



Scientia et Humanitas:
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Submission guidelines

We accept articles from every academic discipline offered by MTSU: the natural sciences, the social sciences, and the humanities. Eligible contributors are all MTSU students and recent graduates, either as independent authors or with a faculty member. Articles should be 10 to 30 typed double-spaced pages and may include revisions of papers presented for classes, conferences, Scholars Week, or the Social Science Symposium. Articles adapted from Honors or M.A. theses are especially encouraged. Papers should include a brief abstract of no more than 250 words stating the purpose, methods, results, and conclusion. For submission guidelines and additional information, e-mail the editor at scientia@mtsu.edu or visit <http://libjournals.mtsu.edu/index.php/scientia/index>

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EDITOR'S INTRODUCTION

Since the first issue of *Scientia et Humanitas* in 2011, the journal has upheld a twofold mission. Not only does *Scientia* strive to showcase the highest quality of student research at MTSU, but it attempts to introduce students to the rigor of the peer-review publishing process. Publication is no walk in the park. Authors are asked, usually several times, to revise their work in the fullest sense of the word—i.e., to re-envision and to reevaluate the content, purpose, and organization of their articles. Revision can be discouraging because it sometimes requires the writer to remove whole paragraphs or to go in search of more sources. In her book *The Writing Life*, Annie Dillard describes the writing process in terms of building a house. The writer uses her hammer to tap the walls of the building, checking for stability, and sometimes comes to the sad realization that not all of the walls can stay: “There is only one solution, which appalls you, but there it is. Knock it out. Duck.”

The articles featured in *Scientia's* eighth issue are the product of the patient and determined writers, from both the undergraduate and graduate student body at MTSU, who persevered through peer-review, faculty review, and multiple rounds of copyediting and proofreading. Their houses have stood the test of a thorough revision process. I am proud of their work and of the opportunity as this year's editor to present their efforts in a formal publication.

In keeping with the journal's title, this year's issue features a variety of topics and disciplines that range from the sciences to the humanities. Jennifer Rideout received the Deans' Distinguished Essay Award for her analysis of the way Joseph Conrad uses the tragic event of the Russian influenza as an extended metaphor in *The Secret Agent*. Andrew Black, another representative of the humanities, writes about Ralph Waldo Emerson's essay, “Self-Reliance,” and the various misreadings that have been applied to Emerson's infamous question, “Are these *my* poor?”

In addition to the humanities, there are a series of articles that range from nursing to communication studies. Elizabeth Jordan assesses the current state of the science related to nursing-driven protocol for enteral feeding of critically ill patients. Cassandra Mihalko investigates whether a callus tissue culture of the King of Bitters plant can be made of its anti-inflammatory property, neoandrographolide. Mary De La Torre conducts an ethnographic study of the way societal attitudes affect the treatment of prison inmates in rural Tennessee. Finally, Katelyn Brooks examines how the new media landscape ushered in by the rise of social media platforms requires a reassessment of the long-standing assumptions established by Agenda-setting theory.

I am also grateful for the team of people who volunteered their time as reviewers and copyeditors. This year's *Scientia* staff includes the following group of graduate and undergraduate reviewers: Andrew Black, Gregory Bronson, Corey Cummings, Jasmin Laurel, Rachel Marlin, Wyatt May, Ella Morin, and Hillary Yea-

ger. Without their help in (re)reading articles, attending to minute issues of syntax and grammar, and without their general enthusiasm for the journal itself, this year's issue would not have made it into your hands. A special thanks goes to Megan Donelson, my associate editor, who headed up our social media campaign to solicit articles, and who also helped review and manage many of the submissions we received this year.

I would also like to thank the Honors College administrative faculty of *Scientia*. Both Dr. Phillips and Dr. Vile helped us secure some of the faculty reviewers for this year's issue. Susan Lyons is responsible for the design of the printed edition. Finally, Marsha Powers has been an indispensable support for *Scientia*. Not only did she solicit articles, she was also generous with her time by allowing me to sit in her office and talk through all of the challenges that come with publishing an academic journal.

I hope that you enjoy the eighth edition of *Scientia et Humanitas*. This is my third and final year working with the journal. *Scientia* has been an invaluable resource for me as a writer and researcher, and I hope that it will continue to be beneficial to MTSU students for many more years.

Nicholas Dalbey
Editor in Chief

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The Russian Influenza as Extended Metaphor in Joseph Conrad's *The Secret Agent*

Jennifer Lynn Rideout

Abstract

*In *The Secret Agent*, Joseph Conrad introduces anarchist Adolf Verloc and links his arrival in London to the unseen yet deadly viral arrival of the influenza. I argue that, in so doing, Conrad creates the character descriptions of Verloc and his family as metaphorically representative of the virus and its symptoms. Conrad complicates the story by setting it in 1886, inviting the reader to recall the terrifying events of the 1889 Russian Pandemic and the 1894 attempted bombing of the Greenwich Observatory and to envision a Britain whose innocence is shattered by destructive forces unseen with the naked eye. By expanding on the connection between the progression of time and the notion of fluid borders, both of which feed the rush of 20th-century modern technology, Conrad's characters represent the emergence into a world over which Britons perceived that they had little control.*

When Joseph Conrad's *The Secret Agent* was released in 1907, negative reviews focused on "the book's difficulty and inaccessibility to the 'ordinary reader'" (Najder 379), allegedly because of Conrad's "foreign origins." However, one cannot help but wonder if the real reason for such criticism was fear in the face of reality. Studies of turn-of-the-century Britain show the nation seeking to define itself in the new modernist period, a time fraught with societal challenges from within and without, many originating far beyond England's borders (Honigsbaum 300). In *The Secret Agent*, Conrad highlights Britain's sense of vulnerability by setting the novel in 1886 and inverting time to incorporate two major events that, in reality, came later. The first is the highly documented Russian Flu pandemic of 1889-1890, and the second is the attempted bombing of the Greenwich Observatory by French anarchist Martial Bourdin in 1894 (Butterworth 329). Conrad heightens the sense of terror by taking readers back to 1886, a time when Britons feared loss of control in the rush of modern technology. He inverts time to combine that fear with these two later national events that were both media sensations.

While in France in 1884, Conrad was taken for an anarchist himself, though he was later absolved of suspicion. The incident, combined with Bourdin's attempt on the Greenwich Observatory, influenced Conrad's thinking in *The Secret Agent* (Newton 117). In the novel, he characterizes time and the fluidity of borders in terms of pandemic influenza, extending the metaphor of terrorism as a virulent crisis through anarchist Adolf Verloc and his immediate family, Winnie and Stevie. Michael Martin touches on the notion of virulence when he claims that *The Secret Agent* is not just an espionage novel but also fits the genre of "the pre-Great War invasion narrative . . . depicting myriad ways in which British society is imperiled by Continental miscreants" (253). Martin goes on to explain these fictional devices depicting "London [as] denationalized by malevolent foreigners, a generalized xenophobia and specifically a visceral Germanophobia, a British populace in a state of physical and mental decline, and acts of aggression that paradoxically 'vaccinate' Britain by stimulating its resistances" (260 emphasis added). Martin, however, is not the only writer to hint at metaphorical virulence in the literature of the period.

Writing about a text within the same general time period, Katherine Kelly explains that Heinrich Ibsen's *The Doll's House* (1879) deals with pandemic and mod-

ernism. She writes that “Ibsen used metaphors of disease and pollution to signal the urgent need to break with the past and prepare for a new future” (24). Conrad’s view of the future was not one of clarity but of contamination. While Kelly writes that Ibsen was “dismantling . . . tradition in preparation for coming change – a great clearing away in advance of a new age” (24), Conrad’s metaphorical use of pandemic in *The Secret Agent* is not optimistic about the future. I examine his view of the future and contend that, for Conrad, modernism means uncertainty, threat, loss of control, and even loss of life. He reflects the sense of vulnerability that plagued turn-of-the-century British society as it emerged from the first flu pandemic in 1890. In this paper, I argue that Conrad captures this feeling and plays upon Britons’ fears of an invisible killer, extending the metaphor of influenza to anarchists in *The Secret Agent*.

From the first chapter, Conrad sets an ominous tone through a metaphorical connection to pandemic influenza. Alluding to the insidious and pervasive nature of terrorism as embodying the symptoms of disease, Conrad writes of Verloc: “He generally arrived in London (like the influenza) from the Continent, only he arrived unheralded by the Press; and his visitations set in with great severity” (6). Conrad illustrates here and at the end of the novel that, unlike the public health issue manifested by influenza, people could be warned about and take appropriate precautions for safety, terrorists cannot so easily be identified. Rather, like influenza, terrorists slip across borders unknown and unseen. Mark Honigsbaum explains that “the Russian influenza was peculiarly ‘modern’—a pandemic that seemed to be intimately linked to modern trade and transportation technologies and the increasing speed of global communications” (300). From post-Victorians’ perception, modernist period change moved faster than man and, thus, man was not in control anymore. Honigsbaum further elaborates this point: following the trajectory of the Russian Flu as it swept through Europe and North America, his research reveals that the virus “spread rapidly between European capitals via international rail, road and shipping connections in a westward progression that was the subject of widespread commentary in both the daily and periodical press” (300). Modern mass transit created a realistic fluidity of borders through which materials and people quickly moved. Influenza’s infectious invisibility allowed it to travel as an unseen passenger on mass

transit, changing the public's perception of the impressive speed that moved goods and people to that of a horrifying invasion of swift and deadly proportions. For these emerging modernists, "the idea that the influenza 'microbe' might hitch a ride on these symbols of the machine age was doubly disconcerting" (304-5).

Conrad's metaphorical use of the spread of influenza relates to the unseen activity of anarchists, and creates a sense that terrorism is virulent in its ability to sicken society by inciting paranoia and a perceived inability for people to protect themselves from it. Most poignant is Conrad's illustration in *The Secret Agent* of a turn-of-the-century awareness of the unpredictability of who will live and who will die. Most notably, he does this when he creates a microcosm of pandemic in the members of the Verloc household. Whenever he uses flu-like symptoms as metaphor in the novel, only Verloc and his family are described in connection with them. For Verloc, the description begins with Mr. Vladimir's warning that he must soon take action or face termination from employment with the embassy. Vladimir's pronouncement to Verloc that "We don't want prevention – we want cure" (22) initiates Conrad's allusions to terrorism as illness. Vladimir incites fear in Verloc that he must act in order to preserve his income from the Embassy. Just as an influenza epidemic creates vigilance among people to preserve their own health, Vladimir's discussion with Verloc reveals that an act of terrorism will incite people's fears and affect their confidence in their protectors if law enforcement is unable to prevent such acts.

Conrad emphasizes that Verloc is a foreigner on English soil. Richard Niland calls attention to Conrad's description when he writes that "Vladimir's 'amazingly guttural intonation' is 'not only utterly un-English, but absolutely un-European' (*SA* 24), and his orchestration of the bomb outrage—allowing Conrad to highlight a malignant Russian influence—guarantees that all 'foreign scoundrels' are suspected by the establishment of being 'likely to throw something,' causing 'a national calamity' (*SA* 112)" (Niland 131). Carrying these concerns with him, Verloc first displays symptoms of impending influenza after meeting with fellow anarchists. He arrives home thinking to himself that "he hoped he was not sickening for anything" (46), and at Winnie's inquiry about his health, he says to her, "'I don't feel very well,' . . . passing his hand over his moist brow" (48). The remainder of the characters in the novel remain untouched by such description and are described for their physi-

cal features instead. For example, Michaelis is described as “round like a distended balloon, he opened his short thick arms” (42), while “Comrade Ossipon’s thick lips accentuated the negro-type of his face” (42), and Karl Yundt, in his departure from the meeting, “rais[es] an uncertain and clawlike hand” (43). The anarchist group is “a sad lot – misshapen, overweight, grotesque, bloodthirsty, lame” (Raskin 193). In contrast to the grotesque physical features of the anarchists, Conrad distinguishes the members of the Verloc household with descriptors of influenza symptomatology. A better understanding of the suspected causes of the Russian flu and its symptoms, however, is necessary to establish the connection with influenza to Verloc, Winnie, and, indirectly, Stevie.

Health practitioners in the 1890s believed that the Russian influenza may have spread through “atmospheric electrical phenomena” (Smith 62) such as ozone impurity, meteors releasing “a poisonous gas from outer space” (64) or “comets’ tails convey[ing] freeze-dried organisms, including influenza viruses, gathered from interstellar dust” (65). One scientist’s report reassured the public that the ozone level at Greenwich was normal (63). Suspected influenza connections researched at Greenwich and the focus of Greenwich Observatory for Bourdin’s attempted bombing connects the two threats with effects on time and transportation, creating a sense of vulnerability in the post-Victorian mind. Almost personifying the influenza by the ability to choose its victims, “influenza seemed to single out the urban middle classes and, in particular, male heads of households for attack, as well as by the fact that the earliest recorded casualties were precisely those considered most essential to the smooth functioning of Victorian society and economy, such as diplomats, post office workers, lawyers, and employees of banks and insurance firms” (Honigsbaum 300). Influenza, like the terrorist attempt on the Greenwich Observatory, was an attack on time. F.B. Smith writes that, because of the virus, “the economy was disrupted. Postal services were curtailed for weeks, particularly during the 1891 and 1892 epidemics, because letter deliverers, sorters, and overseas parcels officers were especially affected” (58). Although influenza cannot consciously and willfully attack like terrorists can, its invisibility and malignant presence likens the virus metaphorically to terrorism’s effects on people in its disruption of schedules and day-to-day living. While terrorists disrupt timetables with destruction and death,

likewise, influenza disrupts timetables with critical illness and death.

Similarly, reports in newspapers suggested not only a potential for infections through the fluidity of terrestrial borders but also mysterious cosmological borders. Additional concerns included earthquakes and the flooding of the Hwang Ho River in China in 1888-89, which left carcasses of animals rotting along its banks that scientists believed could release airborne pathogens (Smith 63). The Russo-Japanese War was also blamed for the transmission of disease, as infected troops moved about on trains with civilian passengers, systematically spreading influenza westward (66). Symptoms of Russian flu recorded by health practitioners included “sudden fever which lasted for three to five days to a fortnight, chills, especially in the back, and thumping muscular pains, runny nose and eyes, sneezing or dry coughing, prostration for up to a fortnight, loss of appetite and (occasionally) sense of smell, and photophobia” (Smith 56). Just as no one seemed to know how terrorists came to be in London, scientists could also only guess at the origin of the contagion. One particular example of how Conrad establishes an “influenza-like atmosphere” in the story is when he writes about the bomber’s death at the Greenwich Observatory as being “a raw, gloomy day of the early spring” (66) and then describes Verloc and Winnie with numerous influenza symptoms.

Drawing on the various influenza medical theories as well as first-hand experience, Conrad effectively characterizes Verloc as a living metaphor for the virus itself. For example, he describes Verloc as already feeling unwell as goes walking on a damp, cold evening leading “a cortège of dismal thoughts along dark streets” (146). His very thoughts are like a funeral procession in the night, foreshadowing death in the coming pages of the novel and bringing to readers at the time the recollection of such scenes in the wake of the Russian influenza epidemic. Upon reaching home, he announces that he will go to the Continent, passing across the border of England for a buying trip for his shop (149). Upon his return, the tragic action of the novel unfolds with Conrad’s metaphorical descriptions of viral symptoms that pave the way for the demise of the Verloc household members. In his plan to enlist Stevie, Winnie’s intellectually disabled brother, to place the bomb at the Greenwich Observatory, Verloc proposes to Winnie that Stevie go to the country and stay with the anarchist Michaelis at his cottage (156). It is likely that Winnie

would have thought this a good idea, because taking the country air was supposed to be a preventative measure against disease, and a method for city-dwellers to purify their bodies from urban pollution. News reports of the period indicate that people attempted to escape the flu by taking the country air (Mussell 12). Among influential members of society who fled for the country was Queen Victoria who “refused ‘personal intercourse with individuals from London,’ and ha[d] all messages from the foreign office disinfected” (12). Therefore, Stevie is protected from being described with flu-like symptoms and, instead, dies from exposure to Verloc’s plan.

Much like the destructive effect of influenza coming as a shock to Britons at that time, the destruction of all three members of the Verloc household comes as a shock to readers. Martin Bock writes that “the Verloc family, like a ‘perfect detonator,’ is a tightly restrained and delicate domestic mechanism that is easily disturbed by Vladimir’s insistence that Verloc earn his “pay as an agent provocateur” (102), likening the family to explosives. The timing and effects of the deaths work both as a metaphor for influenza and as the literal effects of terrorism. First, Conrad leads readers to believe that Verloc died in the explosion at the Greenwich Observatory. Readers sense this confirmation through the extended discussion among the anarchists who knew him. Ossipon says, “I don’t know what came to Verloc. There’s some mystery there. However, he’s gone” (65). When Conrad writes about Stevie setting off fireworks in the stairwell of the milk company (8), he foreshadows Stevie’s death, creating for readers the first shock when they are led to believe that it is Verloc who died. Conrad sets up the second shock when he leads readers to believe that Winnie, who has just learned from Verloc about her brother’s death, has gone upstairs to dress in order to leave her home. When Verloc calls to her to come sit with him on the couch, Winnie unexpectedly seizes the moment to exorcize her passion and grief when she noiselessly picks up the carving knife from the sideboard, ending the scene by killing Verloc with the knife. This scene comes as a shock to readers because Conrad writes that initially Winnie obeyed Verloc’s call to come sit with him on the couch, illustrating that “she started forward at once, as if she were still a loyal woman bound to that man by an unbroken contract” (215). However, Conrad shifts from Winnie’s obedience to her acting upon impulse when he writes that “her right hand skimmed slightly the end of the table, and when she had passed

on towards the sofa the carving knife had vanished without the slightest sound from the side of the dish” (215). By the end of the scene, Winnie changes from submissive wife to impassioned killer. The third shock for readers comes when the anarchists’ earlier supposition that Verloc is gone in the explosion is proven false. After killing Verloc, Winnie meets Comrade Ossipon in the street and sends him into the flat to turn off the lights. In the semi-darkness, he makes out the form of Verloc in repose on the couch and suddenly realizes that it was not Verloc who blew himself up at the Greenwich Observatory. Ossipon first thinks Verloc is sleeping, but when he realizes what he is seeing, Conrad writes that “a yell coming from the innermost depths of his chest died out unheard and transformed into a sort of greasy, sickly taste on his lips” (234). Conrad continues the scene expressing that “Comrade Ossipon made out the handle of the knife [and] . . . turned away from the glazed door, and retched violently” (235). The fourth and last shock is Winnie’s suicide as she attempts to escape for the Continent, explained by the press as “An impenetrable mystery [which] seems destined to hang forever over this act of madness and despair” (Conrad 252). Sarah Cole writes that the Victorian “sensationalist-minded press . . . spread word of anarchist outrages far and wide and help[ed] to stir public fear and interest” (317). Conrad replicates media sensation in aligning these four shocks with influenza, extending the metaphor by tying it with the real fears people held about the disease, not knowing who will live and who will die.

Unfortunately, terrorism does not function in the novel just as a sickness affecting the public but instead as a contagion that impacts the characters themselves. In their efforts to train Stevie to be a good worker, Winnie and her mother teach him docility and obedience to the point that he is described among the young men of London as “none more affectionate and ready to please, and even useful, as long as people did not upset his poor head” (49). If Verloc is influenza, Winnie and her mother unwittingly place Stevie in the spray of the sneeze that is Verloc’s plan to blow up the Greenwich Observatory. Thinking to affirm Stevie’s place as a useful member of their household, Winnie tells Verloc, “You could do anything with that boy, Adolf . . . He would go through fire for you” (151). And go through fire he does, when he stumbles with the explosive varnish can in his grip. At this point in the novel, Verloc is described as fully symptomatic of influenza: “his head

held between his hands. . . his teeth rattled with an ungovernable violence, causing his whole enormous back to tremble at the same rate” (157). Further, “his eyes were bloodshot and his face red. . . . His appearance might have been the effect of a feverish cold. He drank three cups of tea, but abstained from food entirely” (159). Note, these are the very symptoms of flu reported at the time, according to Smith. Conrad goes on to describe that Verloc was not himself, either physically or mentally (160): “his features were swollen and [he had] an air of being drugged” (161). Winnie was concerned about her husband’s state and saw “something wild and doubtful in his expression [that] made it appear uncertain whether he meant to strangle or to embrace his wife. . . . He had gone in red. He came out a strange papery white. His face, losing its drugged, feverish stupor, had in that short time acquired a bewildered and harassed expression” (162). Still puzzled, Winnie wonders why Verloc “should remain . . . leaning over the table, propped up on his two arms as though he were feeling giddy or sick” (164). All of Verloc’s virulent symptoms soon come clear to Winnie when she learns that her husband is an anarchist who enlisted her brother, involuntarily, on a mission of death.

When Winnie learns of Stevie’s death, the influenza of terrorism is out of Verloc’s previously perceived control and becomes manifest in Winnie. Conrad then describes Winnie’s actions as mimicking viral symptoms: “her lips were blue, her hands cold as ice, and her pale face, in which the two eyes seemed as two black holes, felt to her as if they were enveloped in flames” (172). She “reeled to and fro” and had “crazed eyes” (172). Verloc finds that “the prospect of having to break the news [of Stevie’s death] to her put him in a fever” (189). Both Verloc and Winnie are overcome with influenza-like symptoms as they wrestle with the tragedy of Stevie’s death. Winnie’s mind is fevered with passion, and when Verloc looked at her “he was startled by the inappropriate character of his wife’s stare” (197). Conrad indicates that her “mental condition had the merit of simplicity; but it was not sound” (205). Winnie’s condition follows the observations of doctors during the Russian influenza pandemic. Having exhibited the typical physical signs, Winnie then exhibits the “peculiar ‘cerebral disturbances’ and other worrying ‘nervous sequels’ . . . [that doctors said] could also result in psychoses sufficient to trigger suicidal thoughts or the urge to take the life of a close family member” (Honigsbaum 311). What was

a seemingly straight-forward plan to infect the city with paranoia of catastrophe comes home to Verloc in his inability to account to Winnie for his own responsibility in Stevie's death, infecting her with a hatred and passion enough to kill him.

At this point in the novel, the reader can anticipate Winnie killing Verloc. However, when she flees for the Continent with Ossipon, her suicide comes as a surprise that substantiates Paul Armstrong's assertion that "the characters in this novel repeatedly experience astonishment at finding that they can no longer count on what they believed, assumed, and trusted" (86), which echoes the post-Victorian movement into modernism, a time of immense change that challenged traditional beliefs and cultural norms. Verloc's attempted act of terrorism spread infection into his family, ending Stevie's life, Verloc's life, and eventually Winnie's as her fevered fear of imprisonment and hanging for his murder drives her mad and results in her suicide. Honigsbaum writes that the Russian influenza had neurological aftereffects for some people and resulted in increased suicide rates (314). Conrad adds Winnie to that number as he brings the novel full circle from likening Verloc to influenza at the novella's beginning to the Professor's reflections at the novella's end.

Closing the novel on an ominous note, Conrad characterizes the Professor, who keeps a bomb in his pocket at all times, as "unsuspected and deadly, like a pest in the street full of men" (255). The pandemic metaphor ends with Verloc and Winnie's deaths, but Conrad leaves his readers realizing that unlike the coughing and feverishness of influenza revealing its presence, by the end of the novel he sees anarchists as "pest[s] in a street full of men" (255), unknown as a threat with the potential to kill, much like a plague of rats. In *The Secret Agent*, Conrad demonstrates the pandemic potential for terrorism as Verloc arrives from the continent and sets off a series of events that inflict destruction and death within his own close circle of relations, ending any future prospect of violence at his hands. However, Conrad makes clear that Verloc's end is not the end of terrorism, just as Britons realized that the end of one pandemic did not mean an end to those in the future. Closing the novel with the image of the Professor, armed with hidden bombs on his person as he walks the crowded streets of London, the reader knows that terrorism, like influenza, will strike again – random, unseen, and deadly. As England's Victorians moved under a cloud of sorrow into the twentieth-century, facing the death of their

longest reigning queen, Victoria, in 1901, they soon were faced with the first recorded pandemic and also dealt for the first time with the threat of anarchist terror plots. Gathering these threads of grief and shock, Conrad taps into turn-of-the-century paranoia in *The Secret Agent*, illustrating a Britain that the sensationalist media took advantage of, striking fear into the hearts of the public and exacerbating feelings of their world as out of control.

