than top newspapers; indeed, we might expect student newspapers to publish more articles about academic subjects of any kind than top-circulating newspapers. But when we compare the numbers of articles about the humanities and about science published in each type of source to one another, we see that articles about the humanities are disproportionately under-represented in top newspapers and over-represented in student newspapers.[23] When top newspapers do publish articles about either the humanities or science, these articles are even more likely than we might expect to be about science than about the humanities. And conversely, while student newspapers still publish more total pieces about science than they do about the humanities, they also tend to publish more pieces about the humanities than expected.

Grouping	Number of documents (percentage share of documents in classification category)
About humanities from top newspapers	260 (9% of documents from all source types classified as being about the humanities)
About humanities from student newspapers	2,555 (91% of documents from all source types classified as being about the humanities)
About science from top newspapers	2,216 (21% of documents from all source types classified as being about science)
About science from student newspapers	8,108 (79% of documents from all source types classified as being about science)

Table 5: Number of documents classified as being about the humanities and as about science by source type.

Our data also reflect differences between campus communities. As Table 6 shows, the majority of articles classified as being about the humanities from student newspapers are from the newspapers of private institutions.[24] Glancing at a list of the ten student newspapers that contribute the most articles to the humanities category (Table 7) reveals that these articles frequently appear not only in the newspapers of private institutions, but in the newspapers of some of the nation's wealthiest and most elite private institutions: Stanford, Dartmouth, Harvard, Princeton, and Cornell all top the list.[25] The situation is reversed when we examine articles that have been classified as being about science. The majority of these articles are from newspapers located at public institutions (Table 6), and the ten student newspapers that contribute the most articles to the science category include newspapers from many large public research universities (Table 8). This difference suggests a correlation between the institutional support and relative prestige of humanities disciplines at elite private institutions and the appearance of articles about the humanities in the student newspapers of those institutions. As Ayers emphasizes, "the more exclusive and expensive the college or university, by and large, the more established the relative position of the humanities."[26] Not all publics are equally accessible – or equally public. Our data reflect the extent to which even public discourse about the humanities is privatized, or at least centralized within the most exclusive campus communities in the United States. Like the humanities themselves, discussion of the humanities is, as Christopher Newfield writes, "a luxury good found mostly at wealthy private universities."[27]

Grouping	Total Documents (percentage share of grouping)	Documents from Student Newspapers at Private Institutions (percentage share of grouping)	Documents from Student Newspapers at Public Institutions (percentage share of grouping)
Documents from student newspapers	102,615 (100%)	36,833 (36%)	65,005 (63%)
Documents classified as being about the humanities from student newspapers	2,555 (100%)	1,610 (63%)	939 (37%)
Documents classified as being about science from student newspapers	8,108 (100%)	2,813 (35%)	5,199 (64%)

Table 6: Comparisons of 3 different groupings of our data: documents from student newspapers; documents classified as being about the humanities from student newspapers; and documents classified as being about science from student newspapers. The table lists the total number of documents in each category, the number of documents from student newspapers at private institutions, and the number of documents from student newspapers at public institutions. Numbers and percentages do not add up to 100% because some of our student newspaper data is not from the US (see note 19).

Top 10 sources for documents about the humanities from student newspapers	Number of Documents (percentage share of 2,555, or total documents about the humanities from student newspapers)
The Stanford Daily (Stanford University)	320 (13%)
The Dartmouth (Dartmouth College)	101 (4%)
The Harvard Crimson (Harvard University)	90 (4%)
The Daily Princetonian (Princeton University)	75 (3%)
Cornell Daily Sun (Cornell University)	60 (2%)
The Brown Daily Herald (Brown University)	47 (2%)

Daily Bruin (University of California Los Angeles)	46 (2%)
The Columbia Spectator (Columbia University)	44 (2%)
The Duke Chronicle (Duke University)	31 (1%)
Cavalier Daily (University of Virginia)	29 (1%)

Table 7: The top 10 sources from documents about the humanities published in student newspapers.

Top 10 sources for documents about science from student newspapers	Number of Documents (percentage share of 8,108, or total documents about science from student newspapers)
The Stanford Daily (Stanford University)	597 (7%)
The California Aggie (University of California Davis)	310 (4%)
Daily Californian (UC Berkeley)	231 (3%)
The Kaleidoscope (University of Alabama Birmingham)	190 (2%)
Daily Bruin (University of California Los Angeles)	179 (2%)
The Tartan (Carnegie Mellon University)	168 (2%)
Michigan Independent (University of Michigan Ann Arbor)	145 (2%)
Colorado Daily (University of Colorado Boulder)	127 (2%)
The Daily Cardinal (University of Wisconsin Madison)	122 (2%)
The Daily Texan (University of Texas Austin)	122 (2%)

Table 8: The top 10 sources from documents about science published in student newspapers.

Public Discourse About the Humanities

To examine the themes and keywords that surface in articles about the humanities, and to bring out the salient features of such discourse in comparison with discourse about science, we combined the documents our model predicted were about the humanities with those it predicted were about science to produce a collection of 13,139 total documents. We have examined this collection in two ways. We compared articles about the humanities to articles about science by running a Wilcoxon rank sum test to discover the most distinctive words in each category.[28] We also produced a 100-topic model of this data.[29] To analyze this topic model, we first examined the top 100 articles associated with each topic and identified 12 topics as those with the highest concentrations of top articles that our classifier categorized as being about the humanities, 69 topics as those with the highest concentrations of top articles about science, and 19 topics as those that fall in the middle.[30] We then created a label for each topic based on an assessment of each topic's top keywords and on reading its top articles.

This reading process suggested to us that throughout the 100 topics of our model run three distinct though interrelated modes of public discourse, or ways of talking about the humanities or science. We designate these modes here as the *communicated,* the *infrastructural,* and the *debated.* Articles that contribute to the "communicated mode" are often news items that convey the substance and content of humanities and/or science projects, practices, research, and results. Articles associated with the "infrastructural mode" tend to be informational and describe the systems, built environments, bureaucracies, people, materials, and resources necessary for the day-to-day operations of a variety of institutions, including but not limited to institutions of higher education. And articles in the "debated mode" detail controversial issues and often take the form of opinion pieces, editorials, or reports on specific debates.

Such mode designations represent a human interpretation of machine learning; they provide another dimension through which to view a topic model by registering our understanding of how language resonates when the various components of a model – keywords, articles, and topics – come together. The modes we identify act as an interpretive framework for understanding our topic model rather than as exclusive categories, as modes crisscross and overlap. Articles communicating research or

debating an issue will sometimes also presuppose particular institutions and infrastructures, for example, and single topics can easily contain articles that contribute to more than one mode. Even so, in the discussion that follows, we include tables representing the topics that we find to be most meaningfully associated with different modes in order to identify broad trends in public discourse about the humanities and the sciences.[31]

As we discuss in greater detail below, we find that articles about science that contribute to the communicated mode report directly on the results of scientific research, whereas articles about the humanities that contribute to this mode mediate humanistic knowledge through descriptions of events and classes that foreground an audience of attendees or students in addition to the implied audience of newspaper readers. Articles about science contributing to the infrastructural mode reference institutions ranging from the workplace to governmental agencies, whereas articles about the humanities in this mode center institutions of higher education. And articles about science associated with the debated mode mobilize scientific knowledge in relation to specific issues in the public sector, suggesting concrete actions, whereas articles about the humanities associated with this mode are more abstract, often discussing the importance of the humanities in general without offering an account of how humanistic knowledge could be applied to issues of public concern.

The articles about science in our topic model that contribute to the communicated mode convey scientific research results to their audience through a relatively straightforward act of reporting. Language in topics associated with such articles is concrete and specific (Table 9). The headlines of sample articles in each of these topics foreground scientific findings: "BU researchers unveil underground world where fungi fight climate change" (topic 80); "Study finds link between proteins, electroconversion therapy response" (topic 81); and "UMass researchers studying migratory patterns of bluefin tunas and other fish" (topic 84).[32] In general, headlines of articles associated with the communicated science mode adhere to a remarkably formulaic pattern, with similar phrasing occurring in articles associated with topics related to astronomy, cancer, viral infections, neuroscience, zoology and botany, human ancestry and genetics, polar ice caps, cell biology, archaeology and paleontology, quantum physics, planetary geology, health, and robotics, among

others.[33] The language is that of discovery and investigation, and many pieces use headline templates such as "Researchers find…" or "Studies show…" to communicate results published in scientific papers. Such language reaches a pitch in topic 32, which we labeled as "Research Findings and Publications," consisting of words such as "study," "researchers," "results," "findings," and "data."[34] We might characterize the discursive pattern common to the communicated sciences as a single act of communication: information follows a direct route from the reporter to the primary audience of a reading public.[35]

Topic	Our Topic Label	Top Keywords	Topic Weight	Articles (of Top 100) Classified as About Science
80	Plants and Microbes	plants, plant, carbon, soil, nitrogen, algae, oxygen, organisms, water, grow, species, dioxide, bacteria, blooms, fungi, photosynthesis	0.3	100
81	Psychology, Psychiatry, and Mental Health	mental, people, stress, psychology, depression, anxiety, behavior, disorder, emotional, social, therapy, treatment, disorders, meditation, symptoms	0.5	97
84	Aquatic Life	fish, sea, marine, species, ocean, water, coral, scientists, salmon, waters, bears, fishing, animals, food, sharks	0.5	100
32	Research Findings and Publications	study, researchers, research, found, professor, published, results, studies, findings, different, author, new, team, data, lead	4.1	100

Table 9: Sample Topics contributing to the "Communicated Science" mode.

