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THE HILLTOP REVIEW
A Journal of Western Michigan University
Graduate Student Research

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Acknowledgments

The current issue of The Hilltop Review features academic essays, creative writing, and artwork from different fields and disciplines. I would like to express my deep gratitude to all the graduate students who have been involved in our Spring 2017 issue either as submitters or reviewers.

I am pleased to congratulate the winners of the Spring 2017 issue of The Hilltop Review awards: Rebecca Straple will receive $500 scholarship in first place paper for “Glorious and Execrable: The Dead and Their Bodies in World War I Poetry”; Eric A. Gobel will receive $250 scholarship in second place paper for “Liturgical Processions in the Black Death”; Rebecca D. Fox will receive $150 scholarship in third place paper for “Experience and Authority: Knowledge, Gender, and the Creation of the Self in the Book of Margery Kempe and Late Medieval Travel Literature”; Ariel Berry will receive $250 scholarship for the best creative writing entitled “to nobody, too”; and Gauri Manohari Narendra Rajamanohar Kowsalya will receive $250 scholarship and the placement of her artwork on the cover for the best artwork entitled “The Light”. Moreover, I would like to extend my congratulation to Joseph R. Schuetz, the winner of first prize at the WMU Graduate Humanities Conference for his essay, “Quantifying the Spiritual: Incorporating Subjective Spirituality in Biomedical Research”

The editorial board members and I encourage active participation in The Hilltop Review’s future publications. We hope our graduate students take advantage of this opportunity and gain more experience while serving as authors, artists, reviewers, and editorial board members.

Zahra Ameli Renani

Notes from the Editor

It is my great privilege to once again serve the outstanding graduate students of Western Michigan University as the Director and Editor of The Hilltop Review.

A point of pride for us are the many opportunities we provide for our graduate students to grow personally and professionally by becoming familiar with the submission and publication process; by improving their writing, editing, and reviewing skills; and by celebrating their creativity in art and literature.

Spring 2017 is my last semester working at The Hilltop Review. Over the past year, I have not been the sole director and editor of this journal - many other people have served as my editing partners throughout this semester: my parents Ahmadreza Ameli and Roya Narimani, who have made their newcomer daughter more confident about tackling all the challenges of an editor; the prior Director and Editor of the journal, Rebecca Straple, as well as the ScholarWorks Librarian and Associate Professor of University Libraries, Maira Bundza, both of whom have tirelessly trained me in so many different ways; my thoughtful and knowledgeable mentor, Lee Kirk, to whom I owe a deep debt of gratitude for all the editing and writing skills he has taught me; Margaret Von Steinen, the Senior Executive Assistant at WMU Office of Government Affairs, who has generously shared her knowledge and novel ideas in order to promote this journal; and last but not least, the editorial board members: Rebecca Straple, Erin S. Lynch, Hannah Pankratz, Sita Kariki, Seán Patrick Geizer, Dwepobotee Brahma, and Anna Alioto, who have been hard-working, patient, and compassionate while accompanying me in all the ups and downs we have faced throughout this journey.

On behalf of all the directors and editors of The Hilltop Review, as well as everyone whose work we now publish, I would like to invite you to read and enjoy the Spring 2017 issue we now proudly share with you.

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Articles
Glorious and Execrable: The Dead and Their Bodies in World War I Poetry

"Unburiable bodies sit outside the dug-outs all day, all night, the most execrable sights on earth: In poetry, we call them the most glorious."
– Wilfred Owen, February 4, 1917

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Many critics of poetry written during World War I see a clear divide between poetry of the early and late years of the war, usually located after the Battle of the Somme in 1916. After this event, poetic trends seem to move away from odes to courageous sacrifice and protection of the homeland, toward bitter or grief-stricken verses on the horror and pointless suffering of the conflict. This is especially true of poetry written by soldier poets, many of whom were young, English men with a strong grounding in Classical literature and languages from their training in the British public schooling system. Through such divides are necessarily oversimplified, this characterization is, as Janis P. Stout argues in Coming Out of War: Poetry, Grieving, and the Culture of the World Wars, "a useful approximation, fitting the general outlines of the considerable body of memorable poetry that came out of the war." This poetic shift reflected and paralleled larger cultural and societal movements accompanying the war and the first decades of the twenty-first century: quickly developing new technologies; increasing industrialization; a general disillusionment with the supposed “progress” and “modernization” of that technology and industry; the weakening of rigid British class structures; changing gender roles; and the birth of Modernism, an artistic and literary movement that urged artists to, in the enduring words of Ezra Pound, “make it new,” to recognize and reject obsolete traditions and cultural trends of the past.

Although most of the soldier poets fighting in World War I would not be classified as Modernists by literary scholars, they also developed “a new kind of war poetry whose techniques, language, and willingness to confront unvarnished horrific facts constitute a turning against the romantic and genteel past,” reproducing the larger cultural shift of Modernism in miniature within the confines of the trenches and hospital wards of World War I. Many scholars have identified aspects of soldier poets’ work that illustrate this shift, including the increase in fragmented phrasing, breakdown of regular rhyme scheme and meter, and precision and brevity of imagery that characterizes Modernist poetry more generally. In this paper, I examine poetry by Rupert Brooke, Charles Sorley, Wilfred Owen, Siegfried Sassoon, Isaac Rosenberg, and others, and argue for an additional, and, for these poets, highly significant marker of this shift—the epistemological power of the dead and their bodies. While World War I poets were naturally concerned with bodies throughout the war, the stories they told with those bodies and the way in which they spoke through them changed drastically as the war dragged on. Poetry of the early years of the war depicts bodies as stable, insulated objects on which poets can project messages of admiration for the sacrifice and nobility of soldiers, support for the war, or concepts of nationalism and empire; in later poetry of the war, bodies are unstable, exposed, and corrupted, no longer able to support old messages of courage and noble sacrifice, but reflecting the futility, senselessness, and destruction of the war.

Early English Poetry of the War: The Dead as Heroes

The war in Britain “was welcomed enthusiastically by most, if not all, sections of the society... initially conceived as a ‘liberator,’” and, to some, a cleansing force that would jolt awake a stagnating culture. To understand the British people’s enthusiasm for the war and the prevailing attitude toward soldiers and their deaths, especially in the first year or two of the war, requires a certain understanding of the British literary environment at the turn of the twentieth century. With no television, no radio, the extremely recent advent of film, and an unprecedented level of literacy, entertainment for the masses largely consisted of literature, and the literary canon at the beginning of the twentieth century determined that many British citizens were “a literary people who saw the war through the old texts.” Ben Townsend argues that “the poetry of the First World War provides a literary picture of the Empire at its height and before its fall, when a highly literate public saw a modern war through medieval eyes.” This included the soldiers who enthusiastically volunteered in masses at the beginning of the war, some of whom, including many of the soldier poets, were the product of the public schooling system that placed value on “the reading of classics that romanticized war and chivalry” and “sport, in which students learned to be committed and passionate, to play fair, and to accept pain without complaining.” These tendencies in public schooling reflected a “prevailing archetypal attitude of ‘hero-worship’ in the culture more generally.”

Herbert Asquith’s “The Volunteer,” actually written in 1912 before the start of the war, epitomizes these attitudes. Taking the form of an epitaph, the poem tells us that “Here lies a clerk who half his life had spent / Toiling through the old texts.” This clerk gets his wish—“those
waiting dreams are satisfied”—and the poem ends on a distinctly romantic and heroic note: “Nor need he any hearse to bear him hence, / Who goes to join the men of Agincourt.”

Dying for one’s country in a blaze of glory is the clerk’s ultimate wish, envisioned in the language of medieval romance to the reality of the war.” The bodies of the dead in this poetry certainly reflect the value placed on abstract concepts of sacrifice, courage, “fighting the good fight,” and protection of the homeland; and projects both of those concepts onto the dead and their bodies. Townsend describes this poetic work in “On the Front Lines of an Empire: The Rhetoric of Poetry of the First World War”: “Using language of the British literary canon, imbued with feudal rhetoric, those soldiers produced poetry that stands in contrast to the reality of the war.” The bodies of the dead in this poetry certainly contrast those of reality. Bodies are rarely depicted being killed or wounded, acting in the thick of fighting, or lying exposed, left unburied; instead, poets usually describe the dead and their bodies long after their deaths. They are portrayed as whole, not missing limbs or riddled with wounds, and are usually buried: stable, protected, and sealed away, not confronting the reader or speaker with the horrors of war.

By portraying the dead this way, poets like Rupert Brooke, Charles Sorley, and others, including even Wilfred Owen and Siegfried Sassoon—perhaps the most famous voices of bitter, graphic, realistic World War I poetry in the war’s later years—project abstract messages of nationalism, heroic sacrifice, cours, remembrance, and the call to continue fighting onto the stable, insulated bodies in their poems. One of the most enduring poems of the time, Rupert Brooke’s “The Soldier,” worth quoting here in its entirety, exemplifies the way in which physical bodies can carry embody nationalism and the Empire:

If I should die, think only this of me:
That there’s some corner of a foreign field
That is forever England. There shall be
In that rich earth a richer dust concealed;
A dust whom England bore, shaped, made aware,
Gave, once, her flowers to love, her ways to roam,
A body of England’s, breathing English air,
Washed by the rivers, blest by suns of home.

And think, this heart, all evil shed away,
A pulse in the eternal mind, no less
In hearts at peace, under an English heaven.”

The body here is England, “bore, shaped, made aware” by England; everything the body is has been given or been affected by England (ln. 9). The body is, in fact, making the earth around it into England as it lies in its grave, expanding the Empire, a dutiful English soldier (ln. 2). The speaker is, in fact, alive, speaking to us, but in the hypothetical situation he projects, he is already dead; readers do not see the shell or bullet or illness that kills him. There is also no sense of regret or grief from the speaker at the prospect of dying, only a nationalistic reassurance to the presumed friends and family whom the speaker is comforting. As Eric J. Leed argues, “Within the national ideologies that reigned in 1914, the civilian exchanged his private self and his individual self-interest for a public and communal identity represented in the uniform.” “The Soldier” is largely patriotic and supportive of the Empire, as it reflects this exchange of private self or interiority; the speaker is now a “pulse in the eternal mind” (ln. 10). The last line adds the common sentiment of soldiers protecting those at home: he died to protect “gentleness, / In hearts at peace, under an English heaven,” the heaven (particularly English, rather than universally Christian) from which he presumably will look down on those hearts (Ins. 13-14).

The body in “The Soldier” is certainly productive, turning the earth around it into a “richer dust,” allowing the transmission of nationalistic and memorializing messages, but some buried bodies in early World War I poetry, such as those found in poems by John McCrae, John William Streets, Wilfred Owen, and Charles Sorley, are even more literally productive. A common conceit in poetry of this era is that of flowers growing out of soldiers’ graves, or even from their blood. One of the most famous and oft-quoted poems of the war, and perhaps one of the most influential in terms of the poem’s enduring image of the red poppy as the “Remembrance Poppy,” is Canadian John McCrae’s “In Flanders Fields,” written in 1915. Those “poppies blow / Between the crosses, row on row / That mark our place” where they lie / in Flanders Fields.” Written after the death of McCrae’s friend Alexis Helmer in the Second Battle of Ypres, the poem is certainly a memorial, but it is also an exhortation to keep up the fight, to continue the work that the dead began, a patriotic call to arms: “Take up our quarrel with the foe, / To you from failing hands we throw / ‘The torch; be yours to hold it high’” (Ins. 10-12). As Daniel Hipp remarks in The Poetry of Shell Shock, “According to Yeats, a poem such as this one demonstrates the proper use of war in poetry—to monumentalize the dead, to make their deaths symbolic and timeless, rather than to recreate the experience of such deaths in all their horror and immediacy.”

Similarly patriotic and eager to make war sacrifices “timeless” are the poems of John William Streets, collected in the book The Undying Splendour after his death in the Battle of the Somme in 1916. The title of the collection alludes to the romantic and idealistic view of the war found in Stret’s poems: “Matthew Copse” and “A Soldier’s Cemetery,” for example, contain phrases such as “Man in triumph scorning death below” and “the flower of Youth, / the men who scorned / To live (so died) when languished liberty.”
His long poem “The Dead: A Requiem,” written in June 1915, is full of classical allusions, romantic language and conventions, and enthusiastic praise of heroes:

O Youth too great with Littleness to dwell!
O soul of Youth triumphant over death!
O envious manhood keeping sentinel
Over nobleness of life! O oracle which saith:
"The soul of life is in the will to give
The best to life in willing sacrifice." 18

“A Soldier’s Cemetery” makes a connection between the burial of soldiers and future fertility: “And flowers will shine in this now barren plot” (ln. 11). “Matthew Copse” is even more explicit:

Nature flourishes amid decay…

Dreams of the day when rampant there will rise
The flowers of Truth and Freedom from the blood
Of noble youth who died: when there will bud
The flower of Love from human sacrifice. (ln. 21, 25-28)

In this poem, the “flowers of Truth and Freedom” grow directly from the soldiers’ blood and “the flower of Love from human sacrifice” (lns. 26, 28). In these poems, the sacrifices of soldiers are productive, ensuring future peace and fertility; the war is certainly not the senseless waste that dominates later World War I poetry.

In fact, even Wilfred Owen's very early poems and writing on the war share these productive and supportive sentiments. “1914”19 is a surprisingly conventional poem, reflecting the view at the time that the war would renew Western culture:

For after Spring had bloomed in early Greece,
And Summer blazed her glory out with Rome,
An Autumn slowly fell, a harvest home,
A slow grand age, and rich with all increase.
But now, for us, wild Winter, and the need
Of sowings for new Spring, and blood for seed. 10

Although the war will have the same killing effect as winter, “a new Spring” will follow, new growth made possible by the sacrifices of the war—indeed, growing out of their blood. Finding such an attitude in a poem of Owen’s might come as a surprise, considering the harsh critique of the war found in his later poems (discussed below), but his initial ideas about the war were similar to most other Britons. In a letter to his mother written in France in December 1916, he describes being injured: “This morning I was hit! We were bombing and a fragment from somewhere hit my thumb knuckle. I coaxed out a drop of blood. Alas! No more!! There is a fine hero-
Your lot is with the ghosts of soldiers dead,
And I am in the field where men must fight.
But in the gloom I see your laurel’d head
And through your victory I shall win the light.

Sassoon also draws on Classical imagery, giving his brother laurels, ancient symbols of victory: Sassoon memorializes his brother and the other soldiers who have given their lives in the war, without focusing on their bodies or even their resting places, immortalizing them even more literally than the above poems have with soldiers who are buried.

Laurel Binyon pursues a similar goal in his 1914 poem “For the Fallen”:
They shall grow not old, as we that are left grow old:
Age shall not weary them, nor the years condemn.
At the going down of the sun and in the morning,
We will remember them.

Not only will they not grow old, but Binyon depicts them sleeping, employing, like the government and the soldiers themselves, a euphemism for the words “dead”: “They sleep beyond England’s foam” (ln. 20). Like Sassoon’s brother and many of the soldiers in the poems above, these soldiers are also immortalized and memorialized; they are also, like the speaker of “The Soldier” discussed earlier in this section, tools of Empire and national sentiment. What little body the soldiers do possess in “For the Fallen” is England’s—“England mourns for her dead across the sea. / Flesh of her flesh they were, spirit of her spirit, / Fallen in the cause of the free”—or is described as it was before their deaths, symbols of the hale, hearty English soldier who is the object of hero-worship—“Straight of limb, true of eye.”

The poem is still recited yearly around the English-speaking world on November 11, Remembrance Day.

These poems and their reluctance to discuss or portray the method of these soldiers’ deaths or the reality of the war—that huge numbers of men were being killed in brutally violent ways and were often left unburied because of practical problems with retrieving bodies from No Man’s Land or the difficulty of identifying remains left after heavy shelling—reflect society’s early attitudes about the war: mostly optimistic, enthusiastic, even excited. After all, most Britons thought the war would be over by Christmas 1914, and, as Fussell points out, the British had a “tendency toward heroic grandiosity about all their wars.”

As the war dragged on, however, and as it became more and more destructive, some poets looked for ways to renew that optimism or at least to provide comfort to soldiers and their families in the face of almost inevitable death, composing poems like the ones discussed above. Parfitt sees in these poems a “drive…to establish, by way of the creation of unity, the idea that no sacrifice is too great for ‘the One Flag,’ and ‘the One Race.’” Townsend argues that “During World War I, people read what they wanted to hear, that their young men were dying gallantly, that the Empire would live on, that country still came first. The nation wanted to believe that old flames still burned brightly, not that men were dying like cattle or that Horace had lied.” This disillusionment becomes the prevailing attitude of later World War I poetry, exemplified in the poetry of Wilfred Owen, Siegfried Sassoon, Edmund Blunden, and Isaac Rosenberg, as they shared their frustrations and disillusionment with and their anger at the war and what they saw as needless, not productive, sacrifices.

The “Universal Pervasion of Ugliness”: The Dead as Waste

As the war continued into 1916 and on, poetry, especially by soldier poets, began to display the “swerve from heroic aspiration to the bitter disillusionment.” This transition is just becoming visible in Siegfried Sassoon’s “To Victory.” In this poem, Sassoon idealizes not the war or those who died in it, but the pleasure in life and contentment that existed for him before the war:

Return to me, colours that were my joy,
Not in the woeful crimson of men slain,
But shining as a garden, come with the streaming
Banners of dawn and sundown after rain.

I want to fill my gaze with blue and silver,
Radiance through living roses, spires of green,
Rising in young-limbed copse
Not in the
woeful crimson of men slain
But shining as a garden, come with the streaming
Banners of dawn and sundown after rain.

Some of Sassoon’s later frustrations with the war surface here, although they are not nearly as bitter as they become; aside from the “woeful crimson” of line 2, Sassoon also writes, “Tired of the greys and browns and leafless ash / I would have hours that move like a glitter of dancers, / Far from the angry guns that boom and flash” (lns. 10-12). Although Sassoon does not directly reference bodies in “To Victory,” the “woeful crimson of men slain” and “young-limbed copse” unavoidably evoke blood and “corpses,” respectively. Sassoon’s growing frustration is just starting to manifest here, still couched in the romantic and pastoral imagery of nineteenth-century verse.

In contrast to the metaphorical allusion to bodies in “To Victory,” many poets focus heavily on bodies in graphic detail and brutal clarity in the later years of the war. In contrast to the poems discussed above, bodies in later World War I poetry are no longer stable and are not sealed tastefully away in graves. They are often left unburied, confronting the reader with the horrors of the war, especially because many of these exposed bodies are fragmented, blown apart, or compromised by visible and grisly wounds. In Edgell Rickard’s “Winter Warfare,” winter leaves soldiers’ “fingers stuck to burning steel, / toes to frozen boot” and “stalk[s] on into No Man’s Land…with glinting heel / stab[s] those who lingered there / torn by screaming steel.”

Max Plowman’s “Going into the Line” tells the story of a soldier who dies during an attack: “and there he lay, / Foully deformed in what was once a man.” These are not whole bodies, safely buried under the earth.

The Battle of the Somme took place between July 1 and November 18,
1916, on both sides of the River Somme in France. It was intended to turn the tide of the war in the Allies’ favor, but it became the largest battle of World War I on the Western Front and one of the bloodiest battles in human history. Over a million soldiers were wounded or killed in gruesome deaths that refuted the ideals of war represented in the poems above. Almost twenty-thousand British soldiers died on the first day of the battle alone. For many scholars, the Battle of the Somme represents a turning point in the reception of the war and its representation in poetry: war could no longer be seen as a glorious, heroic enterprise in which men stoically died for their country. Ernest Hemingway’s Frederick Henry reflects on this change in his letter from Owen to his mother, dated February 4, 1917, Owen writes about the ‘universal pervasion of ugliness’ (his own capitalization and underscoring) and the ‘hideous landscapes…everything unnatural, broken, blasted’.

... It had become less and less clear for what cause English soldiers were actually dying; England itself did not perpetuate, as Owen calls it in “Dulce et Decorum Est,” “the old Lie: the glorious had no glory and the sacrifices were like the stockyards at Chicago in...” [Owen’s Collected Letters 482].”

In a comment eerily appropriate for this discussion, Sycrterz notes “The bodies of later World War I poetry disable the “old Lies”; they still support messages, but those messages may be incoherent or not yet understood, reflective of the senselessness and futility of the war perceived by these poets, and they are unable to support the abstract and insubstantial concepts of noble sacrifice, courage, and productive violence supported by early poetry of the war.

The paradigmatic poetry of this type is Wilfred Owen’s “Dulce et Decorum Est.” Instead of the “feudal high-diction [that] defined early war poetry,” this poem uses realistic, common speech and drags the reader down into the mud, blood, and flooded trenches in which the poets themselves were immersed. The reader accompanies soldiers “knock-kneed, coughing like hags through sludge” as they “trudge” and are “drunk with fatigue.” And when the unit is hit by a gas attack and one soldier cannot get his mask on in time, the description of his death is sustained in grim detail over fourteen lines:

Although this body is not fragmented or blown apart by artillery, it is its meaning. Part of this duty is depicting grievously wounded or dead soldiers in brutal and realistic detail and letting these bodies speak new messages. Sycrterz notes that “the soldier poets of World War I insist that the wounded body does indeed speak, and it speaks with surprising frequency throughout their poetry.” Sycrterz’s study of war poetry and the body sets up a dichotomy between scars and wounds, where “the wound disables an authoritative narrative identity, while the scar reassembles that narrative”; in this case, I argue that the narrative is the one of noble sacrifice that persisted throughout the early years of the war—and indeed for some, such as those at home, persisted throughout the war. Thus, buried bodies in early war poetry are like scars: stable, enclosed, and therefore able to support relatively tenuous, unstable messages, the “old Lies” of those who supported the war and who oversaw it. However, bodies in later war poetry are wounds. They carry[...] the same semantic potential as the scar, but it emerges in a different way, through the strange language of the body: the screams and moans of pain, the crunch of bones, the sound of tissue tearing, the sight of blood and the charnel smell of rotting flesh. The wound differs from the scar in that the injured individual cannot yet harness those lesions into a coherent narrative, for her voice cannot yet close its meaning.

But someone still was yelling out and stumbling, And found’ring like a man in fire or lime…

If in some smothering dreams you too could pace Behind the wagon that we flung him in, And watch the white eyes writing in his face, His hanging face, like a devil’s sick of sin; If you could hear, at every jolt, the blood Come gurgling from the froth-corrupted lungs, Obscene as cancer, bitter as the cud Of vile, incurable sores on innocent tongues,— (Ins. 11-24)
reader would be safely insulated from it. The soldier "plunges" at the "helpless" speaker, and therefore the reader, confronting both with his suffering and his truly horrible death. The body's lungs are "froth-corrupted," the "innocent tongues" afflicted with "vile, incurable sores," and earlier in the poem, the soldiers as they walk are described as "asleep," "lame," "blind," "drunk," and "deaf"—the poem cuts off any possibility of speech, perception, or understanding, any opportunity for making grandiose statements about the sacrifice of this soldier, the glory of war, or the strength of the Empire.