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“He had *his* poor”: Emerson’s Self-Reliance and the Question of Charity

Andrew Black

Abstract

Ralph Waldo Emerson’s often anthologized essay “Self-Reliance” has been presented as a clear example of Emerson’s endorsement of the wider nineteenth-century’s laissez faire ideology. This is, however, an ultimately inaccurate characterization and a consequence of various kinds of misreading. This paper examines these misreadings and attempts to place “Self-Reliance” in its intellectual, chronological, and textual context. It is one essay in a carefully ordered presentation that is published as an embedded and local work. The essay’s tangential critique of “miscellaneous charities” is a communitarian and local critique of the burgeoning institutionalization and especially internationalization of American benevolence. When read in context, “Self-Reliance” demonstrates that Emerson’s poor are immediate, proximate, and fraternal, those to whom the whim of the moment can mandate a local response.

Ralph Waldo Emerson's son Edward published *Emerson in Concord* in 1889, presenting the book as the kind of intimate portrait of Emerson only a son could write—Edward purports to show the private Emerson in the context of his social circle. Emerson had decided not to make Edward the executor of his literary estate, and had instead chosen James Elliot Cabot to write his official biography, one that presented Emerson the national figure and focused on his public life and work. Edward's biography, published two years after Cabot's, poses as a humbler compliment to Cabot's longer work and depicts Emerson "the citizen and villager and householder, the friend and neighbor" (Emerson 1). The pose is significantly embedded in the functions and scenes of a particular place, and Edward sees himself as "writing for the chronicle of his village club the story of my father" (1). Edward's book depicts a localized context outside of which Emerson's work is easily and, it seems, consistently misread.

Perhaps appropriately, the village of Concord plays, in Edward's book, the pivotal role in Emerson's life. In Robert Habich's recent reading, "not until his father settled in Concord did he experience the therapeutic joys of 'householding,' the love of gardening, and the sustaining interest in his town's affairs that stabilized his life and set him on his true path" (114). An Emerson undistinguished in work, frail in health, and mourning the death of his first wife finds, in Concord, solace and a community in which he can participate. Habich's examination of the tenuous nature of biography in general looks especially at the six biographies of Emerson published in the late nineteenth-century. While these tensions, motivations, and misrepresentations need to be kept in clear view, Edward's localized depiction provides a necessary counterpoint to the disembodied and ideological tenor that has overrun both the popular and the scholarly imagination and is, I think, nowhere more visible than in the misreading of Emerson's infamous "Are they my poor?" tangent in his most anthologized essay "Self-Reliance." While often read as a rhetorically abrasive denial of any obligation toward the poor, a contextualized reading allows for a more sympathetic, more generous, and ultimately more accurate assessment.

There is a surprising and seemingly ubiquitous naïveté when it comes to the particular reception and interpretation of themes in Emerson's individual works. Habich's discussion of the earliest biographies suggests this has always been the

case. No biography presents a complete picture: Cabot's "official" biography highlights the public life, while Edward's navigates the private. In the same way, Emersonian scholarship in the latter half of the twentieth century and into the twenty-first has focused on particular themes and works to the occlusion of others. Concomitantly, interest in an additional or novel concern—Abolitionism, race, political action, radical individualism, Jacksonian democracy—creates an additional Emerson. What feels an irreconcilable and inevitable confusion is attributable to two identifiable tendencies. The first tendency attempts to identify the sum of Emerson's thought on a particular issue, and so jettisons issues of chronology and textuality. The second reads Emerson as an exemplary representative of his wider milieu.

Laurence Buell's more recent (2003) biography of Emerson presents him as a public intellectual and is perhaps the most notable example of the tendency to exclude issues of textuality. While Buell helpfully corrects oversimplifications of both Emerson's ideology and Emerson's biography, and draws together the seemingly illimitable strands of Emersonian scholarship to date, he consistently occludes significant contextual details. To take one example, Buell presents Emerson's lecture "The American Scholar," as "Emerson's first concerted attempt to express this ambivalence [toward the relationship between belief and action] publicly" (243-4). Buell's presentation privileges the presently canonical essay "The American Scholar," over the contextually significant essays that chronologically preceded it. Emerson's 1837 Phi Beta Kappa address, "The American Scholar," draws extensively on the various public lectures and sermons that serve as its basis. After discussing "The American Scholar," Buell continues by suggesting that the ambivalent sentiments expressed in the later essay "Self-Reliance" are equally indicative of Emerson's initial thoughts regarding public action (245). Buell uses these two well-known essays to illustrate the public development of Emerson's thought. But this kind of discussion unhelpfully elides the local and private trends of Emerson's intellectual development. The pattern, moreover, remains a typical consequence of topically arranged or ideology-centered representations.

The second and most common tendency is to read Emerson as definitively representative of the era's wider thought. Such representations appear in the work of Robert Milder, William Charvat, Clemens Spahr, and Susan Ryan, who each

in their own way present an Emerson participating noticeably in the stereotypical trends of his time. Charvat, in an often-overlooked essay interrogating the relationship between the New England Romanticism of the 1830s and 40s and the 1837 financial crisis, sees Emerson's thought as participating in the financially insulated elitism of New England. Charvat describes the essay "Self-Reliance" as "a protest against the tyranny of public opinion in a society in which numbers were beginning to be more powerful than the prestige which Emerson's class had always enjoyed" (66). Taking an opposite position, Milder investigates what he calls "Emerson's radical period," between the financial crisis so pivotal in Charvat's reading and Emerson's 1842 "endorsement of what can only be called free enterprise ideology" (51). The discrepancies between Charvat's indictment and Milder's defense further illustrate the prevalent elision: Emerson's private and Emerson's public self.

In a recent article on Orestes Brownson, Clemens Spahr builds on Milder's portrayal. Spahr attempts to demonstrate a causal progression from Transcendentalism to social action, and uses, among others, Emerson's essays on "Art" (1841) and "Nature" (1844). Spahr shows how what is often seen as Brownson's break with Transcendentalist thought arises instead inevitably out of Transcendentalism's implicit but substantive ethical thrust. Spahr argues that scholars, since Matthiessen (32), have ignored the "social thought" of Emerson. Spahr's argument is a helpful corrective, but seems also to rely on broader generalizations of Emerson as primarily representative of wider movements of his day. Using Emerson instrumentally as a representative—whether indicative of the elitism or the radicalism of New England Romantics—usually results from a larger necessity, a wider argument helped along if Emerson can perform the role of representative foil. Susan Ryan's work and its influence most clearly illustrates the consequence of such instrumental inaccuracies.

Ryan examines the discourse of charity in the antebellum period, and her argument builds on the dissertation of Cassandra Cleghorn. Cleghorn contends that there is a lively, operative discourse surrounding charitable giving in the periodical literature of antebellum America. This literature revolves around the issues of duplicity—whether of the philanthropist or the recipient (140)—and spectacle (157). Any invocation or discussion of philanthropy, according to Cleghorn, draws from, alludes to, and participates in this larger discourse. Cleghorn mentions Em-

erson in her discussion of the duplicitous recipient, stating "nothing could serve a proponent of self-reliance more efficiently than an imagined charity gone bad" (152). In Cleghorn's argument, the demonstrable duplicity of the unknown beggar encourages Emerson's refusal to be charitable. Ryan, taking up Cleghorn's argument, makes this suggestion more explicit. She attributes Emerson's opposition as part of "the era's pervasive suspicion of direct charitable aid" (79) and connects the period's "ethos of suspicion" (58) directly to Emerson's infamous tangent. "Emersonian self-reliance," writes Ryan, ". . . is one of many antebellum attempts to represent and evaluate dependence and its opposites" (78). Ryan attempts to ameliorate Emerson's explicit rejection of direct charitable aid by commenting, "though his phrasing is extreme, Emerson is expressing widely held views" (79). These views involve the refusal to give charitably on account of the potential giver's assumption of the beggar's duplicity. Ryan and Cleghorn are right to contextualize Emerson's seeming ambivalence, and they lay the groundwork to read Emerson accurately, but ultimately fail to do so. Instead, Ryan uses Emerson's "Self-Reliance" to create an adequate context for what she sees as Melville and Douglass's critiques of Emersonian "selfishness."

While Ryan's use of Emerson as a foil for the more subversive figures of Melville and Douglass is understandable and effective, her book's reception illustrates the way that such use perpetuates misreadings of Emersonian thought. Lawrence Goodheart, in a sizable review of Ryan's work, notes Emerson's infamous rejection of benevolence and builds on Ryan's suggestions: "Such laissez faire ideology was a clear apology for the reigning class system and skewed distribution of wealth and power" (363). Emerson's "Are they *my* poor?" rejection recurs and illustrates the period's unfeeling response to the lazy and deceptive poor. Emerson is read as a proponent or at least defender of a kind of Social Darwinism.

More recent scholarship has largely attempted to correct these two tendencies—the tendency to assess the totality of Emerson's thought on a particular subject, and the other tendency to read Emerson's anti-benevolence as representative of wider trends. John Ronan argues, building explicitly on the scholarship of David Robinson, that there is a congruity between the homiletic work of Emerson and the Emerson of the *Essays* (1841), and, further, that the *Essays* are homiletic in

structure and style. Prentiss Clark, in what is foundationally related to this present work, reads the sermons, essays, and journals to de-center and re-present the locus of Emerson criticism from the self alone to the self in a web of relations to the whole. In Clark's reading, Emerson evokes and rejects a Cartesian alienation of the self and instead posits interaction, not thought, as the foundation of being: "a man engaged by and engaging the world, wondering at the very fact of this live relation and what it requires of him" (323). For Clark, this is "the singular position of humankind Emerson will investigate in all his writing" (324). Most recently, Robinson Woodward-Burns has argued that Emersonian solitude necessarily leads to action. Woodward-Burns investigates the whole of Emerson's thought, but is chronologically particular. He avoids conflating individually developed essays (a tendency illustrated above). These three scholars, their work taken together, suggest the path forward, but, in the vastness of their scope, continue to overestimate the ability of scholarship to accurately elucidate complex totalities—such as Emerson's various ideological progressions—by means of synchronically selected and unsystematically related particulars. The path forward begins with a re-estimation and careful consideration of particulars—the diachronic context of "Self-Reliance" in the life, work, and place of Ralph Waldo Emerson.

Laurence Buell has written that "we must focus less on adjudicating what [Emerson] did when and more on what he thought and said about what he was doing or not doing" (280). As my critique of Buell demonstrates, we must go further. We must, additionally, not lose sight of where and when Emerson thinks about what he's thinking and saying. This begins with a more nuanced consideration of Emerson's compositional process. Many scholars have taken up the ideological content of "Self-Reliance" without considering its diachronic position. Emerson first includes "Self-Reliance" in his second published work, *Essays* (1841). The significance of this position, so rarely acknowledged, is first suggested by Joseph Slater in his historical and textual introductions to the *Essays*. For Slater, Emerson's operative contexts are the journals, the lectures, and the publication of the works of Thomas Carlyle (*CW*, II. xv-xvi). Slater further draws attention to the careful arrangement of the essays, where he asserts that "[Emerson's] conscious concern about shape and symmetry is evident in the alternative arrangements of 'chapters' in his journal entry

of June 1840" and "his worry that the essay 'Nature' might not be completed in time to function as a proper balance to its adjacent essays" (*CW*, II. xxx). Emerson carefully arranges these essays, and Slater highlights the intricate significance of this ordering: "twelve essays arranged in three quatrains, in an A-B-A order, general-particular-general: the table alone looks like a rhyme scheme" (xxx-xxxi). Given the notable care Emerson puts into the artful, point-counterpoint arrangement of this published work, there is tremendous irony in the fact that essays like "Self-Reliance," which, it seems, were not intended to function as a solitary unit, often function as singularly representative of Emerson's thought. In addition, the conflation of later work as a compliment to or elucidation of the concepts in *Essays* (1841) betrays an ungrounded or ill-considered representation. The published *Essays* (1841) is a mined apotheosis of the preceding eleven years of journals, sermons, and lectures, and it stands as a curated whole, helpfully elucidated by both the preceding work on which Emerson drew and the essays in the published volume.

Slater, Albert Von Frank, and David Richardson all read "Self-Reliance" in its published context, preceded by an essay entitled "History" and followed by another titled "Compensation." This context allows them to interpret the essay's primary theme in three important ways. Slater reads it as communicating "that what is true for you is true for all men and that to worship the past is to conspire against the sanity of the soul" (*CW*, II. xxxi). Von Frank sees it as an attempt to make the reader "more personally authentic by teaching him to inhabit himself" (Von Frank 108). Richardson argues Emerson is recommending "self-reliance as a starting point—indeed *the* starting point—not the goal" (Richardson 322). Acknowledging the thematic interrelation of the carefully arranged series of essays allows these three scholars to identify the essay's instrumental theme, and provides the appropriate initial context for investigating Emerson's intent in describing his benevolent dollar as "a wicked dollar" (*CW*, II. 31).

Yet, largely because the popular and scholarly mischaracterization of Emerson remains an entrenched and well-established counterpoint, it is beneficial to return first to Edward Emerson's localized characterization of his father in the neighborhood of Concord and from there to move to the various sermons and lectures Emerson gave as a member of these two in-placed communities: Boston and

Concord. First, Edward draws attention to the often-overlooked possessive pronoun adjective “my poor.” Writes Edward, “The property that came to [Emerson] . . . was impaired by various claims that he willingly recognized and responsibilities which he assumed to his kin by blood and marriage, and also by sympathy of idea,—he always had ‘*his poor*,’ of whom few or none else took heed” (Emerson 198). Edward’s conscious echo of “Self-Reliance” contextualizes the passage’s concern. Edward continues by emphasizing the shrewd frugality of his father, a frugality that allowed him “to give freely for what public or private end seemed desirable or commanding” (198). A Little later, Edward finds it necessary to defend his father from the charge of giving *too* generously to the philanthropic societies of Concord (201). These passages, problematic as their source might be, helpfully complicate the oversimplified depictions of Emerson explored above: Emerson as stably *laissez faire* and exclusively ungenerous. On the one hand, Edward feels it somehow necessary to defend his father from the charge of selfishness, while on the other against the charge of credulous generosity. If, as is sometimes suggested, “Self-Reliance” communicated a fiscal principle of strategic neglect, these passages object to that suggestion.

Emerson was also a Unitarian minister. One of Emerson’s sermons, entitled “Benevolence and Selfishness” and delivered many times, is demonstrably composed and delivered within the period Susan Roberson highlights as when “Emerson had been steadily working out issues of self-reliance, self-authority, and self-empowerment in his sermons” (3-4). It is imperative, as David Robinson has shown and Ronan has reasserted, to understand that Emerson continues to preach after his 1833 departure from the Second Unitarian Church of Boston. This “Benevolence” sermon, though composed during Emerson’s pastoral tenure, is last delivered in the immediate wake of the financial panic of 1837, the same panic Charvat examines. The sermon’s introduction highlights the existence and characteristics of true selfishness, the highest form of which is ungenerosity toward friends (*CS*, II. 135). A second section argues for the need to educate children in benevolence: “The aim of education . . . should be the rule of Christian benevolence . . . that it is base to forget the comforts of others in seeking his own” (135). Interestingly, Emerson emphasizes the work of the sympathetic imagination, contrasting the self-centered and profiteering gaze of the trader with “the man of benevolence,” who sees in

each member of a needy crowd an infinite soul existing in a web of mutuality: "each ... is a son, brother, husband, friend" (137). This emphasis on commonality, on the individual self recognizing, in the moment, her responsibility toward others, complements Clark's suggestion that Emerson considers the self to exist in mutuality (323). These two sections culminate with a concluding, ethical imperative worthy of quoting in full:

There is not one of us, I suppose, who might not find within a stone's cast of his own house, some child of pain and want who suffers severely from want of comforts which it is in our power to bestow, or to obtain. Let the Lord's maxim carry us to those cheerless rooms as messengers of consolation. As you would that men should do to you do ye unto them likewise. (*CS*, II. 137)

To suggest, on account of one sermon variously preached in Concord and Boston, that Emerson can no longer be read as a vocal proponent of *laissez faire* ideology would be irresponsible. Nevertheless, this sermon illustrates the increased level of nuance Emerson's position requires. Further, the central position of the individual observer and the proximity of local want personally ameliorated by a physically present individual may provide the necessary evidence for a more accurate interpretation, especially when read alongside a few key passages within lectures evidently mined by Emerson for his essay "Self-Reliance."

In composing "Self-Reliance," as has been shown, Emerson draws from various lectures. These have been catalogued and collated by Robert Spiller and Wallace Williams. In four, chronologically ordered early lectures, each given during the latter period of Emerson's homiletic use of "Benevolence and Selfishness," Emerson further elucidates the principles that inform his infamous tangent. Each of the following lectures is noted by Spiller and Williams as providing material for "Self-Reliance," and so can be accurately presented as operative, meaningful context. In "Ethics," first given in Boston in 1837, in a discussion of genius's role in ethical action, Emerson bemoans the difficulty of believing one's own thought in light of the inevitable appearance of "those who think they know what is your duty better than you know it yourself" (*EL*, II. 152). In "Duty," first given in Boston in 1839, virtuous action is explained as obedience to "the sovereign instinct," that in each

moment the self has a particular relation to the whole that generates imperatives not by custom or command, but by impulse (*EL*, III. 144). This same idea recurs in “Reforms,” given in Boston in 1840, where Emerson links whim explicitly to philanthropy, suggesting that one ought to conform each cause to one’s own “character and genius” (*EL*, III. 260) and so be, in the midst of philanthropic endeavor, an ultimately autonomous self. Finally, in “Tendencies,” delivered in Boston in 1840, Emerson again addresses the topic of philanthropy, suggesting that philanthropic societies “are right, inasmuch as they involve a return to simpler modes and a faithful trust of the soul that it has and can show its own royal road” (*EL*, III. 303-4). In context, “simpler modes” refers to fraternal as opposed to mercenary modes of exchange.

Emerson’s essay “Self-Reliance,” is compiled from many of his previous lectures, and it is carefully arranged alongside eleven others in a collection published in and for the communities of Boston and Concord and, from there, distributed further. When read as embedded in these contexts, Emerson’s infamous tangential critique operates as a rhetorically striking reiteration of Emerson’s elsewhere evident concerns. In the essay’s relevant passage (*CW*, II. 30-31), an initial critique of malicious philanthropy connects ethical imperatives to immediate and local community. The malicious philanthropist “assumes this bountiful cause of Abolition,”—for which Emerson was himself an initially cautious but vociferous advocate—but in Barbados. The Philanthropist seeks to varnish his proximate cruelties with an ultimately wasted piety (*CW*, II. 30). Emerson’s discussion of philanthropic malevolence seems inexplicably followed by the elevation of “Whim,” but given the essay’s context this topic naturally follows. For, as we have seen in “Duty,” the ethical impulse is, for Emerson, always grounded in the impulses of the moment, in proximate vision of immediate need. Finally, the language of belonging and possession that follows in response to the suggestion Emerson has a responsibility “to put all poor men in good situations. Are they *my* poor?” (*CW*, II. 30) signifies the obligation that whim exhibits only in immediate localities wherein the more basic mode of fraternal exchange can exist. So the “wicked dollar” seems to be that dollar which, rather than used for the charitable relief of those individuals in want “within a stone’s cast” of one’s own house, is used for the impersonal and miscellaneous (31).

"Self-Reliance" is often read as something of a straightforward presentation of Emerson's typical *laissez faire* ideology. This is, however, an ultimately inaccurate characterization. "Self-Reliance" is instead but one part of a carefully ordered presentation and an embedded and local work. Emerson's tangential critique of "miscellaneous charities" is a communitarian, a local critique of the burgeoning institutionalization and especially internationalization of benevolence. Emerson does in fact, as Edward notes, have *his* poor. Emerson communicates, in "Self-Reliance," that *his* poor are immediate, proximate, and fraternal, those who the whim of the moment allows, even mandates him to operate benevolently toward—those embedded persons to whom he belongs: "thy infant... thy woodchopper" (30).

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Survival of the Fittest: Social Media's Influence on the Relationship between Traditional Media and the Public

Katelyn Elizabeth Brooks

Abstract

Despite the innovations and emergence of digital and social media technologies, the influential Agenda-setting theory developed by Max McCombs and Donald Shaw in 1972 has remained relatively unchanged. Many analysts still operate under the assumption that the media agenda has a greater influence on the public agenda. With the rise of social media, however, the possibility for reverse agenda-setting needs to be more seriously considered, especially in light of recent events surrounding the Trump University lawsuit, the 2016 presidential election, and the relative success of the #NoDAPL protests. Because of modern technological capabilities in social media, the basic premise of Agenda-setting theory is no longer accurate. This paper serves as a critique of existing theoretical models of Agenda-setting by analyzing recent developments in social media.

The assumption of Agenda-setting theory that media influences the public agenda has become an outdated and inaccurate theory because of innovation within social media platforms. The majority of Americans use social networking platforms, enabling them to post whatever thought comes to mind for friends, family, and strangers alike to view (Perrin, 2015). Two main types of media sources are social media and traditional news media. Traditional news media, typically synonymous with cable news programs, are both older and less interactive than social media platforms found exclusively through internet-accessible devices. Social media platforms have been made available to use at the tip of nearly everyone's fingers through an influx of smartphones (Smith, 2015). Many traditional news sources have adapted to the smartphone by creating different applications (apps) for users to download. However, downloading separate news-source apps can be inconvenient to users due to their device's storage capacity limits. Limited storage and the versatile nature of smartphones lead users to seek that same storage-saving versatility in their apps and are twice as likely to use search engines and aggregators for news consumption (Media Insight Project, 2014). Unlike traditional media, social media platforms have capitalized on this, which is why, as of 2016, 62 percent of American adults receive much of their news from social media platforms (Gottfried & Shearer, 2016). In order to adapt to the convenience and efficiency of search engines and aggregators, social media platforms, like Facebook, Twitter, and Snapchat have developed "trending stories." Snapchat, for example, has introduced "Snap-stories," which display news stories and historical events such as the 2016 presidential election and "Live Story" videos collected from the front lines in Iraq (Flynn, 2016). While traditional news mediums have attempted to adapt to the proliferation of digital media, they find that they are less capable of acting as gatekeepers for news information (Nielson & Sambrook, 2016).

Social media, compared to traditional news, has greater influence on the spread of information because it offers direct involvement with current issues (Mitchell, Gottfried, Barthel & Shearer, 2016; Vu, 2014). Recent examples of the public overpowering and forcing the media to redirect focus via social media includes traditional news networks' attention given to the settlement of the fraud case against Trump University (BBC News, Nov. 2016), the 2016 presidential election

coverage (Confessore & Yourish, 2016), and protests to halt construction of the Dakota Access Pipeline (Rott & Martin, 2016). Because of increased civic engagement through social media, the premise of a media-influenced public agenda is no longer an accurate representation of American society. Whereas communication theorists once argued that mass media set the public agenda, social media consistently proves that this is no longer the case. This paper serves as a critique of existing theoretical models of Agenda-setting through recent developments in social media.

Developments in Agenda-setting Theory

Agenda-setting theory is consistently held as one of the most studied theories of mass communication since its inception with the 1972 Chapel Hill study by Max McCombs and Donald Shaw (Lycarião & Sampaio, 2016). The basic premise of Agenda-setting theory is that mass media influences a topic's salience for the public. According to McCombs and Shaw, the media “may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think *about*” (McCombs & Shaw, 1972, p. 177). In the Chapel Hill study, McCombs and Shaw provided evidence supporting the strong correlation between public and media agendas, concluding that the public agenda was more likely to adopt pronounced issues in the media as a reaction.