This mode of research communication is almost entirely absent from articles that our classifier tagged as being about the humanities. In comparison to the examples cited above, consider the topics shown in Table 10 that we have designated as contributing meaningfully to the communicated humanities mode. Headlines of sample articles associated with these topics show us a humanities *in medias res*, detailing events, projects, course programming, and accessibility efforts: "CLAS to offer new major in Arabic and Islamic Civilizations" (67); "Uruguayan poet's campus visit includes reading" (18); "Panel Discussion at Dickinson College

Addresses Feminism Within Sororities" (61); and "UCLA professors digitize collections to allow greater access" (46).[36] Most importantly, these articles operate through a double layer of communication. Science articles, as we saw above, relay research results directly to the reader. Humanities articles also present humanistic knowledge, but, in contrast to science articles, this knowledge is often described in the process of being conveyed to an audience. Such articles include discussion of the objects and outcomes of humanities research, but only in the context of an act of communication such as a class or a talk, which is then communicated again to the reader. Instead of simply conveying the results of literary analysis, for example, an article might convey such analysis as part of the context of a poetry reading.[37] Instead of focusing exclusively on a faculty member's research, an article might include a description of such research as part of a speaker's biography that introduces a lecture or panel discussion.[38] Furthermore, many articles participating in this mode explicitly thematize communication itself, particularly in relation to language learning or translation. The study of language and culture, for example, is described not only as providing students with "distinct communication skills" but also with encouraging "a deeper understanding of what it means to communicate."[39]

Topic	Our Topic Label	Top Keywords	Topic Weight	Articles (of Top 100) Classified as About Humanities
67	Languages and Cultures	language, languages, abroad, english, study, studies, spanish, french, foreign, culture, literature, history, classics, italian, german	0.5	94
18	Literature	english, writing, literature, book, read, poetry, reading, books, literary, write, humanities, creative, writers, poems, poem	0.8	94
61	Diversity and Social Justice	studies, professor, diversity, gender, black, race, american, ethnic, white, issues, social, women, history, justice, asian	0.6	93

46	Digital Humanities	humanities, digital, duke, brown, unl, projects, medieval, scholars, project, library, history, collection, dorm, new, books	0.3	89

Table 10: Topics contributing to the "Communicated Humanities" mode.

As a function of their doubled communication, articles about the humanities often foreground an embedded audience, particularly students, in addition to the implied audience of newspaper readership. Newspaper readers see "many students gathered...to listen" to a poetry reading, for example, and their own act of "listening" occurs in concert with students' reactions, as they watch them "interacting with living poetry."[40] Similarly, academic fields come to life only through student participation. We learn key concepts in disability studies, for example, through the lens of students engaging with assigned texts in the classroom; likewise, discussion of an American Indian Studies minor, which seeks "to expose" students "to the experiences and history of American Indian folks," also exposes the reader to this field, in turn.[41] Readers of these articles take their place among layers of other readers – the "faculty and students...studying century-old documents such as...Emily Dickinson's poetry and Thomas Jefferson's journals" in a college library, the students who "go to [their] iPhone...as [they're] walking back to [their] dorm room" and "start reading the letters of Ben Franklin," and "a new generation of readers" in high school who are just beginning "to discover what literature can bring to their lives."[42] Such publics are thus not just invoked or thematized; rather, they are integral to the article's structure. The reader accesses the humanities in these articles through the mediation of extant audiences.

These articles are not only populated by publics already participating in the humanities; they also invite further, future publics to join them. Pieces on digitization efforts and the digital humanities often emphasize this invitation. Common refrains highlight the "benefits" of "allowing access to materials that otherwise wouldn't be made public" and the "ability to share our resources worldwide" through digitization.[43] At stake is a "radical democratization of knowledge" that resonates differently than articles about science associated with the communicated mode.[44] Though outward facing, the relaying of scientific research tends to preserve a greater distance between the expert and the lay public. Such

distance is somewhat collapsed in articles about the humanities when digital tools, for example, are described as "giving more power to the reader to make the decisions" by allowing literary artifacts to become "like a do-it-yourself kit."[45] The implication is that "anybody," like the student of digital humanities, could learn to "tell meaningful stories with data," adding their own acts of communication to those of scholars.[46]

These articles make clear that one of the foremost acts of humanities communication is college teaching. This association of the humanities with teaching also appears in our second category of public discourse about the humanities, articles about the humanities associated with the infrastructural mode. The topics that we have identified as including many articles associated with this mode make the bureaucracy of higher education visible, as evidenced by the pedagogical, institutional, and procedural language listed in Table 11. What these examples make clear is that, in contrast to articles about science that participate in this mode, which we will detail shortly, articles about the humanities are associated almost exclusively with the language of college administration, and they are well-peopled with educational and administrative actors. Keywords such as "students," "faculty," "committee," "professors," and "dean" all appear in these topics, along with "courses," "curriculum," "departments," "major," "minor," "teaching," "semester," "learning," and "classroom," which describe the building blocks of humanities infrastructure.[47] Articles that contribute to this mode are not just "related" to institutions of higher education; rather, they are evidence of day-to-day functioning of these institutions, including announcements of new majors and minors, reports on meetings, and articles about new faculty members or administrators who have recently been hired.

Topic	Our Topic Label	Top Keywords	Topic Weight	Articles (of Top 100) Classified as About Humanities
11	General Education Requirements	students, courses, core, requirements, curriculum, classes, education, requirement, course, general, new, required, student, class, college	1.5	100

49	College Bureaucracy	faculty, proposal, committee, meeting, students, uw, proposed, changes, email, members, process, university, decision, change, college	1.0	96
38	College Faculty and Leadership	faculty, department, departments, tenure, professors, professor, members, teaching, university, college, dean, track, academic, dartmouth, position	1.1	92
99	College Courses and Enrollment	students, department, major, majors, courses, classes, minor, departments, year, studies, number, new, enrollment, program, student	1.6	88
15	College Pedagogy	students, course, class, classes, courses, teaching, professor, semester, student, taught, teach, professors, learning, learn, classroom	1.5	82

Table 11: Topics contributing to the "Infrastructural Humanities" mode.

This language evidences the extent to which, as many scholars have argued, the concept of "the humanities" itself is primarily administrative. As Ayers writes, "the idea of the humanities developed simultaneously with the machinery of the humanities."[48] This entanglement with the language of university administration, however, belies a complex tension: in the articles that contribute to this discourse, the humanities are depicted as simultaneously embedded within the bureaucratic processes of academia – making decisions, holding meetings, and allocating resources – and as alienated from those structures, on unstable footing amidst larger infrastructural changes in higher education. Discussions of core courses, for example, provide evidence of, as Michael Meranze has emphasized, "the identification of the humanities with teaching and general education," yet these articles also demonstrate a tense push-and-pull relationship between the humanities and curricular requirements.[49] At stake is the extent to which the humanities factor into, as one article puts it, "what a…graduate should look like."[50] In contrast to the positivity and enthusiasm that characterize articles associated with the communicated mode, a sense of crisis often pervades articles associated with the infrastructural mode. In relation to enrollment patterns, for example, some directly

name "the worsening economy" since 2008, and others address the impact of faculty labor conditions and university hiring policies on undergraduate teaching and course offerings.[51] Articles detail sacrificed second language requirements and newly prioritized corporate values of success pushed by what one faculty member diagnoses as the agenda of "businessmen not educators."[52] Another faculty member's assessment of her colleagues' reactions to restructuring sums it up well: "panic in the humanities."[53]

Articles that our classifier categorized as being about the sciences reveal a different infrastructural topography. While both humanities and science articles demonstrate attention to teaching and educational institutions, the apparatuses of research align much more closely with articles about science, as seen in the topics listed in Table 12. Article headlines associated with the topic we labeled "Research Methods, Infrastructure, and Administration" (26), for example, document the establishment of research centers and the launching of interdisciplinary initiatives. Articles associated with other topics listed in this table celebrate "the advantages of increased speed and power to researchers" provided by advanced computational equipment (94), showcase a vivid sense of the collaboration and teamwork necessary for scientific research (65), and emphasize that "research is for students, too" (45).[54]

Topic	Our Topic Label	Top Keywords	Topic Weight	Articles (of Top 100) Classified as About Science
26	Research Methods, Infrastructure, and Administration	research, science, new, technology, world, field, work, scientific, knowledge, development, fields, engineering, technologies, approach, understanding	2.3	82
94	Data Science and Computational Infrastructure	data, information, computer, researchers, analysis, system, model, computing, models, large, systems, network, big, new, analyze	1.0	99
65	Collaboration and Teamwork	project, team, work, working, professor, engineering, design, projects, research, create, group, worked, develop, goal, based	1.7	97

45	Student Research	research, lab, students, work, working, biology, student, graduate, science, project, experience, professor, labs, field, summer	1.2	97

Table 12: Research-focused sample topics contributing to the "Infrastructural Science" mode.

The differences we see between articles participating in the infrastructural humanities mode and those participating in the infrastructural science mode are also suggested by the results of our Wilcoxon rank sum test. The words that are most distinctive of articles about the humanities are associated with education, and specifically with education as it is situated within institutions of higher education (Table 13). Words like "students," "courses," "education," "college," "major," "department," "academic," "university," and "faculty" occur more frequently in articles about the humanities than they do in articles about science.[55] In contrast, the list of words most distinctive of articles about the sciences includes "researchers," "data," and "lab" (Table 14).

Term	Frequency	Percentage Increase	Wilcoxon Statistic
humanities	4.39	5246%	21.7
students	6.52	272%	15.8
english	1.21	7475%	11.5
courses	1.83	1249%	11.4
history	1.42	648%	10.8
education	1.72	320%	10.7
literature	0.96	2712%	10.6
college	1.37	621%	10.5
student	1.3	259%	10.3
majors	1.23	1177%	10.0
major	1.88	374%	9.8
faculty	1.98	474%	9.6
course	1.78	406%	9.2

arts	0.97	1566%	8.4
class	1.23	344%	8.3
academic	0.77	447%	8.1
classes	1.29	618%	8.0
university	1.21	287%	8.0
philosophy	0.67	2044%	7.5
department	1.73	539%	7.3

Table 13: A list of the top 20 most distinctive words in articles about the humanities compared to articles about science. "Frequency" refers to the term's relative frequency per 500 terms in articles about the humanities; "Percentage Increase" refers to the percentage increase in use of that term in articles about the humanities as compared to articles about science; and "Wilcoxon Statistic" is a measure of how distinctive that term is to articles about the humanities (the higher the value, the more distinctive the term is to this set of articles). We tested a random selection of 500 documents from each category, only including words that appeared at least 5 times across all documents in at least 1 test set. All comparisons listed have p-values below 1 X 10^{12}.