Poems by Siegfried Sassoon, Edmund Blunden, and Isaac Rosenberg engage with messages about England, its Empire, and its soldiers in varying ways, but none of them support traditional messages of nationalism and the glory of war by supporting or spreading those messages. In Sassoon's "The Rear-Guard," the soldier in the poem and reader are confronted with a casualty of the war, this one already dead:

Savage, he kicked a soft, unanswering heap
And flashed his beam across the livid face
Terribly glaring up, whose eyes yet wore
Agony dying hard ten days before,
And fists of fingers clutched a blackening wound.48

Again the possibility for communication is cut off; the soldier is an "unanswering heap" (ln 14). There is also no sense of glory or sacrifice here, just mute, senseless death, "a blackening wound" (ln 18). Additionally, the live soldier in the poem is not the brave, dignified Briton of early war poetry; he is depicted "groping along the tunnel," "tripping," and cursing at and kicking the dead soldier: "God blast your neck!...Get up and guide me through this stinking place" (lns 1, 8, 12-13). As Townsend points out, "The old myths of gallant soldiers worked in their time, but not in this one. Here was a war breaking down bodies the way that the war itself does."51 The poem reflects a sentiment in many of the war poets' writing: "To speak of 'suffering' is not enough; one must see and feel the bloody head cradled dead on one's own shoulder," or, in this case, hear and feel the bones crunch under one's feet.54 These bodies are not buried with dignity or memorialized in poetry, but are left exposed, nameless, and subject to further degradation.

Unlike the buried bodies of earlier World War I poetry, those bodies left lying on the ground in the later poems of Blunden, Owen, and Rosenberg are not productive, fertilizing plants and flowers with their blood; indeed, they are distinctly unproductive. Blunden's "The Welcome," for example, turns six men, with the potential productivity of six lives, into a "muckheap," pure "wastage" (line 20).55 Owen's "Futility" revises the agricultural language of his earlier poem "1914," in which blood was seed:

Move him into the sun—
Gently its touch awake him once,
At home, whispering of fields half-sown…

Think how it [the sun] wakes the seeds—
Woke once the clays of a cold star.
Are limbs, so dear achieved, are sides
Full-nerved, still warm, too hard to stir? (lns 1-3, 8-10)

The sun will not wake this dead soldier like it wakes seeds. "Futility" raises the question of continuing life for the soldier, leaving the reader to answer it from his or her reading of the poem—Owen's "The
“End” answers that question for the reader, cutting off any possibility of production.

Shall Life renew these bodies? Of a truth
All death will he annul, all tears assuage?—
Or fill these void veins full again with youth,
And wash, with an immortal water, Age?

When I do ask white Age he saith not so:
‘My head hangs weighed with snow.’

This soldier’s veins are “void,” and when the speaker asks directly, “Shall Life renew these bodies?” the answer is unambiguously negative (Ins. 7, 5, 9).

Finally, Rosenberg’s “Break of Day in the Trenches” is far less graphic than “Dead Man’s Dump,” but still shuts down the possibility of production from the soldiers’ bodies or from the ground that swallows them. The “droll rat” to whom the speaker talks passes by.

Strong eyes, fine limbs, haughty athletes,
Less chanced than you for life
Bonds to the whims of murder,
Sprawled in the bowels of the earth,
The torn fields of France.57

These living bodies are destined for death, and the ones who are already dead are not respectfully buried, but “sprawled in the bowels of the earth” (ln. 17). Rosenberg also recalls McCrae’s poppies when his speaker “pull[s] the parapet’s poppy / To stick behind [his] ear” (Ins. 5-6). Just as flowers grow from the blood of soldiers who have died in Stret’s “Matthew Copse” and “A Soldier’s Cemetery,” they grow here as well—but they do not thrive: “Poppies whose roots are in men’s veins / Drop, and are ever dropping” (Ins. 23-24). Susanne Christine Puissant explains that “during the high times of British romantic irony in the nineteenth century, the world was perceived as chaotic but the chaos itself as highly fertile. Now, at the beginning of the twentieth century, this fertility seemed to have turned into its opposite, namely ultimate destruction.”58 This shift from the perception of chaos being productive to that of chaos being senseless and destructive is deeply reflected in poetry of the time, including that by Rosenberg, Owen, Sassoon, and others, who subvert and reverse old metaphors and conceits.

Bodies in this “new kind of war poetry” are not productive, but wasted; not buried reverently, but left to rot in No Man’s Land; no longer stable slates on which to write nationalistic messages of pride and hero-worship, but disintegrating pieces of meat incapable of communicating such simplistic ideals. This poetic revolution was necessary for poets who lived through the new and shocking experiences of World War I; as Townsend points out, “this was an unprecedented war and the experience of a war like this had never been described before.”59 Trudy Tate describes the historically unique situation that led to so many soldiers developing what was then called shell shock, now understood as post-traumatic stress:

War was no longer something that a skilled, courageous soldier could survive due to his individual actions, fighting face-to-face with a recognizable foe. World War I “fundamentally altered traditional sources of identity, age-old images of war and men of war,” and it “constituted, for the soldier, a fundamental break with the past,” reflected in the break with past poetic language and concepts that many poets effected.60 The changing imagery and uses of the dead and their bodies in World War I poetry are markers of that break, as they undergo a transformation from fertile, productive signs of meaning that serve to perpetuate old-fashioned, archaic views of war as glorious, heroic, and productive to empty, fragmented, and corrupted meat, capable of conveying new understandings of war as futile, destructive, and wasteful, but not the abstract, flimsy messages of the early war period.

In 1918, while posted to the Northern Command Depot at Ripon, Yorkshire, after convalescing from a diagnosis of shell shock, Wilfred Owen wrote a draft “Preface” to a planned book of poetry that he never saw published. He was killed in action on November 4, 1918, one week before the signing of the Armistice that ended the war; his book was published the next year. His Preface contains some of the most famous lines about his poetry:

This book is not about heroes. English Poetry is not yet fit to speak of them.
Nor is it about deeds, or lands, nor anything about glory, honour, might, majesty, dominion, or power, except War.
Above all I am not concerned with Poetry.
My subject is War, and the pity of War.
The Poetry is in the pity.62

At the end of World War I, it seems that it was not possible, for many poets, for their poetry to be about anything else.

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9 Ibid., lines 15-16.
10 Allen Frantzen, in Bloody Good: Chivalry, Sacrifice, and the Great War (Chicago: University of Chicago Press, 2003), examines the proliferation of chivalric ideals in World War I poetry, shows how they actually affected soldiers’ behavior in combat, and traces those ideals back to their medieval origins.
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14 Leed, No Man’s Land, 204.
15 McCrae, “In Flanders Fields,” lines 1-3.
19 Some scholars, including Dominic Hibberd, author of the 2003 Wilfred Owen: A New Biography, believe that “1914” was Owen’s first poem about the war.
22 Ibid.
23 Owen, “1914,” lines 3-5.
25 Brooke, “IV. The Dead,” lines 1, 8.
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28 Sassoon, “To My Brother,” lines 5-8.
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37 Plowman, “Going Into the Line,” lines 44-45.
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45 Ibid., 144.
Liturgical Processions during the Black Death

“In the year 1349 there came a great death in Germany that is called the First Great Death. And they died by the dozen, and when that began, on the third day they died. In Limburg more than 2400 people died, not counting the children.”

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The years of 1348 to 1350 in Europe were a time of great despair. Since the turn of the millennium, Europe had undergone great change. The continent had shifted from one dominated by agricultural practices and local trade to one of increasing interconnectedness with the wider world, characterized by increased urbanization and trade between diverse populations and locations. The inventions of the horse collar and the heavy plow, as well as the warmer climate, aided in this transformation as they allowed for greater food production, which in turn contributed to a rising population and the migration of people to cities from their agricultural roots. These inventions especially helped those farmers living in north and central Europe, where the soil consisted largely of clay, which holds more nutrients and is harder to turn over than the sandy soil found near the Mediterranean coast.

The incredible economic and population boom of the eleventh to the thirteenth centuries stalled near the beginning of the fourteenth. The favorable climate that had given rise to the expansion was receding, shortening growing seasons and reducing the productivity of fields. Less productive farmland meant less food, and famine quickly followed. It was against this population of malnourished, desperate people that the plague struck. Commonly referred to as the Black Death, the pestilence that ravaged Europe from 1348 to 1350 was the cause of many economic and social changes that have been well documented. Also well documented is the rise of the Flagellant Movement that sprung up to combat the roots of the plague. This movement, consisting mostly of laymen, gained a particularly large following in the central European German-speaking lands.

The flagellants, pilgrims who whipped themselves to appease God’s anger, might seem to have reacted to hardship in the extreme to the contemporary person. While this is not an overstatement, it should be noted that the medieval Church had a long tradition of penitential flagellation. Indeed, as early as the fifth and sixth centuries, St. Augustine and St. Benedict prescribed whipping as an acceptable form of both private and public penance. Voluntary flagellation, however, began in Italy in the eleventh century, and in 1260, “a public, widespread, processional Flagellant Movement arose in central Italy that was to be an important precursor to the one nearly a century later between 1348 and 1350 during the Black Death.” This iteration left behind confraternities of flagellants in Italy, although its impact was less influential in the German-speaking lands, where it also took place.

Despite connections to earlier traditions, the origins and purpose of the Flagellant movement of the mid-fourteenth century differ greatly from that of the earlier rise of the flagellants. Rather than aiming to combat heresy or promote peace, the German flagellants instead explicitly sought to perform penance for the sins of humankind. While this quality is key to the practice of flagellation in general, during the Black Death the perceived need for such action was much more prominent than in previous times. It is easy to associate the corresponding flagellant movement with hysteria, but the reaction is as rational as it is emotional, as traditional as it is radical. While previous scholarship has delved into the economic and social repercussions of the plague, close analyses of the mechanics of the Flagellant Movement and the causes for its success are largely lacking. The populace’s change in perception was due not only to the terrible devastation brought by the arrival of the plague, but also to the failure of the traditional clergy to meet the needs of their communities. As exemplified by the processions that each group used to introduce their ritual observances in light of the Black Death, the flagellants enjoyed much more credibility than traditional clergy and liturgical practices. In large part, this increased credibility rests on the flagellant practice of preserving traditional processional elements, while augmenting them to include greater engagement from viewers and participants, and providing heavenly evidence to support their actions.

The Arrival of the Pestilence

Before examining the attempts of flagellants and the clergy to ameliorate the effects of the plague, we will first touch upon the plague’s impact on Europe and initial reactions to its arrival. Modern attempts to understand the Black Death have resulted in a much clearer understanding of the event than those people would have had who lived and died under its influence. The Center for Disease Control in the United States identifies the active plague-causing agent as a bacterium called Yersinia pestis. A primary method of spreading this disease is transmission via flea. These insects and their rodent hosts are able to sustain the disease without suffering drastic losses in their populations. Other mammals are more vulnerable.

Humans can attract three separate varieties of the plague, though each of these stems from contact with the same bacterium. The first type, and the one by which the disease is most often known, is the bubonic plague. Occurring most often from the bite of an infected flea, bubonic plague is characterized by a swelling of the lymph nodes. The second form, septice-
mic plague, can also be contracted via fleabite, or also from direct contact with the disease. The third and deadliest form of the plague, the pneumonic version, occurs by either inhaling infected droplets (as from another infected human) or as a continuance of untreated bubonic or septicemic plague, when the infection spreads to one’s lungs. While today the plague can be treated with antibiotics, in the Middle Ages no such cure existed. Instead, 1348 would mark the beginning of a time of unprecedented carnage for the medieval world.4

The plague began in the East and quickly travelled westward. Abu Hafs Umar Ibn Al-Wardi, a Muslim scholar who would die of the plague in 1349, recorded its origins in China and described its presence in the Near East, where it “sat like a king on a throne and swayed with power, killing daily one thousand or more and decimating the population.”7 Giovanni Villani, an Italian statesman, and Nicephorus Gregoras, a Byzantine scholar, described the transition of the plague to Europe.8 In each instance, the spread is linked with trade-heavy regions, notably those areas that regularly traded with Muslim merchants. By the time the plague reached central Europe, it arrived with an apocalyptic fanfare. An unknown monk writing at the monastery of Neuberg in Austria reaffirmed that the pestilence began in the East, but added that it was also heralded by natural and supernatural disasters.9 When the plague reached the western German city of Limburg, the chronicler Tilemann von Wolfhagen recorded that “In the year 1349 there came a great death in Germany that is called the First Great Death. And they died by the dozen, and when that began, on the third day they died. In Limburg more than 2400 people died, not counting the children.”11

In the German-speaking lands, 28 percent of homeowners and 35 percent of local council members died as a result of the plague.12 Similarly, by some accounts at least 40 percent of parish clergy lost their lives to the plague, devastating cathedrals and abbeys the same as individual villages with their own priests.13 Aside from adding onto the already horrific death toll, the loss of the priests and other clergymen and the inability of the Church to channel God’s grace and combat the pestilence led to concern over the power of traditional practice, adding a feeling of helplessness that compounded the desperation of the time. If God chose to let his servants die, why would he deign to save a common person, no matter how devout their belief?

Attempts to understand the plague began with science, but the search for answers was also conducted in spiritual realms: “Scholars could not decide whether such a deadly year was due to the vagaries of the planets or the corrupted air, but could only commit everything to God’s will.”14 Increasingly, as the power of the Church failed to protect the clergy and the wider populace, the plague shifted in common perception from a threat that God might protect against to a tool that God wielded as punishment. Some contemporaries viewed the coming of the sickness as the end of times, equating it with the Biblical plague, while others struggled to understand it in their own terms.15 Petrarch, a widely respected Italian scholar, wrote of his anxieties to a friend in 1349, I do not deny that we deserve these misfortunes and even worse; but our forebears deserved them too, and may posterity not desire them in turn. Therefore why is it, most Judge of judges, why is it that the seething rage of Your vengeance has fallen so particularly hard upon our times? Why is it that in times when guilt was not lacking, the lessons of punishment were withheld? While all have sinned alike, we alone bear the lash. We alone, I say; for I hear it affirmed that compared to the number we receive at present, the lashes inflicted upon all men after that most famous ark had borne the remnants of humanity upon the formless sea would have been a delight, a joke, and a respite…could it be that certain great truths are to be held suspect, that God does not care for mortal men? But let us drive these foolish thoughts from our mind.:16

The sufferings of the 1300s took on a more terrible character than those remembered of other times. In spite of the ministrations of local and administrative clergy, the prospects continued to look dark for most people. The commoners continued putting their faith in God and in the Church, but circumstances put their faith to the test. The Black Death “did not spare those of any age or fortune,”17 including members of the ecclesiarch. The medieval person had trusted that, if the plague indeed stemmed from God, His chosen messengers could stop it, appease His anger, and lead the way to salvation and health. That did not happen.

The Clerical Cure

By 1348, the medieval Church was ripe for criticism. Even before the plague struck, problems of simony and uneducated clergy undermined popular perceptions of the institution.4 The arrival of the pestilence created further issues for the Church, as the devastation prevented the Church from performing its regular observances, which the Church stalwartly tried to maintain in the presence of the illness. While the Church would never be completely detached from the common people, traditional practices had established that most of the clergy come from the nobility,19 and that specific measures be taken in times of hardship, which contributed to a perceived lack of ability to appease God’s anger. The Catholic Church had an established tradition designed to help save God’s desire for penitence. These events, called Rogation Days, happen at set times each year, or as needed in times of great calamity.20 Records for continental rogation processions are scarce, but fortunately, we have an exemplum from which we can construct the general path and practice of processions around the mid-fourteenth century.21 By the end of the twelfth century, the Church employed processions much more frequently than the earliest records, from the twelfth century, show. Processions increased not only in number but also in complexity. By the fourteenth century, the number of occasions for regular (not rogation) processions had tripled, and practice had refined the form to impart more
Powerful symbolism. Indeed, processions, which came into Christian practice as early as the fourth century, had originally served the purpose of conducting the preacher and his ministers to the site of the service; by the twelfth century, processions occurred every Sunday in many places. As such, the processions came to serve more as affirmation for the authority of the clergy rather than honoring specific saints or holy days.

It is little wonder, then, that one of the first actions of the Church upon the arrival of the plague was to call “special civic Masses and processions, thought to be useful in quelling the divine rage and sparking repentance in the people.” Rogation processions followed a similar path to that of regular processions, with differences only prominent in the songs used during the event and the more frequent inclusion of saintly relics.

At the beginning of any procession carried out by the clergy, a blessing of salt and water opened the ceremony. The priest of the ceremony wore a red cope over his alb, while the other participants were restricted to their usual dress of surplices. At least one cross followed the Holy Water, with specific numbers and types of crosses determined by the importance and type of the ceremony. Next came participants carrying candles and incense, followed by a sub-deacon bearing a text of the Gospel and finally any monks or clerks who were present. In rogation ceremonies, the use of relics was common. If included, a reliquary would take the position immediately before the sub-deacon, giving the honored saint a prominent role in the proceedings, before even the Bible. Occasionally the processions featured “bare feet, ashes, and sackcloth” as “common signs of penance,” as well as flags for some rogation days. As can be gathered from these instructions, the number of participants walking in any one row could vary slightly. It would not have been uncommon to see one to three members in a row, depending on the member’s role in the procession.

Ordinarily, processions left the choir while singing, and continued through the church, travelling down the main aisle before entering the cloister. Here the procession stopped under the cross, where another song was sung and the priest gave a prayer. Once this was completed, processions returned to the choir, after which the event concluded.

The chants of the rogation processions hold particular importance to our discussion, as these made up the bodily supplication portion of the ceremony. It is important to remember when discussing these, however, that chants sung by the established clergy would have been sung in Latin, and thus would have been inaccessible to the majority of listeners. Rogation processions appropriately included pleas for God’s help, whether generally or for a specific cause. While there are records of processions called specifically to combat pestilence, they relied on standard rogation lyrics to communicate their messages. In these, however, Christ is rarely mentioned.

The “regular and secular clergy frequently carried relics around their churches with prayers to avert the impending disaster,” but it is critical to remember that, by the mid-fourteenth century, processions had become at least a weekly part of one’s churchgoing practice. Processions did not signify important or unique events, but instead existed as part of the status quo. Setting rogation processions apart from others was the heavy use of relics and supplications to saints. In the time of the Black Death in particular, these processions would have included the figures of plague saints such as Saint Sebastian and Saint Roch, the worship of whom was more prominent in Germany. That said, even the veneration of specialist saints was far from a radical change, especially when they failed to deliver the protection that was so desperately sought.

As mentioned above, the flagellants were continuing a practice deeply rooted in Christian traditions of both the distant and recent past. Norman Cohn defines the flagellation as “a grim torture which people inflicted on themselves in the hope of inducing a judging and punishing God to put away his rod, to forgive them their sins, and to spare them the greater chastisements which would otherwise be theirs in this life and the next.” Flagellants sought not only to diminish their punishment for the sins that they had accumulated as individuals, but also to relieve all people from bearing the burden of God’s anger. Heaven provided the ultimate answer for medieval people. When they turned to God’s priests and saints for protection, they felt His lashes only fall harder, and society responded the same. The flagellant attempts to subvert the ire of God from many to a few attracted people from all levels of society. In the German-speaking lands more so than in other regions, hope arrived in the form of these visceral penitents, who “unexpectedly arose from all parts of Germany, whose numbers and the suddenness of their coming was a source of universal wonder.”

The Flagellant Movement, as a reaction against the plague and as a supplementary effort to that made by the Church, maintained many similarities in its activities to the processions and supplicatory attempts of the established institution. Despite that, the rise of the flagellants is a direct rebellion against the status quo. As such, there were many differences between the flagellants’ practice and traditional Church practice, among which the most important are the demographic makeup of the groups, the language of the liturgy, their connection to the spiritual realm, and, of course, the flagellation for which they received their name.

The people who would become flagellants reacted to the great sadness that came from the many deaths of the plague and formed a community for people to “rue their sins and [seek] penance.” At its outset, this community grew almost daily, with “many people of the cities also [becoming] flagel-
lants, both laymen and priests, but no learned priest joined them.” Later writers, as part of the establishment, would not deign to legitimize the efforts with the inclusion of so much as one “learned priest.” Nevertheless, at the time, open membership was a key attraction, as it allowed anyone to take an active role in their own salvation. Von Wolfhagen mentions that whoever wanted to join, whether knights, servants, or other people, joined with the flagellants to seek their penance. In attempts to achieve the salvation offered by the flagellants, “men in the cities and in the country went with the flagellants [by the] hundred, two-hundred or three-hundred or in the masses.” These bands of penitents, despite following the same codes, moved “without any order,” acting as separate but similar bands rather than units of the same coherent body; and performing the liturgy in vernacular languages.

The independent bands of flagellants functioned like processional pilgrims. The groups travelled throughout the German-speaking lands, united in many characteristics, but without an office to maintain uniformity or provide any kind of governing authority. The individualistic nature of the flagellant bands would have been viewed as a happy departure from the norm for a fourteenth century medieval person. Indeed, the makeup of the groups provided a particularly strong impetus to join—no longer was supplication restricted to the elite class of the clergy, which consisted of mostly nobles. Now, rather than being led in worship by a priest whose ministrations had failed to prevent or cure the plague and whose very holiness is doubtful, people from every niche of society had the opportunity to participate in appeasing God’s wrath. Performing the liturgy in vernacular languages rather than Latin, the mysterious language of the Church, further allowed the people to strive for their own salvation. Instead of trusting in a priest to say the right words, people could cry their own prayers to heaven and know the content of their supplications.

While travelling throughout the German-speaking lands, the flagellants would frequently stop in towns and cities to perform their penance. They arrived in towns, “walking two by two,” and wearing a tunic “over their ordinary clothes. On the front of this tunic they wore a red cross over the breast and another behind on the back, and the tunic was cut away in one place and there hung their whips…they wore hoods over their heads, upon each of which was sewn a red cross before and behind.” This dress, so similar to that which crusaders, also pilgrims, wore when they departed on their holy journeys, likely helped to add to the excitement that greeted flagellant processions. Flagellant processions earned their fame. Arriving in the square or marketplace, they produced their scourges and performed penance. Heinrich of Hereford recorded the appearance of the flagellants in great detail, noting that, “Each whip consisted of a stick from which hung down three cords tied with great knots on their ends, so that passing through the knots from both sides in the shape of a cross were two pieces of iron sharpened to a point, which stuck out of the knots as far as a medium-sized grain of wheat or less.” Taking these whips, the flagellants began to sing, at which point they acted in unison and, “in a moment everyone fell with his whole body flat on his chest, and they formed a cross out of their arms and body, and getting up on their knees, they performed various bodily torments, to such an extent that those watching were amazed and wept and had compassion on their sufferings. And the penitents performed this rite a second and a third time.” As they whipped themselves, the blood ran down their backs until it flowed down their thighs and over their ankles. While some of them continued to bear crosses, candles, and flags. The second song, performed during this beginning part of the process, outlined the desperation of the flagellants, inviting, “enter here, [those] who want penance / we flee the hot hell. / Lucifer is angry at attending / so he has / consumed us for the feast.” The hymn finished with hope, though, assuring listeners that Jesus was comforted with his suffering, “...so he has / consumed us for the feast.”

As von Wolfhagen records, when flagellants performed their services, they “carried crosses and flags like in the churches...and when they came before a city, they went in a procession two by two into the church; [they] had hoods on, then stood before red crosses,” while the leader began a song. The song, a flagellant himself. The flagellants sang this German hymn frequently, including every time they came across the body of a saint, as well as when they entered a church, at which times they stripped to their underclothes, with bits of cloth only on their loins and on their ankles. In some cases, as Li Muisis notes, “they arrived at the site with their feet and bodies naked, wearing only a garment made from cloth in the likeness of what butchers wear when performing their work.” Once appropriately dressed, they exited the church either to a churchyard, as von Wolfhagen records, or to a town square, at which point “word of them spread through the whole town, so that all came running.” Beginning a second song, the flagellants prepared to begin their true demonstration, for which they received their name.