The assumption that the public agenda is more likely to adopt issues from the media agenda was best exemplified through the Watergate Scandal in 1972. News sources were integral to keeping the public informed as the Scandal unfolded, particularly the *Washington Post*'s journalists Bob Woodward and Carl Bernstein, whose investigative journalism left a lasting impact on the journalism industry (Giuffo, 2001). By publishing updates on the Watergate Scandal, the *Washington Post* influenced the public agenda. After analyzing events like the Watergate Scandal, McCombs and Shaw determined that every media sensation followed a similar pattern. They developed a formula that accurately depicted the relationship between media and public agenda:

repeated reporting by media sources → public reaction

“Public reaction” does not mean public agreement (McCombs & Shaw, 1972). As seen in the Watergate Scandal, 57 percent of the public thought that Nixon should

be removed from office while 24 percent approved of him even as he resigned on August 8, 1974 (Kohut, 2014). McCombs and Shaw argued that media influences what is discussed, not how it is discussed or the various conclusions the public will infer about the events.

Media, however, is constantly evolving. At the time of the Chapel Hill study, television was controlled by only three channels; researchers reviewed the two largest of the three news broadcasts on different channels owned by different companies, as well as multiple newspapers and news magazines (McCombs & Shaw, 1972). In comparison, modern technological capabilities allow for more than three channels to broadcast news and entertainment. According to the United States' Federal Communications Commission, as of November 2016 there are 1,781 full service television stations, as well as the daily creation of new internet websites devoted to both broad and specialized news topics. Additionally, most media outlets are now available to people in the palm of their hands through handheld smart-phones. These inventions and innovations were impossibly far-off to McCombs and Shaw whose initial study helped developed Agenda-setting theory. Nevertheless, Agenda-setting theory was never intended to be static; the theory is designed to be flexible. McCombs, Shaw, and Weaver (2014) have recently discussed Need for Orientation (NFO) and Agendamelding as two new directions that can be explored relevant to Agenda-setting theory.

NFO is nearly as old as McCombs and Shaw's Chapel Hill study and was first introduced in 1973 by McCombs and Weaver (McCombs & Weaver, 1973). NFO is defined as "a combination of relevance and uncertainty" (McCombs, et al., 2014, p. 784), and posits that traditional news media ought to include information that is relevant and understood by a particular audience (McCombs & Weaver, 1973). NFO states that to successfully dictate the public agenda, media must take the public's context into consideration. Without taking the public's context into consideration, the information the media provides will be largely irrelevant (McCombs & Weaver, 1973). For example, very few individuals in a suburban neighborhood in Indiana are likely to care about food standards in Portugal regardless of how often the media discusses them. Unfortunately, there is little research on NFO and its interaction within Agenda-setting theory. Recent research includes Matthes'

scale, which is based on three dimensions of NFO: “NFO towards an issue; NFO towards specific aspects or frames of an issue; and NFO in regard to journalistic evaluations” (2006, p. 429). Matthes’ scale differs from the earlier accepted two dimensions (relevance and uncertainty) by focusing more on relevance, facts of the issue, and the reporting of the issue and facts (Matthes, 2016; Chernov, Valenzuela, & McCombs, 2011). Matthes’ scale has since been validated in an experimental comparison of Matthes’ three dimensions and earlier two dimensions (Chernov, Valenzuela, & McCombs, 2011). By accounting for how an issue is reported, Matthes’ scale acknowledges the importance of the media source as it pertains to traditional media, but it does not explicitly account for messages shared through social media by friends and family or those not included in journalistic evaluations. Despite the shift in dimensions, the primary concept remains that the media must provide information relevant to the public they are targeting.

Similarly, Agendamelding reveals how closely correlated and aligned the public and media agendas are (McCombs, Shaw & Weaver, 2014), and is one of the most recent advances in Agenda-setting theory. For the media to be successful in dictating the public agenda, “the correlation between media and public needs to have some reasonable level of agreement” (McCombs, Shaw & Weaver, 2014, p. 794). If the media can predict the audience’s degree of interest in public issues, then it could tailor its message, which would create a reverse agenda-setting effect. There are two major axes of Agendamelding: vertical and horizontal. Vertical media agenda-setting is that of the civic communities—i.e., it represents all members of those communities. Horizontal media agenda-setting, on the other hand, represents personal communities; it gravitates towards personal interests. For example, 1930s Nazi Germany had a high correlation between public media (vertical axis) and personal media (horizontal axis) due to the firm restrictions on media that punished deviation (McCombs, Shaw & Weaver, 2014).

According to McCombs, Shaw, and Weaver (2014), Agendamelding can be condensed into a formula that blends civic community agendas, personal community agendas, and individual interests, experience, and beliefs:

$$\begin{aligned} &\text{Agenda Community Attraction (ACA)} \\ &= \text{Vertical Media Agenda Setting Correlation (squared)} \end{aligned}$$

+ Horizontal Media Agenda Setting (squared) + Personal Preferences

The vertical media agenda-setting is the preliminary correlation for the social system correlation being measured. The horizontal media agenda-setting measures the correlation between individuals and more personalized media sources. Horizontal media is impossible to measure because of its breadth of possible sources, but it can be estimated by determining what is not accounted for by vertical media. If both vertical and horizontal media correlations were 1.00, researchers could perfectly predict the salience of issues to the public. Unfortunately, a perfect correlation is untenable since it is difficult to predict public interest (McCombs, Shaw & Weaver, 2014).

More recently, researchers have been exploring the impact digital platforms have had across sub-disciplines of communication and increasingly in setting public agendas (Morgan, Shanahan & Signorielli, 2015; Hyun & Moon, 2016; Jeffres, 2015; Lycarião & Sampaio, 2016). Specifically, Lycarião and Sampaio (2016) have attempted to reimagine Agenda-setting theory as an interactional and cyclical process because of the recent impact and influence of digital communication. Based on results from the 1972 Chapel Hill study, researchers believed that the media influenced the public agenda more often than the public influenced the media agenda (Wu & Coleman, 2009). Today, however, hashtags, memes, videos, and pictures that are instantly sharable and find their way into the mainstream media can go viral and receive coverage on par with “real” news. In 2011, Jaewon Yang and Jure Leskovec tracked social media data (Tweets, blog posts, and news media articles), and their “results hint that the adoption of quoted phrases tends to be much quicker and driven by a small number of large influential sites” (Yang & Leskovec, 2011, p. 185). Thus, if an artifact is easily sharable, it has a greater potential to go viral.

Although Agenda-setting theory has evolved since the Chapel Hill study by developing and expanding with the introduction of NFO and Agendamelding, its premise has remained relatively unchanged. Many analysts still operate under the assumption that the media agenda has a greater influence over the public agenda. The possibility of reverse agenda-setting is not denied by researchers but has not been adequately investigated. Because of modern technological capabilities in social media, the basic premise of Agenda-setting theory is no longer accurate. Thus,

researchers should revisit Agenda-setting theory to determine the extent of the shift of influence between the media and public.

Development in Media

Because media technology is constantly changing and evolving, the Chapel Hill study is no longer an accurate reflection of modern news consumption. Within the past 10 years, more and more people receive news information second-hand through social media platforms on a smartphone application. According to the Pew Research Center, at least 64 percent of American adults owned a smartphone in 2015 (Smith, 2015). Additionally, of those adults, younger adults (ages 18 to 29), those with low household incomes and low levels of educational attainment, and non-whites are more likely to have a higher rate of dependence on their smartphone (Smith, 2015). Smartphone companies quickly adapted existing social media platforms like Facebook onto their operating systems, thus solidifying the smartphone as a tool of connectivity and communication. Additionally, according to a separate Gallup Poll in 2015, 44 percent of Americans upgrade their phones approximately every two years when their cellphone contract expires, while 54 percent of people upgrade their phone when it stops working or becomes obsolete (Swift, 2015). The technological boom turned the luxury item of a personal computer into a commonplace object which grew to connect the world digitally.

Unlike traditional media, social media platforms are not stable entities. Myspace was launched in August of 2003 and was most popular between 2005 and 2008, but it was surpassed by Facebook within a year after Facebook launched publicly in 2006 (Albanesius, 2009). To stay relevant, social media platforms must avoid stagnation. Since 2012, Facebook has updated its code twice a day to be as efficient as possible (Protalinski, 2012). After its boom in popularity from 2008-2009, Facebook has added video and text chat, live video streaming, a “marketplace” for users to sell unwanted items, and different “reactions” beyond just “liking” the post. Platforms such as Myspace and Google+ are not as successful as Facebook because they did not adapt quickly enough, whereas Facebook has continued to grow in popularity because of its willingness to reinvent itself (Albanesius, 2009; Cantil, 2016). Social media platforms must continue to adapt to the ever-evolving audience and user base to avoid becoming irrelevant like Myspace or Google+.

Facebook's level of continued success is currently unprecedented. Other social media platforms, however, have begun competing with Facebook and with each other. Examples of the evolution of social media technology can be seen in the constant introduction of new social media platforms. The first recognized social media site was Six Degrees, introduced in 1997. Six Degrees failed due to inadequate internet infrastructure, poor access to an internet connection, and an unreliable user-base. (Boyd & Ellison, 2007). Similarly, in 2001, Ryze—one of the earliest versions of online resume and job application websites—experienced early modest success because it was marketed toward business professionals rather than purely social relationships (Boyd & Ellison, 2007). LinkedIn, however, became more successful than Ryze because of additional features that benefitted companies who used the LinkedIn platform (Boyd & Ellison). Similarly, although Myspace still exists and maintains users, it fell from prominence despite several re-design attempts (Albanesius, 2009). In contrast, Facebook was launched in 2004, made public in 2006, and has remained the most important major social networking platform (Gottfried & Shearer, 2016). Facebook has maintained its user base for nearly a decade because it has avoided stagnation and obsolescence through constant platform updates. Following Facebook's lead, there has been an explosion of new social media platforms, including Instagram, Snapchat, and Twitter. The rise and fall of media platforms, however, also affects traditional media. Traditional media has had to survive by remaining relevant to its existing audience, making itself available through emerging digital platforms, and by adapting to new and younger audiences whose primary form of media consumption occurs through the fluctuation of the social media landscape (Nielson & Sambrook, 2016).

The inevitable adapt-or-die climate for media platforms can be explained through the concept of Technological Convergence. Although researchers have traditionally used Technological Determinism to explain shifts in technology, Technological Convergence provides a more nuanced and accurate explanation of the processes technology and media undergo as they adapt to new audiences. For example, according to Technological Determinism, new media sources are created, mature, and then evolve to survive, while preexisting forms of media must adapt to the emergence of new forms (Lehman-Wilzig & Cohen-Avigdor, 2004). The natural

life-cycle of inventive and innovated media is comparable to biological functions, such as evolution (Lehman-Wilzig & Cohen-Avigdor, 2004). A new species (i.e., media invention/innovation) arrives and either competes for resources (i.e., the audience) or fills an empty ecological niche. Technological Convergence, however, complicates the evolutionary analogy by analyzing the changes the new and old media would undergo while competing and/or filling a niche (Lehman-Wilzig & Cohen-Avigdor, 2004). On a broader scale, this phenomenon is observable in the creation of interdisciplinary industries such as information and communication technology (Hacklin & Wallin, 2013). Technological Convergence argues that new media does not simply replace the preexisting media, but by virtue of its adaptations, it forces older forms to change.

More traditional media sources, while having the advantage of being regarded as news-bearers, are not immune to becoming irrelevant as seen through audience consumption according to recent research studies (Mitchell, Gottfried, Barthel & Shearer, 2016; Gottfried & Shearer, 2016; Nielson & Sambrook, 2016). Since the mass production of televisions, individuals have adopted a preference for learning news through a screen such as a television or a computer (Mitchell, et al., 2016). According to the American Press Institute, as of 2014 the overwhelming majority of Americans prefer to consume their news directly from news organizations (92 percent) and through television (87 percent). However, when the same poll was replicated in 2016, preference for receiving news through television fell to 57 percent (Mitchell, et al., 2016). Upon further analysis of 2016 data, there are significant discrepancies of source preference correlated with age. Preference for traditional news platforms (television and print newspapers) is strongest in older audience members while online platforms are strongest with younger audience members (Mitchell et al., 2016). More specifically within online news, social media has become increasingly more popular as an avenue for news consumption. In 2016, 62 percent of American adults received news via social media, an increase from a similar 2012 study which reported only 49 percent (Gottfried & Shearer, 2016). Facebook is the most prominent social media site, reaching nearly 67 percent of U.S. adults, as well as the leader in social media news with about two-thirds of users getting their news via Facebook (Gottfried & Shearer, 2016). Market researchers predict that

online news sources, will eventually surpass traditional news sources similar to how television surpassed print news sources (Nielsen & Sambrook, 2016). As a result, the power of traditional media to function as news gatekeepers or agenda setters is waning with the consistent rise of new and evolving social media platforms.

One reason social media platforms have drastically altered media, especially news, is that users are directly engaged with each other regardless of distance (Mitchell, Gottfried, Barthel & Shearer, 2016). They are no longer passive audience members simply reading or watching news being reported. While most adults still commonly share news by word of mouth, sharing news digitally becomes more frequent the easier it can be shared (Mitchell, et al., 2016). Users control the spread of news via their own social media page, which enables every user to act as a commentator. In other words, social media users become news reporters because of the nature of social media communication. Currently, traditional news sources are in the beginning stages of recognizing and adapting to the shift of social media acting as gatekeepers of news by developing their own social media pages across various digital platforms (Nielsen & Sambrook, 2016).

A further development in the way social media affects traditional media outlets is the creation of news sources from digital platforms. These types of news sources can be categorized as digital pure players that focus primarily on building an audience to distribute through platforms like Facebook and YouTube (Nielsen & Sambrook, 2016). Examples of digital pure players include Occupy Democrats (Nunberg, 2011) and Tomi Lahren (Wendling, 2016). The newsworthiness of digital pure players stems directly from the fact that they exist exclusively on digital platforms. Modern technology has created a digital landscape that would have been unimaginable to the Agenda-setting theory creators in 1972. Researchers, therefore, must account for the new possibilities created by new media platforms and evaluate their consequences in light of the theoretical status quo of Agenda-setting theory.

Implications of Developments

Because of social media's ability to involve the public, traditional media is no longer able to set or control the public agenda because the audience now influences aggregators and algorithms¹ (Vu, 2014). Civic engagement, for example,

1 Social media relies on aggregators and algorithms that display content personalized for the user based on how the user interacts with prior content.

has increased because users can easily post and respond to online petitions, calls for action, and virtual gatherings to show solidarity and to protest (Yu, 2016). The lack of gatekeeping and increased civic engagement can be seen recently in three specific instances in ascending order of importance: the unsuccessful subconscious overshadowing of the Trump University court settlement, the direction of presidential campaign issues, and the involvement in protests of the Dakota Access Pipeline.

On November 18, 2016, President-elect Donald Trump settled the fraud case against Trump University for \$25 million, which was reported by BBC News (BBC News, Nov. 2016). That evening, Vice President-elect Mike Pence attended a showing of *Hamilton: An American Musical*. Following the performance, the actor playing Aaron Burr, Brandon Victor Dixon, delivered a message to Pence calling for the future Trump administration to “uphold our American values and to work on behalf of all of us” (see Mele & Healy, 2016). The next day, on November 19, news stations covered Donald Trump’s tweets about the speech to Mike Pence, where he claimed that Pence was “harassed” by the cast; then on November 20, Trump tweeted that the cast and producers “should immediately apologize to Mike Pence for their terrible behavior” (BBC News, Nov. 2016; Mele & Healy, 2016). Despite the popularity of the *Hamilton* incident, Figure 1 demonstrates that the “Trump University settlement” was searched using Google² more often than “Hamilton cast to Mike Pence” at their respective peaks on November 19 and 20:

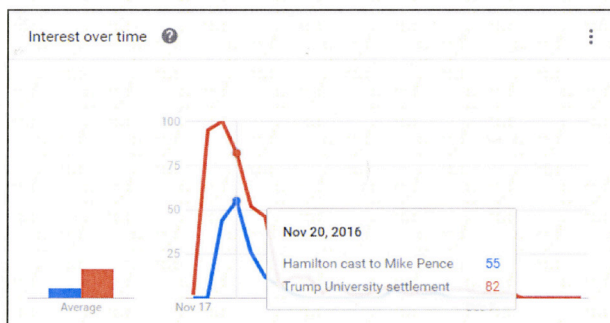


Figure 1: From Google Trends on December 16, 2016

2 Google, Inc. provides information on the relative frequency of terms searched on Google search engine. Individuals can go to <https://www.google.com/trends/> and enter any term(s) into the “Explore topics” search bar and the frequency relative to its peak and duration of Google searches of the specific term(s), punctuation and capitalization included, will be created in either a line or Cartesian graph depending on the amount of terms searched.

In addition to a general Google search, Fox News and CNN coverage of both events were also examined because of their documented partisan biases (Weatherly, Petros & Christopherson, 2007). When searching the Fox News results using “Trump University settlement site:foxnews.com” on Google, 571 results appear (see Appendix). In contrast, when searching the Fox News results using “Hamilton cast site:foxnews.com” on Google, 3,560 results appear (see Appendix). A similar disparity occurs on CNN’s website: 1,620 results appear for “Trump University settlement site:cnn.com,” while 3,590 results appear for “Hamilton cast site:cnn.com” (see Appendix). While not as prominent on CNN, both conservative and liberal biased media appear to have endeavored to overshadow the Trump University fraud case, thus attempting to influence the public agenda. Despite Fox News’s and CNN’s attempt to set the public agenda regarding the presidential election, the controversy surrounding the Trump University fraud settlement was searched more because it was trending on social media (BBC News, Nov. 2016; Holt, 2016). In this instance, the premise of a media-controlled agenda failed. Although the media did not actively attempt to withhold information, the incident supports the notion that traditional media no longer has a monopoly on setting public agendas since digital media allows for a broader dissemination of information.

The media failing to influence the public agenda is not an anomaly anymore. Throughout the Presidential election, Donald Trump received a nearly endless amount of free attention because of his Twitter account (Confessore & Yourish, 2016). Trump used Twitter as a platform and it received daily coverage. His Twitter posts received mention in both the Republican primary and Presidential debates (see Federal News Service, 2016 for transcript). Donald Trump effectively set the election agenda through social media. His constant use of buzz words like “Crooked Hillary” and “Make America Great Again” would receive more favorites and retweets on average than standard campaign rhetoric (Mitchell, Holcomb, & Weisel, 2016). Because of his effective use of Twitter, Trump controlled the media agenda, which attempted to control the public agenda. Building on Trump’s aggressive rhetoric toward Hillary, news outlets devoted 19 percent of Clinton’s coverage to varying controversies. Overall, no less than 7 percent of total weekly coverage focused solely on varying facets of email scandal allegations. Trump’s media coverage

allotted only 15 percent of coverage to controversies including but not limited to the Trump Foundation, unreleased tax returns, avoiding federal taxes, system rigging allegations, and sexual misconduct (Patterson, 2016). When examining social media sentiment in July 2016, from a sample size of 28,131 Trump mentions, 8,113 (28.84 percent) were negative as opposed to Clinton's sample of 25,186 mentions which resulted in 5,721 (22.71 percent) negative sentiments (DeMers, 2016). Synthesizing his *Forbes* article, DeMers notes that while the media tried to push an agenda that devoted more time to Clinton controversies, the public focused more on Trump's shortcomings (DeMers, 2016). This resulted from increased social media usage, providing almost everyone from presidential candidates to interested citizens a platform to voice their own opinions as well as engage with opposing views on a larger scale rather than interpersonally discuss agreements or disagreements based on media opinion.

The #NoDAPL movement is the most important example of the three recent events because it displays the growing influence of reverse agenda-setting. The Dakota Access Pipeline Project is an attempt to build a pipeline approximately 1,172 miles to connect and transport crude oil from Bakken and Three Forks production areas in North Dakota to refineries in Patoka, Illinois. The project was announced publicly on June 25, 2014, and landowners along the intended pipeline route were provided informational hearings between August 2014 and January 2015. Construction began early 2016 and was halted on December 4, 2016 on executive order by President Obama, but construction resumed January 24, 2017 under executive order by President Trump. The largest reported controversies surrounding the project involved potential environmental hazards and infringement on sacred Native American territory (BBC News, Aug. 2016). Protests of the pipeline began with the construction, largely to protect Native American sovereignty, specifically of local Sioux tribes (Martin, 2016). Sacred Stone Camp was established in April 2016 by a Standing Rock Sioux elder within the Standing Rock Indian Reservation as an act of protest. It was not until September 2016 that mainstream media began to provide significantly more coverage due to bulldozing of documented historic and sacred land and the violent retaliations of protestors by site security and militarized police spreading across social media platforms (Manning, 2016; Silva, 2016; BBC News,

Aug. 2016). The increase in public attention is further corroborated when examining Google web search trends of “#NoDAPL” (the most commonly recognized reference for the Dakota Access Pipeline protest). Figure 2 shows that #NoDAPL’s initial peak lasted between September 4-10:

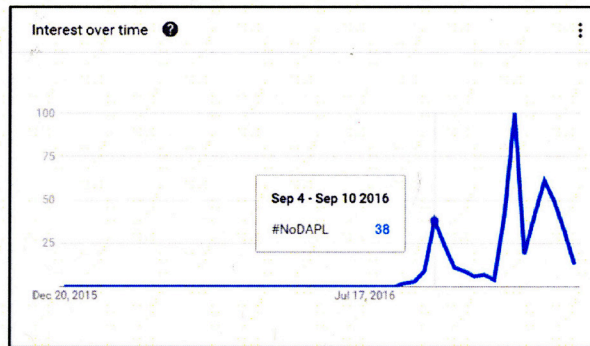


Figure 2: #NoDAPL search trends retrieved from Google Trends December 16, 2016

Beyond just searching for #NoDAPL information, individuals unable to journey to Sacred Stone Camp took part in protests via social media, specifically Facebook. As an act of solidarity, Facebook users encouraged one another to “check in” at Standing Rock Indian Reservation (Kennedy, 2016). During the “check in” protest, #NoDAPL reached its highest salience as shown in Figure 3:

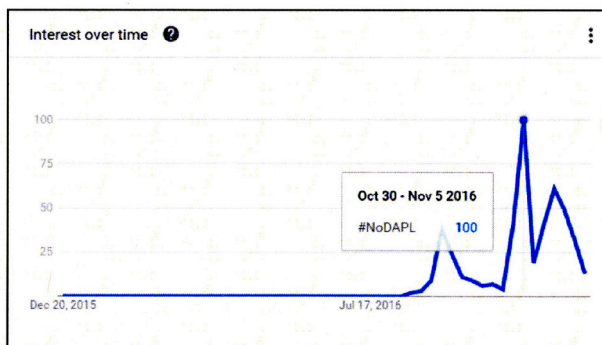


Figure 3: #NoDAPL search trends retrieved from Google Trends December 16, 2016

#NoDAPL did not obtain national attention until it began to trend on social media platforms, which inevitably helped set the agenda for traditional media. As a result, the reverse-agenda setting success of #NoDAPL demonstrates the potential influence social media will continue to exhibit as digital technologies improve and become more prevalent within society.

Conclusion

As recent events have shown, Agenda-setting theory as it currently exists requires important modifications. The Trump University settlement versus Hamilton cast and the 2016 presidential election media coverage displayed that the media was unsuccessful in directing the public's attention to and from certain issues. Similarly, the #NoDAPL movement displayed social media's power to influence the media's agenda. These three events are not unique or isolated from each other; they happened within the same year and had a significant impact on public discourse.