Term	Frequency	Percentage Increase	Wilcoxon Statistic
scientists	1.07	96%	10.97
researchers	0.94	94%	9.02
science	2.74	56%	7.81
research	2.23	56%	7.30
team	0.54	91%	5.56
scientific	0.58	78%	5.45
health	0.82	82%	5.27
data	0.90	78%	5.19
found	0.57	64%	4.54
earth	0.44	93%	4.30
patients	0.53	97%	4.29
disease	0.47	96%	4.28
project	0.61	56%	3.54
developed	0.25	67%	3.49

lab	0.43	70%	3.46
cells	0.53	100%	3.45
technology	0.79	54%	3.33
humans	0.28	86%	3.32
cancer	0.62	98%	3.25
million	0.24	64%	3.23

Table 14: A list of the top 20 most distinctive words in articles about science compared to articles about the humanities. "Frequency" refers to the term's relative frequency per 500 terms in articles about science; "Percentage Increase" refers to the percentage increase in use of that term in articles about science as compared to articles about the humanities; and "Wilcoxon Statistic" is a measure of how distinctive that term is to articles about science (the higher the value, the more distinctive the term is to this set of articles). We tested a random selection of 500 documents from each category, only including words that appeared at least 5 times across all documents in at least 1 test set. All comparisons listed have p-values below .002.

The different language that characterizes articles about the humanities and articles about science also implies different publics. Whereas the infrastructural language of the humanities aligns more closely with institutions of higher education, within articles about science associated with the infrastructural mode, the university registers in public discourse as one star among a constellation of many overlapping institutions (Table 15). Alongside the university setting of the topic we labeled "Campus Construction" (69), articles contributing to this mode mention many additional institutions and infrastructures that exceed the framework of higher education, such as the primary and secondary schools central to topic 76, labeled "K-12 STEM," and the broader healthcare systems indexed by topic 64, labeled "Healthcare Research and Administration." Top articles associated with the topic we labeled "Industry and Investment" (9) – many of which come from top-circulating, rather than student, newspapers – describe issues like venture capital, detail "the deployment of university research into the market," and discuss the process of "securing commercial development deals for scientific discoveries."[56] Topic 56, labeled "Risk, Safety, and Standards," gathers together articles that detail the relationships between scientific practice and accreditation bodies, legal systems, and governmental review processes at both state and federal levels.[57] And articles associated with topic 8, which we labeled "Scientific Publishing and Research Integrity," imply the dual publics of both the scientific community and the layperson.

At stake are the professional standards of what it means to "do good science," as well as how to avoid an outcome in which "the general public loses trust in us."[58]

Topic	Our Topic Label	Top Keywords	Topic Weight	Articles (of Top 100) Classified as About Science
69	Campus Construction	building, new, space, campus, students, facility, center, construction, science, facilities, labs, buildings, lab, project, floor	1.2	90
76	K-12 STEM	students, science, school, education, learning, teachers, high, math, schools, stem, teaching, learn, teacher, teach, kids	1.1	95
64	Healthcare Research and Administration	health, medical, care, patients, medicine, patient, doctors, clinical, doctor, physicians, hospital, physician, public, uab, treatment	1.0	95
9	Industry and Investment	companies, company, industry, technology, business, tech, market, year, based, product, development, products, new, start, money	1.1	100
56	Risk, Safety, and Standards	report, agency, safety, officials, federal, public, year, government, state, law, risk, director, group, experts, including	2.1	100
8	Scientific Publishing and Research Integrity	scientific, science, research, article, published, scientists, news, paper, journal, data, work, peer, journals, articles, editor, results	0.7	91

Table 15: Further sample topics contributing to the "Infrastructural Sciences" mode.

Articles about the humanities contributing to our third category of discourse, the debated mode, solidify the connection between the humanities and higher education. This mode is the closest relative of the scholarly defenses of the humanities so common in academia; articles broadly associated with this category often include opinion pieces, letters to the editor, and reports on controversial issues that focus

explicitly on why and how the humanities should be taught in college. Table 16 identifies the topics that we find to be most meaningfully associated with the debated humanities mode. In articles contributing to these topics, the crisis in the humanities is explicitly and consistently named.[59] Many pieces begin with a recognition of a post-2008 economic landscape; authors write "as one concerned with the perceived decline of the humanities" and situate themselves "at a time when support for the humanities continues to dwindle."[60] "The cost to receive an education in the United States has risen dramatically since our parents went to college," one student writes, leading the current generation to evaluate rigorously whether a humanities education is "worth it."[61]

Topic	Our Topic Label	Top Keywords	Topic Weight	Articles (of Top 100) Classified as About Humanities
22	Humanities Disciplines	humanities, philosophy, students, arts, education, history, english, university, college, disciplines, study, literature, fields, studies, sciences	1.3	100
25	History and Intellectual Traditions	history, culture, western, world, cultural, century, historical, society, ideas, political, today, modern, social, intellectual, academic	1.1	93
100	Jobs and Degrees	students, stem, skills, job, education, career, majors, college, degree, jobs, major, fields, degrees, engineering, business	1.6	87

Table 16: Topics contributing to the "Debated Humanities" mode.

Debates about the humanities in these articles quickly escalate into debates about the meaning of a college education at large. As Meranze has argued, the humanities have become "symbolically central to debates about the university's place in contemporary society" even as such debates often serve to render humanities disciplines "structurally subordinate" to professional schools in particular.[62] In these articles, the humanities often emerge as a kind of collegiate canary – the health of the humanities can be an indicator for the health of higher education more broadly, and to imagine an exemplary humanities education is also to imagine an ideal college experience. Student writers are particularly cogent in diagnosing "a gradual shift in

the view of the purpose of higher education;" as one student writes, "focus is moving away from the pursuit of knowledge and acquiring a greater understanding of our place in the world, in favor of specific career training."[63] While recognizing past and ongoing sea changes, articles we associate with this mode also urge readers to rethink the future of education systems. In the face of objections that "the humanities are interesting but impractical," one student argues, "the solution must not be to shun the humanities altogether, but to reform our expectations about what an education is."[64] Debates about the humanities in core curricula prompt assertions that "we must re-conceptualize the value systems that underlie liberal education" and spark questions about "the primary obligation of the university in America."[65] Interestingly, however, some students are quick to dismantle such rhetoric, criticizing the impulse to "[conflate] the humanities with education in general" and insightfully differentiating that "the decline in humanities majors does not mean a decline in the humanities."[66]

Articles about the humanities that contribute to the debated mode often justify the humanities by pivoting from the immediate public of college students to larger, more general arguments about the public good. Many of these articles claim that studying the humanities is a pursuit that, by making people "historically and politically aware," "prepares students to become citizens of the world" and forms a crucial part of a "healthy civic life."[67] By "developing social consciousness and our ideas of justice" and shaping voters and jurists "able to consider where other people are coming from," the humanities emerge in these articles as central to citizenship.[68] As one article puts it, "democracy is...dependent on a society that is informed by the humanities."[69]

Articles about science contributing to the debated mode also often invoke public engagement, but they do so in a way that mobilizes specific research content in relation to specific issues, referring to laws, bills, hearings, policies, and presidential agendas to provide context for their claims. Table 17 provides examples of topics that we associate with this mode. In a typical progression, an article on cloning (topic 5) begins with a political frame ("President Bush is working with Congress on legislation that would outlaw human cloning in the United States"), then moves to an ethical claim ("As enlightened human beings, we have an ethical responsibility not to clone people"), then recounts the scientific process behind the debate in depth

("A clone is created when a cell's genetic material is implanted into an egg cell that has had its genetic material removed").[70] Similar patterns and argumentative strategies occur in articles contributing to topics about stem cells (55), drug use (19), and genetically modified organisms (52).[71] The topic we labeled "Science and Politics" (14) gathers together articles characterized by this language, as we can see from top keywords such as "science," "president," "political," "policy," and "government." Articles associated with these topics advocate for a wide variety of relationships between science and the democratic process, ranging from the perspective that "federal and state legislators have no business tying scientists' hands" to arguing for "more scientists and engineers to leave their labs and universities and run for public office, including U.S. Congress."[72] Authors also question the role of science in public education. Articles on evolution and intelligent design associated with topic 7, for example, ask the reader to consider what "a teacher of science" "should be responsible for" and what the "purpose" of "a science classroom" is.[73]

Topic	Our Topic Label	Top Keywords	Topic Weight	Articles (of Top 100) Classified as About Science
5	Cloning	human, cloning, ethical, embryos, scientists, ethics, cloned, embryo, technology, research, babies, egg, rights, clone, genetic	0.6	99
55	Stem Cell Research	stem, cells, cell, research, embryonic, human, embryos, life, scientists, researchers, bush, funding, diseases, potential, lines	0.8	100
19	Drugs	drug, drugs, marijuana, patients, medical, fda, effects, treatment, pain, addiction, people, trials, doctors, medications, pharmaceutical	0.7	100
52	Genetically Modified Organisms	food, crops, genetically, modified, farmers, plant, agriculture, corn, gmos, foods, crop, production, plants, organic, genetic	0.6	100

14	Science and Politics	science, president, political, scientific, administration, policy, bush, public, bill, scientists, government, obama, trump, congress, state	1.0	98
7	Teaching Evolution	evolution, science, theory, intelligent, design, scientific, creationism, god, school, schools, religious, theories, evidence, teaching, taught	0.8	100

Table 17: Sample Topics contributing to the "Debated Science" mode.