Here we see many similarities to processions performed by Church officials, one of which von Wolfhagen points out. The prominence of crosses and flags in the ceremony, the use of song, veneration of saints, and use of sackcloth for clothing are all practices found in traditional rogation processions. It would not, however, be customary for the clergy to strip naked upon entering the church, nor would the songs be sung in the local dialect. Also remember that references to Christ are relatively few in traditional rogation-processions. Flagellant processions turn more often to God for intercession and rely less on the saints. Not only were flagellants singing in their own language, they were engaging in a more personal relationship with Christ through their songs. It was upon emergence from the church and entry into the secular world that flagellant processions earned their fame. Arriving in the square or marketplace, they produced their scourges and performed penance. Heinrich of Hereford recorded the appearance of the flagellants in great detail, noting that, “Each whip consisted of a stick from which hung down three cords tied with great knots on their ends, so that passing through the knots from both sides in the shape of a cross were two pieces of iron sharpened to a point, which stuck out of the knots as far as a medium-sized grain of wheat or less.” Taking these whips, the flagellants began to sing, at which point they acted in unison and, “in a moment everyone fell with his whole body flat on his chest, and they formed a cross out of their arms and body, and getting up on their knees, they performed various bodily torments, to such an extent that those watching were amazed and wept and had compassion on their sufferings. And the penitents performed this rite a second and a third time.” As they whipped themselves, the blood ran down their backs until it flowed down their thighs and over their ankles. While some of them continued to bear crosses, candles, and flags. The second song, performed during this beginning part of the process, outlined the desperation of the flagellants, inviting, “enter here, [those] who want penance / we flee the hot hell. / Lucifer is angry at attending / so he has / consumed us for the feast.” The hymn finished with hope, though, assuring listeners that Jesus was comforted with his suffering, and that “thus we should fall on a cross.”
named them according to their sins, at which point each person lay in a certain way to signify that fault.66 Closer notes a similar practice in the Chronicle of Strasbourg, in which he describes the different positions held by the penitents and the progression from the master beating them to them beating each other after rising from their assigned stances.67 Prostrating themselves on the ground, “they lay on the earth until they said five Lord’s Prayers,”68 after which the master of the group struck each member, telling them to “stand up, so that God may forgive all of your sins,” at which point the flagellants rose to their knees once more and began another verse of their song.69 With the completion of their ritual pending, the bloodied flagellants called out: “Now stretch out your hands / [so] that God reverses the great death; / now stretch out your arms, / [so] that God has mercy on us!”70 For the finale, the penitents exposed their chests, finishing their song with a call to the heavens, “Now strike us hard / through Christ’s ire! / Through God let our pride leave, / so that God has mercy on us.”71

A key element of flagellant liturgy was the reading of the heavenly letter. Claiming that the letter came “directly from Christ through an angel who inscribed it on a marble or stone tablet on the altar of the Church of St. Peter in Jerusalem,” the flagellants framed the letter as the critical element of the ceremony, more striking than any relic. Following the catharsis of the bloody ritual, the flagellants legitimized their practice in the most powerful way possible, not relying, as the traditional clergy did, on saintly relics, but instead on a special issue of the word of God, read in the vernacular tongue. The heavenly letter marks the sins of the people as the cause for not only the plague, but also the famine and natural disasters that preceded it and warfare with Muslims.72 Like the songs of the flagellants, the heavenly letter also promised hope, recording that the angel who delivered the letter was one of many that had begged God to spare the world from complete destruction. God agreed, but only if men were to “go on a pilgrimage for thirty-three and a half days,” in which they were “never to have a good day nor night and spill [their] blood,” for which God “intended[ed] to forget his anger against poor Christians.”73

The heavenly letter provides every element for a call to action and support for the movement. It is easy to imagine the content in the hands of a good preacher, using his words to paint a vivid picture of despair and blame, reminding everyone of their own guilt in the disasters that had wrecked their lives and the actions that they could personally take to rectify the situation. Those who participated in the movement as practitioners embraced the opportunity to achieve a personal relationship with God fully, engaging in a contract with Him, singing songs directly to Him, and performing penance to earn intercession directly from Him. The audience who witnessed the performance engaged God personally as well. By listening to and possibly singing along with liturgical songs that they could comprehend, then bearing witness to a supplication that required an audience, medieval people engaged with religion in a way that, for many, would have been intimate and thrilling. The heavenly letter’s power lay not only in its Godly affirmation of flagellant efforts, but also in its call for support.

With the ceremony completed, the flagellants raised themselves from the ground, causing those around them to feel sadness at the sight of their bodies,69 and hope at the great deed performed by the practitioners for the sake of all humankind. During the beginning of the movement and throughout much of its existence, “people…who had never seen such a thing, began to take pity on the performers and empathize with their suffering and thank God for their great penance.”74 Though the flagellant rules disallowed their members from asking for anything, including food or lodging, Hereford mentions that “offerings [were] freely made to them and they accept[ed] many of these with gratitude.”75 They were restricted by their vows not to lay down with linen or pillows,76 but flagellants often received offers to stay with townspeople, who “invited the flagellants home, one [person invited] four or five, another six or seven” to stay with them in good will.77 After staying a night, the penitents continued on their way to a new city, providing the people they left behind with a mirror as a remembrance of something that would never happen “on Earth over this century or the next.”78 Heralded by such effusive praise, when flagellants came upon a town, the residents greeted them with such fervor that, if the priests refused to provide the penitents with prayers, their parishioners subsequently scorned them in outrage.79 The people fueled their good opinions by spreading stories that, “in many places, miracles were affirmed to have been performed by their pence.”80 Flagellant processions were cause for great celebration, providing hope and faith for audiences in a way that traditional liturgical processions could not.

Unlike the traditional clergy, flagellants were unwilling to simply beg for forgiveness and remission of sins. Instead, by assuming many of the trappings and performance traditions of the clergy and coupling them with physical and spiritual penitence, the flagellants provided a visceral, physical, active, painful way to earn God’s favor again. The flagellant performances, unlike clerical ones, engaged the audience with its own language, and verified its methods with physical action, direct calls to God, and the holy word, rather than with ritual, saints, and the Latin language. The familiar forms provided a foundation for flagellant rituals, but the content was unmistakably radical and widely supported, at least for a time.

Conclusion

The popularity of the Flagellant Movement in the German-speaking lands during the Black Death is due to a number of factors. Flagellation may seem like an extreme reaction to despair from a modern perspective, but for medieval people, the itinerant processional penitent pilgrims represented more than a bloody spectacle. The success of the flagellants resides not in the grotesquerie of the performances, but instead in their ability to provide audiences and performers with familiar, engaging ways to observe penance while departing from ecclesiastical norms that had failed to protect Christendom. In doing so, the flagellant services stimulated medieval society with an outlet for a more immediate, intimate, and impactful relationship with God.
The Black Death of 1348 to 1350 devastated Europe and spread panic, despair, and desolation. It contributed to vast economic and social changes, and by some accounts contributed to the destabilization of the Catholic Church. Amidst the deaths of countless commoners, the bodies of nobles and clergy were also to be found. Despite the best attempts of scientists and priests, the plague maintained its grip on Europe. By adapting standard practices and meeting the punishment of the plague with public penitence, flagellants did what the established institutions could not: they allowed people to hope.

The details of the Flagellant Movement tell us much about the needs of society during the crisis of the Black Death. Within the lessons about ritual, performance, and relationship to God is a larger lesson. I frequently remind my students that medieval people are not that different from who we are today. In times of crisis, we still seek answers from those around and above us, whether in our lives as citizens, employees, or private individuals. Just like the medieval people living in the plague, sometimes our frustrations manifest against the institution that we see as carrying responsibility. In the Middle Ages, that was the Church, and even God. In the United States, for many years that institution has been the government. In times of anxiety, we continue to desire greater connection and transparency from those at the top, but perhaps the example of the flagellants suggests that more engagement with the process, clearer communication between groups, and a willingness to change can provide answers, or at least comfort.39

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Experience and Authority: Knowledge, Gender, and the Creation of the Self in the Book of Margery Kempe and Late Medieval Travel Literature

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As Terence N. Bowers notes in his article “Margery Kempe as Traveler,” travel was considered dangerous in the late Middle Ages not only because of practical concerns, but sociopolitical concerns as well:

In early modern England, travel was a controversial issue because freedom of movement conflicted with traditional concepts of the society (modeled on such paradigms as the Great Chain of Being), which viewed the social order, like the physical universe, as consisting of various degrees and estates, strictly ordered from high to low. Given this model of a fixed, hierarchical structure in which everything had to be in its place, travel posed a danger, for when individuals moved out of their physical places, they might also move out of their social places and possibly destabilize the structure as a whole.

Both secular and sacred journeys offended the idealized power structures that were such a fundamental part of medieval England’s social system. Yet, some of the most read texts—in their own day and in the present—from the fourteenth and fifteenth centuries were those by and about travelers—The Travels of Marco Polo (c. 1300), The Book of John Mandeville (c. 1360), The Canterbury Tales (c. 1387), and The Book of Margery Kempe (c. 1430).

In order to discuss Kempe’s role as a pilgrim in her legacy more fully, Bowers seeks to put forth a theory as to why travel was so disruptive to medieval society. His view is very individualistic, arguing that travel can be pow-

erfully subversive both as “a medium of expression” and “a mode of social construction,” because it is a “self-initiated act,” outside of the “controlling frameworks of ordinary life,” both sacred and secular. It becomes “a way of conferring distinction and full personhood upon selected members of so-

ciety,” which in fourteenth-century England essentially meant noble, or at least affluent, men. From this perspective, travel is significant because of its role as a masculine “rite de passage,” through which a man can achieve “movement, liminality, and radical transformation” through the self-defini-
tion that travel allows. In the late middle ages, travel was considered danger-

ous especially for women, who, in contrast to men, were considered incom-
plete. As partial persons confined to the home, a traveling woman would not only be putting the social order in jeopardy, but would be going against her very “nature” by participating in a male rite of passage.

Bowers’ goal is to apply this theory of travel as a masculine rite to Kempe in order to understand her travels as a “medium of expression” and self-creation! He sees Kempe’s pilgrimages as performances that allow her to critique her society and define her own personhood. Bowers denies that Kempe’s self-expression follows the pattern of female rites, which are “char-
acterized by emergence, continuity, and magnification.” Instead, he argues that Kempe, by traveling, is participating in the masculine strip-and-remake model of self-creation, in which someone’s selfhood is broken down and lost and then rebuilt into something new.

Part of what makes Bowers’ understanding of travel so interesting is its applicability to many texts—except perhaps that of Margery Kempe. The travels of Marco Polo, John Mandeville, and Chaucer’s Wife of Bath all can be understood very well through this interpretive lens, but the main weak-

ness of Bowers’ argument seems to be its application to the subject of study. Partially, this is because Bowers must deemphasize Kempe’s role as a mystic and the nature of her self-definition in order to argue that she is embracing a masculine style of transformation. Ultimately, though, I be-
lieve that Bowers’ difficulty arises from the fact that—unlike the other works mentioned—Kempe’s Book is an autobiography, written (after a fashion) by a woman. Travel may very well have been understood as a male rite de pas-
sage by men, but that does not necessitate that a woman would have seen her journeys in the same light, or would, by participating in travel, necessarily be also participating in a masculine rite. There is another thread, though, that connects the travel-as-rite-of-passage theory and Kempe’s own use of pilgrimage: that of authority. At the heart of Polo, Mandeville, and Dame Alys’s masculine style of self-definition is a greater concern with legitimiz-
ing their authority—just as it is for Kempe.

In the foreword to their book on authority in the Middle Ages, Sini Kan-
gas, Mia Korpiola, and Tuija Ainonen acknowledge that the medieval idea of auctoritas is difficult to define. Although it had personal and legal meanings, the primary understanding of authority had to do with the origin and conti-

nuity of knowledge and truth, namely in Classical and Biblical texts:

In certain [medieval] encyclopedias, authority is only discussed in the context of texts, their authorship, and power to influence by es-

teein and reputation. As an author had to write his/her own text with re-

erence to those of others, relying on sources that gave a clear and reliable account of the truth was essential. Ultimately, this element of veracity made God the fount of all authority in the Middle Ages,
while Scripture and the Church Fathers were also considered highly authoritative as witnesses of truth.⁴

_Auctoritas_—written authority—placed all _auctores_ in a chain of knowledge leading back to divine revelation. Barrie Ruth Straus much more simply defines authority as “the basis of [one’s] knowledge, or [one’s] claim to know.”⁵ Albrecht Claussen explains that it “concerns all human interaction, and, moreover, touches on man’s general need for and quest for a divine force, the ultimate limit, and source, of all human existence.”⁶ Putting these ideas together, we can define authority as power through knowledge and claims to knowledge, which in the Middle Ages was understood primarily as knowledge based on the written word.

As Bowers observes, issues of authority and hierarchy were central to the discourse of late medieval England. _Auctoritas_ was fundamental to the Church’s religious and social hegemony; text and authorship, whether biblical, theological, scientific, or philosophical, were of principal importance.⁶ Travelers challenged this monopoly with their claims to knowledge through experience; as eyewitnesses of things beyond their own cultures, travelers could return with claims to “scientific, geographic, and personal authority” outside of the scope of the written authorities—both sacred and secular, Biblical and Classical—on which medieval Christendom was based.⁷ Those who documented and disseminated stories of their travels, then, engaged in a complicated dance as experiential authority engaged with and became written authority.

Marco Polo acts as a sort of control, since he was one of the first to write about traveling in the East. Bowers’ rite theory holds well for Polo, since he is only seventeen when he leaves with his father and uncle to journey to the court of Kubilai Khan.⁸ That far beyond European culture and power, he is only seventeen when he leaves with his father and uncle to journey to the court of Kubilai Khan.⁹ Interestingly, the author of the book named for him, declares that he is writing about his travels to the East because “many people delight in hearing the said Holy Land spoken of...”¹⁰ Albrecht Claussen explains that it “concerns all human interaction, and, moreover, touches on man’s general need for and quest for a divine force, the ultimate limit, and source, of all human existence.”¹¹ Putting these ideas together, we can define authority as power through knowledge and claims to knowledge, which in the Middle Ages was understood primarily as knowledge based on the written word.

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The legitimacy of Polo’s transformation from merchant to favored courtier is dependent on his claim to unique experiences. The text insists that “ Messer Marco observed more of the peculiarities of this part of the world than any other man, because he travelled more widely in these outlandish regions than any man who was ever born, and also because he gave his mind more intently to observing them.”¹⁹ Evidently, for Polo to retain his identi-

ty, his adventures must be validated—his authority must be recognized. To discover that Polo is highly concerned with readers accepting his claim to experiential authority, one must look no further than the prologue:

Our book will relate [all the great wonders and curiosities of the East] to you plainly in due order, as they were related by Messer Marco Polo, a wise and noble citizen of Venice, who has seen them with his own eyes. The reader can see that he has not seen but has heard from men of credit and veracity. We will set down things seen as seen, things heard as heard, so that our book may be an accurate record, free from any sort of fabrication. And all who read the book or hear it may do so with full confidence, because it contains nothing but the truth.²⁰

Clearly, Polo and his scribe, Rustichello da Pisa, are very anxious that he be believed. Albrecht Claussen notes that the authors seem afraid that their travelogue will be too fantastic to be taken seriously, and seem almost overly willing to assure their readers of Polo’s veracity. Claussen also points out each of the repeated assurances that Polo gives of his truthfulness throughout his text, especially at points when he fears being disbelieved.²¹ Claussen concludes that Polo constructed his account in as “realistic and careful” a manner as possible, “in an effort to establish his authority.”²² To put it plainly, Claussen is suggesting that Polo’s _Travels_ is intentionally boring in order to convince readers that its descriptions of the exotic East are not the more fantastical information provided in the commonly accepted authoritative texts. Polo’s transformed identity must be ratified by his assertion that his own experiences trump all that has been written before him about the East—just as his claim to said identity is presented to strengthen his claim to authority. In an unexpected turn of events, experience supersedes—even debunks—_auctoritas_.

_The Book of John Mandeville_, with which Classen partners Polo’s _Travels_ in his discussion of travelers’ authority, makes similar claims to those of its predecessor. While Polo seems primarily interested in detailing mercantile matters as he travels, “John Mandeville, knight,” the purported author of the book named for him, declares that he is writing about his travels to the East because “many people delight in hearing the said Holy Land spoken about and take pleasure in it.”²³ His _Book_ is luxurious in its descriptions and elaborate in its devotions, going to great lengths in its exhaustive discussion of all possible travel routes and the spiritual significance of each location visited. Mandeville’s travelogue is moreo a catalogue of wonders, making the shape of the earth itself into a sort of sacrament, in which geography is a participation in the physical realities of spiritual truths.

Stephen Greenblatt, in his chapter on Mandeville in his book _Marvelous Possessions_, is pleasantly surprised by Mandeville’s demeanor. Unlike Polo, Columbus, and other travelers, Greenblatt finds that Mandeville is strangely unpossessive of status, riches, his religion, or even knowledge—the very stock in which he trades. Greenblatt argues that these “moment[s] of renunciation” arise from Mandeville’s devotional wandering, but are not natural to him. Mandeville’s travels convert him away from his originally
possessive desire to regain Jerusalem for Christianity (as discussed in the prologue of the Book) toward a recognition that his own culture is in dire need of reformation before it is deserving of the Holy Land. This seems to be Mandeville’s *rite de passage*. Like Polo, Mandeville is offered promotions in status on his journey—first by the Sultan of Babylon and then by Thiaut Chan—but, unlike Polo, Mandeville does not stay long in the service of these great kings and refuses all honors and riches. Instead of changing his rank or social position, Mandeville’s travels transform his desires. Mandeville’s more spiritual *passage* is complicated by the fact that, despite representing his Book as a description of real journeys and experiences, there is no evidence that John Mandeville, the English knight of St. Albans, journeyed to the East or even existed at all. Despite many insistances that his descriptions can be trusted because of his status as an eye-witness, Mandeville remains, as Classen calls him, an “armchair traveler” who was synthesizing descriptions of the Holy Land and Far East from written authorities. Classen points out that Mandeville evidently had access to a staggering amount of information, which he shows off at every opportunity. The Book is not a travelogue, but “a mouthpiece of many previous sources, summarizing their facts, or factors.”

If he was such an expert on authoritative texts, however, the question remains as to why the Mandeville-author would choose to claim experiential authority. Classen believes that the author forged his travels in order to “support his claims [he makes] about the monstrous East” or to increase the popularity of his Book. While much of the Book is occupied with descriptions of wonders and monsters, these things do not require an imaginary *rite de passage*. Greenblatt notices that the author uses the very moments in which Mandeville’s spiritual transformation is clearest to criticize the spiritual and secular elites of Christendom. Mandeville, in true Bowersian fashion, is undermining the power of the authorities of his culture through imaginary travel. Of course, the author relies on *auctoritas* to do this, but, by claiming experiential rather than written authority, he refuses to submit to it. Instead, the author is using imagination to craft a unique and self-transformative experience from *auctoritas* in order to critique the hypocrisy of his society. By using imaginative travel and a forged *rite de passage*, though, he reveals (as Polo did) that experience has the power to supersede written authority.

The dichotomy of experience and written authority is most famously represented in Chaucer’s character Alisoun, the Wife of Bath. Her declaration that she speaks from “experience, though noon auctoritee” seems to gender these two ideas, aligning women with the former, and men with the latter. Since women were excluded from the chain of truth of *auctoritas*, it would seem that experiential knowledge would be the only way they could claim authority. The irony of experiential knowledge being paired with both women and the male rite of travel is that, in theory, the two should have been kept separate. There was much suspicion of female travelers and fear that they were overstepping their natural domestic sphere or engaging in promiscuity. Dame Alys fully lives up to both of these prejudices. However, even as she participates in the masculine rite of travel, Chaucer binds the Wife of Bath’s identity as a pilgrim with that of her identity as a wife.

In the general prologue, we read that Dame Alys “koude muchel of wandedrynge by the yewe”—a reference to her experience as a traveler, which also extends to her vast carnal knowledge. She has been on at least seven pilgrimages, and has had almost as many husbands. Like Polo, the Wife of Bath uses her experiential knowledge to argue with commonly accepted written authorities, and like Mandeville, she uses her claim to authority to critique her society. Elizabeth M. Biebel argues that Alisoun “both challenges the scholarly world of men and manipulates their textual authority for her own purposes.” Her prologue and tale are both a candid conversation about sexuality and gender relations, and through them her primary interest is revealed: gaining mastery within marriage. Alisoun’s identity as a traveler acts as both a metaphor for and demonstration of her dominance within her relationships with her husbands as within both she takes on typically masculine modes of self-creation and authentication. Dame Alys’s frank sexuality and independence give her an identity that is typically associated with men. When he initially describes her, Chaucer emphasizes the “good wyf” for her economic autonomy (“Of clooth-makyng she hadde swich an haunt. / She passed hem of Ypres and of Gaunt”), many husbands and pilgrimages, lively sensuality (“Gat-tothed was she”) and masculine way of riding (“Upon an amblere esly she sat, / ...And on his feet a paire of spores sharpe”). She has her own business, chooses and gleefully enjoys her husbands, moves freely, and even rides astride. Biebel says that “in [her] quest for increased self-governance [Alisoun’s] greatest victory is the creation of what many might call the means of men: wealth, power, and aggression.” Throughout her prologue, the Wife of Bath describes how she retained her autonomy in her marriages by using sex, manipulation, and bullying until she “hadd hem hoolly in myn hond. / To han the governance of hous and lond, / And of his tonge, and of his hond also.” It is at this point, when Jankyn gives up his misogynistic textual authority and submits to her wife’s “maistrie” and “soveraynetee” that they are happy together.

Chaucer goes beyond merely using travel as a metaphor for Alisoun’s desire for authority, though—it is also her means to maintaining and defining her independence. Chaucer makes it clear that Alisoun uses travel as a way of escaping husband number four, the philanderer. She made at least one of her journeys to Jerusalem during their marriage, and “made [her] visitaciouns / To vigilies and to processiouns, / To prechyng eek, and to thise spores sharpe”). She has her own business, chooses and gleefully enjoys her husbands, moves freely, and even rides astride. Biebel says that “in [her] quest for increased self-governance [Alisoun’s]”...
soun makes herself into an authoritative figure, but to do so, must also take on the more masculine qualities discussed above.

Just as we saw with Mandeville, much of the problem with Alisoun's claims to experiential knowledge and authority arise from her fictional-ity. All that is said about the Wife of Bath's autonomous creation of herself through travel must be checked by the reminder that she is invented by Chaucer, a man. It is hard to know how Chaucer himself viewed his creation. Straus wonders whether the Wife "is a figure to laugh with" or "to laugh at"—is she an intentionally comedic invention, or one "whose morals and rhetoric are to be assiduously deplored" (emphasis Straus's). If she is to be laughed at and deplored, then her claims to experiential authority and its va-lidity and her self-initiated identity are all meant to be laughed at too. From this perspective, Alisoun's attempts to participate in masculine self-creation are failures. On the other hand, if Chaucer means his audience to laugh with the Wife, then her claims to authority are still tenuous, since her experiences are fictional. Alisoun argues with various auctores on the strength of her vast experience, yet we cannot take her claims to authority entirely seriously, because there never was an Alisoun who traveled so widely and ruled her five husbands so well.

It is possible that Alisoun fits Bowers' model so well not because travel must be interpreted as a masculine rite de passage, but because that is how men understand travel. Perhaps the fact that a man wrote Alisoun into exist-ence is the reason she grasps for authority in such a masculine way. Travel is certainly a way for individuals to grasp at experiential authority, but, as we have seen with the Wife of Bath, this is a complicated thing. Although experience was more accessible to women, they nonetheless were, in theory, excluded from attaining any authority—experiential and written alike.