Like traditional media sources, media studies that rely on Agenda-setting theory should evolve alongside the changing media landscape. The popularity and ubiquity of social media has reached unprecedented levels of influence, and it perpetually modifies itself to remain interesting and relevant to users (Albanesius, 2009). Because of these innovations in media and technology, the processes of determining and delivering news to the public by traditional news outlets are permanently altered and are subjected to future innovations and adaptations. Thus, the assumption that traditional media is more influential in setting the public agenda is outdated and should be revised to more accurately represent the dynamism new media innovations have on news consumption.

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Appendix

Screenshots of Compared Search Terms from Fox News and CNN

All screenshots in Figure 4 were retrieved on December 16, 2016. I obtained these by typing the quoted phrases into Google search engine and documented the results. I used the terms “Trump University settlement” and “Hamilton cast” as broad subject terms to have access to all relevant news articles and broadcast clips from specified sources. I limited the site each time by “site:” to only search on the news networks’ official sites.

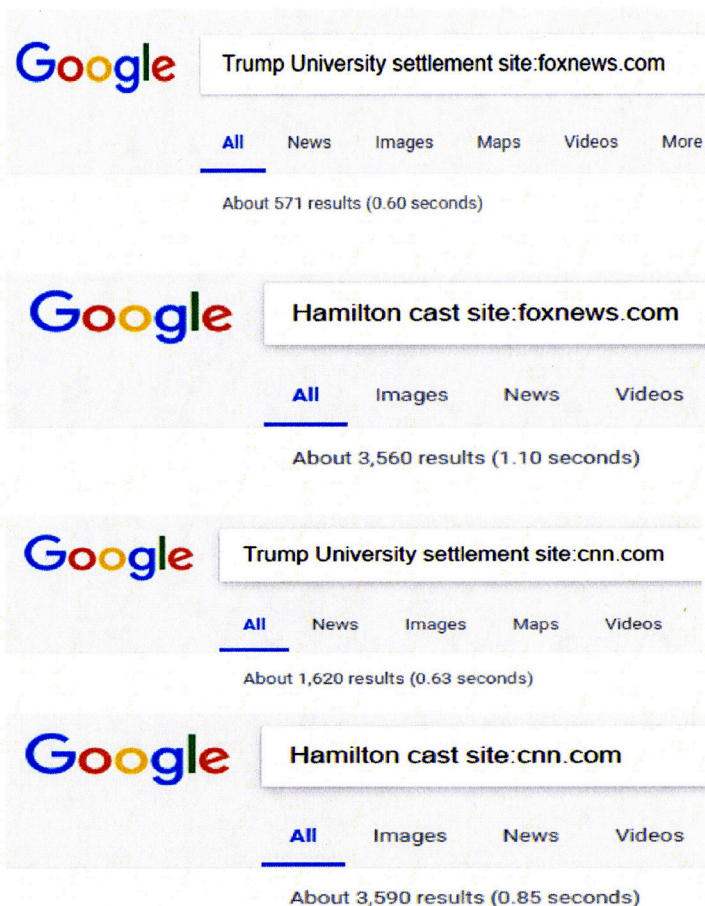


Figure 4: Search term comparisons retrieved December 16, 2016

State of the Science: Enteral Nutrition Protocols

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Abstract

Managing nutrition in critically ill patients is an important intervention to promote healing. Adequate nutrition decreases rates of infections and pressure ulcers, improves prognosis for recovery, and decreases mortality. The purpose of this literature review is to determine the current state of the science in regards to evidence-based protocols for the administration and management of enteral nutrition (EN-tube feeding) in critically ill patients. Is the use of a nursing-driven protocol for enteral feeding in critically ill patients effective in improving patient outcomes compared with not utilizing a protocol? Ten studies with enteral nutrition protocols for adult, critically ill patients were included for review. Study characteristics and themes are identified. Early initiation of EN and adequate titration to goal are important for achieving the maximum nutritional advantage. The highest benefit is also derived from identifying and delivering an individualized caloric and/or protein goal. Interprofessional collaboration remains paramount, and an EN protocol increases standardization of practice. A nurse-driven protocol may yield higher compliance and greater effectiveness than a protocol that is not nurse-driven. Lastly, gaps in knowledge, future research opportunities, and applications to nursing administration, research, education, and practice are discussed.

Nutrition and malnutrition both have significant impacts on critically ill patients. Critical illness itself has physiologic impacts that affect nutritional status. Therefore, managing nutrition in critically ill patients is an important intervention to promote healing.

Physiologic Effect of Illness

The body's stress response to illness increases the basal metabolic rate as well as the catabolism of protein and lipids (Colaço & Nascimento, 2014; Ellis, 2015; Friesecke, Schwabe, Stecher, & Abel, 2014). Furthermore, hospitalized patients usually have decreased caloric intake. The resulting negative energy balance causes loss of body mass, increased risk for infection, metabolic derangements, organ dysfunction, and increased morbidity and mortality.

Malnutrition and Undernutrition

Some patients may have baseline malnutrition, while others' condition deteriorates during hospitalization (Damratowski & Goetz, 2016; Gerrish, Laker, Taylor, Kennedy, & McDonnell, 2016). Kuslapuu, Jögela, Starkopf, and Blaser (2015) estimate that patients develop nearly a 6,000 kilocalorie deficit within the first week of admission to the intensive care unit (ICU). This may be due to the limited nutrition management education imparted to medical providers and nurses (Soguel, Revelly, Schaller, Longchamp, & Berger, 2012). Alternatively, caloric needs may simply be underestimated during hospitalization (Ellis, 2015).

Malnutrition and undernutrition have detrimental effects on the body's ability to recover from critical illness. Both have been shown to decrease immune response and wound healing thereby increasing the rate of infection and pressure ulcers, time on mechanical ventilation, hospital length of stay, as well as morbidity and mortality (Colaço & Nascimento, 2014; Damratowski & Goetz, 2016; Gerrish et al., 2016). Non-use of the gut, in particular, fosters intestinal permeability of bacteria and enhances the risk for sepsis (Friesecke et al., 2014; Jarden & Sutton, 2014). The in-hospital mortality rate of sepsis is approximately 10 percent, which is greater than that of an ST-segment elevation myocardial infarction, more commonly known as a heart attack (Singer et al., 2016). As an important aside, all of these effects increase hospital costs. Guerra et al. (2014) found that undernutrition increases hospitalization costs by 19 to 29 percent.

Benefits of Nutrition

Nutritional care has previously been considered merely a supportive function rather than therapeutic (Jarden & Sutton, 2014). However, the benefits of nutrition are numerous. Adequate nutrition allows for the reduction of the effects of physiologic stress and cellular injury, as well as decreased rate of infections and pressure ulcers due to improved immunity and increased tissue healing (Colaço & Nascimento, 2014; Ellis, 2015; Friesecke et al., 2014; Jarden & Sutton, 2014; Taylor, Brody, Denmark, Southard, & Byham-Gray, 2014). Overall, these equate to improved prognosis for recovery, higher quality of life, and decreased mortality. Protein specifically promotes injury repair and energy maintenance (Colaço & Nascimento, 2014). Enteral nutrition decreases the inflammatory response and maintains intestinal function, integrity, and motility (Friesecke et al., 2014; Jarden & Sutton, 2014).

Purpose

Multiple evidence-based guidelines exist for nutritional management in critically ill patients, such as those published by the American Society for Parenteral and Enteral Nutrition (ASPEN), the European Society for Parenteral and Enteral Nutrition (ESPEN), the Canadian Critical Care Clinical Practice Guidelines Committee, and the Society of Critical Care Medicine (SCCM) (Colaço & Nascimento, 2014; Damratowski & Goetz, 2016; Ellis, 2015; Kelly, 2014; Taylor et al., 2014). However, actual practice does not always align with the recommended guidelines (Compton et al., 2014; Damratowski & Goetz, 2016; Ellis, 2015; Friesecke et al., 2014; Jarden & Sutton, 2014; Kelly, 2014).

Multiple studies have been conducted to develop and test the effects of a protocol for nutritional care in critically ill patients (Compton, Bojarski, Siegmund, & van der Giet, 2014; Damratowski & Goetz, 2016; Ellis, 2015; Friesecke et al., 2014; Heyland et al., 2013; Jarden & Sutton, 2014; Kelly, 2014; Kuslapuu, Jögelä, Starkopf, & Blaser, 2015; Reeves et al., 2012; Taylor et al., 2014). What is known is that adequate nutrition is important to the physiologic response to critical illness and, conversely, that malnutrition is detrimental to healing and recovery. What is not known is whether the implementation of a protocol that guides enteral nutrition support is effective in improving the outcomes of critically ill patients. Furthermore, it is

unknown whether a nurse-driven protocol is more or less effective than a protocol not managed by nurses.

The purpose of this literature review is to determine the current state of the science in regards to evidence-based protocols for the administration and management of enteral nutrition in critically ill patients. Specifically, is the use of a nursing-driven protocol for enteral feeding in critically ill patients effective in improving patient outcomes compared with not utilizing a protocol?

Framework

The framework guiding this review is Patricia Benner's Clinical Wisdom for Critical Care Nursing. Parts of Benner's focus are clinical judgment and knowledge. She identified 31 competencies of nursing practice and seven domains of influence. Later, Benner identified nine domains specific to critical care nursing. Specifically, one of these domains is "diagnosing and managing life-sustaining physiologic functions in unstable patients" (Masters, 2013, p. 54). The use of a protocol for enteral feeding aligns with this concept. The critical care domains were further used to develop six aspects of clinical judgment and skilled behavior, such as reasoning-in-transition (practical, ongoing, clinical reasoning), skilled know-how (skill and intelligence), response-based practice (adaptation of interventions to changing needs), and agency (one's ability to influence a situation), among others.

Methods

Studies were identified by searching the Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus database. All searches were limited to articles published since 2011. The initial search for "nursing protocols," limited to peer-reviewed research in English, yielded 182 results. A couple of studies were identified, but this search was not appropriately specific to enteral nutrition. A search for "enteral nutrition" yielded too many results for review ($n = 3,122$), while "enteral nutrition AND nursing protocol" produced only 12. "Enteral nutrition AND nursing" yielded 368 results; the additional parameters of peer-reviewed research published in English limited the results to 96.

Studies with enteral nutrition protocols for adult, critically ill patients were included. Studies without a protocol and those pertaining to pediatric or disease-specific populations were excluded. Studies were also excluded if the study

population was medical-surgical or in the community, even if a nutritional protocol was presented.

Eight studies were identified through the CINAHL Plus database searches. Additional review of those articles' reference lists produced two more studies meeting the inclusion criteria. Unfortunately, only two of the ten studies presented a protocol clearly described as nurse-driven (Frisecke et al., 2014; Kuslapuu et al., 2015).

Furthermore, one of these nurse-driven protocols was developed out of the current study and not actually tested in the current study (Kuslapuu et al., 2015). A follow-up study was going to be conducted on the benefit of the protocol. The authors did not respond to a request for the status and results of the second study. The effect on this literature review is very limited data from that particular publication.

Results

Study Characteristics

Research method. One of the studies was qualitative (Damratowski & Goetz, 2016). One study was mixed methods (Reeves et al., 2012). The remaining eight were quantitative (Compton et al., 2014; Ellis, 2015; Frisecke et al., 2014; Heyland et al., 2013; Jarden & Sutton, 2014; Kelly, 2014; Kuslapuu et al., 2015; Taylor et al., 2014).

Framework. Seven of the studies did not indicate a theoretical framework (Compton et al., 2014; Damratowski & Goetz, 2016; Frisecke et al., 2014; Heyland et al., 2013; Kuslapuu et al., 2015; Reeves et al., 2012; Taylor et al., 2014). Each of the remaining three identified a different framework that guided the research. Ellis (2015) utilized the Iowa Model of Evidence-Based Practice to Promote Quality. Jarden and Sutton (2014) followed the Plan-Do-Study-Act (PDSA) quality improvement model. Lastly, Kelly's (2014) research was guided by Larrabee's Model for Change of Evidence-Based Practice.

Research design. Two studies conducted prospective, randomized control trials (Heyland et al., 2013; Reeves et al., 2012). The qualitative portion of the mixed methods study was conducted with structured interviews (Reeves et al., 2012). One study was a prospective observational design (Kuslapuu et al., 2015). The remaining

seven studies, including the qualitative one, utilized a pre- and post-implementation design (Compton et al., 2014; Damratowski & Goetz, 2016; Ellis, 2015; Frisecke et al., 2014; Jarden & Sutton, 2014; Kelly, 2014; Taylor et al., 2014).

Sample. Per the inclusion criteria, all of the quantitative studies examined critically ill patients admitted to the ICU (Compton et al., 2014; Ellis, 2015; Frisecke et al., 2014; Heyland et al., 2013; Jarden & Sutton, 2014; Kelly, 2014; Kuslapuu et al., 2015; Reeves et al., 2012; Taylor et al., 2014). A few studies focused specifically on mechanically ventilated patients (Compton et al., 2014; Ellis, 2015; Heyland et al., 2013; Taylor et al., 2014). The qualitative study sample was comprised of ICU nurses (Damratowski & Goetz, 2016).

Themes

Time to initiation. All but one of the studies addressed the topic of “early” initiation of enteral nutrition (EN) for maximum benefit (Compton et al., 2014; Ellis, 2015; Frisecke et al., 2014; Heyland et al., 2013; Jarden & Sutton, 2014; Kelly, 2014; Kuslapuu et al., 2015; Reeves et al., 2012; Taylor et al., 2014). However, as several authors discussed, the recommended timeframe for initiation varied between the studies, generally ranging from within 24 to 48 hours (Ellis, 2015; Frisecke et al., 2014; Heyland et al., 2013; Taylor et al., 2014). Ellis (2015) even cited literature that identified within 48 to 72 hours as an acceptable timeframe for initiation. Others identified early initiation as within 24 hours (Frisecke et al., 2014; Jarden & Sutton, 2014; Kelly, 2014; Taylor et al., 2014). Notably, the event that starts the time also varies, from ICU admission, last oral intake, and time of intubation (Compton et al., 2014; Ellis, 2015; Frisecke et al., 2014; Heyland et al., 2013; Kelly, 2014).

Three studies demonstrated decreased time to initiation of EN with the implementation of the EN protocol. One study demonstrated a decrease in start time from day one after intubation to day zero, the day of intubation (Compton et al., 2014). This is the only study that counted days instead of hours. Ellis (2015) found that 83 percent of patients received EN within 48 hours of intubation, an increase from pre-implementation. Frisecke et al. (2014) also observed an increase to 64 percent in the number of patients receiving EN within 24 hours of admission, with an average of within 28 hours of admission.

Three other studies observed no significant change in the time to initiation

of EN with the implementation of an EN protocol (Jarden & Sutton, 2014; Kelly, 2014; Taylor et al., 2014). No studies demonstrated an increase in time to initiation of EN.

In the new, untested protocol, Kuslapuu et al. (2015) directed EN to begin within six hours of ICU admission. Only one other study demonstrated consistent initiation in less than 12 hours (Reeves et al., 2012). Kelly (2014) observed an average time to initiation of approximately 12 hours.

Caloric goal and delivery. Almost all of the studies discussed the intent to deliver a caloric and/or protein goal from EN (Compton et al., 2014; Damratowski & Goetz, 2016; Ellis, 2015; Frisecke et al., 2014; Heyland et al., 2013; Jarden & Sutton, 2014; Kelly, 2014; Reeves et al., 2012; Taylor et al., 2014). Again, however, there was variation between the studies in terms of what percentage of the goal is appropriate. For example, Damratowski and Goetz (2016) identified that patients will experience nutritional compromise if they receive less than 65 percent of their required daily calories. Conversely, Ellis (2015) asserted that delivery of more than 70 percent of the recommended calories via EN may produce an increased rate of complications, therefore the intake goal was 60 percent. Most other studies aimed for patients to receive equal to or greater than 80 percent of their caloric goal with EN (Damratowski & Goetz, 2016; Heyland et al., 2013; Kelly, 2014; Reeves et al., 2012; Taylor et al., 2014).

As far as the effect of the EN protocol on delivery of the caloric goal, 78 percent of patients reached the 60 percent goal in the study by Ellis (2015), which was an improvement from pre-implementation. Sixty percent of the patients in the study by Reeves et al. (2012) achieved 82 percent of their calorie and protein goals; this was an improvement with the protocol. In the study by Heyland et al. (2013), patients received 47 percent and 44 percent of their target protein and calories, respectively. Although this seems low compared to the goal of 80 percent, these figures demonstrated an improvement with implementation of the protocol. Taylor et al. (2014) implemented a revised version of the protocol by Heyland et al. (2013) and improved the calorie and protein delivery to 89 percent.

Three studies had not identified a target but reported the number of patients who reached their EN goal. Seventy-four percent of patients in the study

by Compton et al. (2014) reached their goal, and, notably, this was unchanged from prior to implementation to the EN protocol. Patients in another study received about 60 percent of the prescribed EN (Frisecke et al., 2014). Eighty percent of the patients in the study by Jarden and Sutton (2014) reached their target rate. Importantly, this was measured by the target rate rather than the caloric or protein content.

Lastly, few studies addressed how the nutritional goal was identified. Several studies identified that the target was calculated for each individual patient (Damratowski & Goetz, 2016; Friesecke et al., 2014; Reeves et al., 2012; Taylor et al., 2014). Only two of these identified specific values (Damratowski & Goetz, 2016; Taylor et al., 2014). Heyland et al. (2013) asserts that no standard for EN prescription exists.

Time to goal. Some of the studies examined the timeframe required for patients to receive EN at the goal rate (Compton et al., 2014; Jarden & Sutton, 2014; Kelly, 2014; Reeves et al., 2012). This is an important consideration because even if EN is initiated early, the starting rate is often low, such as 20 to 40 milliliters (mL) per hour or 50 mL every three hours (Compton et al., 2014; Jarden & Sutton, 2014; Kuslapuu et al., 2015; Reeves et al., 2012). Patients will not receive adequate nutrition if the rate is increased to the target rate too slowly or not at all (Heyland et al., 2013). For this reason, the algorithm developed by Heyland et al. (2013) focused on a daily, volume-based target rather than an hourly, rate-based target. Similarly, the protocol utilized by Jarden and Sutton (2014) aimed to promote rapid titration of the EN.

With implementation of the EN protocol, Compton et al. (2014) achieved target delivery rate in approximately 6 days and 2 days for gastric and jejunal routes, respectively, which were both improved from before use of the protocol. Similarly, Jarden and Sutton (2014) observed decreased timeframes to achievement of the target rate. With the rapid titration protocol, target rate was reached at an average of 34 hours from admission and an average of 10 hours from initiation of EN. The study by Kelly (2014) established a goal for the target rate to be reached within 48 hours. One hundred percent of patients achieved this with use of the protocol, with an average time of 18.5 hours, which was an improvement prior to the use of the protocol. Reeves et al. (2012) demonstrated achievement of the goal rate at approximately 12 hours.

Management of gastric residual volume. Significant variations in the definition and management of gastric residual volume (GRV) were identified (Compton et al., 2014; Damratowski & Goetz, 2016; Frisecke et al., 2014; Heyland et al., 2013; Jarden & Sutton, 2014; Kelly, 2014; Kuslapuu et al., 2015; Reeves et al., 2012; Taylor et al., 2014). The volume for GRV is defined anywhere from 200 mL to 500 mL. The response to the GRV also varies, from holding, stopping, or decreasing the EN rate to considering gastric motility agents. Two algorithms were developed specifically to standardize the management of GRV (Damratowski & Goetz, 2016; Kelly, 2014).

Complications. Complications of EN, such as gastric intolerance, regurgitation, emesis, aspiration, vomiting, and diarrhea, were measured in five of the studies (Compton et al., 2014; Damratowski & Goetz, 2016; Heyland et al., 2013; Jarden & Sutton, 2014; Taylor et al., 2014). Two of the studies did not report the findings (Compton et al., 2014; Heyland et al., 2013). Most researchers found no statistically significant change in the occurrence of EN complications with the implementation of a protocol (Damratowski & Goetz, 2016; Jarden & Sutton, 2014; Taylor et al., 2014). Specifically, Damratowski and Goetz (2016) identified that increasing the GRV threshold to 500 mL does not affect the rate of aspiration and regurgitation as long the head of the bed is elevated to 30 degrees. Only Taylor et al. (2014) observed an increase in the rate of a complication, specifically diarrhea, in patients receiving EN with the volume-based protocol.

Patient outcomes. Patient demographics were reported in six of the studies (Compton et al., 2014; Frisecke et al., 2014; Heyland et al., 2013; Jarden & Sutton, 2014; Kelly, 2014; Taylor et al., 2014). Unfortunately, patient outcomes were not measured in a majority of the studies (Damratowski & Goetz, 2016; Ellis, 2015; Jarden & Sutton, 2014; Kelly, 2014; Kuslapuu et al., 2015; Reeves et al., 2012). Those that did measure clinical outcomes observed no significant changes after the implementation of an EN protocol, including Heyland et al. (2013). Compton et al. (2014) noticed an increase in mortality rate, but reported that it was not statistically significant. Similarly, Taylor et al. (2014) observed an increased length of stay, but reported that the strength of the finding lessened when the deceased patients were removed. Frisecke et al. (2014) and Taylor et al. (2014) found that mortality was not

significantly affected by the implementation of an EN protocol. Neither did Taylor et al. (2014) observe a change in patients' time requiring mechanical ventilation.

Other EN considerations. Various other important topics were discussed in the articles but not with as much prevalence. For example, two groups of authors mentioned the need to consult dietary specialists, even with the use of an EN protocol (Damratowski & Goetz, 2016; Taylor et al., 2014). Only one author addressed the selection of EN type (Reeves et al., 2012). Two studies considered the supplemental use of parenteral nutrition with EN (Compton et al., 2014; Heyland et al., 2013). The administration of continuous versus bolus feeds is an important matter to address with EN (Ellis, 2015; Taylor et al., 2014). Another significant topic is tube placement in the stomach or small intestine (Compton et al., 2014; Frisecke et al., 2014; Kuslapuu et al., 2015; Reeves et al., 2012). Lastly, managing feeding interruptions is important for adequate delivery (Heyland et al., 2013; Jarden & Sutton, 2014; Reeves et al., 2012; Taylor et al., 2014).

Compliance. Compliance with the protocol was monitored in half the studies (Frisecke et al., 2014; Heyland et al., 2013; Jarden & Sutton, 2014; Kelly, 2014; Taylor et al., 2014). Surprisingly, Kelly (2014) aimed to have a compliance rate of only 50 percent, and met this goal at 67 percent. Jarden and Sutton (2014) reported increased compliance with nursing management of the protocol. Taylor et al. (2014) observed 90 percent compliance with the protocol during the study period but observed a decline to 80 percent after the initiative ceased, suggesting lack of sustainability.

Standardization. Numerous quantitative data has been presented, and accurate comparison between studies is difficult to ascertain. Importantly, however, several studies reported that implementation of the EN protocol produced noticeable standardization of practice in EN delivery and care (Damratowski & Goetz, 2016; Ellis, 2015; Kelly, 2014; Reeves et al., 2012).

Discussion

Study Characteristics

Framework. A majority of the studies did not indicate the theoretical framework that guided the research. However, just because a framework was not clearly stated does not mean that one was not used. For example, the management

of physiologic processes in unstable patients, such as in Benner's Clinical Wisdom for Critical Care Nursing, could be an implied framework for many of the studies. The explicit identification of a framework, however, would have allowed for greater applicability of the results to practice and theory (McEwen, 2011).

Research design. A majority of the studies utilized a pre- and post-implementation research design. While this is a credible, quasi-experimental design, advantages and drawbacks exist (Polit & Beck, 2011). The advantages are that the design is practical and does not require randomization. The primary disadvantage is that the lack of a control group limits the validity of the results. The possibility exists that the pre- and post-implementation groups are not comparable enough to attribute the comparisons and differences to the intervention alone.