The specificity of articles about science participating in this mode differs markedly from the relative abstraction of articles about the humanities that contribute to the debated mode. The greatest degree of specificity in articles about the humanities associated with this mode emerges in those connected to topic 25 (Table 16), which we labeled "History and Intellectual Traditions," about the status of the Western canon in debates around core curricula. Here, authors assess "books that have contributed to the great Western conversation" and grapple with the concrete composition of "an ideal humanistic education" that will create "global-minded and ethical citizens."[74] Other articles about the humanities associated with this mode gesture briefly towards opportunities for the application of humanistic knowledge, writing that "the demand for incorporating ethics, rhetoric, history or epistemology into topics like artificial intelligence, climate change, technological disruption or machine learning has increased dramatically," and that the key is "to connect humanistic insight to other disciplines, from atmospheric sciences to informatics."[75] Yet there is little concrete description of how such processes of application to the public sphere would actually take place.[76] Encounters with specific texts – like "expos[ure] to the anguish of Othello" – are quickly abstracted into values like "learning leadership" and "commit[ting] ourselves to the service of others" with little clear sense of the steps in between.[77]

The word "humanities" itself thus often indexes a strange absence in these articles. Unlike in articles about science in the debated mode, there is often a lack of clarity about how specific conclusions drawn from humanistic research could be leveraged in service to specific facets of the public good.[78] These articles are *about* the humanities in the sense that they directly name the humanities as a subject of debate, reflection, concern, and interest, but they are also *about* the humanities in the sense

of *skirting around* a central focus. They often hold the humanities in their peripheral vision, focusing on the skills, values, social benefits, and flexible career paths to which the study of humanistic subjects might lead, but often substituting such *aboutness* for a concrete account of what humanistic knowledge actually entails. If a reader didn't already have a conception of what the act of humanistic research is, then it would be difficult to construct such a conception from reading these articles.[79]

Taken together, the discursive modes that we have explored here suggest an inverse relationship in public discourse about the humanities between the representation of specific humanistic practices and content and the justification of the humanities in response to economic crisis. Articles about the humanities associated with the communicated mode have a high degree of specificity: though we don't see the same straightforward presentation of research findings that characterize articles about science associated with this mode, these articles still lay out concrete details of humanities courses, research projects, publications, and events. The humanities crisis is not a prominent frame in such articles. At the other end of the spectrum, articles about the humanities associated with the debated mode often discuss this crisis, but they also often discuss the humanities in a general way. While there is no single way of discussing the humanities in newspapers today, what is often missing from such discussions are articles that connect the concrete particulars of humanistic knowledge and practices to larger values and outcomes.

Humanities Public Discourse

Our above analysis focuses on articles about the humanities, but as Table 4 indicates, such articles constitute only a small portion of all the articles in our corpus, even among those articles that contain humanities keywords. How does the concept of the humanities appear in this larger portion of our corpus, and how might such appearances shift our understanding of what it means to talk "about" the humanities in newspapers today? To answer these questions, we turn to those articles that contain humanities or science keywords but that our classifiers did not categorize as being about the humanities or science. These articles comprise most of our data, and they generally feature seemingly incidental mentions of the words "humanities," "liberal arts," "science," or "sciences." As we might expect, articles that contain such

incidental mentions of these words but that aren't about the humanities or science are more broadly like one another than articles that have been classified as being about the humanities or science are to each other. When we compared articles that contain humanities keywords but that aren't about the humanities to articles that contain science keywords but that aren't about science using the Wilcoxon rank sum test mentioned in the previous section, we found many fewer statistically distinctive words for each category than we did when we ran this test comparing articles about the humanities to articles about science.[80] This makes sense, given that articles belonging to these two categories are from the same kinds of sources and are not held together by anything other than the presence of specific keywords.

There are some differences between these categories, however. For instance, as we can see in Table 18, articles that contain humanities keywords but that haven't been classified as being about the humanities are still more likely to contain words associated with education, specifically with higher education, than articles containing science keywords but that haven't been classified as being about science. Indeed, many of the words that are most likely to appear in these articles – including "professor," "courses," and "studies" – look similar to the most distinctive words in articles about the humanities (Table 13).

Term	Frequency	Percentage Increase	Wilcoxon Statistic
humanities	2.45	1453%	30.3
arts	2.01	380%	9.33
art	2.46	228%	6.6
history	1.82	114%	5.5
professor	2.58	44%	5.1
english	1.08	142%	5.1
book	1.62	204%	4.9
program	2.98	65%	4.6
music	1.49	81%	4.2

cultural	0.63	159%	4.1
works	1.08	129%	4.0
work	3.21	40%	3.9
books	0.90	138%	3.9
director	1.70	49%	3.8
literature	0.53	177%	3.8
courses	0.99	96%	3.6
artists	0.80	435%	3.6
culture	0.82	69%	3.4
writing	1.13	182%	3.3
studies	0.95	72%	3.3

Table 18: A list of the top 20 most distinctive words in articles that contain humanities keywords but that our classifier did not categorize as being about the humanities compared to articles that contain science keywords but that our classifier did not categorize as being about science. "Frequency" refers to the term's relative frequency per 500 terms in articles containing humanities keywords; "Percentage Increase" refers to the percentage increase in use of that term in articles containing humanities keywords as compared to articles containing science keywords; and "Wilcoxon Statistic" is a measure of how distinctive that term is to articles containing humanities keywords (the higher the value, the more distinctive the term is to this set of articles). We tested a random selection of 1500 documents from each category, only including words that appeared at least 5 times across all documents in at least 1 test set. All comparisons listed have p-values below .001.

But Table 18 also includes words that don't appear in Table 13, such as "cultural," "books," "director," and "program." These words point us toward a salient feature of what we are calling humanities public discourse. When we used a Wilcoxon rank sum test to compare these articles to public discourse about the humanities, or articles our classifier categorized as being about the humanities, we found that articles containing the word "humanities" but that our classifier did not categorize as being about the humanities contain more frequent "event language" – words such as "day," "family," "week," "children," "city," "local," and "free" (Table 19). These words often occur in event announcements, particularly announcements about municipal and regional arts events, museum exhibits, and readings at local bookstores, indicating a broad range of inscribed humanities publics beyond the institutions of higher education.

Term	Frequency	Percentage Increase	Wilcoxon Statistic
day	1.58	66%	7.8
home	1.12	77%	6.0
family	1.06	79%	5.3
team	1.08	80%	5.0
president	2.27	51%	5.0
week	1.0	52%	4.9
state	1.78	66%	4.7
days	0.61	68%	4.6
children	0.97	83%	4.3
city	0.81	83%	4.1
friday	0.59	74%	3.9
months	0.48	70%	3.9
season	0.61	100%	3.9
company	0.80	88%	3.8
high	1.62	41.7%	3.7
house	0.53	84%	3.7
night	0.60	73%	3.7
local	0.58	65%	3.7
free	0.99	70%	3.6
saturday	0.52	91%	3.5

Table 19: A list of the top 20 most distinctive words in articles that contain humanities keywords but that our classifier did not categorize as being about the humanities compared to articles that our classifier categorized as being about the humanities. "Frequency" refers to the term's relative frequency per 500 terms in articles not about the humanities; "Percentage Increase" refers to the percentage increase in use of that term in articles not about the humanities as compared to articles about the humanities; and "Wilcoxon Statistic" is a measure of how distinctive that term is to articles not about the humanities (the higher the value, the more distinctive the term is to this set of articles). We tested a random selection of 1500 documents from each category, only including words that appeared at least 5 times across all documents in at least 1 test set. All comparisons listed have p-values below .0005.

To add more depth to our understanding of humanities public discourse, we examined a 150-topic model of 27,362 articles containing the word "humanities" but that our classifier did not categorize as being about the humanities.[81] As with the topic model discussed in the previous section, we analyzed this model by creating a label for each topic based on examining each topic's top keywords and top articles.[82] This model includes topics that focus on humanistic fields, experiences, and art forms, such as those we labeled "Dance" (11), "Languages" (72), and "Poetry" (87), as well as topics about additional fields or sectors like "Medicine" (124) or "Business" (115). Topics about a range of social issues appear as well, including those labeled "American Politics" (45), "Criminal Justice" (58), "Environment and Climate Change" (99), "Gender Equity" (23), and "Race and Civil Rights" (6). As the results of the Wilcoxon test described above suggest, we also found that many topics include event language. Topic 77, for example, includes keywords like "event," "festival," "day," "week," "annual," "celebration," and "community." A typical article associated with this topic, titled "Why thousands of school children are on Fresno State's campus," describes a festival "created to help young people gain knowledge and appreciation of literature through oral interpretation and performance," while another advertises a "Festival of International Books and Arts" that "highlight[s] the importance of literacy in the Hispanic community."[83] Similarly, topic 48 includes the keywords "lecture," "event," "professor," "discussion," "conference," "audience," "students," and "questions;" articles associated with this topic advertise events, conferences, symposia, and other kinds of public discussions, with some, like the one titled "University and city host book talk," explicitly bridging the boundary between academia and broader publics.[84] Twelve further topics in this model gather together community calendar and event listings, articles that are often clustered into discrete topics by specific paper or geographical region.[85] Furthermore, topics we labeled "Music" (65) and "Performing Arts" (98) consist mainly of advertisements and announcements for performances, while topics labeled "Literary Events" (37), "Film" (42), "Fine Arts," (2) and "Museum and Gallery Listings" (10) announce readings, film festivals, and art exhibitions.[86] This robust strain of humanities public discourse is outward-facing and participatory, continuing and intensifying trends that we observed in articles about the humanities associated with the communicated mode. Humanities public discourse centers on acts of communication, such as events, festivals, and talks, it

invokes embedded publics of audience members, and it does not frame itself in terms of crisis.