So, then, is the pursuit of authority—even experiential authority—always necessarily masculinizing, or can it be done in a feminine way? If it can, then perhaps it would not be easily recognizable as feminine, or would still superficially have to shape itself into a masculine model in order to be recognized as such. Ellen M. Ross approaches the contradictory nature of women's autobiography—which is one of the most direct ways for a woman to claim experience and engage with auctoritas—by arguing that women must "either adopt a model of male selfhood or adapt themselves to a model of the male-approved 'ideal woman,'" yet they tend to present their life stories in a very un-masculine way: "not so much by chronology as by episodic or dis-tinct hierarchical structure of English culture. It seems unlikely, though, that social change is the greatest object of Kempe's pilgrimages, displays of weeping, and affective visions, as Bowers seems to assume. Rather, Kempe's use of travel to critique her own culture is a component of her claim to prophetic authority.

Ross argues that, although she never explicitly calls herself a prophet, Kempe nonetheless "perceives herself as God's spokesperson, personally charged to preach the dangers of spiritual lassitude and to deliver God's of-fer of mercy and compassion, exhorting believers to reform their lives and renew their spirituality. Kempe speaks with authority, boldly defending her right to go on pilgrimage without her husband's written permission, to dress as a virgin, and publicly preach her message to those who would castigate her. When chastised, Kempe even turns the allegations against her onto her accusers—even when they are a power-ful cleric or the Archbishop. Even though Kempe is illiterate, she can defend her theology when held in suspicion. Even her enemies must admit that "she knows her religion well enough"—although she is excluded, as a woman, from fully engaging in literary culture, she often makes use of her significant knowledge of the Bible and, as she puts it, "the Articles of our Faith." As Bowers argues, when Kempe, a laywoman, and others like her "gain access to key texts, they present the possibility that they too may become authorities and contest the authority of those in power." Her prophetic authority, which is based on the experience of her visions and pilgrimages and her knowledge of the scriptures, supersedes the authority of those who exclude her.

Kempe's claim to authority also relies on her uniquely feminine identity, which is established by her visions and ministry. As Ellen M. Ross contends, Kempe participates in the births of Mary and Christ. She acts as Mary's handmaid-en and serves her throughout her life until the Nativity. Kempe continues to perform this duty, carried out literally in the vision, more metaphorically to generate "a powerful critique of English society." While each of these is true, Bowers does not connect them tightly enough to Kempe's claims as a mystic or the nature of her new female personhood.

Kempe does, indeed, often act as a critic of her society. When she is ques-tioned by clerics throughout her travels, Kempe responds with confidence and astute theological orthodoxy and even upbraids those who oppose her. Bowers has brilliantly analyzed how Kempe uses her pilgrimages to reveal the injustice of English society's persecution and suspicion of her: "while the pilgrims become linked to the forces opposed to Christ, [Kempe] is linked to Christ, with the result that her behaviors and the rights she struggles to ob-tain...not only appear less deviant, but emerge as appropriate expressions of Christian devotion." Through these episodes, Kempe is able to legitimize her claims to mystical experiences and expose the un-Christianity of the strict hierarchical structure of English culture. It seems unlikely, though, that Kempe's use of travel to critique her own culture is a component of her claim to prophetic authority.
throughout the rest of her life. She also, as a mother and “virgin in [her] soul,” identifies heavily with the mother of God, to the point that she weeps uncontrollably whenever she sees a baby boy, because it reminds her of the infant Christ.10 In her vision of the Passion, Kempe’s emotions mirror those of Mary Magdalene, who weeps bitterly over Christ’s death and desires, as Kempe does, to remain alone with the body of Jesus and grieve. When the risen Christ tells Mary Magdalene that she must not touch him, Kempe takes this injunction personally to heart, as if Jesus had been speaking to her.11 Kempe’s view of herself as a “reformed sexual temptress” who now weeps for her sins makes Mary Magdalene another fitting avatar of Christ-like femininity.12 So, Kempe brings together practically every feminine role possible simultaneously, allowing herself to identify with as many women as possible while creating a unique selfhood that encompasses all of womanhood. This fits Bowers’ description of women’s rites of passage, in which “women are adorned with layers of clothing” instead of stripped and reclothed, as men are.13 Kempe’s selfhood cannot be stripped and remade through various rites because if it were, she would lose her ability to identify with all aspects of femininity.

Kempe’s frequent identifications as mother, sister, daughter, and spouse have a unique effect on the meaning of her travels. She does not concede any of her roles in order to join the public world of men; instead, “Kempe’s family relations provided categories for naming and experiencing her relations to the world. Rather than substituting for domestic relations, her self-definition...signifies an extension of familial categories that enables and empowers Kempe to create a world of public activity.”14 Although Kempe’s critics and enemies see her free movement as a transgression against her role in the home, Kempe is extending the home—and her female role in it—to include the entire world in her pilgrimages, and in doing so makes them into Bowers’ feminine rite of “emergence, continuity, and magnification.”15 Although Bowers never explores the implications of the male scribes of 

The Book of Margery Kempe, their presence might be taken to support Bowers’ argument that Kempe’s travels must be understood through the lens of male experience and self-expression. If they were heavily editing Kempe’s experiences, they could potentially—like Chaucer—be interpreting her through masculine definitions of self and rites of passage. However, the inability of such definitions to contain Kempe and her claims to authority show that Kempe should truly be considered an autobiographer with an authentic voice.

Kempe, then, participates in travel as a tool to gain and prove her prophetic and experiential authority. In doing so, she does not submit to the masculine model—as the Wife of Bath does—but instead appropriates and adapts it. In other words, Kempe does not become a person through her travels and thereby cease to be a woman (as Bowers argues); instead she uses her travels to ratify her spiritual authority, which springs from her radical encompassing of all feminine roles, revelatory experiences, and her verbal engagement with authoritative texts. As with Polo, we must contend with Kempe as a real person making real claims to her experience, and so must make room for her and her Book as she becomes a part of the literary auctoritas that she contended with in her own day. Polo, the Mandeville-author, Chaucer, and Kempe all used travel as a way to construct identities, whether for themselves or characters they invented, but not as ends unto themselves. Each was using their created-selves to make claims of experiential authority in order to grapple with their societies’ assumptions—whether those were about the nature of the East or the nature of femininity. Bowers’ theory is extremely useful for understanding the role that travel plays in the contest of knowledge and power, and the complicated relationships of these late medieval authors reveals how identity can be the first step in establishing authority.

Work Cited

1Terence N. Bowers, “Margery Kempe as Traveler,” 5.
5Bowers, “Kempe as Traveler,” 27.
7I recognize the problematic nature of this claim, since Kempe’s Book was transcribed and edited by men, but I choose to side with Ellen M. Ross in embracing the Book as Kempe’s authentic voice. Ellen M. Ross, “Spiritual Experience and Women’s Autobiography: The Rhetoric of Selfhood in ‘The Book of Margery Kempe,'” 527-546.
12Albrecht Classen, “Marco Polo and John Mandeville: The Traveler as Authority Figure, the Real and the Imaginary,” 229.
13Marco Polo, 37-38.
14The Travels of Marco Polo, trans. Roland Latham, 40. Marco Polo, 41.
15Marco Polo, 41.
17The Khan’s courtiers speak of what Polo will be like when he “lives to manhood,” and repeatedly refer to him as a “youth.” Marco Polo, 41.
18Marco Polo, 41-42.
19Marco Polo, 33.
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21Classen, “Polo and Mandeville,” 236-237.


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Academic and Social Engagement of Students with Psychiatric Disabilities

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Students with disabilities are historically underrepresented in post-secondary institutions (Quaye & Harper, 2015). Research has been able to illustrate the types of experiences students with psychiatric disabilities have while navigating through college (Flowers, 2012; Hong, 2015; Huger, 2011). By examining these experiences, higher education administrators and student affairs professionals can learn about the types of support students have received and challenges they have encountered. California Mental Health Advocacy Services (2015) conducted a study to identify challenges for students with psychiatric disabilities as they transition from high school to college. More than half of the students in the study discontinued their education and most indicated that they did not disclose their disability for fear of negative stigmatization (Barga, 1993). Stigmatization can be defined as receiving differential treatment based on perceptions by others (Barga, 1993).

The attendance of students with psychiatric disabilities has significantly increased over recent decades, and these students represent the largest group of students with disabilities across college campuses (Madaus, 2011). It is important for higher education administrators and student affairs professionals to understand the experiences of students with psychiatric disabilities in order to better support their academic and social engagement in higher education. To gain insight into how to support academic and social engagement, it is important to understand classifications of disability, historical perspectives on disability, and literature regarding the experiences of students with psychiatric disabilities. Further analysis of research related to the student experience reveals issues faced by students with psychiatric disabilities and the coping techniques used to navigate through college. The purpose of this paper is to bring forth recommendations for postsecondary institutions that provide insights on how to better support the academic and social engagement of students with psychiatric disabilities.

Definition of Disability

Smart (2009) describes physical, intellectual, cognitive, and psychiatric disabilities as four distinctly broad categories of disability. These categories are based on specific symptoms, for which individuals experience different challenges and face different stereotypes or stigmatization in society. Individuals with psychiatric disabilities were last to be recognized by the U.S. federal government, and thus last to receive federal funds for services and benefits (Smart, 2009).

Psychiatric disabilities include learning disabilities such as attention deficit hyperactivity disorder (ADHD) (Flowers, 2012), autism, mental illness, and chemical or substance abuse (Smart, 2009). The American Psychiatric Association (1994) explains that mental illness includes schizophrenia, delusional disorders, bipolar affective disorders, major depression, and anxiety/panic disorders. This creates an expansive range of challenges that students with mental illness face in higher education. According to the Americans with Disabilities Act (ADA) (1990), persons with disabilities are defined as such when their impairment substantially limits one or more major life activity. Examples of major life activities include walking, seeing, hearing, talking, and breathing (ADA, 1990). Psychiatric guidelines have added thinking, concentrating, interacting with others, and sleeping to the list of major life activities that could be limited for persons with psychiatric disabilities (Kiuhara & Huefner, 2008). Also, under the ADA (1990), students with disabilities are required to disclose their disability in order to receive accommodations. Kiuhara and Huefner (2008) explain that the requirement to disclose a disability automatically puts these students in a position where they are “defined by a category of difference” (p. 103).

The attendance of students with mental illness across college campuses has tripled over the past two decades (Hong, 2015; Reynolds, 2009). Western Michigan University’s (WMU) health center reports that anxiety or depression rank as the second highest concern shared by students when they visit (WMU Forum on Student Suicide, 2016). Just five years ago, anxiety and
depression were ranked as the fifth highest concern presented by students at WMU’s health center (WMU Forum on Student Suicide, 2016). Students identifying with psychiatric disabilities experience limitations connected to academic and social engagement (Kiuhara & Huefner, 2008). Limitations are experienced within social, emotional, and cognitive domains, as represented in Table 1 (MacDonald-Wilson et al., 2003).

Kiuhara & Huefner (2008) explain that, while these domains are difficult to consistently define, they can serve as broad categories that are connected to challenges faced by students with psychiatric disabilities.

<table>
<thead>
<tr>
<th>Social Domain</th>
<th>Emotional Domain</th>
<th>Cognitive Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interacting</td>
<td>Adjusting to situations</td>
<td>Concentrating</td>
</tr>
<tr>
<td>Forming and maintaining relationships</td>
<td>Consistently following schedules</td>
<td></td>
</tr>
<tr>
<td>Communicating with others</td>
<td>Making decisions</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Experienced Limitation Across Social, Emotional, and Cognitive Domains

The rigors of higher education have the potential to negatively impact any student’s ability to engage in college across these domains (Kiuhara & Huefner, 2008; Quaye & Harper, 2015; Hadley, 2011). However, for students with psychiatric disabilities, the impact can be more significant and it can take longer to work through the limitations as they are experienced, depending on the situation and the support received (Kiuhara & Huefner, 2008). Professionals at postsecondary institutions can gain a better understanding of these limitations and the challenges students face through an exploration of the historical perspectives on students with disabilities, as well as the research related to the experiences of students with psychiatric disabilities in particular.

**Historical Perspective**

The exploration of historical perspectives on disability in the U.S. reveals that as early as 1864, congressional considerations were made for students with disabilities in higher education (Madaus, 2011). Table 2 outlines key legislative acts impacting access to postsecondary institutions (U.S. Ability One Commission, 2015).

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Year</th>
<th>Purpose / Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congressional Act</td>
<td>1864</td>
<td>To authorize the Columbia Institution for the Deaf and Dumb and Blind to confer degrees (renamed Gallaudet College in 1894)</td>
</tr>
<tr>
<td>Soldiers Rehabilitation Act</td>
<td>1918</td>
<td>To provide vocational rehabilitation for disabled veterans returning from WWI; allowed for the Federal Board of Vocational Education to make specific considerations for disabled veterans</td>
</tr>
<tr>
<td>Smith-Fess Act</td>
<td>1920</td>
<td>To provide civilian vocational rehabilitation for disabled non-veterans; allowed for the Federal Board of Vocational Education to aid all disabled persons including non-veterans</td>
</tr>
<tr>
<td>Social Security Act</td>
<td>1935</td>
<td>To establish provisions to make vocational rehabilitation a permanent federal program (no longer requires a reactivation vote)</td>
</tr>
<tr>
<td>Barden-LaFollette Act</td>
<td>1943</td>
<td>To amend previous rehabilitation acts to expand services and funding; specifically focused on expanding services for physical restoration; regarded as a major legislative development for persons who are blind</td>
</tr>
<tr>
<td>Serviceman's Readjustment Act</td>
<td>1944</td>
<td>Allowed all returning servicemen to attend college; created a significant impact on the percentage of veterans attending college</td>
</tr>
<tr>
<td>Rehabilitation Act</td>
<td>1973</td>
<td>Provided equal access for people with disabilities in postsecondary educational institution</td>
</tr>
<tr>
<td>Mental Illness Bill of Rights Act</td>
<td>1983</td>
<td>To allow for protection and advocacy for people with psychological disabilities</td>
</tr>
<tr>
<td>The American's with Disabilities Act (ADA)</td>
<td>1990</td>
<td>To provide comprehensive civil rights protections for people with disabilities; modeled after the Civil Rights Act Section 504; became the most sweeping disabilities rights legislation in American history</td>
</tr>
</tbody>
</table>
With congressional approval in 1864, President Lincoln signed into law a bill that authorized the foundation of a college division at the Columbia Institution for the Deaf and Dumb (Madaus, 2011; United States., Rives, 1864). In 1894, the college was renamed Gallaudet College, removing the words deaf and dumb, and eventually renamed Gallaudet University in 1986. Today Gallaudet offers 40 majors for undergraduate degrees, as well as graduate degrees, and is the world’s only liberal arts university with a focus on supporting individuals who are deaf (Madaus, 2011). Legislation in the U.S. has continued to create access to postsecondary institutions for persons with disabilities.

After World War I, the Vocational Rehabilitation Act of 1918 was passed, which helped veterans with disabilities gain access to education. At this time, areas of study for veterans with disabilities included industry, trade, and agriculture (Madaus, 2011). The passing of the Serviceman’s Readjustment Act of 1944 had an even greater impact on college campuses (Madaus, 2011). This act is commonly known as the GI Bill of Rights and, within two years of this legislation’s approval, 52% of the total college population in the U.S. constituted veterans (Madaus, 2011).

Until the 1960s, legislation impacting access for persons with disabilities largely related to physical disabilities (U.S. Ability One Commission, 2015). However, in 1963, Dr. Samuel Kirk coined the term learning disability (LD) to expand the scope of disabilities that should be considered (Madaus, 2011). By 2001, the federal government designated this term as a category of disability in the K–12 public school system (Kavale, 2001). After this designation, services specific for students with hidden disabilities such as LD were developed in K–12 public schools (Madaus, 2011).

Considerations for persons with disabilities in society were addressed through legislation into the 1960s, but advocacy for civilian (non-veteran) individuals with disabilities aiming to attend postsecondary institutions were not instated until 1973. That changed with the passing of the Rehabilitation Act of 1973, which provided equal access for individuals with physical disabilities to postsecondary institutions. However, this legislation did not recognize individuals with psychiatric disabilities (U.S. Ability One Commission, 2015). Individuals with psychiatric disabilities and their access to postsecondary institutions began with the approval of the 1985 Mental Illness Bill of Rights Act.

The Americans with Disabilities Act (ADA) of 1990, modeled after Section 504 of the Rehabilitation Act of 1973, provided legislative mandates for both public and private postsecondary institutions to consider applications of qualified individuals and to provide reasonable accommodations for individuals with physical and psychiatric disabilities. Upon the approval of this legislation, some colleges feared that they would have to close because of anticipated high costs of accommodating students with disabilities (Madaus, 2011). A national longitudinal study was conducted from 1990 to 2005, which revealed that since the passage of the ADA in 1990, there has been a notable increase in postsecondary students with disabilities (Madaus, 2011).

However, no colleges have closed because of fiscal burdens connected with accommodating students with disabilities. To address concerns of service delivery and policy, the ADA Amendment Act 2009 provided clear language regarding the definition of disability and what constitutes a disabling condition in order to address concerns of service delivery and policy (Madaus, 2011; Smart, 2009).

Importantly, college attendance is not an automatic indication that students are fully engaged in the college experience (Quaye & Harper, 2015). It has taken over 100 years for legislation in the U.S. to attempt to fully address the needs of individuals with disabilities; however, even though students with psychiatric disabilities are increasing in numbers at postsecondary institutions, their needs are not yet being met (Hong, 2015; Kiuhara & Huenfer, 2008; Madaus, 2011; Reynolds, 2009). To support and accommodate the needs of students with psychiatric disabilities, it is important to understand how these disabilities impact the students while in college.

The Student Experience

Students with psychiatric disabilities encounter different issues than their peers while in college (California Mental Health Advocacy Services, 2015). The emergence of major mental illness often occurs between ages 18 and 25, in a period when many young adults pursue postsecondary education, prepare for future careers, and develop social relationships (Unger, 1992, as cited in Sharpe et al., 2004). Postsecondary institutions can better prepare to support students with psychiatric disabilities if they understand both the positive experiences and challenges faced by these students as they navigate through college (Flowers, 2012; Hong, 2015).

In an effort to better understand experiences of students with psychiatric disabilities, Hong (2015) conducted a study in which students were asked to journal both positive and negative experiences over a 10-week period. Participants in this study disclosed a wide range of disabilities, including clinical depression, bipolar depression, attention deficit disorder, eating disorder, and seizure disorder (Hong, 2015). By coding students’ journal entries, Hong revealed information about student experiences in relation to interactions with faculty, advisors’ knowledge of supports, stressors as experienced by the students, and the quality of support services provided. The results found the following:

1. Students felt judged, embarrassed, and even humiliated by faculty when they requested accommodations.
2. Students felt that advisors were generally unprepared to help them.
3. Significant stressors included mental and emotional struggles along with social stigmatization.
4. Students felt intimidated by personnel when visiting offices that provide support services (Hong, 2015).

Hong (2015) suggests that school administrators use this information to develop better services and support for students with psychiatric disabilities. According to the National Institute of Mental Health (2002), about one
in five Americans experience a diagnosable psychiatric disability every year (as cited in Sharpe et al., 2004). The results of a nationwide survey of college students with psychological disabilities published by the National Alliance on Mental Health (NAMI) in 2012 showed that 6.4% of students ceased to attend college because of a mental health related issues (California Mental Health Advocacy Services, 2015).

Of those who stopped attending college more than 45% did not request accommodations, and 50% did not access mental health services and supports on campus...Overall, 40% of students with a diagnosable psychological disability did not seek help and 57% did not request accommodations from their schools (California Mental Health Advocacy Services, 2015, p. 5).

Stigma was identified as the number one reason for not seeking help (California Mental Health Advocacy Services, 2015).

**Challenges Relating to Stereotypes and Stigmatization**

Hong (2015) and Sharpe et al. (2004) found issues related to the access of resources, information, and support services created challenges in postsecondary education for students with psychiatric disabilities. However, Sharpe et al. (2004) also found stereotypes and stigma to create significant barriers for students with psychiatric disabilities:

Stereotypes and Stigma—All of the focus groups stated that students with psychiatric disabilities often face incorrect, stereotyped views about their disability and endure the stigma and negative consequences that frequently accompanies disclosure of such a disability (Sharpe et al., 2004, p.2).

Stereotypes can be defined as “a set of beliefs about the characteristics of a social category of people” (Bar-Tal, 1996). These beliefs, or stereotypes, create a perception of “not normal” that stigmatizes students with psychiatric disabilities if exposed. The ADA (1990) requires students to disclose their disability to an instructor in order to receive accommodations, such as more time on tests. However, Bargh (1993) found that this requirement forces students with psychiatric disabilities to self-impose stigma, so students would only disclose their disability to a professor if they knew for sure that they would struggle academically with a particular class. The fear of stigma attached with disclosing a disability causes many students to opt out of services they may need to fully engage in college (Bargh, 1993). Stein (2013) recently observed a similar theme, even when participants were not directly asked specifically about stigma:

Many students expressed discomfort having to ask for assistance, but did so because they knew receiving supports and accommodations were integral to their ability to achieve their postsecondary academic goals. Also, most participants asserted there is a greater amount of stigma attached to psychological disabilities and only disclose the nature of their disability when it is “absolutely necessary” or “obvious” they were struggling with anxiety or depression or other psychological symptoms. Furthermore, most participants described stigma as a pervasive problem and felt most people held misconceptions or negative attitudes regarding psychological disabilities (Stein, 2013, p.154).

The stigma attached with disclosing a psychiatric disability creates both academic and social engagement barriers (Barga, 1993; Hong, 2015; Quaye & Harper, 2015). Academically, students find ways to avoid disclosing their disability for fear of being set apart from their peers in the classroom (Barga, 1993). Students also avoid disclosing because they find it challenging to communicate their disability and need for accommodations (Timmerman & Mulvihill, 2015). Timmerman and Mulvihill (2015) found that students who practice disclosing their disability have had more success in communicating their need for accommodations with Disability Student Services and professors. Timmerman and Mulvihill (2015) identify scripting, rehearsing, and mentally mapping out the disclosure as an effective means for students to practice disclosing their disability.

Socially, students fear the threat of being judged or treated differently (Hong, 2015). Hong (2015) found that students did not want to disclose themselves because they feared losing their friends and believed that their peers would think differently about them if their disability were disclosed. Of tentimes, students with disabilities do not have to personally disclose their disability while in high school because parents, teachers, and counselors help them communicate their needs through Individual Education Plans (IEPs) (Patrick & Wessel, 2013). Therefore, the transition from high school to college creates a necessity for students to be able to personally disclose their disability.

**Challenges Transitioning to Postsecondary Education**

In order for students to be successful in college, they need to navigate through a transitional process from high school into college (Patrick & Wessel, 2015; Hadley, 2011). For many students with disabilities, the transition process is particularly challenging (Patrick & Wessel, 2013; Hadley, 2011). Patrick and Wessel (2013) found students with psychiatric disabilities have specific transitional challenges relating to academics, social connections, family relationships, and requesting accommodations. Students found academic rigor, workload, and program expectations significantly different from high school, to the point that they did not feel prepared (Patrick & Wessel, 2013).