Results

Standardization? Several studies demonstrated that the use of an EN protocol enhanced the standardization of practice. Thus, an EN protocol provides standardization against itself. However, lack of standardization between protocols was evident. Numerous elements of practice related to EN are included in each protocol, increasing the opportunity for variability. Each element must be individually defined, such as appropriate timeframe for "early" initiation of EN, a method for determining nutritional prescription and goals, ideal percentage of the goal to be delivered, and measurement and response to GRV. With any variation of these metrics between protocols, the results may not be generalizable.

Generalizability. The lack of standardization among EN protocols may have contributed to the variability in results between studies. Three researchers observed a decreased time to initiation of EN with the implementation of an EN protocol (Compton et al., 2014; Ellis, 2015; Friesecke et al., 2014). Three other studies, however, demonstrated no change (Jarden & Sutton, 2014; Kelly, 2014; Taylor et al., 2014). Four studies demonstrated that the implementation of an EN protocol increased the percentage of patients who received their target calories and/or protein (Ellis, 2015; Reeves et al., 2012; Heyland et al., 2013; Taylor et al., 2014). However, these results may or may not be comparable because the target timeframes and nutritional goals were different between the studies.

Inconsistency between sample inclusion criteria also affects one's ability

to draw and generalize conclusions. For example, although the revised protocol by Taylor et al. (2014) demonstrated improved delivery of total protein and calories over the original study by Heyland et al. (2013), the sample population inclusion criteria were different, making the results difficult to compare. Both studies included patients who were mechanically ventilated on admission or within 6 hours of admission. However, Heyland et al. (2013) only included patients who were mechanically ventilated for greater than 72 hours and whose nutrition had been initiated after admission. Conversely, Taylor et al. (2014), only included patients whose length of stay was at least 7 days and who had demonstrated EN tolerance, as evidenced by EN administered for at least 72 hours after reaching the target EN goal.

The rate of complications was the most consistent finding among the studies in that most researchers found no significant change in the occurrence of EN complications with the use of an EN protocol. Only one study observed an increase of a relatively minor complication (Taylor et al., 2014).

Protocol compliance. Protocols serve numerous purposes that include guiding rapid decision making, providing guidance in overcoming barriers, and promoting standardization (Reeves et al., 2012; Taylor et al., 2014). A protocol is not developed with the intent of partial implementation. Without compliance, the protocol is rendered ineffective towards its purposes. Furthermore, lack of compliance skews measurable results and significantly limits sustainability. However, what is a reasonable target for the compliance rate? How is compliance measured and enforced?

The answer to the latter question is to examine barriers to compliance. Most likely, processes and systems issues are to blame, not individuals' efforts and intentions. Areas of non-compliance may be identified through regular chart audits. Process improvement tools can then be utilized to identify gaps, develop checklists, and improve adherence. In this way, protocol development and enforcement is an ongoing, quality improvement process.

Role of Nursing

Despite the initial impression that only two of the studies considered the EN protocols to be nursing-driven, several authors acknowledged in their discus-

sions that nurses hold a significant role in the implementation of the protocol in practice (Damratowski & Goetz, 2016; Ellis, 2015; Frisecke et al., 2014; Jarden & Sutton, 2014; Kelly, 2014; Reeves et al., 2012; Taylor et al., 2014). Nurses are often the first clinicians to assess nutritional status and identify potential malnutrition (Gerrish et al., 2016). Nurses are often then responsible for initiating, monitoring, and advancing EN as well as managing any complications (Colaço & Nascimento, 2014; Taylor et al., 2014). During the administration of EN, nurses have the ability to minimize interruptions, allowing patients to receive maximum nutrition (Damratowski & Goetz, 2016; Ellis, 2015). After all, the benefits of nutrition are not achieved if the EN is not adequately delivered. For all these reasons, nurses must be familiar with EN guidelines (Damratowski & Goetz, 2016).

Conclusions

Identification of Themes

This literature review has identified numerous, important themes relating to the administration of EN and the implementation of an EN protocol. Defining and implementing both early initiation of EN and adequate titration to goal are important for achieving the maximum nutritional advantage. The highest benefit is also derived from identifying and delivering an individualized caloric and/or protein goal. Interprofessional collaboration remains paramount such that any barriers to multidisciplinary communication must be addressed. Physicians, nurses, and dietetic professionals must work together to determine and deliver the most effective prescription, type, route, and rate of EN.

An EN protocol increases standardization of practice in relation to the aforementioned themes as well as the management of GRV, complications, and potentially for managing feeding interruptions. Because of the significant effects of nursing care on nearly all aspects of the management and delivery of EN, a nurse-driven protocol may yield higher compliance and greater effectiveness than a protocol that is not nurse-driven. Above all, current practice should align with best practice.

Limitations

In addition to the challenges of standardization and generalizability already

discussed, the greatest limitation to answering the clinical question was that patient outcomes were not measured in a majority of the studies. Further research is needed to determine the benefit of an EN protocol on clinical outcomes.

Gaps in Knowledge

The most apparent gap in knowledge is the identification of standardized guidelines for EN administration. Because of the variability in practice, each element of EN practice could seemingly have a protocol, algorithm, or decision tree of its own. For example, one algorithm could guide the initiation and advancement of EN while another directs the measurement and management of GRV. On the one hand, this could promote standardization if the elements are individualized. On the other hand, this would likely be too cumbersome for practical use.

Future Research

Future research should focus on the measurement of patient outcomes in addition to utilization of the same EN protocol across practice settings to determine its effect. As complications and outcomes are measured, any negative trends deserve careful investigation. The existing clinical practice guidelines should be implemented into practice, although further research appears necessary for continued validation and standardization.

Recommendations

Nursing Administration

Nurse administrators, who guide the culture of an organization, should seek to foster a culture of safety and evidence-based practice. The latter requires a multi-faceted approach of clearly defined expectations, education and resource allocation, shared governance, and supportive, engaged leadership (Fitzsimons & Cooper, 2012). The identification of current practice, comparison to best practice, and implementation of changes to produce alignment between the two must occur throughout the facility. In some situations, this may occur via a top-down approach. However, in an environment that supports innovation and shared governance, many ideas for practice improvement will originate from a bottom-up approach. Administrators must recognize the valuable contributions of frontline staff and encourage their initiative and involvement. Furthermore, nursing administration must support not only the implementation of evidence-based practice, but also the development

and dissemination of evidence-based practice through research and education. Of note, these suggestions apply to all areas of practice, not just the delivery of EN to critically ill patients.

Nursing Research

Research begins with an identified problem or a clinical question (Polit & Beck, 2011). For example, data tracking and trending may reveal specific areas of opportunity. A clinical question may originate from a professional at any level in the organization. Further research may then be conducted to validate prior findings and develop new evidence.

In relation to an EN protocol, research may trigger the development, use, or improvement of a protocol. Ultimately, nursing research must focus on continuous, quality improvement of practice. For example, regarding time to initiation of EN, what are the delays? How can they be mitigated? What are the processes and procedures that cause interruptions in EN administration? How can they be lessened? Does continuous versus bolus feeding affect the total protein and calories delivered? Unlike many of the studies utilized in this literature review, future nursing research should follow a theoretical framework in order to give meaning to the findings. Once the research is completed, the findings must be disseminated.

Nursing Education

Education is extremely important for nurses at all levels of their experience. Whether novice or expert, education translates into knowledge, which translates into practice change (Taylor et al., 2014). Nurse educators must focus not only on disseminating information on best practice as it is identified, but also on empowering nurses to implement practice improvements.

In terms of the EN protocol, this translates into ongoing education for the use of the protocol. This is particularly important when the protocol is first introduced. The technical aspects of the protocol will be easy to instruct. The more difficult aspect will be engaging nurses in the need for a practice change, as described in Lewin's Theory of Planned Change (Shirey, 2013).

Once the change has been implemented and use of the protocol becomes the norm, ongoing education will be necessary to ensure knowledge and compliance. Compliance is driven by more than mere knowledge. Additional factors such

as attitude, sense of personal responsibility, and psychological safety must be considered (de Oliveira Dourado, da Costa Barros, Diogo de Vasconcelos, & da Silva Santos, 2017; Sholomovich & Magnezi, 2017).

Nursing Practice

The literature review has identified numerous EN applications to nursing practice because nurses are at the forefront of EN administration, perhaps even more so with the use of a nurse-driven protocol. Tying the conclusions of the literature review back to the theoretical framework of Patricia Benner's Clinical Wisdom for Critical Care Nursing will not only expand the theory but also enhance understanding of nursing practice.

Use of an EN protocol does not remove critical thinking from nursing practice. Rather, nurses must continue to demonstrate critical thinking and clinical judgment to manage the changing clinical picture of a patient receiving EN. Benner's theory refers to these as reasoning-in-transition and response-based practice. In other words, nursing practice requires clinical decision-making in a changing environment. Continuing the use of Benner's terms, application of the EN protocol further requires skilled know-how and self-agency. Nurses must possess the knowledge to implement the protocol and recognize their ability to impact patient outcomes either positively or negatively.

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Establishing Tissue Culture of King of Bitters (*Andrographis paniculata*) and Comparison of Callus Versus Plant Neoandrographolide Production

Cassandra Mihalko

Abstract

*Neoandrographolide is a secondary compound endemic to *Andrographis paniculata* (King of Bitters) and gives the plant its anti-inflammatory property. Because of the widespread use of neoandrographolide and the low seed germination rate of *Andrographis paniculata*, creating a callus tissue culture, from which to extract neoandrographolide, has the potential to be beneficial to pharmaceutical companies. Callus was produced from King of Bitters plant tissue using the Mineo protocol for tissue extraction and the Murashige protocol for the callus media and incubation. HPLC-CAD analysis was done on a liquid extract of callus (1 g dried callus to 50 mL methanol) and leaf tissue (1 g dried leaves to 50 mL methanol) using the Li protocol. No detectable neoandrographolide content was found in the callus, but neoandrographolide was found in the plant leaf tissues. To facilitate neoandrographolide production in callus, elicitors, genetic manipulation, metabolic engineering, or the use of symbionts may be viable options.*

Introduction

The King of Bitters (*Andrographis paniculata*) is an herbaceous plant in the family Acanthaceae. An herb is a plant that is used for its medicinal properties, scent, or flavor. This plant is cultivated in southern Asia and has been used for centuries in Asian and European folklore medicine as an herbal supplement and remedy to several ailments.⁶

This plant, named for its extremely bitter flavor, is used as a bitter tonic in traditionally known health care systems of many Asian countries.¹⁴ In Chinese traditional medicine, *Andrographis paniculata* is used to rid the body of toxins and break fevers. In Scandinavian countries, this herb is used to treat the common cold. In Thailand, this plant was even included in “The National List of Essential Drugs A.D. 1999” because it has many medical benefits, such as anti-viral, anti-inflammatory, anti-diarrheal, anti-malarial, anti-cancer, hepatoprotective, and is immunostimulatory.¹³

Within the last few decades, research on *Andrographis paniculata* has become more abundant. Many studies and clinical trials on the medicinal and therapeutic properties of King of Bitters have also surfaced.¹⁴ Studies have shown that the leaves of the mature plant contain andrographolide and neoandrographolide (Figure 1), which have been reported to possess immune-stimulant, anti-pyretic, anti-inflammatory, and anti-diarrheal properties.⁴

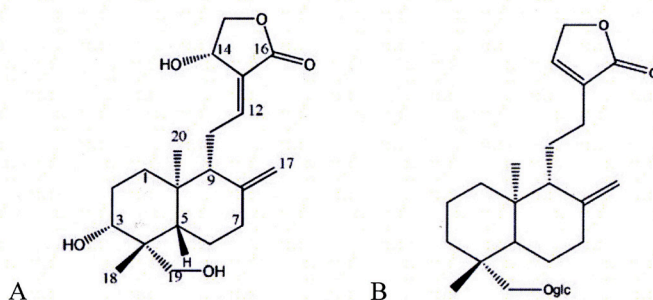


Figure 1: Structure of (A) neoandrographolide and (B) andrographolide.

Source: <https://cmjournal.biomedcentral.com/articles/10.1186/1749-8546-5-17>

Under the humid tropical conditions of Asia, *Andrographis paniculata* normally reaches maturation 90-120 days after germination. A major issue in growing this plant is the poor rate of seed germination. The King of Bitters seed germination percentage rate is relatively low compared to many other plants. The rate of germination can be as low as 20%. Scientists believe that this is due to the difficulty of breaking this plant's dormancy due to its seed coat.⁴

Today, King of Bitters plants are harvested for their leaves and sold as an herbal medicine.² With the seed's difficulty to germinate, finding a faster, easier way to get the medicinal compounds from the plant would be valuable. A possible solution would use plant tissue culture to create *Andrographis paniculata* callus. Callus is a fast-growing mass of undifferentiated cells that a plant grows to defend itself. These cells can be used to create medicines or new plantlets more quickly and efficiently than from naturally growing a King of Bitters plant from seed to maturity.¹⁵ Callus has been used with various plants with germination difficulties and has been found to be a much easier tissue from which to extract compounds. Therefore, establishing tissue culture callus for this plant could be beneficial. This can be done by taking cuttings from plants grown in the greenhouse and putting them on media containing Murashige and Skoog (M.S.) salt mixture, agar, sugar, auxin, and cytokinin. This causes the plant tissue to create callus.¹²

The medicinal compound of interest in this experiment is neoandrographolide. This compound is found solely in *Andrographis paniculata* and it contributes to the plant's anti-inflammatory properties.¹⁰ Neoandrographolide inhibits nitric oxide and tumor necrosis factor-alpha production in lipopolysaccharide-induced macrophages, which leads researchers to believe the compound is the major contributing component of the anti-inflammatory property of *Andrographis paniculata*. This makes neoandrographolide a potential candidate for clinical trial.¹⁰

In this experiment, neoandrographolide content was compared between the leaves and callus. This was done by using HPLC-CAD analysis. The amount of neoandrographolide produced by callus and leaves were compared in order to understand the relative quantity of callus compound production. Andrographolide content was also observed for comparison with other studies.⁹ These data will

determine if pursuing tissue culture for the King of Bitters would be efficient for pharmaceutical companies to produce neoandrographolide.

Methods

Seed Germination and Plant Maintenance

In order to break seed dormancy, the King of Bitters seeds (sourced from stock plant in Department of Biology greenhouse) were given three different treatments. Seeds were either soaked for 5 minutes in 50°C water,⁷ soaked for 10 minutes in 2% KCl solution, or scarified with sand paper 5 times.¹¹ The seeds were then planted in 15 cm pots with commercial potting soil and put under a 24-hour misting system in the MTSU Biology greenhouse. Scarification gave the best results. Once plantlets arose, they were removed from the misting system. Plantlets were watered as needed and fertilized every two weeks. These plants required minimal care for growth.⁷

Media Preparation

Media were prepared using the protocol of Murashige.¹² This medium included agar, M.S. salts-5501, hormones (Naphthaleneacetic acid and Benzylaminopurine), and 3% sucrose. All media ingredients were obtained from Phytotech Laboratories. These ingredients are formulated to cause callus growth. Seventeen grams of M.S. salts (M5501) were added to a flask, which was filled to 400 mL with deionized water. A stir bar was added to mix the solution until the salt was dissolved. During this time, 750 μL of benzylaminopurine (BAP) hormone and 500 μL of naphthaleneacetic acid (NAA) hormone were added to the solution, along with 5 mL of casein. The flask was then filled with deionized water to total 500 mL and autoclaved. At the same time, 4.5 g of agar was autoclaved in a separate 1000 mL flask. Once autoclaved, the solution was added to the agar, mixed together, and poured into approximately 20 sterile petri plates (100 mm x 15 mm). These plates were then sealed with parafilm.

Callus Production

Cuttings of the leaves and stems were taken from the King of Bitters plants and sterilized using deionized water, 70% isopropyl alcohol, 0.2% plant tissue culture contamination control (PTC3) antibiotic, 2.5% bleach, and Dawn dish detergent. The tissues were rinsed with the deionized water, then washed in the 70% alcohol

for approximately 30 seconds. Next, the tissues were washed for 10 minutes in a mixture of the detergent, antibiotic, and bleach. Finally, the tissues were rinsed with sterile deionized water. Following the protocol of Mineo,¹¹ sterile scalpel and forceps were used to make small cuttings from the stem and leaves of the plant. Cuts were made to maximize the amount of internal tissue exposed. Sterile cuttings were placed on the media and plates were incubated at 25°C.

Leaf and Callus Drying

Calli were removed from media, put into empty petri dishes, and left partially open in a hood until the tissue was completely dried (for *Andrographis paniculata* callus, approximately 24 hours). The plant leaves were dried using a conventional leaf dryer for approximately 2 weeks.

Compound Analysis

The andrographolide and neoandrographolide analysis was carried out according to the protocol used by Li.⁹ Callus and leaf tissues (1 g) were extracted using 50 mL methanol. The mixture was sonicated at 60% for 1 minute to lyse the cells and allow the compounds to dissolve in the methanol. The samples were then put on a shaker for 24 hours followed by filtration using a Buchner Funnel. The methanolic extracts were then concentrated to a final volume of 5 mL using a rotary evaporator (Büchi Rotavapor R-200) at 100 mbar in a 45°C water bath. The extracts were then further filtered using a 0.5 micron filter to remove particulates.

Standards for andrographolide and neoandrographolide were obtained from Sigma Aldrich in 5 mg quantities at 99.09% purity. Stock solutions were made at a concentration of 5 mg/mL in methanol. The authentic standards (diluted to 1 mg/mL) were analyzed on a high-performance liquid chromatography-charged aerosol detector (HPLC-CAD) system to generate reference chromatograms. Identification of andrographolide and neoandrographolide in leaf and callus samples were based on comparison of retention times in sample and reference (standard) chromatograms. HPLC analysis was done using an Ultimate 3000 HPLC coupled to a CAD detector. Separation was carried out using a Phenomenox Hyperclone (150 X 4.6 mm; 5 μ) C-18 column with water and acetonitrile as the mobile phase. The following gradient was used for the chromatographic analysis: 20%-50% acetonitrile from 0-50 min. An injection volume of 10 μ L and a column temperature of 25°C

was used. The concentrated leaf extracts were diluted 4-fold before injection. The callus extracts were injected in their concentrated form.

In order to quantify the amount of andrographolide and neoandrographolide in the leaves and callus, a calibration curve was made from stock solutions of the two standards. The sample concentrations for the calibration curve were 1000 $\mu\text{g}/\text{mL}$ methanol, 500 $\mu\text{g}/\text{mL}$, 250 $\mu\text{g}/\text{mL}$, 125 $\mu\text{g}/\text{mL}$, 62.5 $\mu\text{g}/\text{mL}$, 31.25 $\mu\text{g}/\text{mL}$, and 15.62 $\mu\text{g}/\text{mL}$. The peak areas of these samples were graphed and linearized. Comparing the HPLC results for the peak areas of leaf and callus samples to this curve gave the percentage (by weight) of the andrographolide and neoandrographolide content in the samples.

Results

Standards

The HPLC analysis of the standards showed that the retention time was approximately 10.5 minutes for andrographolide and 19.1 minutes for neoandrographolide as shown in Figures 2 and 3. When a mixture of the two compounds was analyzed, each presented a separate, distinct peak, as shown in Figure 4.

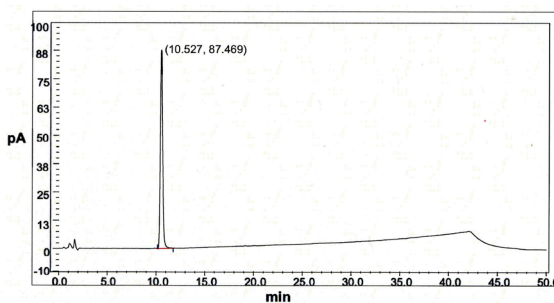


Figure 2: HPLC Results for Andrographolide Standard (1 mg/mL).

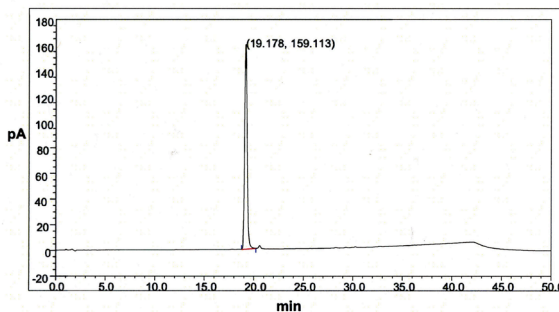


Figure 3: HPLC Results for Neoandrographolide Standard (1 mg/mL).

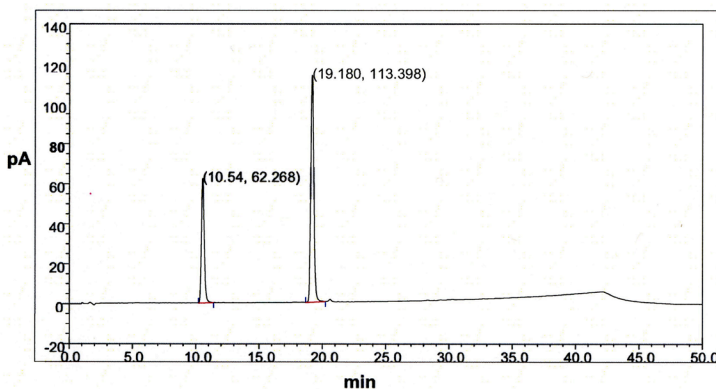


Figure 4: HPLC Results for 1:1 Ratio of Andrographolide to Neoandrographolide (1)

Leaves and Calluses

All three samples of leaf tissue contained amounts of neoandrographolide and andrographolide. The two peaks labeled in Figures 5, 6, and 7 are the peaks representing andrographolide and neoandrographolide content. The calibration curves for each neoandrographolide and andrographolide are represented by Figures 8 and 9, respectively. Using the information from Figures 8 and 9, the percent weight of each secondary metabolite was calculated and results are presented in Table 1. The callus samples are represented by Figures 10, 11, and 12. None of the callus samples contained traces of either andrographolide or neoandrographolide.

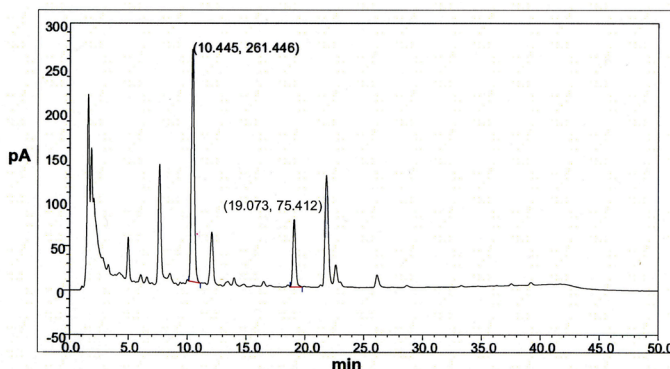


Figure 5: HPLC Results for Leaf Tissue Sample 1 (1 g dried leaf tissue/5 mL methanol).

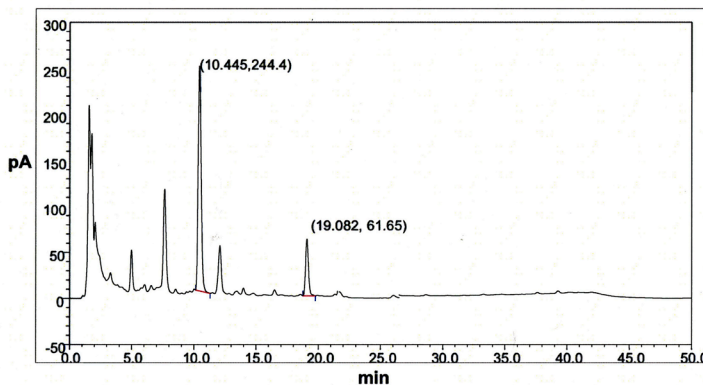


Figure 6: HPLC Results for Leaf Tissue Sample 2 (1 g dried leaf tissue/5 mL methanol).