In contrast to public discourse about the humanities, then, humanities public discourse showcases the expansive range of institutions associated with the humanities.[87] Many topics in this model still focus on the academic infrastructure and student experiences central to higher education, including those we labeled "Courses and Curricular Programs" (8), "Faculty Service and Committees" (32), "College Majors and Jobs" (44), and "Student Research" (25). However, many other kinds of institutions and community infrastructure also appear in these articles, including in articles associated with topics labeled "Libraries" (119), "Museums" (122), "Military" (7), "Summer Camp" (51), and "Primary and Secondary Education" (20).[88] Articles associated with topics we titled "Community Volunteering" (126) and "Local Bureaucracy" (89) often reference regional humanities centers, and in articles associated with a topic labeled "City Government" (29), the word "humanities" appears in the biographies of candidates for local elections. Other topics, like those we titled "Housing and Real Estate" (75) and "Local Restaurants" (38), gather articles that reveal the humanities to be deeply rooted in the built environment. A humanities building or school, for example, can act as a community landmark mentioned in discussions of other neighborhood features. And in articles contributing to topic 66, labeled "Local Sports," the term "humanities" occurs repeatedly in the name of a New York high school.

These contexts are mundane, but they map the connections between the humanities and public life; the presence of the word "humanities" reveals how the humanities are embedded in local infrastructure, indexing a much longer lineage of past values and decisions. These instances mark the moments when an educational institution focused on the humanities becomes something to cheer for at a basketball game, a reference point that might influence the decision to buy a home, a factor in local governance, or part of a daily commute. Some articles also make clear the role that humanities institutions themselves play in shaping local environments by adding historic buildings to the register, for example, or by commissioning public art displays.[89] This association of the humanities with a wide range of institutions emphasizes the humanities as public-facing, active, and engaged with local communities.

Other strains of humanities public discourse include public commemorations of momentous life events like marriage and death. In articles contributing to a topic composed of wedding announcements (117), the word "humanities" indexes the educations and professions of couples and their families through the listing of degrees or job titles. In articles contributing to several topics comprised of obituaries, humanities organizations are often noted as a preferred recipient of donations made in honor of the deceased.[90] Obituaries thus both act as a public record of the impact of the humanities on individuals' lives and further galvanize the mourning publics addressed by such death notices. Importantly, the obituaries of scholars and writers (as seen in topic 112, for example) also act as key sites of direct communication of humanities knowledge when they describe these figures' publications and influence.[91] Given the relative absence of direct humanities research communication elsewhere in our corpus, this observation suggests that the impact of humanistic research is often conveyed in straightforward ways in the press when the person who conducted that research has died. Yet in this context, such research communication is also inseparable from the personal details that make up a life. In these obituaries, the humanities index the ways that personal experiences across a lifetime (family relationships, education, hobbies) and professional accomplishments across a career (teaching, publications, and access to academic resources) intertwine with local, regional, and national institutions of all kinds. Both the personal and the professional are therefore pivotal components of the public resonance of the humanities.

While announcements and obituaries do not constitute the majority of articles containing humanities keywords but that aren't classified as being about the humanities – most of the articles in this category, as in our corpus overall, are simply news articles – they are important for understanding what we mean by humanities public discourse.[92] A History professor's obituary and an announcement about a reading at a local bookstore are not "about" the humanities in the same way an editorial defending the value of the humanities is about the humanities. Yet it is also not correct to claim that these articles are *not* about the humanities. Broadly speaking, these articles register how the humanities are associated with the experiences of many different publics, from museum-goers to children participating in a summer camp to attendees of a wedding or a funeral. These kinds of "event-oriented" and "local" articles that document the "ordinary life and work happening in, through, and all around the humanities," are evidence of how, as Tarika Sankar

writes, "the humanities become part of the background of everyday life."[93] Those advocating for the humanities to become more public-facing often miss this background. When they argue, for example, that humanities scholars need to emphasize "a regrounding of the humanities in the world around us," they do not usually consider how unremarkable yet common news genres like obituaries and event announcements demonstrate the extent to which the humanities are already embedded in this world.[94]

Considering such incidental mentions of the word "humanities" as indexing at least some of the public work of the humanities challenges perceptions of the humanities that view them as disconnected from the world beyond academia. As we've discussed in this article, as opposed to the wide range of institutions referenced by articles about science, articles about the humanities do often focus on institutions of higher education and undergraduate audiences. These articles are underrepresented in mainstream newspapers and overrepresented in student newspapers; what's more, they are more likely to appear in newspapers located at some of the nation's wealthiest and most elite private institutions. However, articles about the humanities also tend to relay ideas and discoveries developed through humanities research and teaching less directly than articles about science, operating through a double layer of communication that focuses on descriptions of classes or events humanists have organized or in which humanities scholarship has been discussed. Such articles foreground how the humanities come to life through the mediation of extant audiences both within and beyond university walls.

But such articles explicitly about the humanities are not very common in either mainstream or student newspapers. Far more common are those articles discussed in this last section, articles that, in announcing a reading at a local bookstore or relaying the details of someone's life or even reporting the score of a basketball game, trace the contours of individuals' and communities' relationships with an expansive set of activities, practices, and institutions associated with the humanities. Such articles provide a view of the humanities that, while more inchoate and diffuse than many understandings of the term, is also more oriented toward activities, events, and everyday life. The challenges confronting higher education in the United States today are substantial, to say the least, and advocates for the humanities, like those for both the natural and social sciences, will need to continue to make the case for

their value in the years to come. Rather than resorting to talk of continual crisis, such advocates may wish to focus in part on the more expansive understandings of the humanities that we see in our corpus. Far from propagating a narrative of decline, many newspaper articles today inspire hope, conveying a sense of the humanities as engaged, energetic, and vital.

Notes

[1] Michael Bérubé and Jennifer Ruth, *The Humanities, Higher Education, and Academic Freedom: Three Necessary Arguments* (New York: Palgrave MacMillan, 2015), 1. We are grateful to the Mellon Foundation for their generous financial support, which made much of the research for this article possible. We also thank this article's peer reviewers and editors, especially Andrew Piper, for their insightful feedback on earlier versions of this article and their work preparing the manuscript for publication.

[2] Ibid., 2.

[3] Ibid., 10. However, as Ben Schmidt argued in 2018, data gathered since 2014 show the number of students majoring in humanities disciplines has rapidly dropped since 2007. See Schmidt, "The Humanities Are in Crisis," *The Atlantic*, August 23, 2018. https://www.theatlantic.com/ideas/archive/2018/08/the-humanities-face-a-crisisof-confidence/567565/.

[4] Edward L. Ayers, "Where the Humanities Live," *Daedalus* 138. 1 (2009): 25. The scholarship on the "humanities crisis" is voluminous, and it is marked especially by the proliferation of special issues and edited collections on the value of the humanities that emerged in the wake of the 2008 recession. For example, see Michelle Ty, ed., "Higher Education on Its Knees," *Qui Parle: Critical Humanities and Social Sciences* 20.1 (2011); and Eleonora Belfiore and Anna Rosser Upchurch, eds., *Humanities in the Twenty-First Century: Beyond Utility and Markets* (New York: Palgrave Macmillan, 2013). Recent books have also focused on the crisis in employment in the academic humanities. See Sidonie Smith, *A Manifesto for the Humanities: Transforming Doctoral Education in Good Enough Times* (Ann Arbor: University of Michigan Press, 2015); and Katina L. Rogers, *Putting the Humanities PhD to Work: Thriving in and Beyond the Classroom* (Durham: Duke University Press, 2020). Finally, in accordance with Ayers, Paul Reitter and Chad Wellmon argue in their recent book *Permanent Crisis* that crisis is integral to the "*self-understanding of the modern humanities*," as "crisis has played a crucial role in grounding the idea that the humanities have a special mission." See Reitter and Wellmon, *Permanent Crisis: The Humanities in a Disenchanted Age* (Chicago: University of Chicago Press, 2021), 3.

[5] Helen Small, *The Value of the Humanities* (Oxford: Oxford University Press, 2013), 2, 3.

[6] A trope employed by many academic histories and defenses of the humanities is to center the 1945 "Harvard Redbook," a report written by Harvard faculty during WWII. This document outlined a vision of the humanities as central to the postwar world, and it is often considered, as Geoffrey Galt Harpham writes, "the single most important document in the history of 'the humanities.'" See Harpham, *The Humanities and the Dream of America* (Chicago: University of Chicago Press, 2011), 153. This version of the history of the humanities not only ties the fate of the humanities to the American system of higher education overall; it also implicitly presents higher education as the only arena in which the meaning and value of the humanities is negotiated.

[7] We wish to acknowledge all of the participants who contributed to this project over many years. Our thinking was fundamentally shaped by this collaborative atmosphere. For a full list of participants See "Our Team," WhatEvery1Says, accessed December 5, 2021, https://we1s.ucsb.edu/about/team/. We are especially grateful to Alan Liu, the project's PI, co-PIs Jeremy Douglass and Scott Kleinman, and postdoctoral scholar Dan Costa Baciu.

[8] WE1S collected these articles using the LexisNexis API, which requires the use of keyword searches to collect data. The conclusions we draw from our data are dependent not only on the decisions WE1S researchers made in how to collect this data, but also on the fact that the data LexisNexis owns is not a straightforward representation of "journalistic discourse" from this period. As a private company, the decisions LexisNexis has made about what to acquire and why are not transparent. It is therefore more accurate to say that our data reflect decades of corporate decisions that have determined what journalistic discourse is preserved in digital form. For more on the issue of representativeness in the WE1S corpus at large, see Giorgina Paiella, "Thoughts on Diversity in the Archive," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/research_post/thoughts-on-diversity-in-the-archive/; and Samina Ali, "Newspaper Corpus Design and Representativeness Report," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/research/we1s-findings/reports/scoping-research-reports/newspaper-corpus-design-and-representativeness-report/.