Students with ADHD report the regular occurrence of feeling nauseous, anxious, and bored when sitting in classes (Flowers, 2012). Students with ADHD also report feeling anxious because of the sense that they are lagging behind peers when they do not complete assignments on time (Flowers, 2012). Research has shown that accommodations and other assistance pro-
Coping Techniques

Federal laws mandate required accommodations, but even with accommodations students with LD and other psychiatric disabilities continue to have issues adjusting to the postsecondary environment (Barga, 1993; Healy, 2005). In one study, all the students reported that they felt challenged by college writing expectations as compared to high school. In order to integrate into the institution, for their writing assignments students sought support by requesting extra time for tests, writing assistance, and assistance from note-takers (Hadley, 2007). Students have additional challenges to obtaining an academic degree because of academic barriers when taking exams and social barriers with stigmatization. In order to navigate through college, students with psychiatric disabilities develop coping techniques. Not all coping techniques are positive, but they are used by the students to help them manage perceived barriers (Barga, 1993). The student approach to navigating perceived barriers includes a coping technique called “passing” (Barga, 1993). Additional coping techniques include management of the disability, self-determination, and self-advocacy (Grella, 2014).

Passing as Non-Disabled

The most common way for students with LD or cognitive disabilities to cope with their disability in public is to pretend that it does not exist (Barga, 1993; Healy, 2005). This concept of “passing” or “normalizing” happens in multiple ways and for many different reasons. Barga (1993) points out that, in order to avoid stigmatization and ridicule, a lot of students with LD utilize this idea of “passing” as a way to make ends meet. Sometimes students want to escape from the label of “disabled,” and so they act as if they do not have a need and “normalize” themselves (Healy, 2005). To make ends meet means to successfully complete all tasks assigned in order to finish school. Students make ends meet by doing whatever it takes to pass their classes without having to disclose their disability. Students with LD sometimes become experts in manipulating the systems around them so that they can better navigate through them (Barga, 1993). An example of this is seen when students who have difficulties with reading and comprehension try to avoid situations in class that could reveal their disability.

One avoidance technique is to leave the classroom just before activities that could potentially reveal a disability begin (Barga, 1993). However, by leaving the room before it is their turn to read, students with LD are missing out on key information. In comparison, students without LD hear this information, thus placing students with LD academically behind.

Managing Disability

Another way students with psychiatric disabilities cope is to find ways to manage their disability through utilizing benefactors and by practicing self-improvement techniques. Benefactors are people who students with psychiatric disabilities rely upon to assist them through academic and personal issues (Barga, 1993). Benefactors create a sense of community by providing academic and emotional support. An example of a positive benefactor for students with psychiatric disabilities is supportive personnel working within student learning centers (Barga, 1993). Students with psychiatric disabilities can rely on these individuals for accommodations with anything from simple tutoring assistance to complex collaboration with professors to make the classroom experience a little easier. For example, after registering with Disability Student Services on campus, a student with ADHD can utilize the learning center on campus to seek assistance with math homework, as well as make use of it for test taking purposes to receive extended time.

Another way that students with psychiatric disabilities manage their disability is to practice self-improvement techniques. Self-improvement techniques are techniques that allow students to focus on improving their perception of individual worth (Barga, 1993). Focusing on improving the self allows students to capitalize on improving their academic success (Barga, 1993). The satisfaction acquired from doing something to improve individual abilities gives students the encouragement necessary to successfully continue navigating through college (Barga, 1993). One way students can practice a self-improvement technique is to seek and initiate assistance at the university level. By reaching out for help, students are taking the first step towards independence and academic success (Stein, 2013). When students with psychiatric disabilities independently register with Disability Student Services during their freshman year, they generally express that they would not have completed their educational journey without those services (Stein, 2013). Those who do not register at that time wish they had, because, more oftentimes than not, they have already failed one class (Stein, 2013).

Self-Determination and Self-Advocacy

The idea of having to independently register to receive accommodations without automatic assistance from colleges relates back to the point that there is not adequate support for students with psychiatric disabilities (Barga, 1993; Grella, 2014). Although Disability Support Services provide accommodations as required by the ADA (1990), there are still necessary advancements in supporting students with psychiatric disabilities. In spite of insufficient support services, students with psychiatric disabilities on college campuses cope by exercising self-determination and self-advocacy (Barga, 1993; Grella, 2014). Self-determination and self-advocacy involve the students doing things to support themselves in order to be successful (Barga, 1993; Grella, 2014).

According to Grella (2014), self-determination involves the need for hard work and effort in order to feel successful. While some students have the luxury of possessing the “natural ability” to be successful in their endeavors,
most students have to put forth some effort in order to truly learn. Self-advocacy is a complex process that involves independence as well as the utilization of outside resources (Grella, 2014). Students with psychiatric disabilities have to be self-advocates to receive support services and achieve their academic goals. One way for students to self-advocate is to disclose their disability and communicate with advisors about course options that are more accommodating (Grella, 2014). An example of an accommodating course is one with an instructor that utilizes supports within the classroom to assist students with psychiatric disabilities (Grella, 2014).

### Best Practices for Supporting Academic Engagement

Key elements to supporting the success of students with psychiatric disabilities include access to accommodations, support services, and resources (Becker, Lee, Wajeeh, Ward & Sherin, 2002; Timmerman & Mulvihill, 2015). Universities that employ these elements are setting examples of best practices in supporting the academic engagement of students with psychiatric disabilities (Becker et al., 2002). Becker et al. (2002) believe that most universities have plenty of resources available to support students, but that they do not have the best approach to educating faculty, staff, and students on the resources that are available. At Western Michigan University (WMU), the Director of Disability Student Services has shared in public forums that she is still seeking new and better ways to educate about the services that are available for all students with disabilities (Jayne Fraley-Burgett, personal communication, March, 2016). In addition to providing better education about the support needs of students with psychiatric disabilities, postsecondary institutions can use exemplary services and support or empowerment agents as guides to creating and sustaining best practices.

### Exemplary Services

Timmerman and Mulvihill (2015) contend that a best practice for supporting students with disabilities is to provide exemplary services while aiming to create a welcoming environment. Students that participated in their qualitative study shared that they appreciate when faculty and staff assist them in managing time obstacles. It often takes more time to complete readings, assignments, or tests because the assistive technologies take longer or because of dealing with side effects from necessary medications (Timmerman & Mulvihill, 2015). They also found that mentor relationships with faculty were significant to enhancing the academic engagement of students with psychiatric disabilities.

### Support Agents

Flowers (2012) identified institutional agents and empowerment agents as key elements to the success of students with disabilities. Institutional agents are described as individuals who have the ability and commitment to share resources and empowerment agents. Empowerment agents are described as individuals who help students see a correlation between their goals and a path to achieving these goals (Flowers, 2012). Many assigned roles in higher education are already encouraged to serve students as institutional or empowerment agents, such as academic advisors, resident advisors, faculty, and support staff. Best practices in supporting students by sharing resources would include training for all levels of employment across college campuses. By training administrators, faculty, and staff of the need for services and the resources available to help students obtain these services, universities would help to create a more inclusive environment for all students (Becker et al., 2002; Flowers, 2012; Kuhara & Huefner, 2008; Smart, 2009; Timmerman & Mulvihill, 2015).

### Recommendations for Higher Education

There have been significant changes made in the way students with disabilities are supported. However, these support services are still unsatisfactory. With increasing numbers of students with psychiatric disabilities attending institutions of higher education, it is crucial that educators focus more attention on how to better serve these students (California Mental Health Advocacy Services, 2015). Studies have shown that when students with psychiatric disabilities feel they are in a welcoming or inclusive environment, they are more likely to disclose their disability and seek support services or accommodations (Hong, 2010; Timmerman & Mulvihill, 2015). Creating an inclusive environment that makes students more inclined to seek support is not the only improvement that needs to be made. Based on a review of the literature, the following recommendations would improve the quality of support services for students with psychiatric disabilities:

1. **Promoting an inclusive environment:** Research suggests that if a student with a disability feels included in their campus environment, then they are more likely to seek support. Educators can make a student with a disability feel included on campus in several ways. One example of promoting an inclusive environment is when educators learn of a student’s disabilities and take time to gain better understanding of what those disabilities mean for the student’s education. By taking the time to research psychiatric disabilities, educators are informing themselves on how to effectively accommodate students while maintaining the integrity of the curriculum.

2. **Awareness and action training:** In order to better serve students with psychiatric disabilities, it is essential that educators are provided with training to ensure awareness of what psychiatric disabilities are and how they could affect students at postsecondary institutions. Awareness includes the discussion of stigmas and stereotypes, as well as more specific information about psychiatric disabilities. Only after awareness is achieved can an educator truly be prepared to take action and improve services. It is recommended that intensive training be incorporated into orientation practices for all students, staff, and faculty. Awareness of psychiatric disabilities and examples for how to support students with
psychiatric disabilities should be incorporated into these sessions.

3. Simplify the process of seeking and receiving accommodations: Current procedures for receiving accommodations at postsecondary institutions are initiated only after the student locates and contacts support services by themselves. Although this process promotes independence, some students miss the opportunity to register for accommodations and face different challenges or even drop out of school. Information about campus services and how to acquire assistance needs to be made more accessible to potential students. Promoting disability services to all students during college recruitment at high schools will help to create an inclusive approach to supporting students. Students will gain a better understanding of the process to obtain accommodations before entering postsecondary education.

4. Increase research on strategies for creating better supports: There is very limited research on how to support students with psychiatric disabilities. By increasing research on the topic, educators are gaining a better understanding of the experiences of students with disabilities. Research will also provide insights to the experiences of faculty and staff working with students and create a better understanding of how to support students with psychiatric disabilities.

Conclusion

Through legislative action, the U.S. has been working to better support students with disabilities for many years. Postsecondary institutions have also been working to better support students with physical and psychiatric disabilities. Federal laws mandate requirements of postsecondary institutions to recognize and make accommodations for students with psychiatric disabilities. However, the requirement to provide accommodations does not automatically help students transition into and navigate through postsecondary education.

To effectively support students with psychiatric disabilities, faculty and staff at postsecondary institutions need to understand what constitutes a psychiatric disability. As our definition explains, psychiatric disabilities include a wide range of conditions including autism, learning disabilities, mental illness, and chemical or substance abuse (Barga, 1993; Flowers 2012; Smart, 2009). The American Psychiatric Association (1994, as cited in Smart, 2009) explains that limitations connected with thinking, concentrating, interacting with others, and sleeping are impairments of major life activities, thus allowing students to be afforded accommodations under ADA (1990) guidelines.

Learning more about the experiences of students with psychiatric disabilities and the coping techniques used to navigate through college are important aspects of creating an inclusive environment and promoting academic and social engagement. Recommendations for postsecondary institutions include promoting inclusivity, training, simplicity of process of seeking and receiving accommodation, and continued research. “A college or university that views all students as members of the campus community who should be able to access all of its programs and services will realize a need for a new way to provide disability services” (Huger, 2011, p. 5). To create better ways, postsecondary institutions need to understand that providing disability services is not the job of one department with a handful of trained professionals, but the job of every member of the community (Huger, 2011). Inclusive environments allow students with psychiatric disabilities to become academically and socially engaged in postsecondary education (Huger, 2011).

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**Mechanized Identity: The Blood-Mill of Richard Coer de Lyon**

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The Middle English romance Richard Coer de Lyon is not often read as a text fascinated with machinery. The semi-historical, superlative, titular character and his various marvelous and deeply disturbing deeds usually claim the most scholarly attention, and not without reason. There is much to examine in the heroically cannibalistic Richard, who presents a complex and often troubling vision of the construction of the English and the Saracen within romance. Also deserving of critical attention, though, is the text’s strange attention to sieges and siege engines. Richard’s army transports a large, named siege tower and countless throwing engines such as trebuchets, ballistae, crossbows, and mangonels. One device in particular seems to perform an explicitly symbolic function: the mill aboard one of Richard’s ships, a machination designed to look like it grinds dead bodies.

While the mill is a useful psychological weapon against the fictional Saracen army, I argue that it principally serves as a manifestation of some of the core ideological movements of the romance. In particular, it is a physical representation of the budding English identity that destroys the Saracens in order to create sustenance for the English community. This destructive and transformative process relies on a body of technical knowledge shared exclusively between the crusading army and the English reader, a manufactured community reflected by the construction and operation of complex machines. To better understand the representative function of Richard’s mill, it is necessary to explore some key qualities of medieval fictional machines, including their deceptive elements, inherent impersonality, and literalizing function. The destructive effects of the English community are further represented through the appearance of several other war machines in the poem, episodes that are best understood after a focused reading of Richard’s blood-mill.

**The Blood-Mill**

The longest sustained description of a mechanical device in Richard Coer de Lyon appears as Richard’s fleet enters the harbor of Acre. After Richard
single-handedly severs the great chain stretched across the harbor that was meant to stop his armada, the poem describes a great mill aboard one of Richard’s ships, which the Saracen soldiers see and immediately flee from in terror. The description of the great mill should first be considered in full:

Ovyr al othere wyttlyly,
A melle he made of grete masyry,
In mydyes a schyp for to stonde
Slyly they were don away.

A lytyl before the lyght of day,
That was come to quell them.
And sayd he was the devyll of hell,
They wende it hadde ben mennes bones.

They were agrysed of that syght,
For it was within the nyght
Sarezynes therof hadden grete drede
And hornes grete upon hys hede:
Al in blood he was begon,
Out of the eye ran red blood
But rubbyd als they were wood.
Grounde they nevere whete no grote,
Stones that deden nevere note:
The stones hung with strings of wire,
Stones that never did work:
They never ground wheat nor grain,
But rubbed as if they were mad.
Out of the eye ran red blood
Before the trough one stood there,
He was covered all in blood
And with great horns upon his head:
Saracens therefore had great dread.
For it was within the night
They were afraid of that sight,
They thought they were men's bones.
And said he was the devil of hell,
That was come to quell them.
A lyttel before the light of day,
Clency they were don away.

Because the mill, which for clarity I will call the blood-mill, is given such attention and because it appears to do entirely psychological and not physical damage, this poetic moment is a good place to focus an analysis of the imaginative workings of siege machines in Richard. Although this description is confusing in several ways, the basic realities of this device are clear. First, it at least resembles, if not operates, like a normal windmill: it has four sails, a set of grinding stones, and a chute out of which comes the finished material, here apparently blood. Second, it is better constructed than a normal mill and set to an entirely different purpose. It has been masterfully built to take advantage of Richard’s demonic reputation, mistake to be grinding men’s bones. However, the description above does not lend itself to this interpretation. The description of the blood-mill follows a list of throwing machines at Richard’s disposal. The blood-mill is made with skill “Ovyr al othere” [Surpassing all others] (2655); that is, it is superior to all other machines in the mastery of its construction. Thus it appears to be the crown jewel of Richard’s prepared war, the most acute demonstration of technical proficiency, not simply a grain mill used to feed the army. Additionally, the impression of a demonic bone grinder seems quite deliberate. It is unclear if the figure standing before the mill’s trough, who is “Al in blood... begen, / And horns grete upon hyx hede” [covered all in blood / and with great horns upon his head] (2672 – 2673), is Richard himself or another unidentified soldier, but the figure appears as a devil against a fiery, blood-soaked backdrop. As the blood-mill is said to have never ground any grain, it does not seem to have a purpose other than what it presents to the Saracens as a devil against a fiery, blood-soaked backdrop. As the blood-mill is said to have never ground any grain, it does not seem to have a purpose other than what it presents to the Saracens as a devil against a fiery, blood-soaked backdrop.

In order to understand how the blood-mill deception functions in Richard, I will turn to scholarship on other mechanical devices in medieval literature. Joyce Tally Lionarons in “Magic, Machines, and Deception: Technology in the ‘Canterbury Tales’” explores the blurring of magic and machines, a discussion that is particularly helpful to this analysis of Richard’s blood-mill. Through an analysis of the brass horse of The Squire’s Tale, a machine shaped like a horse that allows the user to fly anywhere in the world, she develops the idea that the underlying characteristic of both magic and technology in Chaucer’s writing (and perhaps medieval literature in general) is the potential for deception. Much of Lionarons’s analysis rests on the reactions of the people in Cambyses’ court, who initially think the mechanical horse may be a great and useful gift to their lord, but who ultimately regard it with distrust. From their reactions and other instances of magic in the Canterbury Tales, she concludes, “Such devices rely, like magic, on knowledge that is not...
qualities. The Richard of the romance is half demon; his demonic mother the blood-mill can be seen as another manifestation of Richard, but instead natural limitations of humanity. Although Lionarons focuses on the possible danger of technology in Chaucer’s writing, her work provides a very helpful diagnostic for understanding the borders between groups of people in Richard. In this text, technological knowledge, ambiguous with magical knowledge, belongs to certain people and not to others, and those who do not possess that knowledge are potential victims of it. Because the blood-mill is the work of master craftsmen, it is a technology that operates on skill or knowledge inaccessible to most people. It is also purposefully deceptive. It causes the Saracens to believe that a demon has come to destroy them. Even more importantly, they fear that it will grind them to pieces, and their terror drives them to flee from an object that in actuality would do very little actual damage in battle. The blood-mill deploys specialized knowledge to deceive those without that knowledge. Furthermore, the blood-mill’s diabolical trappings suggest that it has supernatural origins. To the Saracens, it seems that only a demon could have constructed such a horrific machine, built from a hell-based blueprint.

The anxiety that Lionarons ascribes to technology depends on one’s access to an uncommon body of knowledge. It is important to recognize that the terrors of the blood-mill only manifest themselves in the Saracen army. One reason the Saracens are anxious at the possibility of extra-human knowledge, because they are the only ones deceived by the blood-mill. There is no mention at all of the mill’s effect on the crusading army on shore or the rest of the English army. No crusader soldier looks toward the blood-mill with fear, and the poet seems to focus entirely on the beneficial effects of the device. There is no indication that the English fear or should fear the mill, yet the knowledge of its function and construction would only belong to a few of the English at best. In theory, the rest of the English army should also fear its origins. However, there are two qualities of the blood-mill that prevent the English from falling prey to the blood-mill’s terrifying deception, and initially these qualities appear to contradict each other.

The first is the parallel between Richard and the mill. It is abundantly clear that the knowledge of the blood-mill belongs in some respect to Richard himself, or more accurately the blood-mill manifests some of him. While he presumably did not actually build the blood-mill himself, the poet ascribes the blood-mill to Richard directly: “A melle made man the mystry” [he made a mill with great mastery] (2656). It is his mill; he gave the orders to have it built. Furthermore, the blood-mill makes literal some of his terrifying qualities, as do other physical objects within the romance. For example, Richard is described playing a game of chess while out at sea with one of his lords. Megan Leitch argues that his skill as a politician and military leader is manifested directly through his working of the chessboard; his victory in chess situates his leadership above that of his underling. Similarly, the blood-mill can be seen as another manifestation of Richard, but instead of demonstrating his tactical mind, the blood-mill represents his insidious qualities. The Richard of the romance is half demon; his demonic mother was able to pass as a mortal for many years before being confronted and exiled. Richard’s parentage serves him well, oddly enough, giving him inhuman strength, which he uses again and again. Furthermore, Richard becomes a cannibal while on crusade, eating several Saracens—first unknowingly, then intentionally—to regain his health. The hornsed figure in front of the mill, “At in blood he was begon, / And hornes grete upon hys hade” [He was covered all in blood / and with great horns upon his head] (2672 – 2673), echoes quite pointedly Richard’s demonic qualities, and the Saracens’ belief that “he was the devyll of hell” [he was the devil of hell] (2679) come to destroy them is not as hyperbolic as it might at first seem. The blood-mill projects the most destructive qualities of the English warlord, and it becomes an extension of his person. The English army need not fear the blood-mill because they need not fear Richard. He is their heroic leader.

Machines and Impersonality

The second quality of the blood-mill that prevents it from victimizing the English seems at first contradictory to the first quality, that the blood-mill is a manifestation of Richard. This quality is that no technical knowledge can be entirely attributed to one person; technical knowledge must be shared among a larger community, however it is attributed. Mildred Leake Day’s work on an odd appearance of technology in romance is helpful to this analysis. Day closely analyzes the appearance of Greek fire in De ortu Waluuanii, work on an odd appearance of technology among a larger community, however it is attributed. Mildred Leake Day’s Day insists that the technology, however the poem might try to tie it to a specific person, is ultimately an impersonal, nebulous entity, created by a particular person, operated by another, but ultimately based on a knowledge that exists separately from either. Gawain may kill the operator and dismantle that particular machine, but his victory remains incomplete.

The same impersonality persists around Richard’s mill. Richard is its master, but he is separate from the men who built it. Perhaps Richard devised the concept, but others turned it into a reality, and still others may take part in its operation. The knowledge of the blood-mill is a body of restricted, shared knowledge. Although the technical nature of the mill’s description does not reveal what the blood-mill is or does, the technical details do prop-
agitate a sense of shared knowledge. The sails of the blood-mill are “Whith canveis layd wel all aboute, / Full schyr withinne and eke withoute” [well laid about with canvas, / fully secured within and without] (2661 – 2662), and the grindstone is hung “Ovyrtwart and endelang, / With strenges of wyr” [over-thwart and end-long / with strings of wire] (2665 – 2666). These semi-technical details go beyond naming the blood-mill a work of “gret masytry” [great mastery]; they indicate how well the construction demonstrates said mastery. Someone well-versed in the making of mills, a likely minority among the poem’s audience, might recognize why it is important that these elements are constructed this way, whereas for the vast majority of audience, these details create the illusion of knowledge, sharing that the sails are “layd wel all aboute” [well laid all about] because they have canvas inside and out. The audience is included within the community of shared technical knowledge, while those components also become part of the larger function of the device. This is something of a behind-the-scenes moment; the poet provides the audience with knowledge usually held by a small group of specialists. The knowledge of the blood-mill belongs to the English reading audience as much as it belongs to the fictional Richard.

Initially it seems impossible for the blood-mill to both belong to Richard and to no one. How can the shared knowledge be both a general impersonal entity and individually linked to the English king? The answer is that the head of Richard does not represent Richard, but rather the blood-mill and Richard are the facets of their shared Englishness. Richard is himself a manifestation of communal English knowledge. Peter Larkin, in the introduction to his edition of Richard Coer de Lyon, argues that the poem uses the figure of Richard to make the English the chosen people of God: “The typological resonance of Richard’s cannibalism and other acts reveal that he, standing for all Englishmen, replaces the Franks as the English become populi Dei [people of God].”7 I would argue that the blood-mill represents one of the mechanisms by which Richard can stand in for all Englishmen in this romance. He draws upon a shared body of knowledge, English knowledge even, to create a device that produces a mass deception against a people excluded from that shared knowledge. Even though the rest of the English army does not possess immediate technical knowledge of the blood-mill, they have access to the knowledge community through Richard. Richard represents the English and because the blood-mill is linked to him, the English have indirect access to what is represented by the blood-mill. The Saracens share neither in the representative nor in the technical knowledge of the blood-mill, and so they fall victim to the English king and army.