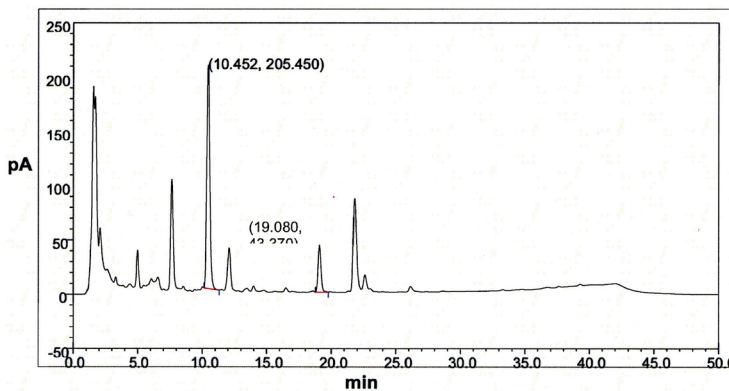


Figure 7: HPLC Results for Leaf Tissue Sample 3 (1 g dried leaf tissue/5 mL methanol).

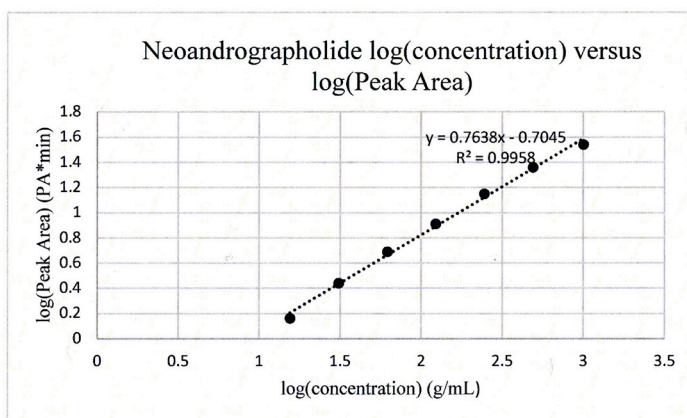


Figure 8: Calibration Curve for Neoandrographolide.

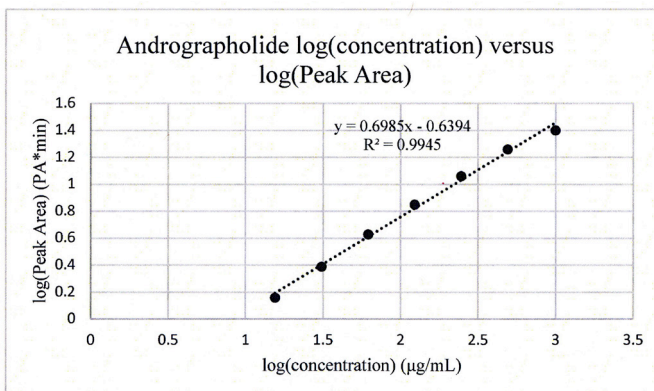


Figure 9: Calibration Curve for Andrographolide.

Table 1: Percent Weight of Andrographolide and Neoandrographolide in Leaf Samples.

	Andrographolide % w/w	Neoandrographolide % w/w
Leaf 1	0.05	0.002
Leaf 2	0.42	0.002
Leaf 3	0.29	0.001
Mean± SE	0.253± 0.108	0.0017± 0.0003

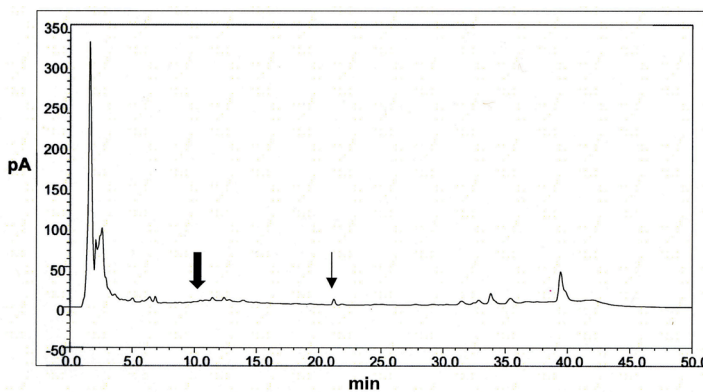


Figure 10: HPLC Results for Callus Tissue Sample 1 (1 g dried callus/5 mL methanol).

(↓ = Andrographolide Peak Location; ↓ Neoandrographolide Peak Location)

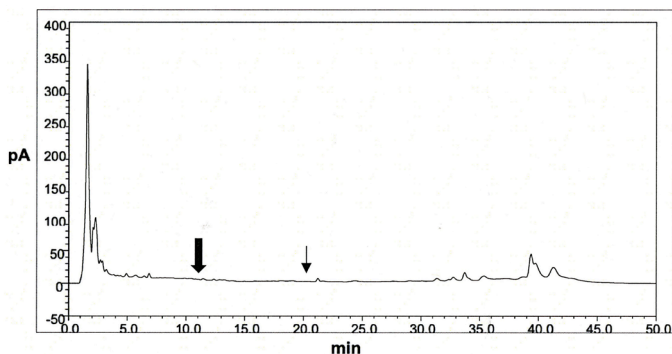


Figure 11: HPLC Results for Callus Tissue Sample 2 (1 g dried callus/5 mL methanol).

(↓ = Andrographolide Peak Location; ↓ Neoandrographolide Peak Location)

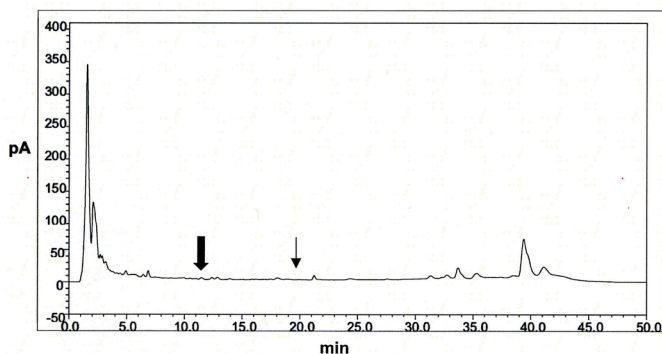


Figure 12: HPLC Results for Callus Tissue Sample 3 (1 g dried callus/5 mL methanol).

(↓ = Andrographolide Peak Location; ↓ Neoandrographolide Peak Location)

Discussion

Like the Chatterjee experiment where the leaf tissue was removed during the winter months, the % w/w results are similar for andrographolide and neoandrographolide in leaf tissue taken from a transferred plant in greenhouse conditions.⁵ The lack of andrographolide in callus tissues was expected based on the Ananthi experiment³ and our current knowledge of the workings of callus.

The results of this experiment are in line with what is known about the ability of callus to produce secondary compounds. In many cases, callus tissue cultures have successfully produced various secondary metabolites. *In vitro* studies of ginseng are a well-known example of the success of calli producing secondary compounds, such as saponin.⁸ However, many callus tissue cultures do not produce

secondary compounds.⁸ For example, *Hypericum perforatum* callus tissues have not successfully produced the secondary compounds hypericins and hyperforins, which are produced in the plant.⁸

Callus may not produce secondary compounds because of a lack of elicitors.³ Secondary metabolites are naturally produced by plants as a defense response against pathogens. Once attacked, elicitors in the plant are activated and act as a signal for the plant to produce secondary metabolites.³ *Ammi majus* L. callus is an example of a tissue culture that does not produce traceable amounts of a secondary compound, umbelliferone, because it lacks the elicitor needed, benzo(1,2,3)-thiadiazole-7-carbothionic acid S-methyl ester. Once this elicitor was introduced, the callus began producing umbelliferone.³

There is currently no information on *Andrographis paniculata* callus tissue's production of neoandrographolide. There are, however, many studies on the health benefits and usage of this secondary metabolite created by the plant's leaves.⁴ With knowledge of how this plant's callus tissue reacts in a standard medium without elicitors, the next step would be to grow the callus in media impregnated with various elicitors and record how this affects production of neoandrographolide. Frequently used elicitors include fungal carbohydrates, yeast extract, methyl jasmonate and chitosan.⁸ Other options to induce secondary metabolites include, genetic manipulation, metabolic engineering, and the use of symbionts.¹

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Causality Testing for U.S. Public Expenditure, Economic Uncertainty, and Other Indicators

Emilia Suggs

Abstract

Government policies respond to a variety of factors, often resulting in a growth in public expenditure as resources flow from the private to the public sector. A series of classic problems in public economics examines the structure of state spending. Research in the literature addresses factors such as macroeconomic conditions, periods of crisis, and political incentives. However, public opinion may contribute to changes in government expenditure proportions through mechanisms such as voting and lobbying. Significant events and conditions as well as an individual's perceptions influence public opinion, encompassing an element of economic uncertainty. This project utilizes Granger causality testing to examine causal relationships between U.S. public expenditure and factors such as periods of crisis, economic indicators, and economic uncertainty, using quarterly data from 1985-2017.

Introduction

Since the 1940s, the general trend of the U.S. public sector's share in gross domestic product has steadily increased, with several prominent peaks and troughs as is shown in Figure 1 (U.S. Bureau of Economic Analysis, 2017). A series of classic problems in public economics prompts examination of the structure of state spending. Problems of this nature elicit proposed explanations for fluctuations in the growth of the public expenditure, ultimately seeking to account for the development and evolution of the public sector. As public economics focuses on the effects of government policies, a natural framing question asks when and to what extent a state should interfere in market processes. Because these problems lead to examinations of the circumstances behind public expenditure increases, the results of such examinations substantiate the discussion regarding when it may be appropriate for the government to intervene based on historic and economic events in the country.

Beginning with the observations of Adolf Wagner and his law of increasing state spending in the late 19th century, economists from various traditions proposed theories throughout the 20th century explaining the causes of change in government expenditure (Wagner & Weber, 1977). One notable theory arose during the 1960s with a study analyzing the effects of war spending on public expenditure (Peacock & Wiseman, 1961). Using public expenditure data from the United Kingdom over a period from 1891 through 1955, Peacock and Wiseman found public expenditure increased sharply during periods of war. In wartime, the country required revenue to fund military engagements, and acquired it through raising taxes. This is known as the displacement effect because it causes funds to flow from the private to the public sector. Following wars, public expenditure remained high, indicating that the public had adjusted to the new tax rates and that government agencies were unwilling to lower tax rates. The Peacock-Wiseman hypothesis proposes that, following periods of war, tax rates and thus public expenditure remained higher than expected because the public and government had grown accustomed to high tax rates. This tendency (a strictly high rate of expenditure) produces "kinks" within the data.

Like the Peacock-Wiseman hypothesis, the ratchet effect uses the concept of the displacement effect but in a more general context (Higgs, 2012). Many social and life sciences observe the ratchet effect; however, in economics this term refers

to the irrevocability of an economic policy intended to correct an event affecting the public at large. While the Peacock-Wiseman hypothesis focuses exclusively on military spending, the ratchet effect, in its more general form, applies to a variety of crisis variables. These variables include recessions, threats to public security, natural disasters, or any catastrophic event great enough to disrupt the country. During such periods of crisis, authorities enact policies as a response, often resulting in an increase in public expenditure as the state assumes more responsibility. Like the Peacock-Wiseman hypothesis, the ratchet effect leads to predictions that authorities will encounter difficulty in rolling back newly established programs as the public grows accustomed to high levels of spending.

The displacement effect theories suggest that responses to periods of crisis significantly influence fluctuations in public expenditure. However, while crisis responses may explain significant peaks, troughs, or kinks within the data, they incompletely account for the structure of the public sector over time. In particular, the displacement effect theories examine only extreme periods of crisis, neglecting subtler changes in the economic or political atmosphere. Therefore, including relevant macroeconomic and political variables, in conjunction with the displacement effect theories, should provide a more complete account of and a more robust explanation for fluctuations in the size of the public sector.

Macroeconomic indicators such as consumer price, unemployment, and industrial activity indices separate elements of the economy into relevant categories. Unlike the period of crisis explanations that describe spending as a response to catastrophes, economic indicators highlight performance in certain parts of the economy, detecting changes that might not result in a recession. Fiscal authorities may target certain results, adopting proactive and flexible policies to address changes in certain sectors of the economy. Similarly, the performance of major United States industries impacts the decision-making of consumers, labor, and other producers. Activity in sectors such as the housing market affects the supply and price of housing units in a given location. In 2016, housing comprised approximately 33 percent of the average U.S. consumer's expenditures, increasing 2.6 percent from 2015 figures (Bureau of Labor Statistics, 2017). Because housing remains the largest portion of consumer expenditure, activity in the housing sector influences location

and home ownership decisions.

Another important industry for the U.S. economy is the information technology sector. Unlike in others, production and innovation in this sector influences nearly all other producers and consumers on account of the widespread use of computer technology. Both housing and information technology have experienced economic bubbles over the last few decades, making industrial performance relevant to the discussion of public sector growth. In tandem, economic indicators and industrial activity indices, rather than recessionary periods and other extreme events, account for changes in particular facets of the U.S. economy.

Public economics attempts to integrate economic and political mechanisms; optimal economic solutions may not be obtainable through political processes alone and vice versa. Therefore, the public acts in two capacities: as economic and political agents. An agent facing certain economic realities may obtain a previously infeasible state of utility through political processes, despite her actions reducing overall wellbeing. An example would be a low-income worker voting for a politician committed to instituting a minimum wage. In this case, the voting public controls, through democratic processes and to an extent, the economic decisions faced by the entire nation.

In the United States, the general public influences economic policy decisions through the election of congressional representatives. Representatives, like the general public, act as economic and political agents and follow certain assumptions regarding self-interest and rationality. Under normal circumstances, it is assumed that a strong incentive exists for political representatives to seek reelection. If representatives act in a self-interested manner and are strongly incentivized to be reelected, they must to an extent cater to the desires of the voting public. This assumes that the effects of non-voting agents such as lobbyists are minimal. If this is the case, representatives must act in a way that conforms with the political opinions of voters, indirectly allowing the general public to influence economic policy.

However, unlike economic indicators and periods of crisis, political opinion measures agents' views of events, rather than real properties of events in the world. Agents form political and economic opinions from their perception of events and

issues, and this involves their knowledge of economic and political systems, their cultural and religious views, their personal experience, and the information available. As a consequence, the public's perception of economic phenomena influences the decisions of representatives and subsequent economic policy. Through this political mechanism, where representatives act as a liaison rather than moderators of the public's views, economic policies may be enacted that do not reflect real events in the economy. Public uncertainty describes the temperament of the nation in response to economic conditions, crises, and general societal climate. The public may understate or overestimate the true values of an indicator, based on the quantity and quality of information available to them, such as the rate of unemployment or certain price levels.

Expectations of negative outcomes in the absence of near-term action can influence the political process through electoral procedures if the public makes suboptimal policy decisions based on what it believes affects it, even if conditions appear normal. In periods of great economic uncertainty, the public may grow skeptical of the effectiveness of market forces to self-correct, such as during recessions. In this case, the public can alter the size of the public sector by electing representatives who endorse the use of active economic policy as a corrective measure. This type of trend was observed during the Great Depression (1929-1941) and the Great Recession (2007-2009) and manifested in the elections of presidents Franklin D. Roosevelt and Barack H. Obama respectively. Their elections were premised on public beliefs that political mechanisms could be used effectively to redistribute economic authority from the private sector to the public sector. Because agents base decisions on their own experiences, considering the effects of uncertainty, whether justified or not, may provide an explanation for changes in the size of the public sector.

The Peacock-Wiseman hypothesis and the ratchet effect use the concept of the displacement effect to explain fluctuations in public expenditure. These types of analysis explain the presence of significant peaks and troughs in public expenditure data, but not subtle changes in continuous economic and political conditions, such as can be explained with macroeconomic indicators. In addition, public perception

may influence public expenditure through the exercise of political mechanisms. This paper addresses the following questions using statistical techniques: (1) is there significant evidence to validate the displacement effect, using periods of crisis variables? (2) Which, if any, economic factors contribute to change in government expenditure? And (3) does public economic uncertainty significantly influence government expenditure?

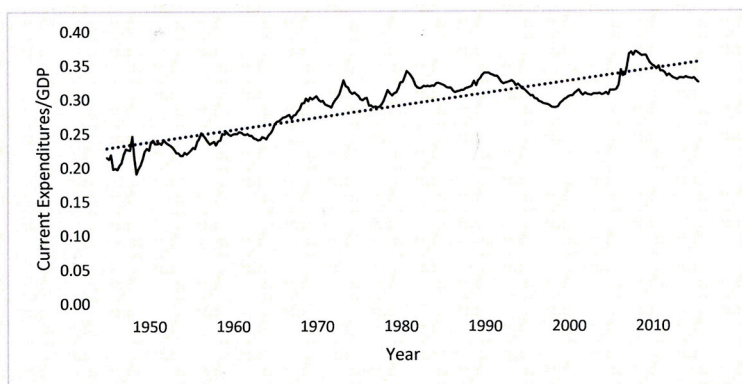


Figure 1: The gradual increase in government current expenditure as a percent of gross domestic product, 1947-2017.

Data and Methods

In our model we use causality testing to determine which factors significantly cause changes in public expenditure proportions. Granger causality is a method of causality testing using in-model forecasting. The reasoning behind Granger causality is simple and concise: assume that we have two variables, A and B. If A causes change in B, we would expect changes in A to predate changes in B. Our model encompasses three categories of variables: economic indicators, periods of crises, and public uncertainty. Using Granger causality testing, our null hypothesis (H_0) states that variable A does not cause change in variable B. Should we reject the null hypothesis, we conclude that variable A Granger causes variable B. With the exclusion of the five crisis binary variables, all data comes from the Federal Reserve Bank of St. Louis (FRED). The model uses quarterly time series data from the first quarter of 1985 through the second quarter of 2017.

The first class of variables used in our models consists of economic indicators. Economic indicators describe characteristics of the U.S. economy over time. In

our model we consider two subclasses of economic indicators: macroeconomic and industrial activity indices. Macroeconomic indicators show elements of the national economy (such as national income, price level, etc.) as they evolve over time. While macroeconomic indicators focus on the economy as a whole, industrial activity indices track the performance of key industries in the United States.

The first variable considered among the macroeconomic indicators is U.S. government current expenditure as a proportion of gross domestic product. This is of particular interest in our model, acting as our dependent variable. We include other common indicators such as the U.S. consumer price index, civilian unemployment rate, and national defense consumption to describe the state of the economy. Depending on the performance of these variables, authorities may pursue monetary or fiscal policy choices, at times resulting in an increase in public expenditure.

We consider a subclass of economic indicators describing industrial activity in the U.S., particularly industries that significantly impact the general public. We consider the activity in the technology and housing sectors as measured by the San Francisco Tech Pulse index and building permits. The San Francisco Tech Pulse index measures activity in the information technology sector using data regarding investment and consumption of IT products, employment, and trade in the San Francisco area. To measure housing market conditions, we use data from the Federal Reserve Bank of St. Louis describing new housing unit authorizations by building permits. These industrial activity measures reflect several important influences on public decision making: technical development, confidence, and affordability. We expect that the industrial activity measures negatively cause change in public expenditure; that is, as industrial activity in these sectors increases, thus improving economic conditions, authorities have less incentive to interfere in market operations. In the case of a decline in industrial activity (or in the event of an economic bubble), usually prompting a decline in economic conditions, authorities may step in to provide relief, causing expenditure to increase.

Peacock and Wiseman proposed that government expenditure increases following periods of war as the public grows accustomed to new tax rates as a means of maintaining sufficient aggregate demand. Similar to the ratchet effect, the Peacock-Wiseman hypothesis describes the inability of the public sector to roll back

policies responding to an external shock, particularly war. Following the intuition of the Peacock-Wiseman hypothesis, periods of crisis include significant catastrophes, such as war, recession, and natural disasters. In our model we use five variables to account for significant distressing events in the United States. The first set of variables includes significant war periods after 1985, specifically, the Gulf War (1990-1991), the Iraq War (2003-2011), and Operation Enduring Freedom (2001-2014). In addition to the war variables, we include binary variables describing recession and election periods in the United States.

Public uncertainty describes the temperament of the nation in response to economic conditions, crises, and general societal climate. Unlike the crisis and indicator variables, which describe real properties of such events, public uncertainty is the response to such shocks. The public may understate or overestimate the true values of an indicator, such as the rate of unemployment or inflation. These expectations can build into the political process through electoral procedures as the public makes policy decisions based on what the public believes affects it, even if conditions appear normal. We use data from the Economic Policy Uncertainty (EPU) index as a measure of public uncertainty. The EPU index tracks the frequency of key economic and political words in major U.S. newspaper headlines. Some of these words include “congress,” “uncertainty,” “economy,” and “Federal Reserve,” as well as common variants of such words (Baker, Bloom, & Davis, 2012). We expect that, in periods of high uncertainty, these words would occur more frequently, reflecting the rise of public uncertainty. Because the EPU index uses major newspapers, that reflect public interest in these topics, the index may be assumed to capture the public perception of the economic climate of the United States.