[9] Our timeframe is limited by the materials that we could collect in digitized, full-text form. Such materials are available primarily after 1998, and, in bulk, from around 2005 on. These years mark a period of contraction for journalism. Penelope Muse Abernathy has reported that from 2004-2019, more than one in five newspapers in the United States closed and the number of journalists employed by papers was cut in half. These losses have hit local and regional newspapers the hardest. See Abernathy, "The Loss of Local News: What It Means for Communities," *The Expanding News Desert*, accessed May 1, 2021, https://www.usnewsdeserts.com/reports/expanding-news-desert/loss-of-local-news/. While we treat journalistic media as an important window on how the public perceives and discusses the humanities, we recognize that newspapers are not the only venue for such discussion. Other parts of the WE1S project, for example, address social media and other kinds of materials, such as foundation reports, that are also part of this public discourse. For discussions of findings from this research, see WE1S key finding cards; "Research Key Findings," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/research/we1s-findings/key-findings/. For a discussion of research on Reddit in particular, see Raymond Steding, "A Digital Humanities Study of Reddit Student Discourse about the Humanities," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/research_post/a-digital-humanities-study-of-reddit-student-discourse-about-the-humanities/. Our analysis also complements other attempts to gather data about the public perception of the humanities, such as "The Humanities in American Life: Insights from a Survey of the Public's Attitudes and Engagement," A Report from the Humanities Indicators Project of the American Academy of Arts & Sciences (2020).

[10] "Our Story and Our Results," WhatEvery1Says, accessed May 1, 2021, https://we1s.ucsb.edu/.

[11] Ibid.

[12] See this article's supplementary data to download the data we discuss (prepared for non-consumptive use) and code that reproduces our analyses.

[13] For recent discussions of the history of the term "public humanities" and a survey of many different projects in and approaches to the public humanities, see Paula Krebs, ed., "Public Humanities," *Profession* (Spring 2019); and Susan Smulyan, ed., *Doing Public Humanities* (New York: Routledge, 2020).

[14] Other scholars as well have sought to destabilize the phrase "public humanities." Kristen Case, for example, asks us to consider "the other public humanities," which starts not with "empowering elite students and faculty members to reach out to their communities," but rather with dedicated pedagogy in the "classrooms of the public university." See Case, "The Other Public Humanities," *The Chronicle of Higher Education*, January 13, 2014.

[15] As Michael Warner argues, such publics "do not exist apart from the discourse that addresses them." Warner, *Publics and Counterpublics* (Durham: Duke University Press, 2002), 72.

[16] Michael Levenson does something similar in his recent book *The Humanities and Everyday Life*, which seeks "to locate humanistic study within the wide field of everyday life and to consider how academic practices intersect with the aims and habits of those outside university walls." Levenson focuses on the connections between the activities of professionally credentialed humanities experts working at colleges and universities and "daily practices" such as "the activities of book clubs, museum-goers, private collectors, domestic genealogists, historical re-enactors, editors

of *Wikipedia*." See Levenson, *The Humanities and Everyday Life* (New York, NY: Oxford University Press, 2017), 1, 1-2.

[17] A rhetorical opposition to science is at the foundation of the history of the institutionalization of the humanities in the United States. As Reitter and Wellmon argue, during the early twentieth century, one rationale for the formation of humanities departments depended explicitly on the perceived opposition of the humanities to scientific instrumentalism. Advocates argued the humanities were necessary to provide "unity of knowledge, clarity of purpose, moral value, and a regeneration of the uniquely human in the face of the centrifugal pressures of science and technology." See *Permanent Crisis*, 228. Comparisons to science thus have a long history in discussions of the humanities.

[18] Most of the articles included in this category contain the word "humanities," but about 16% contain the related phrase "liberal arts." A full discussion of the relationship between these terms is beyond the scope of this article, but significantly, there is little overlap between these keyword categories in our data. Only about 2% of articles in this category contain both "humanities" and "liberal arts."

[19] The 15 top-circulating newspapers in the US as of 2019 included *The New York Times*, *The Washington Post*, *Chicago Tribune*, *The Dallas Morning News, The Boston Globe*, *The LA Times*, *Newsday*, *Star Tribune*, *The Houston Chronicle*, *The Denver Post*, *The Seattle Times*, *Daily News*, *New York Post*, *USA Today*, and *Tampa Bay Times*. A list of all 624 sources from which we have collected data is included in this article's supplementary data in the "data/tables" folder ("sources_by_year.csv"). We say that our campus newspaper data are from sources located "mainly in the United States" because our data include about 500 documents from newspapers in Canada, Europe, and the UK.

[20] As Jamal Russell notes in a discussion of the construction of race in the media, for example, "articles by or quoting humanists…become sites where humanists directly influence public conversation" and, in turn, lend "authority and credibility" to news sources. See Russell, "Public discourse as represented in the media treats humanists as authorities on cultural discourses about race, racism, and ethics," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-3-1.pdf.

[21] WE1S gathered the comparison data using keyword searches of 3 of the most common words in the English language (based on a well-known analysis of the Oxford English Corpus) that LexisNexis indexes and thus makes available for search: "person," "say," and "good." We excluded the word "humanities" from our search in collecting these documents. For more information about our comparison data, see "WE1S Datasets," WhatEvery1Says, accessed May 1, 2021, https://we1s.ucsb.edu/research/we1s-materials/datasets/.

[22] We created training data for these classification experiments by manually identifying articles about the humanities and about science, as well as articles not about the humanities and not about science, from our two source types. We then used this data to test our classifiers on articles from our corpus that these classifiers had never seen. Transformed versions of this training data are included in this article's supplementary data; see the "classification" module's "README.md" file for more information. Of course, since there is no one way of defining what an "article about the humanities" or an "article about science" is, these experiments train our classifier to replicate our judgments regarding these categories. For a good explanation of concepts in machine text classification from the perspective of cultural analytics, see Chapter 3, "Recognition: Literary Distinction and Blackness" in Richard Jean So, *Redlining Culture: A Data History of Racial Inequality and Postwar Fiction* (New York: Columbia University Press, 2021).

[23] We used a chi-square test for independence to compare these values. Our results indicate that we can reject the null hypothesis, meaning there is likely a relationship between the subject an article is about (science or the humanities) and source type (top-circulating or student newspapers). Based on the proportion of articles classified as being about the humanities out of the total number of articles classified as being about either the humanities or science, we could expect roughly 21% of articles from both top newspapers and student newspapers to be classified as being about the humanities if the distribution of articles about the humanities were uniform across source type. Instead, only about 11% of articles from top newspapers have been classified as being about the humanities, while about 24% of articles from student newspapers have been classified as being about the humanities. Meanwhile, if the distribution of articles about science were uniform across source type, we would expect roughly 79% of articles

from both top newspapers and student newspapers to be classified as being about science; instead, 89% of articles from top newspapers and 76% of articles from student newspapers have been classified as being about science. The chi-square statistic for this test is 215.47, with a p-value of 8.81e-49. See the "README.md" file in the "data/tables" directory in this article's supplementary data for a description of the contingency table used in this test.

[24] WE1S collected metadata about each unique source in its datasets, allowing us to categorize student newspaper sources by type of institution. See "Metadata Tags for WE1S Document Sources," WhatEvery1Says, accessed May 1, 2021, https://we1s.ucsb.edu/research/metadata-tags/.

[25] Because data collected from the LexisNexis API include so many duplicates, WE1S developed our own process for detecting and automatically deleting duplicates and near-duplicates in our data. See this article's repository's "README.md" file for more information about the de-duplication process. However, automatically de-duplicating articles from *The Stanford Daily* in particular proved challenging because of how articles from this source are formatted when downloaded from LexisNexis. This may be one reason why articles from *The Stanford Daily* so far outnumber articles from other student newspaper sources.

[26] Ayers, "Where the Humanities Live," 31.

[27] Christopher Newfield, *The Great Mistake: How We Wrecked Public Universities and How We Can Fix Them* (Baltimore: Johns Hopkins University Press, 2016), 111. Other members of the WE1S team, such as Giorgina Paiella, Susan (Su) Burtner, Helen Foley, and Francesca Battista, have explored the relationship between the humanities and different kinds of educational institutions as well. See, for example, Burtner and Paiella, "Word Embeddings of College and University Mission Statements: Preliminary Findings," WhatEvery1Says, accessed December 5, 2021, https://we1s.ucsb.edu/research_post/word-embeddings-of-college-and-university-mission-statements-preliminary-findings/. See also Droge, "The humanities help us to find the 'meaning of life'; but such discourse belongs primarily to students in private institutions and doctoral universities," WhatEvery1Says, accessed December 5, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-8-4.pdf.

[28] The Wilcoxon rank sum test is a test of statistical significance. It is often used to determine which terms appear with greater consistency in one group of words as compared with another. For implementations of this test in literary studies, see Andrew Piper and Eva Portelance, "How Cultural Capital Works: Prizewinning Novels, Bestsellers, and the Time of Reading," *Post45* (May 10, 2016), http://post45.org/2016/05/how-cultural-capital-works-prizewinning-novels-bestsellers-and-the-time-of-reading/#identifier_27_7012; and Chapter 4 "Fictionality (Sense)" in Piper, *Enumerations: Data and Literary Study* (Chicago: University of Chicago Press, 2018). For a comparison of the Wilcoxon rank-sum test to other methods of significance testing for word frequencies, see Jefrey Lijffijt, Terttu Nevalainen, Tanja Säily, et al, "Significance testing of word frequencies in corpora," *Digital Scholarship in the Humanities* 31.2 (2016): 375-397.