Machines and Manifestation

In order to fully understand the nature of the body of knowledge inherent in Richard’s mill and its Englishness, it is necessary to more broadly examine the blood-mill’s metaphorical or representational qualities. Other imagined medieval machines, and the ways that scholars have interpreted them, can help reveal those qualities. Thus this analysis returns again to Chaucer’s horse of brass. Through an extended reading of the brass horse in her book *Time and the Astrolabe in The Canterbury Tales*, Marijane Osborn comes to the conclusion that the horse is in fact a reimagined astrolabe,8 in which each detail of the horse relates in some respect to one of the various components of the instrument.9 She further connects the brass horse and astrolabe to observable horse constellations and stars, arguing that the Squire describes star patterns that would be visible to someone who was well-versed with an astrolabe.10 Osborn makes this connection so strongly that it is difficult to refute, but she does very little to expand upon the implications of such a connection. Even so, Osborn makes a few points useful to this analysis of Richard’s blood-mill. At one point in her argument, Osborn explores the relationship between the horse’s ability to travel and the face of an astrolabe. She comments on the typical use of the pointer, or label, on the astrolabe: “By turning not this astrolabic ‘horse’ itself but the ‘label’…and the rete or cutout star map that lies under it, one may indeed journey, as Cambysuskan is invited to do, wherever in the cosmos one wishes, all within the ‘space’ of twenty-four hours engraved on the outer periphery of the mother plate.”11 The rhetorical motion Osborn makes here is critical; she equates the journey of mental exercise through the astronomical calculation of an astrolabe to the literal journey of the brass horse in the imagined tale. Whereas an astronomer can only transport through his thoughts using an astrolabe, Cambysuskan can transport his physical being by means of the brass horse. The astrolabe is itself a representation of a body of knowledge, specifically the mathematics and a manifestation of astronomical observations in a physical form, which then allows part of the implementation of that knowledge to be realized, here the mental journey through the cosmos. The horse takes the role of representation further, as it makes physical and literal the imagined implementation of astronomy. Thus the relationship between the brass horse, a device, and astronomy, a body of knowledge, is one of illustrative metaphor.

This kind of metaphorical relationship provides a metric to analyze the body of knowledge behind Richard’s blood-mill. By returning to the function of the blood-mill, the shared knowledge behind it can be reverse-engineered. The first and most obvious function of the blood-mill has already been thoroughly examined above; it is a weapon that instills fear in those outside the knowledge community. The second function of the blood-mill is demonstrated by the latter half of its description: “Grounde they [the mill-stones] nevere where no grate, / But rubbyd als they were wood. / Out of the eye ran red blood” [they never ground wheat or grain / but rubbed as if they were mad. / Red blood ran out of the eye] (2668 – 2670). This device operates as other mills do—grinding a substance to create a finer product—and thus it is situated in a larger representational framework. Mills are often used in other medieval texts as representational objects. D.W. Robertson, in reference to a capital carving at Vézelay that portrays Moses pouring grain into a mill, which then produces flour for the waiting hands of St. Paul, explains the position of “the Millers” metaphorical or representational qualities. Other imagined medieval machines, and the ways that scholars have interpreted them, can help reveal those qualities. Thus this analysis returns again to Chaucer’s horse of brass. Through an extended reading of the brass horse in her book
device that creates new meaning out of the old meaning fed into it. The body of knowledge represented by the mill is transformative—the mill takes some other body of knowledge and grinds it into something else. Whereas most mills grind grain to produce flour, Richard’s blood-mill grinds no grain, with the suggestion that it grinds human bones instead and produces blood. It would seem that this device is designed to take Saracen bodies and their attached meanings and then destroy them to produce some other meaning. Rodney Delasanta traces another useful element of the larger medieval function of the mill, which might help illuminate the blood-mill’s final product. In his discussion of the mill in Chaucer’s Reeve’s Tale, in which a miller and his family are duped and violated by a pair of clerks, Delasanta identifies a definitively apocalyptic association with the mill: “the silence of the mills signals the destruction of the city.” The mill then represents the life of the city, as the end of one marks the end of the other. Considering the physical function of the mill, this makes sense; the mill creates sustenance for the community. Connecting then the function of the blood-mill to the body of knowledge behind it, Richard’s mill makes sustenance for the community by destroying and transforming the bodies of fallen Saracens.

**Englishness in the Machine**

The blood-mill’s transformation of Saracen bodies into food clearly foreshadows Richard’s infamous cannibalism that occurs later in the poem. When Richard serves cooked Saracen prisoners to Saladin’s emissaries, Englishness in the Machine destroying and transforming the bodies of fallen Saracens.

The nourishment of identity through war, specifically war between the English and the Saracens, is not a new concept. Siobhain Calkin traces how the romance *Of Arthour and of Merlin* replaces much of the inter-British conflict of Arthur’s early reign with Saracen invasions. Calkin comes to the conclusion that this incessant war does not destabilize Arthur’s political structure, but actually “revitalizes and reunifies the ‘Inglisch’ realm,” in part because it does away with inter-British political tension. The knowledge behind the blood-mill is more than knowledge; it is also a self-aware self-identification. This is where the blood-mill differs from the function of the brass horse. The brass horse takes a knowledge that can be learned and turns it into physical capability; yet one does not need to identify as an astronomer to use the brass horse, or even to use an actual astrolabe. Only the possession of certain knowledge or skills is necessary. The mill, on the other hand, is a manifestation of mental community. Shared knowledge is the result of a shared identity, independent of the technical working of any one device. Thus the blood-mill is the deployment of an English community that benefits by the specialization and skills of its individual members. Richard’s great strength and deeds, though unique, benefit all the English. The mill, or any other mechanical device, may be built and operated by a master engineer, but it is a device that benefits the whole community, and, specifically in the case of the blood-mill, it nourishes the community while destroying another. Perhaps through this communal framework, Richard is no longer a required intermediary. If the technical or hidden bodies of knowledge provide a visible service to the community at large, they cease to be a source of anxiety.

Other siege weapons of *Richard Coer de Lyon* perform similar representational functions, demonstrating carnivorous Englishness through their physical mechanisms. Second to the blood-mill in poetic presence is the siege tower Richard first deploys during the conflict over Cyprus. Richard’s description of the tower outlines its role in the shared English community:

> I have a castell, I understande,  
> Is made of tembre of Englonde,  
> With syxe stages full of tourelles  
> Well flourysshed with cornelles;  
> Therin I and many a knight  
> Ayenst the Frensshe shall take the fight.  
> That castle shall have a surnownne:  
> It shall hyght the mate-gryffon.  

(I have a tower, I understand, / which is made from the timber of England, / with six levels of turrets / well flourished with arrow-slots; / therein I and many a knight / shall take fight against the French.  
That tower shall have a surname: It shall be called the Mate-Gryffon.) (1849 – 1856)
Unlike the mill, this construction has a clear combat purpose. It provides a place from which the chivalrous knights of England can do battle with the soldiers of Cyprus and France, a function in which it proves quite effective. The relationship of the tower to Englishness is overtly made: it is built out of the “tembre of Englonde” [timber of England] (1850), physically made of the shared raw material of England and thus taking shape out of the English community. Furthermore, the tower is presented in a way that invokes a shared knowledge. The audience learns that it has six different levels, each well-supplied with places to shoot from. These details are technical and not strictly descriptive in nature; Richard is communicating its battle effectiveness through its specifications. As with the blood-mill, the description of the siege tower creates the sense of a body of knowledge shared with the reader, even if the technical aspects of the tower are not fully understood. The tower is a device of destruction, fostering, like the blood-mill, an English community through the destruction of the Saracen. Unlike the mill, however, the tower is not deployed exclusively against Saracens. Richard comments that the knights inside the tower are to fight specifically against the “French.” The name Richard gives the tower is also quite significant. Larkin glosses “mate-gryffon” as “kill-Greek.” It would seem then that the English war-fed identity is not limited to Saracens, but can be applied to other peoples as well. The construction of the tower mirrors the purpose of the blood-mill; the blood-mill uses the destruction of Saracen soldiers as a raw material to create sustenance for identity. The tower takes the raw material of identity to create “mate-gryffon,” a device deployed to destroy other Christian peoples. It might overstate the joint representational function of these two devices to assert that wars with Saracens sustain the English identity for wars with other Christian nations. While they both serve as physical manifestations of the shared war project, they appear within different poetic moments that do not appear to be specifically linked to each other. It is more appropriate to say that these two differing machines demonstrate that shared Englishness requires conflict with non-Englishness in general, and not only with the Saracens.

There are many other instances where siege machines appear in the text, but one is particularly useful for discussion. Two complex mechanical devices appear during Sir Thomas’s siege of the Saracen garrison at the castle Orglyous. The first belongs to the Saracen defenders. The Saracens send a spy into the crusader ranks, where he is immediately guessed out by Sir Thomas. Under threat, the spy describes the bridge by which the English should have crossed to the castle. He does so in a pointedly technical nature, saying “And undyrnethe is an hasp / Schet with a stapyl and a clasp; / And in that hasp a pyn is pylt... / And the pyn smeten out were, / down ye shoulden fallen there” [and underneath there is a hasp / shut with a staple and a clasp; / and in that hasp is a pin placed... / and were the pin struck out, / down you would fall there] (4111 – 4118). As with the other two machines discussed above, this description creates the sense of an uncommon body of knowledge behind the device. Unlike the other two devices, this one is built by Saracens to trick and destroy the English. That threatening body of knowledge is, however, defused entirely by the spy’s description of it. Once the English are aware of the trap, they circumvent it and attack the city with a great “mangenel” (4331), or stone-throwing machine. The spy says that the weapon is “Swylke knowen but fewe Sarezynes” [like such but a few Saracens know about] (4331). The Saracen defenders capitulate in complete terror after a single stone (granted a very large one) is thrown into the castle. If the reading of machines in this text holds here as it does above, this moment marks a direct conflict between two identities: the Saracen communal knowledge is revealed and rendered inert by one of their own, while the English shared knowledge (manifested in the great mangenel) is successfully used, creating fear in those who do not share in that knowledge. It is interesting that the Saracen machine is never tested, and that it was effectively disarmed by the Saracen spy. This allows the possibility of dangerous Saracen knowledge to linger; it represents what could have been. The Saracen communal knowledge remains a threat, even as the English machinery proves itself to be superior, because the encounter provides a glimpse into a hostile knowledge community that can manifest itself in its own dangerous devices. Such a state of possible danger seems to justify the intense suspicion Thomas holds toward the spy, identifying him as soon as he opens his mouth.

**Conclusion**

There are many other more minor references to siege equipment and machinery littered throughout the poem, but a complete survey rests outside the scope of this paper. So too do several aspects and implications attached to these weapons. There appear to be many ways in which the mill’s demonic connotations fit with Richard’s demonic qualities, and it would take a great deal of work to reconcile these connotations within a clearly Christian English identity. Rather than treat them lightly or briefly here, it would be best to return to those implications as a separate inquiry. There are, however, several useful results of this analysis, which might go beyond the explanation of what appears to be a narrative oddity. The model of English identity as presented by the blood-mill contributes to the general conversation around identity and otherness in *Richard Coer de Lyon*. The blood-mill demonstrates how a body of knowledge is a principal component of community and may in fact create community through its shared dissemination. The community surrounding Richard takes on the characteristics of the mill, the manifestation of knowledge. *Richard Coer de Lyon* exhibits an English communal identity that destroys, grinds, consumes, and digests the adversarial Saracen, an English identity created and sustained through dangerous communal knowledge.
Work Cited

1 Peter Larkin, ed., Richard Coer de Lyon, lines 2655 – 2682. All quotations from Richard Coer de Lyon are from this edition, and unless otherwise noted, all translations are my own.

2 Malcom Hebron, The Medieval Siege: Theme and Image in Middle English Romance, 39.

3 Joyce Tally Lionarons, “Magic, Machines, and Deception: Technology in the ‘Canterbury Tales,’” 379.

4 Ibid. 382.

5 Megan G. Leitch, “Ritual, Revenge and the Politics of Chess in Medieval Romance,” 130.


7 Peter Larkin, introduction to Richard Coer de Lyon, 20.

8 An astrolabe is an instrument made up of a series of engraved disks held together with a pin. Using an indicator called a “label,” the user can calculate the position of stars given a known latitude and time or vice versa.

9 Marijane Osborn, Time and the Astrolabe in the Canterbury Tales, 42.

10 Ibid. 47

11 Ibid. 42


14 Saladin (Salah al-Din) was a powerful Islamic military and civil leader, whose tactical brilliance is often cited among the principal causes of the defeat and repulsion of the armies of the Third Crusade. In the Richard romance, he serves as a foil to Richard, the cunning leader of the enemy army.

15 Larkin, introduction to Richard, 18.

16 Geraldine Heng, Empire of Magic: Medieval Romance and the Politics of Cultural Fantasy, 62.


18 See Larkin’s note to line 1836.

References


The Impact of Monetary Policy on Banks’ Risk-taking: Evidence from the Post Crisis Data

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INTRODUCTION

This study investigates the impact of unconventional monetary policy (UMP) actions on the risk taking behavior of banks. Recent studies such as Paligorova and Santos (2012), Dellis et al. (2012), and Angeloni et al. (2015) argue that the prolonged period of low interest rate in the aftermath of the dot-com recession has encouraged banks to take excessive risk. According to these studies, there is a significant positive relationship between expansionary monetary policy measures and the amount of risk that the banks take. However, this positive relationship may not hold for the post-crisis period because of the following reasons.

First, the financial crisis caused liquidity problems among the banks, which led to the credit crunch phenomenon. Because of the resulting shortage of capital, the banks became risk averse about lending to businesses and individuals as well as to other banks (Lowth et al., 2010). Secondly, when the central bank repeats the same actions in the same circumstances, agents in the economy learn to respond in a particular way. However, when the policy rule changes, there will be a period when households and firms learn how to respond to the new rules of the game. The 2007 financial crisis caused one such period of adaptation as the Federal Reserve (FED) switched to unconventional policy actions after the funds rate reached the zero lower bound (Farmer, 2012). This might cause a different response of risk taking by the banks. Third, the sluggish recovery of the economy signals that future economic conditions are worse than expected (Haitsma et al., 2015). Such pessimism might cause banks to hesitate to take any risks.

From the policy perspective, one of the channels through which UMPs affect banks’ risk taking is through the wealth effect. By increasing asset prices, the policy actions increase collateral values and lower delinquency and default rates, encouraging banks to take more risk in lending to borrowers. In this regard, Araujo et al. (2013) shows that asset purchases by the FED may not necessarily increase asset prices in all circumstances. In their general equilibrium model, if there exists a sufficient level of collateral for household’s collateral constraint not to bind in equilibrium, central bank asset purchases will have no effect on equilibrium asset prices.

Based on these arguments, the study tests the hypothesis that instead of monetary policy, factors related to the aforementioned reasons are the main drivers of risk taking by the banks in the post-crisis period. These factors include credit crunch as measured by credit growth and expectations about future economic conditions. The new monetary policy regime is represented by using the FED’s total asset as a measure of monetary policy. After the fed funds reached the zero lower bound in December 2008, the FED switched to unconventional policy tools, namely quantitative easing. Under this new policy regime, the FED’s balance sheet is used as the main policy tool as the FED has directly engaged in large-scale asset purchase programs (LSAP). The LSAP involves the purchase of mortgage backed securities and other assets, leading to a massive expansion of its total asset holdings. Because of this the total asset holdings of the FED represent the (unconventional) monetary policy instrument for the post-crisis period. This is in line with Gambacorta et al. (2013) and Khatiwada (2017). Moreover, industrial production is used as a control for the level of economic activity. Following Dellis et al. (2012), this paper measures the risk taking by the banks using the total risky assets owned.

In order to achieve its goal, this paper employs a time series regression where the risk taking measure is expressed as a function of credit growth, expected economic condition, and FED’s total asset. The empirical findings show that monetary policy has been an insignificant factor during the post-crisis period while credit crunch and expectation about future economic condition are found to be significant factors affecting the risk taking decision of banks. These findings imply that the risk taking channel of monetary policy has been ineffective after the fed funds rate reached the zero lower bound.

The remainder of the study is organized as follows. The next section presents a review of previous empirical studies in the area. Following is a discussion of the empirical model to be estimated. The next section describes the dataset used in the study. Then the paper presents and discusses the empirical findings. Finally, the paper concludes by providing some policy implications.

Literature Review

Considerable effort has been made in the empirical literature to study the impacts of monetary policy on the risk taking behavior of banks. Virtually all studies use short-term interest rate as the measure of monetary policy. Dellis et al. (2012) estimates the risk taking impacts of monetary policy using micro level datasets. Their study makes two significant contributions. First, the authors distinguish between risk taking on new and existing loans. Their second contribution lies in the endogeneity problem that concerns the potential joint identification of monetary policy and bank risk. They argue
that bank risk could influence the stance of monetary policy and that both of these variables are affected by the general macroeconomic conditions. To solve this problem of identification, the authors use the strategy developed by Romer and Romer (2004). Using risky assets owned and Z-index for each bank in their sample, the authors found that lowering the interest rate significantly increases risk taking by the banks.

On the other hand, Angelon et al. (2015) uses macro data and employs a VAR model to see the risk taking impacts of monetary policy in the U.S. Their main contribution is in the differentiation they make between two forms of risk: risk taking in the funding structure and overall risk taking. Their study uses data from January 1980 to September 2011. The major finding of their work is that a positive monetary policy shock increases the amount of funding risk taken by the banks while its effect on overall risk taking is insignificant. Similar results are also found by Abbate and Thaler (2014) using macro data. By identifying a Bayesian VAR through sign restrictions, the authors find evidence suggesting that expansionary monetary policy shock causes a persistent increase in proxies for bank risk taking behavior.

Few studies have also attempted to examine the risk taking effects of monetary policy in Europe. Altunbas et al. (2010) tests the hypothesis that low level interest rate is the contributing factor to the recent banking problem in Europe and the U.S. using a comprehensive database of quarterly balance sheet information and risk measures. In order to disentangle the effects of monetary policy from other factors, the authors make control for bank-specific characteristics such as size, liquidity, capitalization, lending portfolios, and profitability. The main result of their study is that, even controlling for the above factors, low levels of short-term interest rates over an extended period of time contributed to an increase in bank risk.

Similar results are also found by other researchers using micro level data. Jimenez et al. (2014) use micro data of the Spanish Credit Register from 1984 to 2006 to find that lower interest rates have a double-sided effect on the default probability of bank loans. This default probability falls in the short term, as the cost of interest payments decreases, but rises in the long run, as a result of banks lending money to riskier borrowers in exchange for a higher yield. This indicates increased risk taking by the banks through reaching for yield behavior.

This paper contributes to the accumulating empirical literature in two ways. First, in evaluating the impacts of monetary policy shocks, the study uses the FED’s total asset as the main policy tool, instead of the commonly held approach of using interest rate or money supply. Secondly, in addition to testing the significance of monetary policy, the study attempts to point out the factors that have been the major drivers of risk taking during the post-crisis period.

Methodology

The empirical approach to test for the risk taking effects of UMPs relies on a time series regression. The econometric model is given by: (1)

Where A is the risky assets owned, is credit growth rate representing credit crunch, and is the monetary policy measured by FED’s total asset. financial market distress as measured by Cleveland Financial Distress Index, and it is the control for uncertainty shocks that have been the major drivers of financial market dynamics over the crisis period (Gambacorta et al., 2013) denotes expected economic condition. It is given by the predicted values from an output equation estimated in the spirit of Toló (2011). The results of this estimation are provided in the appendix. FED’s total asset and banks’ risky assets enter the model in natural log while the rest of the variables enter in level. The main hypothesis in the estimation of Equation 1 is that the coefficients of credit growth and expected economic condition are jointly significant while that of monetary policy measure is insignificant.

Data

The dataset used in the study is monthly data from December 2008 to April 2016, the last month with the complete dataset. A total of 89 observations are used for estimation purposes. It encompasses data on the following variables: FED’s total asset as a measure of monetary policy, industrial production, Cleveland Financial Stress Index, and credit growth. The data are obtained from the Federal Reserve Bank of St. Louis. Data on the total risky assets owned are obtained from the Federal Reserve Board of Governors website. All the data are seasonally adjusted. The time series plot of each variable is provided below and the descriptive statistics are available in the appendix section.

Figure 1: Time series plots; First row: Credit Growth, FED’s total asset. Second Row: Industrial Production, Risky assets owned. Third Row: Cleveland Financial Distress Index.
Estimation Results

In this section, the regression result from estimation of Equation 1 is discussed. From the initial regression, the results indicate the presence of a significant level of autocorrelation in the residuals. In order to correct for that, the Cochrane-Orcutt transformation is applied. This transformation requires the transformation of the regression model, given by Equation 1, to a form in which the OLS procedure is applicable. Rewriting Equation 1 for the period $t-1$, we arrive at:

$$\rho u_t = \rho u_{t-1} + \varepsilon_t$$ (3)

Where $\rho$ is obtained from the AR(1) modeling of first stage regression residuals $u_t$:

$$u_t = \rho u_{t-1} + \varepsilon_t$$ (4)

Equation 3 can be rewritten using the residuals from Equation 4:

$$u_t = \rho u_{t-1}$$ (5)

By construction, the residuals in Equation 5 are white noise.

Table 2 in the appendix presents the result of an estimation of Equation 5. This result indicates that monetary policy is found to have an insignificant effect on the amount of risk that the banks take as expected. Thus, it can be concluded that unconventional monetary policy actions have different impact on the risk taking behavior of banks than the short-term interest rate. On the other hand, the phenomenon of the credit crunch as measured by credit growth has significant impact. A one percent decrease in the credit growth leads to a decrease in the amount of risk taken by the banks by 0.4%. Moreover, the joint significance test of the coefficients of credit growth and expected economic conditions has a p-value of 0.05. This implies that credit crunch and expectation have been significant factors affecting the banks’ risk taking decision.

In order to show that these results are robust, I consider a model in which risk taking is expressed as a function of the financial distress index and FED’s total asset. If credit crunch and expectation about future economic conditions cause the effect of monetary policy to disappear, then in the regression without these two variables the monetary policy measure should have a significant coefficient. The result of this regression is presented in Table 3 in the appendix section, and is found to be similar to the previous case. The coefficient FED’s total asset remains insignificant. This indicates that in addition to the credit crunch and expectation about future economic conditions, there might be other factors that cause the effect of monetary policy to disappear.

Conclusion

This paper re-investigates the impact of monetary policy on the risk taking behavior of banks after the fed funds rate reached the zero lower bound. Previous studies that use short-term interest rate as the measure of monetary policy found that expansionary policy actions lead to an increase in the amount of risk taken by the banks. However, whether this finding holds in the post-crisis period is questionable. This is because the banks have suffered from liquidity problems, and recovery from the crisis has been one of the slowest in history. The study contributes to the existing literature by considering a different measure of monetary policy given by FED’s total asset. Moreover, it also proposes the possible factors that affect risk taking in the post-crisis period.

The results of the study provide no evidence of any impact by monetary policy on the risk taking behavior of banks. Instead, credit crunch as measured by credit growth and expectation about future economic condition are found to be the two major factors affecting risk taking. In terms of implication for the FED, our results suggest that more attention should be given to the capital constraint that the banks suffer from in order to have a prudent macro supervision. This can be attained by altering the total reserve that the banks have through a change in the required reserve ratio or by tapering the large-scale asset purchase program and resorting to the conventional higher short-term interest rate policy in the event that excessive risk taking is a threat to the economy.

Work Cited

1UMP is a term used to refer to monetary policy actions implemented after the zero lower bound.
2Credit crunch is a sudden reduction in the availability of credit from banks.
3The zero lower bound is when the short-term interest rate (fed funds rate) becomes zero.
4Delinquency refers to a default to pay an outstanding debt.
5Z-index captures the probability of default of a country’s banking system.