Descriptive Statistics

Variable	Description	Min	Max	Mean	Std. Dev
GOVEXP	Government Current Expenditures/GDP	0.28839	0.37078	0.323147	0.28839
EPU	Economic Policy Uncertainty	43.72	225.23	101.3428	43.72
FDEFX	National Defense Consumption Expenditures and Gross Investment	310.912	851.464	534.8385	310.912
CPIAUCSL	Consumer Price Index for All Urban Consumers	106.267	245.15	177.4305	106.267
TECH	San Francisco Tech Pulse	19.80543	117.1653	61.25505	19.80543
UNRATE	Civilian Unemployment Rate	3.9	9.9	6.034351	3.9
PERMIT	New Private Housing Units Authorized by Building Permits	539	2228	1352.282	539
IRAQ	Duration of Iraq War	0	1	0.274809	0
ELECT	Periods of U.S. Presidential Election	0	1	0.152672	0
RECC	Periods of U.S. Recessions	0	1	0.083969	0
GULF	Duration of Gulf War	0	1	0.022901	0
OEF	Duration of War on Terrorism – Operation Enduring Freedom (OEF)	0	1	0.40458	0

Table 1. Granger Causality Results (H0: A does not cause B)

Variable A	Category	Variable B	pval	LRM	pvLRM	Result
EPU	3	GOVEXP	0.0041	1.00E-04	0.0191	A does cause B
CPIAUCSL	1	GOVEXP	0.1863	-0.0015	0.2049	A does not cause B
TECH	1	GOVEXP	0.0218	-4.00E-04	0.0247	A does cause B
UNRATE	1	GOVEXP	0.0021	0.0057	0.0178	A does cause B
PERMIT	1	GOVEXP	4.00E-04	0	0.0044	A does cause B
FDEFX	1	GOVEXP	0.0527	0	0.3744	A does not cause B
IRAQ	2	GOVEXP	0.3597	-0.0039	NA	A does not cause B
ELECT	2	GOVEXP	0.0615	0.0015	NA	A does not cause B
RECC	2	GOVEXP	2.00E-04	0.0053	0.0463	A does cause B
GULF	2	GOVEXP	0.2621	-0.002	NA	A does not cause B
OEF	2	GOVEXP	0.6059	-0.0021	NA	A does not cause B
GOVEXP	1	EPU	0.6933	721.0019	0.2685	A does not cause B
CPIAUCSL	1	EPU	0.0358	4.2028	0.0334	A does cause B
TECH	1	EPU	0.0296	-0.6617	0.113	A does cause B
UNRATE	1	EPU	0.0366	1.6668	0.4121	A does cause B
PERMIT	1	EPU	0.1888	-0.0323	0.0967	A does not cause B
FDEFX	1	EPU	0.2341	0.0027	0.3856	A does not cause B
IRAQ	2	EPU	0.5334	-7.1718	NA	A does not cause B
ELECT	2	EPU	0.1649	13.7147	NA	A does not cause B
RECC	2	EPU	0.6474	2.2933	0.3725	A does not cause B
GULF	2	EPU	0.8916	4.9668	NA	A does not cause B
OEF	2	EPU	0.3682	-9.9897	NA	A does not cause B
GOVEXP	1	CPIAUCSL	1.00E-04	-1.2789	0.4917	A does cause B
EPU	3	CPIAUCSL	0.0949	-0.0066	0.2231	A does not cause B
TECH	1	CPIAUCSL	0.0671	0.0657	0.0929	A does not cause B
UNRATE	1	CPIAUCSL	0.1178	-0.3941	0.2614	A does not cause B
PERMIT	1	CPIAUCSL	0.155	-0.0011	0.2725	A does not cause B
FDEFX	1	CPIAUCSL	0.4657	-4.00E-04	0.2648	A does not cause B
IRAQ	2	CPIAUCSL	0.6346	0.3374	NA	A does not cause B
ELECT	2	CPIAUCSL	0.2288	-0.2681	NA	A does not cause B
RECC	2	CPIAUCSL	0.4342	-0.2466	0.3731	A does not cause B
GULF	2	CPIAUCSL	1	-0.1818	NA	A does not cause B
OEF	2	CPIAUCSL	0.433	-0.5627	NA	A does not cause B
GOVEXP	1	TECH	0.3898	-372.918	0.0598	A does not cause B
EPU	3	TECH	0.8126	0.0063	0.4353	A does not cause B
CPIAUCSL	1	TECH	0.0061	-2.5102	0.0042	A does cause B
UNRATE	1	TECH	0.4746	-2.2833	0.1538	A does not cause B
PERMIT	1	TECH	0.9334	-0.0015	0.4311	A does not cause B
FDEFX	1	TECH	0.4898	-0.0021	0.2185	A does not cause B
IRAQ	2	TECH	0.2115	4.7038	NA	A does not cause B
ELECT	2	TECH	0.2767	-5.5508	NA	A does not cause B
RECC	2	TECH	0.2334	-1.9818	0.1662	A does not cause B
GULF	2	TECH	1	0.4058	NA	A does not cause B
OEF	2	TECH	0.1577	-5.2401	NA	A does not cause B
GOVEXP	1	UNRATE	0.1771	49.7294	0.0887	A does not cause B
EPU	3	UNRATE	0.0039	0.0147	1.00E-04	A does cause B
CPIAUCSL	1	UNRATE	0.0016	0.1337	0.2119	A does cause B
TECH	1	UNRATE	2.00E-04	-0.0611	0.0096	A does cause B

Variable A	Category	Variable B	pval	LRM	pvLRM	Result
PERMIT	1	UNRATE	0	-0.0036	5.00E-04	A does cause B
FDEFX	1	UNRATE	0.1268	-1.00E-04	0.3543	A does not cause B
IRAQ	2	UNRATE	0.9362	-0.0449	NA	A does not cause B
ELECT	2	UNRATE	0.0631	0.0633	NA	A does not cause B
RECC	2	UNRATE	5.00E-04	0.619	0.0041	A does cause B
GULF	2	UNRATE	0.6674	-0.5919	NA	A does not cause B
OEF	2	UNRATE	0.2106	-0.7684	NA	A does not cause B
GOVEXP	1	PERMIT	0.4872	-1864.08	0.3802	A does not cause B
EPU	3	PERMIT	0.8446	-0.3453	0.3052	A does not cause B
CPIAUCSL	1	PERMIT	0.0038	-44.6788	0.0082	A does cause B
TECH	1	PERMIT	0.8307	-2.0989	0.2983	A does not cause B
UNRATE	1	PERMIT	0.7175	18.2455	0.3547	A does not cause B
FDEFX	1	PERMIT	0.4582	-0.0111	0.4131	A does not cause B
IRAQ	2	PERMIT	0.7944	22.715	NA	A does not cause B
ELECT	2	PERMIT	0.7666	-24.496	0.3613	A does not cause B
RECC	2	PERMIT	0.7329	-14.55	0.4018	A does not cause B
GULF	2	PERMIT	0.9461	127.3999	NA	A does not cause B
OEF	2	PERMIT	0.4708	-62.6002	NA	A does not cause B
GOVEXP	1	FDEFX	0.0729	114341.7	0.2439	A does not cause B
EPU	3	FDEFX	0.9377	-3.3235	0.4164	A does not cause B
CPIAUCSL	1	FDEFX	0.0113	586.7302	0.0403	A does not cause B
TECH	1	FDEFX	0.3765	-6.4518	0.4623	A does not cause B
UNRATE	1	FDEFX	0.7405	236.3967	0.393	A does not cause B
PERMIT	1	FDEFX	0.8554	-1.6315	0.3224	A does not cause B
IRAQ	2	FDEFX	0.4956	-958.853	NA	A does not cause B
ELECT	2	FDEFX	0.9082	570.3735	NA	A does not cause B
RECC	2	FDEFX	0.9603	33.416	0.4855	A does not cause B
GULF	2	FDEFX	0.2752	-1977.99	NA	A does not cause B
OEF	2	FDEFX	0.6106	775.2853	NA	A does not cause B
GOVEXP	1	IRAQ	0.8998	10.7224	0.152	A does not cause B
EPU	3	IRAQ	0.0263	0.0014	0.1923	A does cause B
CPIAUCSL	1	IRAQ	0.9047	0.0049	0.2654	A does not cause B
TECH	1	IRAQ	0.7025	-0.001	0.3851	A does not cause B
UNRATE	1	IRAQ	0.2928	0.0546	0.1354	A does not cause B
PERMIT	1	IRAQ	0.7995	-1.00E-04	0.3431	A does not cause B
FDEFX	1	IRAQ	0.0515	-1.00E-04	0.1074	A does cause B
ELECT	2	IRAQ	1	0	NA	A does not cause B
RECC	2	IRAQ	1	0	0.5	A does not cause B
GULF	2	IRAQ	1	0	NA	A does not cause B
OEF	2	IRAQ	1	0	NA	A does not cause B
GOVEXP	1	ELECT	0.8077	16.6595	0.2854	A does not cause B
EPU	3	ELECT	0.9314	0.0013	0.3276	A does not cause B
CPIAUCSL	1	ELECT	0.487	0.0113	0.4202	A does not cause B
TECH	1	ELECT	0.9682	-0.0033	0.4117	A does not cause B
UNRATE	1	ELECT	0.7622	0.1295	0.2295	A does not cause B
PERMIT	1	ELECT	0.3442	-7.00E-04	0.179	A does not cause B
FDEFX	1	ELECT	0.9835	0	0.4999	A does not cause B
IRAQ	2	ELECT	1	0	NA	A does not cause B
RECC	2	ELECT	0.9852	0.0031	0.4875	A does not cause B
GULF	2	ELECT	0.0119	0.6794	NA	A does cause B

Variable A	Category	Variable B	pval	LRM	pvLRM	Result
OEF	2	ELECT	0.4842	-0.2715	NA	A does not cause B
GOVEXP	1	RECC	0.4522	-3.0197	0.4759	A does not cause B
EPU	3	RECC	0.0108	0.0145	0.0181	A does cause B
CPIAUCSL	1	RECC	0.6546	0.0954	0.3019	A does not cause B
TECH	1	RECC	0.4131	-0.0331	0.0905	A does not cause B
UNRATE	1	RECC	0.0176	0.3551	0.1554	A does cause B
PERMIT	1	RECC	0	-0.004	0.0058	A does cause B
FDEFX	1	RECC	0.707	1.00E-04	0.4203	A does not cause B
IRAQ	2	RECC	1	0	NA	A does not cause B
ELECT	2	RECC	0.7967	-0.2556	NA	A does not cause B
GULF	2	RECC	0.0083	-1.7104	NA	A does cause B
OEF	2	RECC	1	0	NA	A does not cause B
GOVEXP	1	GULF	0.8614	-1.6995	0.4064	A does not cause B
EPU	3	GULF	0.2709	0.002	0.1451	A does not cause B
CPIAUCSL	1	GULF	0.4518	0.0379	0.1591	A does not cause B
TECH	1	GULF	0.9592	-0.0026	0.2755	A does not cause B
UNRATE	1	GULF	0.1021	0.1033	0.1789	A does not cause B
PERMIT	1	GULF	6.00E-04	-0.0014	0.0824	A does cause B
FDEFX	1	GULF	0.9866	-1.00E-04	0.1793	A does not cause B
IRAQ	2	GULF	1	0	NA	A does not cause B
ELECT	2	GULF	0.9549	-0.2022	NA	A does not cause B
RECC	2	GULF	7.00E-04	0.2727	0.167	A does cause B
OEF	2	GULF	1	0	NA	A does not cause B
GOVEXP	1	OEF	0.8682	5.0679	0.1986	A does not cause B
EPU	3	OEF	0.5746	7.00E-04	0.1137	A does not cause B
CPIAUCSL	1	OEF	0.7422	0.0117	0.2878	A does not cause B
TECH	1	OEF	0.0014	-0.0115	0.1369	A does cause B
UNRATE	1	OEF	0.0837	0.0676	0.1228	A does not cause B
PERMIT	1	OEF	0.712	-1.00E-04	0.1086	A does not cause B
FDEFX	1	OEF	0.5256	-1.00E-04	0.1002	A does not cause B
IRAQ	2	OEF	1	0	NA	A does not cause B
ELECT	2	OEF	0.2101	0.1031	NA	A does not cause B
RECC	2	OEF	1	0	0.5	A does not cause B
GULF	2	OEF	1	0	NA	A does not cause B

Notes:

Category 1: Economic Indicator

Category 2: Period of Crisis Variable

Category 3: Economic Uncertainty

Discussion

Figure 2 describes the causal relationships found within the model using Granger causality testing. Of the twelve variables used in our model, eight are correlated with at least one other variable. Four of the five crisis variables do not produce causal relationships with the other variables in the model: the Iraq and Gulf Wars, the Global War on Terrorism, and election years. This could be in part due to the length of these wars. The Iraq War and Global War on Terrorism range over eight and thirteen years respectively; whereas the Gulf War lasted less than a year. In addition, it could be argued that these wars began and ended in peculiar times, such with the enactment of NAFTA in 1994 and strong dollar policies after 2014, which may have distorted the outcome. Aside from the binary variables, national defense expenditure and inflation had no effect on change in public expenditure. Several interesting relationships including public expenditure appear following Granger testing. Granger testing establishes five causal relationships involving public expenditure. Four variables show positive causation with public expenditure: the binary recession variable, building permits, unemployment rates, and economic policy uncertainty. Recession periods and unemployment follow the same reasoning in explaining their mutual positive causation: as economic conditions decline, often resulting in a decline in employment, we expect political authorities to pursue

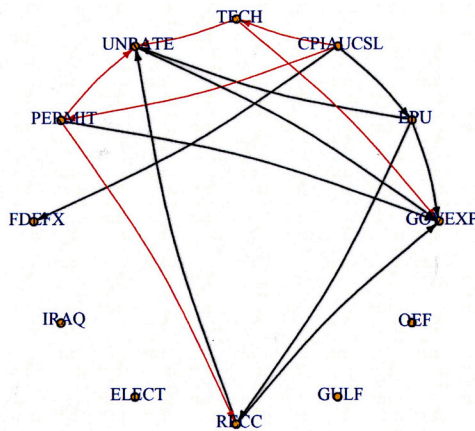


Figure 2: Flow of causation. Black arrows represent positive causation; red arrows represent negative causation.

policies to stimulate the economy, resulting in an increase in public expenditure. The relationship between economic policy uncertainty and public expenditure also makes intuitive sense: as the general public becomes uncertain about the future, it often grows skeptical of market corrections, preferring an authoritative body to oversee and speed up recovery.

The positive causation of building permits, a measure of housing activity, on public expenditure is less intuitive than the prior variables. Using our prior reasoning, we would expect a decline in a major industry such as housing to have recessionary effects, resulting in a growth in public expenditure. Overall the effect housing activity has on public expenditure during the crises should be negative. However, the results of Granger testing do not show a negative causal relationship but a positive one. This would suggest that as housing activity increases public expenditure increases as a result. Despite this effect, housing activity maintains a negative causal relationship with the binary recession variable.

Granger causality results show that activity in the technology sector negatively causes change in public expenditure. This finding indicates that as technological growth declines, as measured by the San Francisco Tech Pulse, government expenditure rises in subsequent periods. Similar to the intuition implicit in the recession variables, we expect that a decline in the technology sector, a major U.S. industry, may trigger recessionary effects, as in the case of the information technology bubble during the late 1990s through early 2000s.

Conclusion

The Peacock-Wiseman hypothesis and the ratchet effect predict that exogenous events, such as war, natural disasters, and major crises, result in an increase in public expenditure. In our model, we test period of crisis variables along with key economic indicators and public uncertainty. Among these categories, significant variables producing change in public expenditure include unemployment, recession years, technological activity, housing activity, and economic uncertainty.

The first important finding from causality testing is the importance of economic conditions in determining public expenditure change. Recessionary effects, such as unemployment and industrial activity decline, significantly contribute to public expenditure increases. The macroeconomic variables, recession years and

unemployment rate, positively causes public expenditure. Technological activity, as measured by the San Francisco Tech Pulse, negatively causes changes in public expenditure. Housing activity produces counterintuitive results, showing a positive causation with public expenditure.

Another important result of Granger testing shows that economic uncertainty positively causes public expenditure. Prior to testing, we anticipated that economic uncertainty would cause an increase in public expenditure through the political process. As the general public perceives a decline in economic conditions, one potential countervailing response comes through democratic processes, such as voting or running for office. During such times, the public may grow skeptical of market corrections and demand more agency influence on the part of the government. In recessions, such influence often appears in the form of fiscal policy. In line with our prediction, the results suggest that uncertainty regarding current economic conditions influences policy decisions in subsequent periods.

Granger causality testing shows several intriguing relationships; however, it insufficiently covers several potential areas of research. The relationship between housing activity, recessionary periods, and public expenditure was inadequately explained by the model. Specifically, the positive causation of housing activity on public expenditure in normal times contrasts with negative causation in recession periods. We expected the relationship between housing activity and public expenditure to be similar to that of technological activity and public expenditure. Both technological and housing activity feature prominently in recent economic bubbles; however, one is linked to a negative causal relationship and the other to a positive causal relationship with public expenditure. As a result, the causes of some specific economic bubbles, while addressed but not fully elaborated, remain unclear from the Granger results alone.

Several conclusions follow from Granger causality testing. Three categories of variables were considered in our model: economic indicators, periods of crisis, and economic uncertainty. Three of the economic indicator variables produced causal relationships with public expenditure: unemployment rate, technological activity, and housing market activity. Of the five period of crisis variables, only recession years produced a significant causal relationship with any other variable in

the model. Overall, evidence for variables in line with the ratchet effect and Peacock-Wiseman hypothesis is limited from 1985 through 2017. Nevertheless, economic uncertainty, which captures public perception of such events, significantly shows positive causation with public expenditure. Combined, the variables featuring causal relationships with public expenditure share a common attribute: they reflect elements of economic activity, rather than political or military events. While the Peacock-Wiseman hypothesis does not hold through the period of our model, when it is generalized to extend to other shocks and uncertainty, change in public expenditure can be explained by key indicators, recession activity, and uncertainty.

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Incarcerated and Pregnant: How Societal Attitudes Affect the Sentencing and Treatment of Pregnant Inmates in Rural Tennessee

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Abstract

This ethnographic case study examines how southern society's views on motherhood and criminal punishment when held by correctional staff and judges influence the sentencing and treatment of female inmates who are pregnant while incarcerated. The research was conducted at a county jail in rural Tennessee. Semi-structured interviews were conducted with a male and a female correctional officer, the jail administrator, the jail's nurse, a judge from the county, and three inmates. The interviews were then transcribed and analyzed for dominant themes. Nearly all the respondents held more traditional views on criminal punishment and motherhood. In addition, these views on motherhood, not the views on criminal punishment, had an impact on the sentencing of the pregnant inmates and how these inmate mothers were viewed by the staff. The inmates also appeared to internalize these views and to blame themselves for their incarceration. However, the inmates reported their prenatal care was good, so it did not appear to affect how they were treated. This study does have limitations, though, such as its small sample, the fact that housing pregnant inmates was a relatively new issue for this specific jail, and that the inmates' responses may have been influenced by the presence of a prison authority. It is also just a snapshot of this small, rural area at this time, and therefore the findings cannot be generalized to other areas. However, this research is important because it suggests that certain societal attitudes in small, rural, southern areas when held by correctional staff and judges can influence pregnant inmates' sentences and how they are viewed by the staff.

Over the past few decades, women have been one of the fastest growing populations under correctional supervision. Between 1980 and 2014, the number of incarcerated women rose by nearly 700 percent. There was a total of 26,378 female inmates in 1980 and the total rose to 215,332 female inmates in 2014 (The Sentencing Project, 2015). Specifically, in local jails, the female inmate population increased from 68,100 to 100,940 between 1999 and 2013, an increase of nearly 48 percent (Minton, Ginder, Brumbaugh, Smiley-McDonald, and Rohlof, 2015). The increase in the number of female inmates has led to another problem: the increase of inmates who are also mothers. Two-thirds of incarcerated women have minor children (Gilad and Gat, 2013, p. 372); it is estimated that annually there may be anywhere from 6,000 to 20,000 pregnant women in the nation's jails and prisons (Dignam and Adashi, 2014, p. 14). This increase in incarcerated and pregnant women presents many challenges that our correctional system and even society at large are often not suited to face, such as additional medical costs, an increase of children living with aging grandparents or in foster care, and problems with battling stigma and constructing identity related to mothering and motherhood.

Literature Review

Demographics of Incarcerated Mothers

For the most part, incarcerated women belong to minority racial groups. Many of these women have a low socioeconomic status, limited education, and are often under 40 years old. They have higher rates of substance abuse and mental health disorders than incarcerated men. They are also likely to have a history of abuse, specifically child abuse, sexual abuse, physical abuse and domestic violence (Laughlin, Arrigo, Blevins, and Coston, 2008; Vainik, 2008; Kennedy, 2012; Barnes and Stringer, 2014). Also, nearly 53 percent of female inmates in 2015 were incarcerated for property or drug crimes (Carson and Anderson, 2016). Incarcerated mothers share many of the same demographics as the general female inmate population. However, incarcerated mothers are more likely than other prisoners to be incarcerated for a non-violent drug or property crime. In addition, incarcerated mothers tend to have multiple children, with the majority having two to three children. Often, these mothers live with their children as the child's primary caregiver before being incarcerated: estimates indicate that 64.3 percent of state-level incarcerated

mothers lived with their children prior to arrest, and 31 percent of those mothers lived alone with their children prior to arrest (Laughlin et al., 2008; Kennedy, 2012).

The challenges of mothering while incarcerated

Being an incarcerated mother presents many challenges. One of the most researched challenges is how incarcerated women construct their identity as a “mother.” In this study, the majority of the research is interview-based, and findings revealed that even though the women were incarcerated, they still viewed themselves as mothers. Some respondents simply reflect an understanding that they are “bad” mothers and feel guilt or shame over their actions. However, most incarcerated mothers try to find new ways to construct their identity as a mother (Enos, 2001; Ferraro and Moe, 2003; Barnes and Stringer, 2013; Couvrette, Brochu, and Plourde, 2016; Aiello and McQueeney, 2016; Easterling and Feldmeyer, 2017). Maintaining contact with children, having a good relationship with the child’s caregiver, and making plans to reunite with their children after release were important ways to construct a “good” mother identity (Enos, 2001; Ferraro and Moe, 2003; Barnes and Stringer, 2014). In addition, Couvrette, Brochu, and Plourde (2016) found in their interviews with substance-abusing, incarcerated mothers that they had created a new identity of the “deviant good mother.” Though most of the women felt that “good” mothers do not use drugs, some felt that they could still be a “good” mother and use substances such as alcohol and drugs. Some even reported that their substance use made them more relaxed and open to their children. Enos (2001) found that incarcerated mothers believe substance use did not interfere with their ability to be a mother, and that crimes such as shoplifting or fraud were ways to gain resources for their children. Aiello and McQueeney (2016) reveal that incarcerated mothers also construct their identities by embracing and distancing themselves from stigma. To distance themselves, they separate their criminal acts from their identities of being a mother. In another attempt to distance themselves from the stigma, they used “defensive othering” to deflect the stigma onto other incarcerated mothers. This allowed them to claim that they were “better” at mothering than other incarcerated mothers, which is similar to what Enos (2001) found in her study. Finally, Easterling and Feldmeyer (2017) focused their research specifically on white inmate mothers in a rural area in Kentucky and found that living in a rural area may amplify

one's "spoiled identity." Since rural areas are smaller, when an individual becomes incarcerated, it can be widely known; therefore, incarcerated mothers are likely to be recognized and faced with informal sanctions and stigmas from their local communities.

Another challenge faced by incarcerated mothers is arranging care for their children. After becoming incarcerated, mothers have to arrange care for their children, especially if they were the primary caregiver. Often, they arrange for their children to live with friends or family members, specifically grandparents (Enos, 2001; Mignon and Ransford, 2012; Kennedy, 2012). Enos (2001) found that incarcerated mothers express concern over whether or not caregivers were suitable, and some inmate mothers even report that the caretakers are hostile towards them and work to limit the mother's contact with their child. Caregiver hostility can make it hard for incarcerated mothers to keep in contact with their children. Maintaining contact with children has been found to be an important way to maintain one's identity as a mother. The most common ways to keep in contact are writing letters and making phone calls. However, hostile caretakers, lack of money for phone calls or stamps, long travel times to facilities, and lack of interest from the children can all prevent women from keeping in contact with their children (Enos, 2001; Flavin, 2009; Mignon and Ransford, 2012).

Maintaining custody of their children can be a special challenge for incarcerated mothers. The Adoption and Safe Families Act (ASFA) of 1997 required termination of parental rights (TPR) proceedings to be brought forth if "the child has been in foster care for fifteen of the most recent twenty-two months" or "the court has determined that the child is 'an abandoned infant.'" (Lee, Genty, and Laver, 2010) After reviewing case files, Lee et al. (2010) found that "TPR was granted in 81.5 percent of the cases involving parents incarcerated due to drug-related offenses" and "TPR was granted in 92.9 percent of the cases in which the mother was incarcerated" (p. 81).

Pregnant inmates also face unique challenges: often, pregnant inmates are at an increased risk for a complicated pregnancy. Histories of health problems related to substance abuse, STDs, and psychiatric disorders are particularly impactful on their pregnancy. Low birth weight is more of a problem amongst babies born to

pregnant inmates than babies born to mothers living in the community (Mertens, 2001; Parker, 2005; Sufrin, Kolbi-Molinas and Roth, 2015). This is especially true for babies born to pregnant inmates who are in their 30s (Hollander, 2005). Pregnant inmates also need specialized care such as prenatal care or nutritional diets. However, they do not always receive this care, as there are no laws requiring it, and even in states that require incarcerated mothers to receive prenatal care, the care is not always adequate (Vainik, 2008; Parker, 2015).

Addressing the challenges of mothering while incarcerated

Recently, there has been more research on the programs and policies that can address the difficulties incarcerated mothers face. One program receiving attention is prison nurseries. Prison nurseries are programs that allow incarcerated mothers to live with their newborn babies for a set amount of time, on average 12 to 18 months, and the program is designed to strengthen the bond between mother and child. The nurseries are located in a separate area, away from the general prison population. Typically, mothers eligible for this program are those who have given birth while incarcerated, have committed a non-violent crime, and have a relatively short sentence. Research has shown that these programs can help both the baby and the mother because it allows them time to bond and become attached, which can be important for the baby's development. Additionally, the program improves the mothers' mental health and lowers their recidivism rates (Gilad and Gat, 2013; Elmalak, 2015). As of 2015, there were nine prison nurseries operating in California, Illinois, Indiana, Ohio, Nebraska, New York, South Dakota, Washington, and West Virginia (Elmalak, 2015).