[29] To view this model using Andrew Goldstone's dfr-browser, go to http://harbor.english.ucsb.edu:10002/collections/20200515_1455_us-classification-results-top-newspapers-universitywire-hum-sci/dfr-browser/topics100/. This model includes transformed article content (i.e., not full-text data) prepared for public viewing. For more on dfr-browser, see Andrew Goldstone, "dfr-browser: Take a MALLET to disciplinary history," accessed May 1, 2021, https://agoldst.github.io/dfr-browser/; and Goldstone and Ted Underwood, "The Quiet Transformations of Literary Studies: What Thirteen Thousand Scholars Could Tell Us," *New Literary History* 45.3 (2014): 359-384.

[30] We identified the 100-topic model as the best fit for our data by comparing it to models of the same data with 25, 50, 150, 200, and 250 topics. We used the top documents as displayed by Andrew Goldstone's dfr-browser to categorize topics (Goldstone calculates this metric differently than MALLET does). Topics with high concentrations of top documents about the humanities are those in which at least 80 of the top 100 articles were categorized by our classifier as being about the humanities. We used the same metric to find topics with high concentrations of top documents about science (at least 80 of 100). Topics that fall in the middle are topics in which neither articles about the humanities nor articles about science dominate the list of top documents in this way.

[31] See the dictionary we created for this topic model to view the number, manually assigned label, top 15 keywords, weight, ratio of top 100 articles classified as about the humanities/about science, and manually-assigned mode

designation of each topic in the model. This dictionary is located in this article's data repository (the "c33-100-dictionary.xlsx" file located in the "data/tables" folder). Tables displaying information about sample topics in this section are drawn from this dictionary.

[32] See Minali Prasad, "BU researchers unveil underground world where fungi fight climate change," *The Daily Free Press: Boston University*, September 5, 2018; Teddy Rosenbluth, "Study finds link between proteins, electroconversion therapy response," *Daily Bruin: University of California - Los Angeles*, March 8, 2018; Alyssa Creamer, "UMass researchers studying migratory patterns of bluefin tunas and other fish," *Massachusetts Daily Collegian: University of Massachusetts - Amherst*, September 20, 2012.

[33] These are topics 35, 33, 31, 43, 74, 72, 36, 59, 40, 66, 73, 96, and 41, respectively. See the collection 33 dictionary in this article's data repository for further examples.

[34] As Alan Liu has noted, US news media doesn't just communicate about the sciences more concretely and more directly; it also tends to emphasize "catchy" scientific objects "like distant exoplanets, dwarf suns, black holes, spacecraft, or space telescopes." "By contrast," Liu notes, "the humanities seem to be object-poor," often focusing on just one object in particular: books. See Liu, "The public likes to take its science with objects, the bigger or stranger the better," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-5-4.pdf.

[35] Our research does not include press releases and similar documents that are in many cases at the origin of this communication flow.

[36] Gabriella Debenedictis, "CLAS to offer new major in Arabic and Islamic Civilizations," *The Daily Campus: University of Connecticut*, October 12, 2018; Lillian McGill, "Uruguayan poet's campus visit includes reading," *The Observer: University of Notre Dame*, November 20, 2013; Linh Nguyen, "Panel Discussion at Dickinson College Addresses Feminism Within Sororities," *The Dickinsonian: Dickinson College*, November 2, 2018; Blake Deal, "UCLA professors digitize collections to allow greater access," *Daily Bruin: University of California - Los Angeles*, January 12, 2016.

[37] See, among others, Emma Baccellieri, "Professors honor Seamus Heaney at poetry reading," *The Duke Chronicle: Duke University*, October 2, 2013.

[38] See, for example, Lindsey Gapen, "Professor highlights disability issues," *Badger Herald: University of Wisconsin – Madison*, November 11, 2012.

[39] Greg Laudani, "Italian studies major newly available to UNH students," *The New Hampshire: University of New Hampshire*, October 16, 2015. The second quotation is quoting Amy Boylan.

[40] Morgan Hays, "'Sailing to Babylon': A visiting poet performs," *The Exponent: University of Wisconsin - Platteville*, November 28, 2018; the second quotation is from this article but quoting Zheniya Fager; McGill, "Uruguayan," quoting Emma Wolff.

[41] Olivia Mitchel, "Classy classes: Human rights class explores disabilities studies," *The Stanford Daily: Stanford University*, June 18, 2018; Miranda Andrade-Ceja, "CSULB AIS minor program revised," *Daily 49er: California State University - Long Beach*, August 30, 2016.

[42] Lauren Brown-Hulme, "Center for Digital Research in the Humanities inspires students to study interests in collaboration," *Daily Nebraskan: University of Nebraska - Lincoln*, February 4, 2015; Michael Gioia, "Q&A: Caroline Winterer discusses the digital humanities," *The Stanford Daily: Stanford University*, June 4, 2015, quoting Caroline Winterer; Ellen Steinbaum, "Our lives, articulated by others," *The Boston Globe*, March 16, 2008.

[43] Browne-Hulme, "Center"; Deal, "UCLA," quoting Nancy Shawcross.

[44] Gioia, "Q&A," quoting Caroline Winterer.

[45] Irina Teveleva, "Butler digitization transforms access to rare books," *The Columbia Spectator: Columbia University*, January 30, 2015, quoting John Tofanelli.

[46] Gioia, "Q&A," quoting Caroline Winterer; Tony Moore, "Visualize: Students Bring Data to Life through the Digital Boot Camp," *The Dickinsonian: Dickinson College*, February 11, 2015, quoting Chris Francese.

[47] We are building on the observations of Tarika Sankar and Alan Liu, who have emphasized that the media views the humanities "as primarily all about the university." Compared to descriptions of science, which they note are not centered exclusively on "academic programs," discussions of the humanities tend to isolate the humanities within the academy. See Sankar and Liu, "The humanities appear to the public to be siloed in universities (unlike the sciences)," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-5-2.pdf.

[48] Ayers, "Where the Humanities Live," 25.

[49] Michael Meranze, "Humanities Out of Joint," *The American Historical Review* 120.4 (2015): 1313.

[50] Burke Bischoff, "Common curriculum changes," *The Maroon: Loyola University - New Orleans*, August 22, 2013.

[51] Sona Mkrttchian, "Hispanic studies sees declining enrollments," *The Brown Daily Herald: Brown University*, September 26, 2014; Yechiel Schwab, "Behind 2016's Cross-Listing Craze: An Incomplete Solution to a Worrisome Trend," *The Commentator: Yeshiva University*, December 28, 2015.

[52] Bleah B. Patterson, "NVC faculty ask Coordinating Board to reject proposal to add EDUC 1300 to core," *The Ranger: San Antonio College*, February 3, 2014, quoting Thomas Billimek. On cuts to language requirements, see, e.g., Hannah Helwig, "Chancellor makes gen. ed. decisions," *The Exponent: University of Wisconsin - Platteville*, April 7, 2016.

[53] Zack Demars, "College of Arts and Sciences to consider reorganization options," *The Daily Emerald: University of Oregon*, January 22, 2019, quoting Eleanor Wakefield.

[54] Pranav Kannan, "Terra cluster opens new computing possibilities," *The Battalion: Texas A & M University*, November 29, 2016; Jordan Kercheval, "Research is for students, too," *Daily Evergreen: Washington State University*, December 8, 2017. See also headlines that emphasize "researchers," plural, such as Lydia Tuan, "UC Berkeley researchers take part in national effort to predict climate change," *Daily Californian: University of California – Berkeley*, August 26, 2014. Dieyun Song emphasizes that when discussions of grant funding for the humanities do appear in the media, "humanities funding in higher ed" is positioned "as primarily a research rather than teaching priority." Song, "The media covers funding for humanities research, but pays almost no attention to funding for humanities teaching," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-7-4.pdf.

[55] We might assume that the prevalence of language about institutions, education, and research is because the majority of the articles classified as being about the humanities come from student newspapers. Interestingly, however, the general linguistic patterns we observe about these categories hold even if we only examine data from top-circulating US newspapers. If we look only at articles from top newspapers, the words most distinctive to articles about the humanities include "students," "education," "college," and "courses," while those most distinctive to articles about science include "scientists," "researchers," "found," "effects," and "journal." Once again, words associated with education as it is situated within institutions of higher education are more likely to occur more frequently within articles about the humanities. See the "hum-sci-wilcoxon-min5-260-topnewspapers.xlsx" file in the "data/tables" directory in this article's data repository to examine these results.

[56] Javier Saladich Nebot, "Director of Innovation Partnerships at Cornell Center for Technology Licensing Discusses Importance of Research Commercialization," *Cornell Daily Sun: Cornell University*, November 12, 2018. See also Wendy Lee, "Venture funding hits highest level since 2009," *Star Tribune*, July 20, 2011; Michael B. Farrell, "Start-up funding falls across US," *The Boston Globe*, January 18, 2013; and Robert Weisman, "Established Firms Step Up to Aid Start-Ups," *The Boston Globe*, May 8, 2006.

[57] See, for example, Marc Kaufman and Brooke A. Masters, "After Criticism, FDA Will Strengthen Drug Safety Checks," *The Washington Post*, November 6, 2004; and Jordan Steffen, "State: Bias, training problems hurt lab," *The Denver Post*, July 18, 2013.

[58] David Bordelon, "Reproducibility of scientific studies vital to its usefulness, future research," *The Daily Texan: University of Texas - Austin*, September 2, 2015, quoting Bill Swann; Roxanneh Mousavi, "Penn Professor Prevents Research Paper Plagiarism," College Media Network, March 29, 2018, quoting Daniel Acuna.

[59] For nuances of this point, see WE1S key finding cards written by Mauro Carassai, including "Top newspapers do not include the humanities within crisis discourse," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-1-1.pdf; and "Campus newspapers are much more focused on the 'crisis' of the humanities (especially in economic terms) than mainstream media," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-1-2.pdf. See also Raymond Steding, "Students and others on Reddit see not the 'humanities crisis' (the forest) but critical problems and issues (the trees)," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-6-7.pdf.