References


**Appendix A**

**A1. Descriptive Statistics**

Table 1: Summary statistics of the variables in the model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observation</th>
<th>Mean</th>
<th>Std</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Risk</td>
<td>89</td>
<td>9.476816</td>
<td>60.8285</td>
<td>871482</td>
<td>1.10E+07</td>
</tr>
<tr>
<td>Credit Growth</td>
<td>89</td>
<td>0.277313</td>
<td>0.5855085</td>
<td>-1.073507</td>
<td>0.533819</td>
</tr>
<tr>
<td>CFDI</td>
<td>89</td>
<td>0.312479</td>
<td>1.071473</td>
<td>-1.92</td>
<td>2.89</td>
</tr>
<tr>
<td>FED’s total Asset</td>
<td>89</td>
<td>3236128</td>
<td>916481.6</td>
<td>1881629</td>
<td>4507150</td>
</tr>
<tr>
<td>Industrial Production</td>
<td>89</td>
<td>99.22468</td>
<td>5372032</td>
<td>87.4125</td>
<td>106.6868</td>
</tr>
</tbody>
</table>

**A2. Estimation Result of Equation 5**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>113.9</td>
<td>0.0288 ***</td>
</tr>
<tr>
<td>Credit growth</td>
<td>0.004</td>
<td>6.46e-05 ***</td>
</tr>
<tr>
<td>Financial Distress index</td>
<td>0.003</td>
<td>0.0688**</td>
</tr>
<tr>
<td>Expected Output</td>
<td>0.63</td>
<td>0.3363</td>
</tr>
<tr>
<td>FED’s total asset</td>
<td>0.012</td>
<td>0.9552</td>
</tr>
</tbody>
</table>

**A3. Regression Result Without Expected Output and Credit Growth**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>113.9</td>
<td>0.0288 ***</td>
</tr>
<tr>
<td>Financial Distress index</td>
<td>0.003</td>
<td>0.0688**</td>
</tr>
<tr>
<td>Expected Output</td>
<td>0.63</td>
<td>0.3363</td>
</tr>
<tr>
<td>FED’s total asset</td>
<td>0.012</td>
<td>0.9552</td>
</tr>
</tbody>
</table>

**A4. Regression Result for predicting expected economic condition**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.5447</td>
<td>0.2884</td>
</tr>
<tr>
<td>Inflation</td>
<td>2.0800</td>
<td>0.0604***</td>
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<tr>
<td>Capacity Utilization</td>
<td>1.1967</td>
<td>6.18e-14***</td>
</tr>
<tr>
<td>Export of Manufactured Goods</td>
<td>0.0001</td>
<td>0.6855</td>
</tr>
</tbody>
</table>
The Effect of Inflation Targeting Policies on Dollarization: A Cross-Country Analysis

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INTRODUCTION

Dollarization, a situation in which individuals and firms in a country choose to use a foreign currency as a substitute for some of the monetary services provided by the domestic currency, is a common issue plaguing many developing countries. While the foreign currency most commonly chosen is the U.S. dollar, dollarization is a generic term used to characterize any currency that effectively serves as a replacement for domestic currency. Usually, dollarization is differentiated between official, or de jure, dollarization and unofficial, or de facto, dollarization. De jure dollarization typically refers to a situation in which foreign currency is given legal tender status; it is measured in the literature by the fraction of total deposits held in foreign currency (FCD). De facto dollarization refers to the practice of using foreign currency along with domestic currency as means of exchange. This measure also includes the amount of foreign currency in circulation. Measuring unofficial dollarization is a challenge due to the unavailability of reliable data on foreign currency in circulation.

Dollarization could possibly lead to both currency substitution as well as asset substitution. Standard models of currency substitution attribute the ratio of domestic and foreign currency circulating in a country to the difference in their nominal interest rates. If uncovered interest parity holds, and assuming that inflation is reflected in the interest rates, expected inflation would foster currency substitution. Asset substitution, on the other hand, depends not only on the risks and returns associated with both domestic and foreign assets, but also on the prevailing regulatory framework of the domestic economy.

Monetary policy in the presence of dollarization becomes especially challenging. The greater the extent and variability of dollarization, the weaker the Central Bank’s knowledge and control over domestic money supply. Dollarization also reduces the ability of the government to earn seigniorage from its own currency.

However, one of the common driving factors behind both asset and currency substitution is high inflation. As a result, in many emerging economies experiencing hyperinflation, dollarization emerged as a popular method of insuring against the inflationary shocks to holding domestic assets. A common response from policymakers has been to adopt inflation targeting (IT) as a monetary policy to anchor inflationary expectations. This paper aims to investigate the experiences of some dollarized economies after adopting IT regimes and to compare them to other economies with similar levels of dollarization that did not adopt IT. Then this paper discusses how IT policies work in a dollarized economy, followed by a review of the existing literature on this topic. This paper then presents the dataset used and the measure of dollarization employed in this study, and finally discusses the estimation strategy results and conclusions.

Inflation Targeting and Dollarization

In theory, inflation targeting is a fairly straightforward policy. The central bank explicitly declares an official quantitative target (or target ranges) for the inflation rate over one or more time horizons. The central bank then forecasts the future path of inflation and adjusts monetary policy by the difference. It is important to note here that IT is a mixture of a “rule” and “discretion” with substantial variation across the implementing countries. There cannot be a one-size-fits-all version of the policy, as each country adopts a different version of the policy based on the prevailing institutional arrangements.

As long as IT seems like a credible regime that delivers low and stable inflation, it strengthens the domestic currency as a store of value. It dampens the agents’ tendency to hold wealth in a foreign currency by anchoring down inflationary expectations, thereby reducing the risk of holding wealth in domestic currency.

However, it has been observed that de-dollarization (i.e. reduced or discontinued usage of foreign currency) does not occur; at least not fully, when disinflation is achieved. Instead economic agents continue to use foreign currency in their financial systems and in transactions. This is commonly known as the hysteresis effect which usually occurs for two reasons. If economic agents can choose among several currencies for transactions, they will prefer the one that is already widely used in the economy. Therefore if the dollar had already reached sufficiently high level of usage during inflation, it will tend to persist after inflation. This is the network effect. The other reason is fear of depreciation of the domestic currency. The less risky currency dollar persists simply because it is more likely to maintain its value.

This process of hysteresis is more likely to occur in asset substitution than currency substitution. This is because foreign currency denominated assets
would still provide insurance against the probability of a return to inflation and devaluation. Remittances can also induce asset substitution as long as they are maintained in foreign currency. This paper investigates whether or not de-dollarization occurs after adopting IT and to what extent the hysteresis effect persists. It will focus on estimating the coefficient on the IT variable in our empirical model with the initial hypothesis that it is negative.

**Review of the Literature**

Different countries’ experiences with dollarization have been studied extensively in the literature. Ize and Levy-Yeyati (2003) approach financial dollarization as a portfolio choice problem and demonstrate that within the minimum variance portfolio allocation benchmark, financial dollarization displays high persistence whenever the expected volatility of the inflation rate remains high with respect to real exchange rate.

Feige (2003) employs a constructed dataset on the amount of foreign currency in circulation (FCC) in the form of U.S. dollars, in various countries around the world, which overcomes the fundamental empirical problem of “un-observability” to an extent. He focuses on de facto dollarization in Croatia and compares the new empirical estimates of the extent of dollarization to the ones published by the International Monetary Fund (IMF).

Zoryan (2005) also attempts to create an estimate of the amount of foreign currency in circulation (FCC) in the case of Armenia by surveying households, and uses this to create a currency substitution index.

Honanhan (2007) concentrates on short-run variations particularly the response of dollarization to exchange rate regimes. His econometric model suggests that policymakers’ fears of floating may be exaggerated and that exchange rates on average do not result in extrapolative destabilizing denomination of the currency of deposits. Following this, my model controls for exchange-rate regimes.

Mwase and Kumah (2015) investigate the extent of dollarization in low-income countries and their trends during the recent global financial crisis. They conclude that beyond the variation, the level of inflation and size of depreciation also matter for dollarization.

Most of the literature, even those studies conducting cross-country analysis, focus on a particular group of countries, mostly the Latin American economies. In this paper, I investigate a wider cross-section of countries by including dollarized East-Asian economies. Also, most of the existing literature concentrates on the Latin American currency crisis of the 1990s and its aftermath. In this paper, I take the literature forward by considering a more recent time period from 2001 to 2015.

Data and Descriptive Statistics

The dataset considered in this paper consists of a balanced annual panel of fourteen dollarized economies. Eight of these economies have implemented inflation targeting monetary policies, while the other six have not. They are further classified based on whether they were highly dollarized, moderately dollarized, or low-dollarized. A tabulated description is provided below. The time period considered is from 2001 to 2015.

**Table 1: Countries chosen for this study.**

<table>
<thead>
<tr>
<th>Implemented IT</th>
<th>High-Dollarized</th>
<th>Moderate-Dollarized</th>
<th>Low-Dollarized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand, Philippines, Indonesia</td>
<td>Russia, Brazil</td>
<td>Chile, Armenia, Peru</td>
<td></td>
</tr>
<tr>
<td>Did not Implement IT</td>
<td>Malaysia, Cambodia</td>
<td>Argentina, Uruguay, Croatia</td>
<td>China</td>
</tr>
</tbody>
</table>

Only deposit dollarization is considered in this paper because estimates of unofficial dollarization are not available for all countries, and the ones available are not comparable. This is not likely to bias the results as the literature has found official and unofficial dollarization to be highly correlated and similarly responsive to inflation.

The measure for official dollarization is constructed using data from International Financial Statistics following the common Dollarization Index (DI) used by IMF.

\[ DI = \frac{\text{Foreign Currency Deposit}}{\text{Broad Money}} (i) \]

Since countries report Foreign Currency Deposits and Broad Money in national currency terms, they are converted into dollars using the prevailing exchange rate to make this measure comparable across countries. The economies were further classified as High-Dollarized (HD), Moderate-Dollarized (MD), and Low-Dollarized (LD).

Further details illustrating the trends in dollarization and descriptive statistics about the dollarization index are available in Appendix A. Also included is per capita GDP to proxy for the size of the economies. Assuming perfect asset substitutability, we include the interest rate on domestic deposits for each country. The initial hypothesis is that this interest rate will be negatively related to dollarization.

Following Honanhan (2007), I include the exchange rate measured by domestic currency price of foreign currency. Finally, the categorical variables for IT and prevailing exchange rate regimes are constructed from the Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER).

Estimation Strategy and Results

The methodology employed is a fixed effects within panel regression technique with country-specific fixed effects. A statistical test conducted to test for time fixed effects failed to reject the null hypothesis. Also includ-
We further interact the IT dummy with a regional dummy for East Asian economies and Latin American economies, with Central European countries being the reference category.

\[ DI_{it} = a + \alpha_{it} + \beta_1GDP_{it} + \beta_2rit + \beta_3Inflrate_{it} + \beta_4Exrate_{it} + \beta_5IT_{it} + \beta_6IT^*Free_{it} + \beta_7IT^*Asia_{it} + \beta_8IT^*LA_{it} + u_{it} (5) \]

Both these interaction terms carry a negative sign and are statistically significant indicating de-dollarization. However, the Latin American economies tend to de-dollarize more than the East-Asian economies.

**Conclusion**

In conclusion, there is evidence of persistent hysteresis in the economies in the time period considered in this study. The adoption of inflation targeting policies has the desired de-dollarization effect in economies with a free floating exchange rate system compared to the economies with fixed exchange rate systems. Both highly-dollarized and moderately dollarized economies suffer from hysteresis compared to low dollarized economies. However, moderately dollarized economies have a higher degree of persistent hysteresis than highly-dollarized economies. In addition, inflation targeting has had the desired de-dollarization effect in East Asian and Latin-American economies compared to Central European economies in the time period considered in the study. Future work will attempt to investigate the effect of not just adopting inflation targeting regimes, but also the specific targets chosen.

An obstacle still remains in measuring and studying unofficial dollarization in any economy. Previous work that has attempted to measure unofficial dollarization has taken place through the use of survey that are specific to each country. These measures are not comparable and thus cannot be used in any cross-country analysis. In order for monetary policy to be effective, a thorough knowledge of the amount of foreign currency circulating in the economy is necessary. A comparable measure of unofficial dollarization can be used to explain the differential effects of adopting inflation targeting policies of various groups of economies that this study found.
Work Cited
1 The uncovered interest rate parity (UIP) condition states that the difference in the interest rate between two countries is equal to the expected change in exchange rates between the two countries.
2 Seigniorage is the revenue earned by the government by issuing currency.
3 Broad money, as the name suggests, is the broadest definition of the money supply of the economy. It comprises physical money such as coins and bills, as well as demand deposits at commercial banks.
4 Numbers in the column heading refers to the equation number being estimated. Refer to the main text.
5 Bolded coefficients are significant at 95% level of confidence.
6 Numbers in parenthesis refer to t-ratios.

References

Appendix A

Data

Table 3: Descriptive statistics of the Dollarization Index for all the countries in this study

<table>
<thead>
<tr>
<th>Country</th>
<th>Statistic</th>
<th>Minimum</th>
<th>Mean</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td></td>
<td>0.25</td>
<td>0.37</td>
<td>0.57</td>
</tr>
<tr>
<td>Philippines</td>
<td></td>
<td>0.68</td>
<td>0.74</td>
<td>0.81</td>
</tr>
<tr>
<td>Uruguay</td>
<td></td>
<td>0.52</td>
<td>0.59</td>
<td>0.76</td>
</tr>
<tr>
<td>Russia</td>
<td></td>
<td>0.44</td>
<td>0.52</td>
<td>0.67</td>
</tr>
<tr>
<td>Argentina</td>
<td></td>
<td>0.49</td>
<td>0.55</td>
<td>0.77</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td>0.01</td>
<td>0.03</td>
<td>0.07</td>
</tr>
<tr>
<td>Peru</td>
<td></td>
<td>0.27</td>
<td>0.38</td>
<td>0.58</td>
</tr>
<tr>
<td>Thailand</td>
<td></td>
<td>0.77</td>
<td>0.85</td>
<td>0.88</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td>0.67</td>
<td>0.69</td>
<td>0.72</td>
</tr>
<tr>
<td>Croatia</td>
<td></td>
<td>0.54</td>
<td>0.71</td>
<td>0.78</td>
</tr>
<tr>
<td>Malaysia</td>
<td></td>
<td>0.71</td>
<td>0.74</td>
<td>0.79</td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td>0.57</td>
<td>0.62</td>
<td>0.74</td>
</tr>
<tr>
<td>Chile</td>
<td></td>
<td>0.36</td>
<td>0.44</td>
<td>0.55</td>
</tr>
<tr>
<td>Cambodia</td>
<td></td>
<td>0.38</td>
<td>0.62</td>
<td>0.72</td>
</tr>
</tbody>
</table>
Appendix B

Alternative Measures of Dollarization

Following the definition of Feige (2000)

\[ BM = DCC + DDD + DTD + FCD \]

(where BM = Broad Money, DCC = Domestic Currency in Circulation, DTD = Domestic Time Deposits, FCD = Foreign Currency Deposits)

\[ EBM = BM + FCC \]

(where EBM = Effective Broad Money)

In countries with high dollarization, foreign currency serves as a unit of account, store of value and usually as a circulating medium of payment. Due to the lack of data on FCC, most of the literature has been forced to accept FCD as a proxy for dollarization. The measure of official dollarization is:

\[ DI = \frac{FCD}{BM} \]

This is usually biased downwards compared to the unofficial dollarization index (UDI), defined by:

\[ UDI = \frac{FCD + FCC}{EBM} \]

Appendix C

Description of Variables

Table 3: Description and source of data for each of the variables used in the analysis

<table>
<thead>
<tr>
<th>Name</th>
<th>Description of Variable</th>
<th>Source of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Currency Deposits</td>
<td>Foreign Currency and time deposits under Deposit Money Banks for countries still reporting under Non-Standardized Reports and other deposits for countries using the Standardized Report Forms</td>
<td>International Financial Statistics,</td>
</tr>
<tr>
<td>Broad Money</td>
<td>M₃ or Broad Money from National Definition of Monetary Aggregates</td>
<td>International Financial Statistics</td>
</tr>
<tr>
<td>Exchange rate</td>
<td>National Currency Price of Foreign Currency as Annual Average</td>
<td>International Financial Statistics</td>
</tr>
<tr>
<td>IT</td>
<td>Categorical Variable=1 for IT regimes, =0 otherwise</td>
<td>AREAER</td>
</tr>
<tr>
<td>Exchange rate regime</td>
<td>Categorical variable =1 for Free Floating Regimes, =0 for all others</td>
<td>AREAER</td>
</tr>
<tr>
<td>GDP</td>
<td>Per Capita GDP in Current US dollars</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>Annual percentage change in CPI</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Interest rate</td>
<td>Interest rate on domestic deposits in percentage per annum</td>
<td>International Financial Statistics</td>
</tr>
</tbody>
</table>
Appendix D

Estimation Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.021* (-2.05)</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>-0.005 (-6.06)</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>0.005 (2.98)</td>
</tr>
<tr>
<td>Inflation Targeting (IT)</td>
<td>0.03 (1.14)</td>
</tr>
<tr>
<td>IT*Free</td>
<td>-0.19 (-4.84)</td>
</tr>
<tr>
<td>IT*HD</td>
<td>- 0.19 (2.43)</td>
</tr>
<tr>
<td>IT*MD</td>
<td>- 0.26 (3.80)</td>
</tr>
<tr>
<td>IT*Asia</td>
<td>-</td>
</tr>
<tr>
<td>IT*LA</td>
<td>-</td>
</tr>
<tr>
<td>Constant</td>
<td>0.72 (8.48)</td>
</tr>
<tr>
<td>R²</td>
<td>0.19</td>
</tr>
<tr>
<td>n</td>
<td>210</td>
</tr>
</tbody>
</table>

The line balancing problem is one of the most important problems of the preliminary design stage for flow line production systems. Line balancing can be defined as a concept of reducing the imbalance between the workers and the workload to achieve desired production rates. This article is based on a project proposal submitted for balancing a company’s production line. It focuses on a solution for a production line with a relatively simple structure. For a given set of operations, the classical line balancing problem consists of assigning each operation to a workstation to minimize the number of workstations and satisfy precedence constraints. The balance delay time will be minimal if and only if the numbers of workstations are minimal too. The dual problem is minimization of the cycle time for the given number of workstations. The experiment was conducted at Bimetal Bearings Limited in Coimbatore, India, which has a strong manufacturing base in bi-metallic bearings backed by testing and R&D facilities.

Preferably, industries should implement lean manufacturing to eliminate all kinds of unwanted elements that would proliferate the productivity of the line. The arrangement of machine capacity must be relatively secure for
uniform flow of manufacturing. If the demand for the product changes, any change in line balancing should not have any negative effect on productivity. Here is an example of such optimized results by Agnetis (1997), which increased production rates from 1100 units to 1800 units per day and showed that increasing the number of AGVs and processors can enhance the production rate at each stage of production.

There are three possibilities of line balancing. The first possibility focuses on implementing the most effective direction, at least as far as balancing the line is concerned, to increase the output. The second possibility is to locate another product close to the original product, so that some idle machines may be used jointly. The third possibility is to estimate the output of the last workstation, which can serve as an estimate of the minimum output of all the immediate workstations. The following goals have primarily been considered in this article’s line balancing concept:

- The objective is to apply this line balancing concept to reduce wait time on the component and machine for improving the production rate. The parameters, including cycle time, line efficiency, and balanced delay, are optimized to obtain balance.
- The other objective is to obtain perfect balance in the line of bearing production, both by rearranging the line of processes as well as to suggest a solution from a time study software to create a more productive environment.

Literature Review

Line balancing is one of the basic principles in improving productivity, and it is considered a basic tool towards lean manufacturing. Chen et al. (2012) defines line balancing as the problem of assigning various tasks to workstations, while optimizing one or more objectives without violating any restrictions imposed on the line. Chen et al. (2012) has developed the group-genetic algorithm (GGA) technique to single model balance line for a sewing division similar to what we have worked. Dolgui and Proth (2003) and Boysen et al. (2007) have classified various line balancing methods, classifying them into two basic problems: SALB-1 and SALB-2, with SALB standing for Simple Assembly Line Balancing. SALB-1 typically minimizes the number of workstations for a given cycle time, and SALB-2 minimizes the takt time for a given number of workstations. Our work follows the SALB-2 type problem. Chen et al. (2012) classifies the third type problem as ALBP-3, which maximizes the workload smoothness for a given number of workstations. Many researchers have designed algorithms (Chen et al., 2012; Dolgui & Proth, 2013; Scholl & Becker, 2006), experiments (Chen et al., 2012), and various mathematical or computational methods (Dolgui & Proth, 2013; Scholl & Becker, 2006) to develop proper and optimistic solutions in the industrial arena. We have used a time and motion study software called Timer Pro Professional to achieve optimistic solutions. Reddy (2016) has experimented with the line balancing concept using a time and motion study as well. A time and motion study is the basic tool necessary to optimize machines, workstations, and the complete assembly line.

Existing System – Before Rearranging

For balancing the conventional line, important data such as production volume of all assembly lines, plant layout, operations in sequence, production rate per hour, and takt time for operations are collected and analyzed. Only a conventional production line can be balanced because all the other lines are fully automated and cannot be balanced in the conventional way. This section considers the data in the conventional line of production. In the present assembly line, the production of bearings is already productive and optimistic, but this study aims for much better results. To prepare a balanced assembly line, it is necessary to collect certain data from various sources, including production volume, list of operations in sequence, and time duration required for each operation. Product layout requires line balancing; if any production line is unbalanced, then machinery utilization may be ineffective (i.e., the machine in line may operate only for half of the time). A balanced layout eliminates bottleneck operations and prevents the unnecessary duplication of equipment capacity. Line balancing is a major consideration in layout because imbalance can easily hinder the production. For balancing, it is not essential that the output of the quicker machine should be multiple of the output of the remaining other machines.

Production Requirement

There are a total of five production lines: transfer lines 1, 2, and 3, a conventional line, and a safety stock line; respectively, the production requirement for each is 420,260; 378,600; 418,987; 221,520; and 36,950; with a total production requirement of 1,473,617 bearings per month. This article only considers the conventional line of 221,520 bearings per month, since the other assembly lines are automated.

<table>
<thead>
<tr>
<th>Production Line</th>
<th>Transfer line 1</th>
<th>Transfer line 1</th>
<th>Transfer line 1</th>
<th>Conventional line</th>
<th>Safety stock line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production requirement</td>
<td>420,260</td>
<td>378,600</td>
<td>418,987</td>
<td>221,520</td>
<td>36,950</td>
</tr>
</tbody>
</table>
Present List of Operations in Sequence

The sequence of operations plays a key role in the production process. The following process described below is continuous:

- Blanking
- Forming
- Facing
- Chamfering
- Notching
- Piercing
- Oil grooving
- Reaming
- Parting line shaving
- Crush height measuring
- Boring

Takt Time Calculation for Total Production

The takt time is calculated by dividing the available working time per shift (in seconds) by the customer demand rate per shift (in units).

\[
takt\ time = \frac{\text{available work time/day}}{\text{customer demand/day}} = 1 \text{ sec per bearing}
\]

Refer to Appendix 2 for the calculations. The takt time taken for the production of a single bearing is around one second (1 sec) (refer too Appendix A2). Phrased another way, a bearing is produced or manufactured every single second.

Takt Time Calculation for Conventional Line

The takt time was calculated for total production, which means that it includes all the production lines as discussed earlier. We will calculate takt time for the conventional line only as our line balancing concept applies to the line; we cannot apply balancing for automated lines.

\[
takt\ time\ of\ the\ conventional\ line = 6.61 \text{ sec per bearing}
\]

In a conventional line, the takt time taken for a single bearing is approximately 6.61 sec, which means that production in a conventional line lags behind the total production by 5.51 sec (see Appendix A3) to produce a single bearing. If this line is balanced correctly, it will either increase the company’s profit or reduce the cost price of the bearings, which ultimately benefits the company and the market.