Prison nurseries also allow inmates to spend time with their newborn babies before being separated, which can be very important for their mental and emotional health. Forced separation from their babies after giving birth can be damaging for some inmates. In a study by Chambers (2009), incarcerated mothers forcibly separated from their babies reported that they felt positive emotions up until the birth. After the birth, they reported feelings of loss and that a piece of them was missing. However, they tried to maintain a connection with the child even while he or she was not physically there by focusing on the positive emotions and experiences with their baby and thinking about the reunion they would someday have

with them. However, there is backlash against prison nurseries: opposing arguments suggest that prison is not a stable environment to raise a child and that when the child is taken away, it could be detrimental to the mother's mental health. Moreover, nursery programs are not applicable to children born while the mother was not incarcerated (Gilad and Gat, 2013; Elmalak, 2015). Campbell and Carlson (2012) interviewed correctional administrators in eight states that had prison nurseries and 20 states that did not. The authors found that of the correctional administrators in states that did not have a prison nursery program, receptiveness to the idea varied. Seventy-Five percent of correctional administrators in the South were unreceptive to the idea of prison nursery programs. The correctional administrators from the Northeast and West were generally more favorable of the idea.

Parenting classes have also been shown to help pregnant inmates. In their three-year evaluation of the Turning Points parenting curriculum at a correctional facility in Missouri, Urban and Burton (2015) found that the program was effective in improving the mothers' parenting knowledge and their parenting confidence. Loper and Tuerk (2011) gave an eight-session parenting class to incarcerated mothers that focused on parenting stress and improving communication with children and caregivers. While there was a significant dropout rate, they found that the mothers who participated in the program "reported reduced parenting stress, improved alliance with home caregivers, increased letter-writing, and reduction of mental distress symptoms" (p. 89). There are also programs specifically designed for pregnant inmates such as the doula birth support program (Schroeder and Bell, 2005) or the Women and Infants at Risk program which focuses on pregnant inmates who have substance abuse problems (Siefert and Pimlott, 2001).

Southern societal views on motherhood and punishment

A significant part of the research on incarcerated mothers focuses on correctional facilities in the North and Western parts of the United States (Siefert and Pimlott, 2001; Mignon and Ransford, 2012; Aiello and McQueeney, 2016). Southern prisons are not often found in the research, but they do represent an important region of the country because incarceration rates are higher in the southern U.S. In 2015, the average incarceration rate per 100,000 U.S. residents age 18 and older was 860. However, southern states including Georgia, Alabama, Arkansas, Louisiana,

and Mississippi had an incarceration rate of over 1,000, and states like Kentucky, Tennessee, and Florida had incarceration rates in the 900 range (Kaeble and Glaze, 2016). In addition, the Bureau of Justice reported that southern states, including the District of Columbia, accounted for 50% of the local jail inmate population (Minton et al., 2015). Moreover, the South has been found to have a distinct culture that is often more traditional in its views on a number of subject such as crime and punishment. Hurlbert (1989) analyzed General Social Survey data to determine if southerners held distinct, more traditional attitudes about certain subjects such as the use and approval of violence and force, politics, women, race, and moral/religious obligations. Southerners were more likely to hold more traditional, conservative views in regards to religion, politics, and racial issues. However, views on the use of violence and force, and views on women in the workplace were found to be somewhat less distinct when compared between southerners and non-southerners. In regard to women's gender roles, Rice and Coates (2005) found that while attitudes about women's gender roles have become more egalitarian over time, southerners were still somewhat more traditional in their view of women's gender roles than non-southerners. In addition, people living in rural areas were found to be more conservative on these views than people living in urban areas.

However, while views about women and politics or women in the workplace may vary, motherhood is viewed in a similar way in both the South and the non-south. Fulfilling one's role as a mother is seen as an important part of a woman's identity. "Good" mothers are caring, loving, and nurturing to their children. "Good" mothers are selfless, sacrificing everything they have for their children, and put their children's needs and wants above their own. They are also the primary caretaker of their children and they are always available for their children, both emotionally and physically. Finally, they refrain from actions that are associated with "bad" mothers, such as criminal activity, putting work above one's children, or not meeting their children's needs and wants (Roberts, 1995; Enos, 2001; Ferraro and Moe, 2003; Aiello and McQueeney, 2016). Yet, this definition of a "good" mother is shaped around the experiences of white, heterosexual, married, and economically advantaged women. Women with low socioeconomic status, women of color, uneducated women, single women, et cetera tend to fall into the category of a

“bad” mother because they do not meet the standards of what a “good” mother is (Roberts, 1995; Ferraro and Moe, 2003; Flavin, 2009; Kennedy, 2012).

Incarcerated mothers tend to fall into many of the categories associated with “bad” mothers, and this negative categorization can adversely affect their punishments. Mothers who commit crimes have broken both the law and the societal norms of good mothering. Mothers who commit crimes and belong to dominant group categories are believed to be more rehabilitative. Thus, these women are more likely to get lenient punishments that allow them to stay with their children, who are used as a form of social control. By contrast, mothers who commit crimes and do not fall into dominant group categories are more likely to receive harsher punishments. They are viewed as selfish, dangerous, unfit to be a mother, and less likely to be rehabilitative. Therefore, instead of receiving a punishment that allows for mothering options, women who are not members of dominant groups are more likely to end up incarcerated without the option to mother their children (Roberts, 1995; Kennedy, 2012).

The present study

The present study is a qualitative case study. Though it is not a true ethnography, it is ethnographic in nature because it examines how traditional southern societal views when held by members of a small, rural criminal justice system including correctional officers, jail administrators, nurses, and judges influence the sentencing and treatment of female inmates who are pregnant while incarcerated. It focuses mainly on southern society’s views on motherhood and criminal punishment. The purpose of the present study is to address gaps in previous research on incarcerated pregnant women. Interviews with correctional officers, jail administrators, nurses, and judges, rather than only inmates, are used to illustrate how southern societal views on motherhood and criminal punishment affect the sentencing and treatment of women who are pregnant while incarcerated. Moreover, this study focuses on a facility in the rural South, an area where there have been few studies on incarcerated pregnant women.

Methods

Research Site

This research was conducted at a county jail in rural Tennessee. As of the 2010

census, this county had a population of less than 20,000, and roughly 98 percent of the population identified as White. Around 10 percent of the population held a bachelor's degree or higher with nearly 75 percent of the population reporting being a high school graduate or higher. It was estimated that about 20-30 percent of the population lived in poverty (United States Census Bureau, 2016).

Respondents

The sample consisted of two inmates who were pregnant at the time of the interview, one inmate who had been pregnant during her incarceration and had recently given birth, the jail administrator, a female correctional officer, a male correctional officer, the jail's nurse, and a judge from the county. It is relevant to interview these selected members of the criminal justice system because they are important in making decisions and policies that affect the lives of inmates who are pregnant at the time of incarceration. The judge is responsible for the sentencing decisions, the jail administrator is responsible for creating institutional policies and running the jail, the nurse provides the inmates with medical care, and the correctional officers are constantly in contact with the inmates and are responsible for carrying out the institutional policies. It was relevant to interview the inmates because they could provide insight into how they viewed their punishment versus how these members of the criminal justice system viewed their punishment, and they could provide insight into the treatment they received from these various criminal justice employees. Housing pregnant inmates was a somewhat new issue for this jail, so specific programs for pregnant inmates were not yet in place. In addition, there were no parenting classes, or nursery programs. Therefore, I was unable to research further if southern societal attitudes had an influence on programs at the jail.

All the respondents were white and had lived in the southeast for nearly their whole lives. Most of the respondents described themselves as working or middle class. For education, most of the correctional staff had some college education while the inmates had their GED or were working on it. What is most important to note is that the correctional staff and the inmates had similar demographics. The judge, however, was older than most of the correctional staff and the inmates, had more education, and had been working in the criminal justice system for a longer time. As a noted limitation, this study had a very small sample, and the sample was

not very diverse. In addition, this study only looks at one small, rural area. Therefore, it is not representative of the larger society nor is it generalizable to other areas; however, that was not the goal of this study.

Procedures

Permission was obtained from both the university and the jail to do this study. Semi-structured interviews were used to collect the data. The interviews were voluntary, and the respondents received no compensation for agreeing to be interviewed. All respondents had to sign a written informed consent form before being interviewed or recorded. No one refused to be interviewed or recorded. It is possible that inmate responses may have been affected by the presence of an authority figure in the room. For example, when the inmates were being interviewed, the jail administrator was also in the room, and it may have affected their responses. They tended to look at her before answering questions about the facility or the staff, and even though she encouraged them to be honest, her presence may have affected their responses.

The interviews ranged from 10-25 minutes long and were audio-recorded. Notes were also taken during the interview. The interviews were then transcribed and read over in order to identify dominant themes. Significant statements were selected from each of the interview transcripts. Similar statements were then grouped into categories and read over again to find dominant themes. The respondents were informed that they would not be identified by name in order to keep their responses confidential. Therefore, in describing their responses, initials were assigned as identifiers for inmates. The initials do not correspond to respondents' real names.

Results

After reviewing and analyzing the interviews, a few dominant themes emerged. Each is discussed below.

Traditional Views on Motherhood

One of the dominant themes was that the views on motherhood held by the respondents were very similar to the traditional, dominant views on motherhood. There was a strong emphasis on being selfless, loving and caring for one's child, and being responsible for the child and providing for it. Inmate A.B. described being a "good" mother as "Being there, taking care of it, not being in jail." When asked if

she felt jail hindered her ability to mother, she replied, "It does because the child's not with you, but other than that no. You can still give your child love in jail." However, while she felt that one could still love her child while in jail, she did appear to recognize that being in jail was not associated with being a "good" mother. Inmate three held similar ideas of what a "good" mother was. She stated, "I guess to be a good mom you. . . you love your kids. You take care of them, you know. Just do whatever it is that they need." Inmate C.D. did not really elaborate on what being a "good" mother meant to her, but she did state, "A lot of times you don't know what being a mom is until you have to do something like this."

The correctional staff and judge held similar views on what makes a "good" mother. The female correctional officer stated, "My view of being a mother is being loving, nurturing, keeping a child safe, keeping stability with a child, and just teaching it the right thing about life, and loving it." The male correctional officer described "good" mothering as "being there till they're 18, feeding 'em, clothing 'em, bathing 'em, making sure they have the things that they need." The jail administrator and the nurse emphasized that motherhood was about being selfless and putting your child first. The nurse even stated, "I could not imagine putting myself first, let alone carrying a baby, and knowing [that I was using drugs]." Finally, after speaking about his own mother, the judge stated that a mother was someone who nurtures others.

These definitions of what a "good" mother is falls in line with our society's idealized vision of motherhood. There are many women, though, who cannot live up to this idea of what a good mother should be because this vision of motherhood is based on the experiences of mothers who belong to dominant groups in society. However, this has become the standard for all mothers, regardless of their differences.

The role of choice

Another dominant theme was the role of choice, which was heavily emphasized. Inmates were responsible for the choices that led to them going to jail, and because of their choices, they did not know what being a mother really was like. When talking about her thoughts on women being pregnant and incarcerated, the jail administrator replied, "I don't understand how someone can be so selfish."

She later explained that one of the inmates could possibly get out before her baby was born, and when discussing this, she noted, “And that late in the pregnancy I know—I mean not a hundred percent but given her history—that she’ll go back to using.” She also described an incident where one of the inmates felt the baby kick and thought she had broken a rib. The jail administrator attributed this to the inmate’s drug use. She stated, “I’m going to assume that with their history that they abused with the other pregnancies, so they don’t know what actually being pregnant feels like.” The nurse shared similar ideas. She said, “Obviously as soon as they do jail time, they’re gonna go right back out to do the same things.” She even noted that, while she had never experienced an addiction, “If I was to get a charge . . . I would learn my lesson now to one, stop drugs, or, two, get a hysterectomy, or my tubes tied.” This seemed to imply that she felt the women were not stopping their drug use out of choice rather than because of their addiction.

The female correctional officer was blunt with her answers. She replied, “It’s their choice when they chose to do that drug and were pregnant with that child.” She also stated that these women “don’t know how to be mothers.” She then discussed an incident where she was talking with one of the pregnant inmates, and when the inmate stated that she loved her children, the female correctional officer replied back that if the inmate loved her child, then why was she “feeding it meth?” She said that the inmate had no response to that question. The male correctional officer also noted that choice played a role, but his answers were less blunt than those of the female correctional officer. He stated, “I guess it’s just what you’re doing is what brings you to jail . . . ’cause obviously if they were doing the right things, they probably wouldn’t be here anyway.” In addition, while he did state that he was not sure the babies would receive everything they needed if the women were not in jail, he did not explicitly state that these women did not know how to be mothers. Finally, the judge stated that many, but not all, people addicted to drugs tended to care more about their addiction than other things. However, he did recognize that other factors may be contributing to the addiction instead of just choice.

Even the inmates themselves stated that it was their fault they were in the situation they were in. When asked about what she thought of her sentence, Inmate A.B. stated, “It’s my own fault too, so I can’t really say that it’s not fair when it is.” Inmate

E.F. noted, “Well, I don’t like it, but it’s my own fault I’m here.”

This way of thinking falls in line with our society’s emphasis on individualism. Instead of being products of their environment, people are seen as masters of their fate. Instead of looking at their circumstances or their environment, the correctional staff in particular were quick to blame the inmates. While it is true that they chose to take the drugs, the correctional staff failed to consider any underlying problems that may be contributing to that decision. These women are economically disadvantaged, have little education, and live in a poor, rural area where there are not many opportunities. In addition, one of the inmates stated that she had depression and anxiety, so mental health issues may be an influencing factor. The judge was the only one who noted the possibility of underlying mental health issues as a source of these women’s drugs use. He stated, “A lot of the folks I see in court are self-medicating some underlying mental health issue, mamas included.”

In addition, this reinforcement of individualistic ideas and ideas that the inmates are not fit to be mothers may be internalized by the inmates. They stated that they felt it was their own fault for being in jail, and Inmate A.B. and Inmate E.F. even reported that they felt looked down upon, though they did not state who they felt stigmatized by.

Harsher view on sentences

Overall, the inmates felt that the sentences were fair, while the correctional staff felt that they needed to be somewhat harsher, though there was mention of a need for rehabilitation. Two of the inmates had been sentenced, and they felt that considering all the circumstances, their sentences were “fair.” One of the inmates even described her sentence as “God’s way of telling me to sit still and listen” and that she “needed this.” The jail administrator stated, “Sometimes I feel [the sentence] isn’t harsh enough.” She went on to discuss one of the inmates who had violated her probation. Her sentence was to serve the remainder of her previous 11 months and 29 days sentence, and she could possibly be released before her baby was born. The jail administrator did not think this was harsh enough, because the inmate had been a repeat drug offender and used while she was pregnant.

When asked whether she felt the punitive sentences for pregnant inmates were sufficient, the female correctional officer replied, “Just put it this way, they

wouldn't want me to be the judge. Because I would lay them down probably longer than he does." However, she also felt that some kind of rehabilitation was needed. She said, "Let's get some help to get them ready for society, to get their minds reset, their hearts reset, a work ethic programmed." The nurse also felt sentences should be stricter, and specifically mentioned how one of the inmates had been a repeat drug user even while pregnant. When talking about sentences, the male correctional officer noted that "some's fair and some's not near enough," and that even though inmates were human, he felt that inmates, in general, had too many privileges, such as television. The judge did not call for stricter or lesser punishments. He recognized that the system did have flaws, but he called our criminal justice system "the fairest." He also noted that sentences could be beneficial "at some level," but being in jail or even being in rehab did not always fix the underlying problems.

Traditional attitudinal views toward criminal punishment and the tough-on-crime emphasis often found in the South could explain why most of the correctional staff felt that sentences should be harsher and why there was less emphasis on rehabilitation. However, as seen from the jail administrator's comments, the nurse's comments, and the female correctional officer's comments, this view of sentences needing to be harsher appears to be related more to the fact that the inmates did drugs while they were pregnant instead of simply that they did drugs. These women not only broke the law, but by using drugs while pregnant, they also broke societal norms of what a "good" mother should do. Using drugs while pregnant was seen as a selfish decision that unnecessarily endangered the child. This appears to be considered an even more serious offense than drug use alone, and thus, they deserved harsher punishments. For example, when she was asked about her view on criminal punishment in general, the nurse stated that she had a "harder time on dealing with the child abuse problems that they have and the drug abuse [and] trying to get them on the right path as opposed to them coming and being a repeat offender in jail."

Caring for the child

The care the pregnant inmates received at this facility included obstetrician (OB) appointments, prenatal vitamins, milk with each meal, an extra mat for comfort, a snack of a peanut butter sandwich, a banana, and a milk before bedtime, and emergency care if needed. The care and treatment that the pregnant inmates

received was described by Inmate A.B. as “real good.” Inmate C.D. also felt that she received good care and was treated fairly by the staff. However, Inmate E.F. indicated they were “treated like inmates.” The correctional staff all felt that the pregnant inmates received really good care, even stating that it was probably better than they would have received outside of jail. The male correctional officer stated, “I think they probably get better medical attention here than they do on the streets if they were, you know, doing for their selves.” Even the judge felt that being in jail was “the only real plausible possibility they have of staying clean during the course of their pregnancy, of getting the healthcare that they need during the course of their pregnancy, and of having a child that’s born without the impact and long-term, potentially, effects of being a drug addicted baby when it’s born.” It almost seemed like the correctional staff and the judge felt they were doing the pregnant inmates a favor by keeping them there. However, it appeared that this care was given more to benefit the child instead of the mother. While it also helps keep the mother healthy, the extra snack and milk, the vitamins, and the OB appointments all relate to the health and wellbeing of the child. Although the inmates are viewed as unfit mothers, this does not appear to affect the care they receive, despite the fact that the care is intended more for the child than the mother.

Child’s interests > The mother’s interests

Another dominant theme found was that the child’s interests were greater and more important than the mother’s interests. There seemed to be an emphasis on protecting the child and making sure the child was healthy. For the female correctional officer, “it’s about that child that’s growing inside of them that they’re wrecking. It didn’t even ask to be there. It doesn’t have a choice, so somebody has got to take care of those babies.” The female correctional officer considered children to be a “gift from God,” and she felt that by incarcerating the pregnant inmates “they’re saving the child’s life so that child can be healthy.” She also recommended taking some reactive approaches to protecting the children. Since the mothers were seen as unfit to have their children and the foster care system moved them around too much, the female correctional officer recommended building an orphanage and having “good people” run it. The jail administrator also felt that the child should come first. She said she was “very protective of children,” and she felt that an

inmate's baby would be safer if the inmate stayed in jail until she had it. While she recommended parenting classes to help the mothers, the emphasis seemed to be on protecting the child and its interests.

The nurse stated, "If you come here pregnant, it is probably better to stay here to finish out your pregnancy than to send them back out and continue doing the drug abuse and have a NAS [Neonatal Abstinence Syndrome] baby." She even spoke about a preventative measure to protect unborn children: the local health department had teamed with the jail to provide birth control rods to inmates who wanted one. Good for three years, this prevented the mother from potentially having another child in jail. The male correctional officer also felt that jail was the best place for pregnant drug users. He said, "That kid is probably gonna [sic] be born addicted and may or may not make it if she wasn't in here. I'm not saying that that's the right thing to do or the wrong thing to do. I think it's the best thing for them." The judge stated that he considered the impact that releasing the mother would have on the unborn child, and he felt that even though housing pregnant inmates increased costs, it was worth it if it helped the mother and the child.

The child was seen as innocent and the respondents felt that its interests should come before the mothers. The correctional staff and the judge felt like they were supposed to be protectors of this child since the mother was unfit to. Although there was some mention of actions that could be taken to help the mother like parenting classes or birth control, there was more of an emphasis of making sure the child was safe, healthy, and protected as seen from the quotes above. With the mother being considered unfit and a "bad" mother by societal standards, it was up to "good people" like the correctional staff and judge to ensure that the baby was cared for and protected from its mother's addiction.

Social location

Finally, there was a contrast found between the male respondents (the judge and male correctional officer) and the female respondents (the jail administrator, the nurse, and the female correctional officer). The male respondents tended to be more distant and less critical. They did not condone the actions of the inmates, but they were not as harsh as the female respondents in their criticisms of the inmates and the inmates' actions. The judge, for example, tried to weigh all sides in his responses

and explain both his thoughts as well as other possible explanations. The male correctional officer even stated, “We don’t care that they’re pregnant and they’re in jail and ‘oh, she’s a bad mom.’ I mean the kid can’t help it, and like I said, people make mistakes. I mean they’re still human.” He also tended to use phrases like “I guess” or stated that not everyone agreed with him, or that something may or may not be the right thing to do.

The female correctional staff respondents tended to be more blunt and harsher in their responses than the male respondents. They also appeared to be more critical of the pregnant inmate’s actions, such as when they stated it was the inmate’s choice and that they were not as fit to be mothers and when they stated that they believed the punishments should be harsher, specifically for the inmates who have repeatedly tested positive for drugs while pregnant. Also, they were more invested in the lives of the pregnant inmates and their children than the male respondents. The female correctional officer felt that she was a “counselor” and a “mother figure” to the female inmates. The jail administrator stated that she was “very protective” of children, and she was worried about what would happen to the baby if the inmate was to get released before it was born. The jail nurse was very emotional in her response about women who were incarcerated and pregnant, because her adopted daughter was born to an addicted mother. She wished that the inmates would “concentrate on being pregnant instead of drugs.”

The reason for these differences between the male respondents and the female correctional staff respondents may be due to their social location. The female correctional staff respondents have a social location that is more similar to the inmates’ social locations. First, all the female respondents were mothers. They may feel stronger about the inmate’s actions because they have children of their own, and they would not want their children to be exposed to drugs like the inmates’ children. In addition, the female respondents are white, have similar socioeconomic backgrounds, and have grown up in the Southeast all their lives, similar to the female inmates. They also interact more with the female inmates than the judge or the male correctional officer. They have a more developed relationship with the pregnant inmates which may have influenced their responses. In addition, they have conflicting roles. The female correctional staff have a professional side that has to be tough

and stoic and neutral, but they also have a mothering side that is concerned about the babies of these pregnant inmates. However, even though they may feel stronger about this issue, it does not affect how they treat the inmates, and they said they would not want to treat them any differently.

Conclusion

Overall, there were more traditional views on criminal punishment and motherhood were found among nearly all the respondents. In addition, the views on motherhood appeared to have an impact on the sentencing of the pregnant inmates and how these inmates were looked at by the staff. Though they had more traditional views on criminal punishment, these did not seem to have much of an effect on the sentences or how the inmates were viewed. However, these views on motherhood did not appear to negatively affect how they were treated by the staff because all three of the inmates reported that the care they received was “good.” These views also appeared to be internalized by the women and had an impact on their identity because they blamed themselves and even reported feeling stigmatized. This research is significant because it suggests that certain societal attitudes, when held by correctional staff and judges, can influence pregnant inmates’ sentences and how they are viewed by the staff. However, as stated already, these societal attitudes do not appear to have a “negative” impact on the mothers’ treatment, but this may have been because the child’s interests were considered more important than the mothers’ What is especially interesting are the background similarities between the inmate mothers and the female correctional staff, and the stark differences in the constructions of drug-using, pregnant inmates as “bad mothers.” Given the reliance on “choice” as the only explanation for women’s drug use while pregnant, structural factors that constrained their choices were not considered. From the female correctional staffs’ perspectives, if they could be “good” non-drug using mothers, then any women like them could and should be able to do so. This suggests that attitudes toward inmate mothers (and perhaps fathers) hinder the offering of parental programming and rehabilitation goals/efforts.

To address the limitations of this study, future studies could include more research sites including county jails and state prisons in other Southern states. It could also look at both the rural South and the urban South to see if different

attitudes are prevalent that may affect the study. In addition, to make the study more representative, a larger sample could be gathered from each research site and include respondents who are more diverse in race, socioeconomic status, education level, and other factors. It is possible that with a larger, diverse sample collected from the urban South, future studies would produce different findings due to the possibility of the less traditional societal views being found in these areas and among a more diverse group of people.

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