[60] John Sieracki, "Many hunger for humanities education," *The Boston Globe*, June 30, 2013; Christopher Burns, "UMaine elevates humanities through community engagement," *The Maine Campus: University of Maine*, March 31, 2014. As Francesca Battista observes, after 2008, defenses of the humanities published in US news media outlets "increased significantly." See Battista, "After 2008, academic humanities advocates rallied against a 'crisis' largely *absent* from public discourse," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-4-3.pdf.

[61] Nicole Felkins, "Editorial: Humanities are what makes us human," *The Pacifican: University of the Pacific*, November 6, 2014. For further discussion of how students discuss the humanities in relation to employment, see Rebecca Baker, "Students writing about education value cognitive flexibility and 'soft skills' associated with the humanities and liberal arts," WhatEvery1Says, accessed December 5, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-8-1.pdf.

[62] Meranze, "Humanities out of Joint," 1313, 1326. Harpham has also argued that the humanities are often depicted as being "at the very center of…liberal education." See Harpham, "From Eternity to Here: Shrinkage in American Thinking about Higher Education," *Representations* 116.1 (2011): 45.

[63] Robbie Adler, "The Value of a Liberal Arts Education," *The Catalyst: Colorado College*, April 11, 2016.

[64] Hayder Ali, "In an increasingly industrial world, humanities remain equally important to STEM," *The Daily Cougar: University of Houston*, March 25, 2014.

[65] Zach Rosenthal and Debnil Sur, "History not only by the victors," *The Stanford Daily: Stanford University*, February 23, 2016; Sahr Singh, "Heather Mac Donald advocates for Core Curriculum, challenges identity politics at CUCR event," *The Columbia Spectator: Columbia University*, November 14, 2018, quoting Heather Mac Donald.

[66] Ellie Gardner, "'The Heart of the Liberal Arts' Speaker Series Kicks Off at Pomona," *The Student Life: Pomona College*, September 20, 2013; Jonathan Mah, "Coping with decline in humanities majors," *The State Press: Arizona State University*, November 7, 2013.

[67] Burns, "UMaine elevates humanities;" Samantha McGirr, "Stanford launches effort to increase study of humanities," *The Stanford Daily: Stanford University*, April 19, 2011; the final quotation is from Burns.

[68] Anthony J. Greene, "Fields of Learning: Ignorance Is No Excuse," *The New York Times*, December 8, 2005; Felkins, "Editorial."

[69] Felkins, "Editorial." For a broader discussion of the values associated with the humanities in US news media, see Phillip M. Cortes, "The media assesses the value of the humanities both economically and intrinsically – but the

Great Recession changed the balance of the discussion," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-4-1.pdf.

[70] George Deutsch, "Is it government's business to regulate human cloning?", *The Battalion: Texas A&M*, April 2, 2001.

[71] See, for example, Philip Chaney, "Somatic stem cells solve debate," *The Lariat: Baylor University*, October 24, 2007; Benjamin Weiner, "The medicinal alternative hoax," *Daily Titan: California State University, Fullerton*, October 18, 2006; and Charlotte Rodina, "Genetically modified products leave consumers worried," *The Bullet: Mary Washington*, April 18, 2013.

[72] Editorial Staff, "New life for stem cells," *Michigan Daily: University of Michigan-Ann Arbor*, January 10, 2007; Jonathan Patterson, "Congress needs more scientists and engineers," *The Johns Hopkins News-Letter: Johns Hopkins University*, December 7, 2017.

[73] U. Editorial Staff, "Does God equate to science," *The Daily Barometer: Oregon State University*, September 27, 2005.

[74] Chris Herries, "Bring back Western Civ," *The Stanford Daily: Stanford University*, June 25, 2018; Yanshuo Zhang, "Rethinking the values of a humanist education," *The Stanford Daily: Stanford University*, February 29, 2016; Alex Ramsey, "Some ideas for that Western Civilization requirement," *The Stanford Daily: Stanford University*, February 24, 2016.

[75] Richard Scheines, "Letter to the Editor: Humanities at CMU are healthy, and will grow," *The Tartan: Carnegie Mellon University*, December 2, 2018; Samantha Jones Toal, "Major changes cause concern," *Daily Illini: University of Illinois at Urbana-Champaign*, April 27, 2016, quoting Ted Underwood.

[76] For a more detailed discussion of this problem and of potential solutions, see Alan Liu, Abigail Droge, Scott Kleinman, Lindsay Thomas, Dan C. Baciu, and Jeremy Douglass, "What Everyone Says: Public Perceptions of the Humanities in the Media," *Daedalus*, forthcoming (2022).

[77] Joel Kirk, "Dear CMC: An Admonition," *The Student Life: Pomona College*, September 20, 2013.

[78] Several articles that contribute to topic 61, which we label "Diversity and Social Justice" and associate with the communicated humanities mode, do detail the relationship between humanistic fields and concrete civic actions. Interestingly, in examining other WE1S data, project members have found that media discussions of specific social issues often fail to invoke the larger conceptual framework of the humanities. See, for example, sam goli, "Contributions of the academic humanities to thought on gender and sexual identity have little impact on media coverage of these issues," WhatEvery1Says, accessed December 5, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-3-5.pdf.

[79] Similarly, Liu has observed how "humanities fields such as literary studies, history, or philosophy blur together in media coverage as interchangeable parts in the university." See Liu, "The sciences stand out for the public as distinct fields (unlike the humanities, which blur together as just 'academics')," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-5-7.pdf.

[80] The test identified 82 words distinctive of articles containing humanities keywords but not classified as being about the humanities and 16 words distinctive of articles containing science keywords but not classified as being about science. When we compared articles classified as being about the humanities to articles classified as being about science, the test identified 159 words as distinctive of articles about the humanities and 72 words as distinctive of articles about science. See the "not-hum-not-sci-min5-1500-wilcoxon.xslx" and the "hum-sci-wilcoxon-500-min5.xlsx" files in the "data/tables" folder in this article's repo.

[81] We identified the 150-topic model as the best fit for our data by comparing it to models of the same data with 25, 50, 100, 200, and 250 topics. To view a public-facing topic model of this data using dfr-browser (without full-text data), go to http://harbor.english.ucsb.edu:10002/collections/20200522_1900_us-humanities-classification-results-

top-newspapers-universitywire-not-hum/dfr-browser/topics150/. The total number of articles we modeled in this collection is different from the total listed in row three of Table 4 (32,420). This is because our topic model did not include articles containing the word "liberal arts" (but not "humanities").

[82] To see the number, manually assigned label, top 15 keywords, and weight of each topic in this model, see the collection 36 150-topic model dictionary in the supplementary data (the "c36-150-dictionary.xlsx" file located in the "data/tables" folder).

[83] Cresencio Rodriguez, "Why thousands of school children are on Fresno State's campus," *The Collegian: California State University - Fresno*, March 08, 2018; Lea Victoria Juarez, "Festival of Books and Arts at UTPA," *The Pan American: University of Texas - Pan American*, March 28, 2012.

[84] Staff, "University and city host book talk," *Daily O'Collegian: Oklahoma State University*, October 15, 2013.

[85] These are topics 3, 47, 49, 60, 73, 76, 91, 92, 96, 103, 141, and 142.

[86] This association of the humanities with public events dovetails with observations Tarika Sankar has made about how the concept of literature is discussed in mainstream US media. Sankar writes, "The media portrays [literature] both as a hermetic academic activity and as a robust milieu of everyday social activities related to books and reading – e.g., book talks, poetry readings, announcements of literary prizes, and obituaries of poets and writers." See Sankar, "Literature has a split personality in the media. It is tied to the academy, yet bridges to public life in everyday book & reading events," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-5-11.pdf.

[87] As Harpham puts it, the humanities are an "institutional concept." See Harpham, *The Humanities and the Dream of America*, 80.

[88] Christina Roberts notes the presence of terms such as "children," "museums," "nonprofits," and "historical societies" in relation to discussions of federal funding. Roberts, "The media covers U.S. government funding for the humanities as a generalized mix of arts, humanities, and heritage funding," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-7-1.pdf.

[89] See, for example, Jeffrey Gettleman, "Panel Wants Bowling Alley Preserved; Landmark: Holiday Bowl Should Be Given Historic Status For Bringing Japanese Americans And Blacks Together, City Council Is Told," *Los Angeles Times*, January 01, 2000; and John Kelly, "Light artist's sculpture brings color to Washington," *The Washington Post*, January 22, 2017.

[90] Topics 21, 46, 61, 57, and 111 are strongly associated with obituaries.

[91] Obituaries of this kind also surface in topics about specific fields, such as those we labeled "Philosophy" (106) and "Western History" (149).

[92] This claim is based on experiments we conducted with training classifiers to identify event announcements and obituaries in our data. 1% of articles across our entire corpus were classified as announcements, while just under 2% were classified as obituaries. 80% of the articles classified as event announcements and 82% of the articles classified as obituaries came from top-circulating newspapers.

[93] Tarika Sankar, "The humanities are the art of ordinary life," WhatEvery1Says, accessed May 1, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-5-3.pdf. See also Joyce Brummet, "Students on Twitter use 'humanities' to talk about daily academic and campus activity," WhatEvery1Says, accessed May 2, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-6-3.pdf; and Sankar, "The humanities are robustly public in everyday events and activities," WhatEvery1Says, accessed December 13, 2021, https://we1s.ucsb.edu/wp-content/uploads/KF-5-8.pdf.

[94] Mariët Westermann, "The Humanities in the World: A Field Report," in Ignacio López-Calvo and Christina Lux, eds., *The Humanities in the Age of Information and Post-Truth* (Chicago: Northwestern University Press, 2019), 114.