Idle Time Calculations

From the cycle time of various operations, the corresponding idle times are calculated and listed below. It is important to emphasize that the data below was recorded before balancing the production line.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Operation</th>
<th>No. of parts/hours</th>
<th>Cycle Time (in sec)</th>
<th>Idle Time (in sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blanking</td>
<td>3580</td>
<td>1.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>Forming</td>
<td>3580</td>
<td>1.0</td>
<td>0.6</td>
</tr>
<tr>
<td>3</td>
<td>Facing</td>
<td>2250</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>Chamfering</td>
<td>1405</td>
<td>2.6</td>
<td>0.0</td>
</tr>
<tr>
<td>5</td>
<td>Notching</td>
<td>1380</td>
<td>2.6</td>
<td>0.6</td>
</tr>
<tr>
<td>6</td>
<td>Piercing</td>
<td>1090</td>
<td>3.2</td>
<td>0.5</td>
</tr>
<tr>
<td>7</td>
<td>Oil Grooving</td>
<td>975</td>
<td>3.7</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>Reaming</td>
<td>700</td>
<td>5.2</td>
<td>1.8</td>
</tr>
<tr>
<td>9</td>
<td>Parting Line</td>
<td>1060</td>
<td>3.4</td>
<td>1.2</td>
</tr>
<tr>
<td>10</td>
<td>Crush Height</td>
<td>1635</td>
<td>2.2</td>
<td>1.3</td>
</tr>
<tr>
<td>11</td>
<td>Boring</td>
<td>1060</td>
<td>3.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>30.0</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Production Data for the Existing Assembly Line

We have compiled the entire data of the existing assembly line. At the end of this investigation, we will compare the results of the existing line with that of results from rearranged and software methods. It is noticeable that the actual production of the existing line does not satisfy the demand production and that the difference is much too large, which shows a desperate need for line balancing.

- No. of workstations = 11
- No. of operators = 13
- Total cycle time for a bearing = 30 sec
- Idle time for a bearing = 8.5 sec
- Production time for a bearing = 8.95 sec
- Demand / Requirement per day = 8204 bearings
- Production per day = 6061 bearings

Proposed Methods and Analysis

Balancing Assembly Line – Rearranging Operational Sequence

The data collected are studied and a new operational sequence is developed to increase the net productivity. The idle time and cycle time for each
operation after changing the sequence are tabulated below. Process flow after changing the sequence of operation is as follows. It is very important to note that we have interchanged the position of boring and crush height measuring processes. Let us see how effective this line of balancing is in terms of productivity.

Figure 2. Rearranging line of operation
- Blanking
- Forming
- Facing
- Chamfering
- Notching
- Piercing
- Oil grooving
- Reaming
- Parting line shaving
- Boring
- Crush height measuring

Table 3. Idle time and cycle time after rearranging

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Operation</th>
<th>Cycle Time (in sec)</th>
<th>Idle Time (in sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blanking</td>
<td>1.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>Forming</td>
<td>1.0</td>
<td>0.6</td>
</tr>
<tr>
<td>3</td>
<td>Facing</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>Chamfering</td>
<td>2.6</td>
<td>0.0</td>
</tr>
<tr>
<td>5</td>
<td>Notching</td>
<td>2.6</td>
<td>0.6</td>
</tr>
<tr>
<td>6</td>
<td>Piercing</td>
<td>3.2</td>
<td>0.5</td>
</tr>
<tr>
<td>7</td>
<td>Oil Grooving</td>
<td>3.7</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>Reaming</td>
<td>5.2</td>
<td>0.0</td>
</tr>
<tr>
<td>9</td>
<td>Parting Line SHAVING</td>
<td>3.4</td>
<td>1.8</td>
</tr>
<tr>
<td>10</td>
<td>Boring</td>
<td>3.5</td>
<td>0.1</td>
</tr>
<tr>
<td>11</td>
<td>Crush Height Measuring</td>
<td>2.2</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>30.0</td>
<td>7.4</td>
</tr>
</tbody>
</table>

We have rearranged the existing line of operations, and it is noticeable that there is a change in idle time after restructuring/rearranging the line of operations in the assembly line. There is a reduction in idle time of the line of operations, which is what we have explained as SALB-2. We were able to reduce the idle time from 8.5 sec to 7.4 sec to manufacture a bearing from the restructured line of operations. It is important to note the effectiveness of reduction of idle time. The number of bearings produced after rearranging is 6239 bearings, which is 178 more bearings than that of the existing operational system. Also noticeable is an increase of 55,536 bearings per annum. For the calculations, refer to Appendix A.5.

Timer Pro Professional – Line Balancing Software

Simulation software helps to guide industries to study the situation without taking any risk in the effect of changes. It is also the best tool to analyze and optimize the layout design to derive better productivity, and it also gives an idea of efficiency of the current layout compared with that of simulated layouts. Timer Pro Professional is a simulation software to perform time and motion study to enhance the productivity by identifying optimized and cost reducing improvements. It is the one process analysis tool that those involved in lean operations, workflow analysis, line balancing, and six sigma initiatives cannot afford to be without. The unique balance chart interface from Timer Pro Professional allows users to quickly develop best practices and methods, to identify cost reduction opportunities and quantify savings.

Grouped operational sequence. One of the capabilities of the software is that it identifies and groups similar kinds of operations, thus reducing the idle time of machines more effectively than idea proposed earlier of rearranging the line of operations. Process flow after grouping according to similar operations is as follows:

Figure 3. Sequence of operations obtained from Timer Pro Professional
- Blanking, forming, blanking, and facing
- Notching and piercing
- Oil grooving
- Reaming
- Parting line shaving
- Boring and crush height measuring

Timer Pro simulation results.

We have obtained the most optimized and productive results from Timer Pro software, which is much more effective than the existing and the rearranged sequences of operations. Pictorial results from the software have also been shown to represent a clear idea of how the optimization has been enacted. The results are as follows.
Optimal number of operators = 11
Takt time = 5.2 sec
No. of workstations = 6
No. of operators = 6
Cycle time = 30 secs
Production per day = 8206 bearings

From the software, we can see that grouping similar operations has reduced the takt time from 8.5 sec to 5.2 sec, which increases the production of bearings from 6061 to 8206 per month, and which undoubtedly satisfies the requirement per month. Hence, grouping increases the productivity of the bearing with a reduced number of workstations and operators, which ultimately increases the company’s profit. For calculations, refer to Appendix A6. Optimization from the software has reduced the number of workstations and operators to reduce the takt time, which was the key to tremendous increase in production count. From the software’s analysis, the company desperately needs to change its present line of operational sequence for better profitability and market contribution.

Output of the simulation results are shown in Figures 4 through 9. Grouping of workstations can be seen in Figure 4, where 11 operations were grouped into a total of 6 groups, unlike that in the previous two methods, where the processes were machined individually. Because of the grouping of operations, we can reduce the wait time and travelling time from one station to the other.

It is sensible to group various processes that have a lower utilization to one another to ease the assembly line. Cycle time of each grouped process are explained through a bar graph in Figure 5. Actual utilization of operators is shown in Figure 6 for the existing operational sequence without any rearranging or simulation. Compare the value with that of in Figures 7, 8, and 9.

In the existing system, there are 11 workstations, which are not grouped together, and each of which take care of single processes. The utilization of operators and workstations are also less effective. The software groups the operations that can be utilized to a maximum advantage. We can see the optimized output according to individual parameters such as number of operators, production, and takt time, where the value changes according to the optimized parameters. One advantage of the simulation is that we can obtain optimistic values based on our priorities. For example, if takt time is the priority, then we can obtain the estimated optimistic production rate based on optimistic takt time, and the same holds true for other parameters.
Figure 6. Actual utilization of operators

Figure 7. Optimized number of operators

Figure 8. Optimized takt time

Figure 9. Optimized production rate per hour
Results and Discussion

The cycle time and takt time for every operation is calculated for all three methods. By grouping the workstation, performing more than one operation in a single workstation, cycle time of the product is reduced. Grouping is done based on cycle time and utilization of machines. The number of workstations is reduced, hence the number of operators required is also reduced. From the optimized results, we can analyze that the higher the utilization of operators and workstations, the higher the productivity. In this article, we can observe that the utilization of work from the workstations has been increased. The second method, in which we rearranged effectively at the last of the operational sequence, made a slight increase in the production volume. In comparison, the results from Timer Pro Professional suggest very effective utilization of work that would substantially increase production. The process parameters are compared in Table 4 and Figure 10. The results after rearranging and after grouping have been tabulated with that of the existing sequence below.

Table 4. Idle time and cycle time after rearranging

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Consideration</th>
<th>Before Arranging</th>
<th>After Arranging</th>
<th>After Grouping</th>
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<td>6</td>
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<td>Manpower requirement</td>
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<td>13</td>
<td>6</td>
</tr>
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<td>30.00</td>
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<tr>
<td>4</td>
<td>Takt time (in sec)</td>
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<td>7.4</td>
<td>6.61</td>
</tr>
<tr>
<td>5</td>
<td>Production of bearings</td>
<td>6061</td>
<td>6239</td>
<td>8206</td>
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</tbody>
</table>

Conclusion

The data for the time and motion study, including cycle time, production commitment, and production requirement, were collected from the company. After restructuring the process flow, we could observe appreciable increase in production. Using Timer Pro Professional software, the line balancing was carried out and the optimized number of workstations and operators were obtained based on takt time and production requirement, which gave the most optimized results. Timer Pro Professional optimized the line efficiency and workstation utilization, which led to the suggested grouping of workstations to implement pragmatically to proliferate the production volume. A simulated result does not exactly replicate in a practical situation, but it approximately indicates an optimum value that the manufacturing company should consider for productivity. A suggestion was given to the industry about our work both by rearranging the production operation and by using Timer Pro Professional software to increase the assembly line efficiency, which is practically implementable to make the company’s product cost effective and competitive in the market.

References


Appendix A

A1. Basic Formulas for Calculations

Takt time is calculated by dividing the available working time per shift (in sec) by customer demand rate per shift (in units).

\[ \text{Takt time} = \frac{\text{Available work time/shift}}{\text{Customer demand/shift}} \]

A2. Takt Time Calculation for Total Production

Required no. of bearings per month = 14,73,617
No. of working days = 27 days
No. of bearings per day = 56,667 bearings
Number of shifts = 3 shifts per day
For 3 shifts = 175 min per day
Setup change = 60 min per shift
Net available time = 1275 - (3 * time for set up change)
= 1095 min for 3 shifts
Taking efficiency of work = 90%
= 1095 * 0.9
= 986 min per day
= 5.475 hour / shift
Takt time for 56,667 bearings = Net Available Time / Demand
= 986/56,667
= 0.017 min / bearing
= 1.02 sec / bearing

A3. Takt Time Calculation for Conventional Line

Required number for the specific month = 2,21,520 bearings
No. of working days = 27 days
Number of bearings per day = 8204 bearings per day
Number of shifts = 3 shifts
Total time in one shift = 7.1 hours
For 3 shifts = 21.3 hours
= 1275 min
Setup change = 90 min
Net available time = 1275 - (3 * 90)
= 1005 min for 3 shifts
Taking efficiency = 90%
= 1005 * 0.90
= 904 min for 3 shifts
= 5.025 hour / shift
Takt time for 8204 bearings = Net Available Time / Demand
= 0.11 min / bearing
= 6.61 sec / bearing

A4. Bearing Production for the Existing Line

A4.1. Requirement/Demand for the conventional line

Requirement for the month = 2,21,520 bearings
No. of working days = 27
No. of bearings per day = 8204 bearings

A4.2. Production rate in conventional line

Total number of bearings produced per day = 6061
Total cycle time = 30 sec
Idle time for a bearing = 8.5 sec
Total cycle time including Idle time = 38.5 sec

A4.3. Production time in conventional line

Production time for 6061 bearings = Net Available Time / Production
= 904 / 6061
= 0.149 min / bearing
Production time for one bearing = 8.95 sec / bearing

A4.4. Existing requirements for conventional line

No. of workstations = 11
No. of operators = 13
Cycle time = 8.5 seconds
Production per day = 6061 bearings

A5. Production After Rearranging

Total number of bearings produced per day = 6061
Idle time reduced for a bearing = 1.1 sec
No of bearings produced after rescheduling = (38.5 / 37.4) * 6061
= 6239 bearings
Increase in production = 6239 - 6061
Total number of bearings increased per month = 178 * 26
= 4628 bearings
Total number of bearings increased per annum = 4628 * 12
= 55,536 bearings
A Defense of the Unrestricted Kantian Moral Saint

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In this paper, I will offer a defense of unrestricted Kantian Moral Sainthood as a desirable moral paradigm. I will begin with an examination of the criticisms leveled at the ideal of unrestricted Kantian Moral Sainthood by Susan Wolf in her article “Moral Saints,” before offering a possible response to her objection that avoids the difficulties raised and reinforces the legitimacy of unrestricted Kantian Moral Sainthood as a desirable model for living. Unlike other critiques, which usually respond to Wolf’s claims by pointing to some individual in the world and using him or her as a counterexample to Wolf’s charges, such as Carbonell’s, I intend to respond to Wolf’s argument by directly addressing her central criticism.

In Section I, I will explain the necessary conceptual framework for our discussion. In Section II, I will present Wolf’s critique of unrestricted Kantian Moral Sainthood and explain how it challenges the notion. In Section III, I will offer my response in defense of the ideal and explain how this move avoids Wolf’s objection. In Section IV, I will consider a couple of objections that might be raised in response to my defense and propose ways they might be avoided to further elucidate my proposal. Finally, in Section V, I will conclude with some remarks on why unrestricted Kantian Moral Sainthood remains a desirable moral paradigm.

Section I: Conceptual Framework

In what follows, you will find a discussion of the background information and foundational knowledge needed for the purposes of this article. If you are comfortable with the philosophical ins-and-outs of either of the following subsections, then feel free to pass over them. On the other hand, if you need a refresher or are interacting with these ideas for the first time, then these sections should serve as a foundation for the rest of the article’s discussion.
Primer on Kantian Ethics

Ethical theories are designed to help individuals discern the morally correct course of action in any given situation, as well as evaluate the morality of their own actions and those of others. "Kantian Ethics" in particular refers to a specific moral theory created by Immanuel Kant in the nineteenth century. Kant’s moral theory is a deontological theory of right action, which is a philosopher’s way of saying Kant’s ethical system is primarily concerned with the very nature of actions themselves when determining whether they are morally right or wrong (Vaughn 33 – 51). This is opposed to consequentialist theories of right action, such as Utilitarianism, which are primarily concerned with the consequences that actions bring about when judging their moral merits.

Kant’s ethics says an action is right if and only if: (1) it is motivated by the “Good Will,” and (2) it passes the demands of the “Categorical Imperative” (ibid). This means that an action has to be done only because it was the right thing to do, and we must be able to rationally will that everyone else in the world would be motivated in exactly the same way as us without contradiction or without no longer desiring to be part of that world. This is best illustrated with Kant’s classic example of judging whether we can be morally justified in making a lying promise.

To think like a Kantian about the morality of lying to someone to get a loan when you know full well you have no intention of paying the loan back, we must first ask whether we could rationally will that everyone else in the world would be motivated in exactly the same way as us without contradiction or without no longer desiring to be part of that world. This comes easily to her. Is Maria acting morally?

Lastly, consider Maria. She volunteers at the local animal shelter every weekend because of the great joy it brings her. She loves spending time with the animals and being able to help them, so volunteering at the shelter comes easily to her. Is Maria acting morally?

Kant would say no. Patel did not do anything wrong, but Patel also did not do anything right. The “hero” was not motivated to save the mayor because it was the right thing to do (i.e., Good Will), but instead because of the personal benefits of fame and political favors that it would grant him. This motivation — saving someone only when it might bring benefits — cannot pass the demands of the Categorical Imperative because it would result in a world we could not rationally desire to be part of as it would mean we, ourselves, could be left without aid in our most desperate hour.

In summary, Kantian Ethics is primarily concerned with the intention behind an action and whether that intention is acting out of respect for one’s duty to the moral law (i.e., the Good Will) and whether those same intentions could be hypothetically universalized without resulting in contradiction or undesirability (i.e., Categorical Imperative).

This was a very brief and rough overview of Kantian Ethics, but I think it will suffice for our purposes here.

Primer on Moral Saints

The notion of a “moral saint” refers to “a person whose every action is as morally good as possible, a person, that is, who is as morally worthy as can be” (Wolf 200). In other words, a “moral saint” is someone who is morally perfect. There are moral saints found in many moral theories, such as Util-
A Defense of the Unrestricted Kantian Moral Saint

Richard Szabo

William "(Kant 55). The motivation behind the action must also be able to be moral perfection within the context of some particular ethical framework. This means that a "Kantian Moral Saint" is morally perfect, like any other moral saint archetype (e.g., a Utilitarian Moral Saint), but within the context of Kantian Ethics. The motivation for the Kantian Moral Saint’s actions must arise out of respect for one’s duty to the moral law, or "Good Will" (Kant 55). The motivation behind the action must also be made into a general rule that could be rationally universalized; this is what it means to follow the "Categorical Imperative" (56 – 57). As Susan Wolf explains, in Kantian Moral Saint, “being morally worthy consists in always acting from maxims that one could will to be universal law,” and that “moral action consists in treating other persons always as ends and never as means only” (Wolf 206). Furthermore, to be a Kantian Moral Saint, the motivation for these actions must arise "not out of any pathological desire but out of reverence for the moral law as such" (Wolf 206). To put it simply, a Kantian Moral Saint must be motivated by Good Will to act according to the Categorical Imperative—they must intend to act the way they could want others to act for no reason other than because they know it is the right thing to do.

Susan Wolf uses the term “unrestricted Kantian Moral Sainthood” to refer to one of two possible variations of the Kantian Moral Saint that she entertains in her article. Although the topic of this paper is limited to a defense of only the unrestricted version of Kantian Moral Sainthood, understanding the distinction between “unrestricted” and “restricted” Kantian Moral Sainthood will further elucidate our discussion. To this end, I will offer a quick explanation of both. Restricted Kantian Moral Sainthood holds that moral perfection demands the individual lives out their duty to the moral law by simply refraining from actions that would violate the demands of the Categorical Imperative, such as murder, theft, and lying, in a negative sense of their duty towards others. Under this model, the attainment of moral sainthood would not be extremely difficult. As Wolf contends, for the restricted Kantian Moral Saint, “moral perfection would be achieved simply by unerring obedience to a limited set of side-constraints,” such as “do not murder,” “do not steal,” and “do not lie”; such obedience “hardly requires bending over backwards” (206), because many of the prohibited behaviors are those that society tends to prohibit for other reasons.

Unrestricted Kantian Moral Sainthood, on the other hand, provides a much more robust and challenging ideal of sainthood, because it requires not only that one refrain from those actions prohibited by duty to the moral law, but it also sees duty to the moral law as a positive requirement that demands performing certain actions, for example going out of one’s way to lend assistance, volunteer, and lend a sympathetic ear (Wolf 206). Again, the restricted form of Kantian Moral Sainthood demands only negative duties (i.e., prohibitions); the unrestricted form demands both negative and positive duties (i.e., obligations). Important to note is that these positive duties towards others are unlimited in scope as there is always more that can be done to help others (Wolf 206). The fact that unrestricted Kantian Moral Sainthood places this unlimited positive requirement on the aspirant is an important fact that is relevant both to Wolf’s criticism and to my later defense.

My current project, then, is interested in offering a defense on behalf of the unrestricted form of Kantian Moral Sainthood, a notion which places both positive and negative requirements on aspirants to be motivated only in ways they could rationally desire that everyone else be identically motivated. I pose this defense against certain critics who claim we should not want to be unrestricted Kantian Moral Saints in our own lives. I will spend little to no space considering the many other interesting forms of moral sainthood, as I think unrestricted Kantian Moral Sainthood is a particularly robust ideal that is also well-positioned to avoid the concerns Wolf raises.

Having now sufficiently examined the conceptual framework necessary for our discussion, let us move to examine Wolf’s objection to unrestricted Kantian Moral Sainthood.

Section II: Wolf’s Objection

I will begin with a brief sketch of the overall objection in the Presentation, before moving to explain its premises more thoroughly in the Explanation.

Presentation

1. The unrestricted Kantian Moral Saint lacks a healthy, well-rounded, and richly developed character. (1)
2. The unrestricted Kantian Moral Saint lacks non-moral character traits and virtues. (2)
3. The unrestricted Kantian Moral Saint lacks an appreciation for non-moral virtues and character traits. (3)
4. These non-moral character traits and virtues, which the unrestricted Kantian Moral Saint lacks, are good qualities that we ought to praise and pursue. (4)
5. The attainment of unrestricted Kantian Moral Sainthood would produce very undesirable persons. (1), (2), (3), (4)
6. Unrestricted Kantian Moral Sainthood does not constitute a model of personal well-being toward which it would be rational, good, or desirable for an individual to strive. (5)
7. Therefore, unrestricted Kantian Moral Saint should not be pursued by all as an ideal. (6)

Explanation

Premise (1). The charge behind (1) stems from the fact that the unrestricted Kantian Moral Saint has an unlimited positive duty towards others. He or she has a duty "not only to allow others to pursue their ends, but also to pursue their ends as [his or her] own," and this duty is unlimited in the degree that it may dominate the unrestricted Kantian Moral Saint’s life (Wolf 206). An unrestricted Kantian Moral Saint in the fullest sense would have to be
constantly seeking to fulfill his or her obligation to the moral law by helping others achieve their permissible ends. At first glance, this idea might seem like a good thing, because it suggests a world full of people seeking only to help each other. However, this would leave little to no time for the Kantian Moral Saint to do anything else. The unrestricted Kantian Moral Saint would (or may) never read a good book, learn how to dance, catch a touchdown pass, cook a five-course meal, visit a historical site, take a hike through the woods, or fall in love as a result of his or her all-consuming moral obligations. Although none of these aforementioned activities may seem individually necessary for a life well-lived, as Susan Wolf cautions, “a life in which none of these possible aspects of character are developed may seem to be a life strangely barren” (201).

Premise (2). For the same reasons as (1), unrestricted Kantian Moral Saints will be too focused on moral concerns to acquire non-moral virtues and character traits that are seen as worthwhile to most people, for example, proficiency in an art form or trade skill, developed musical talent, success in business, a refined taste for good food or drink, or a passion for learning, because they will be strictly, or at least primarily, engaged in pursuing their moral duties all the time. This charge resembles that of (1) except that, whereas (1) seeks to point out something that an unrestricted Kantian Moral Saint will be missing in the general sense: namely, a healthy, well-rounded, and richly developed character, (2) seeks to point out something that will be missing from the life of an unrestricted Kantian Moral Saint more specifically: namely, non-moral virtues and character traits. Because the unrestricted Kantian Moral Saint must be entirely consumed by his or her duties to the moral law, he or she will be limited to pursuing only moral perfection and nothing else. He or she would be forced to always favor doing the right thing for the sake of duty over having a good sense of humor, building meaningful friendships, developing a sense of artistic taste, learning new things, expanding cultural horizons, and the like. Although the pursuit of worthwhile non-moral activities for their own sakes, unrestricted Kantian Moral Saints would only be able to appreciate them inasmuch as they are the result of their motivation to fulfill their obligations to the moral law. For example, if an unrestricted Kantian Moral Saint was able to somehow justify pursuing his musical talents for moral reasons, perhaps to put on benefit concerts for charity, then he would only be able to appreciate that talent as a means to do moral good and not as a worthwhile end in and of itself. To live in this way seems to miss out on the point of what is worthwhile about the non-moral aspects of life, an insight that Wolf uses to strengthen her criticisms against unrestricted Kantian Moral Sainthood.

Premise (4). Wolf’s next premise strengthens the criticisms raised so far by positing that not only does the unrestricted Kantian Moral Saint lack a well-rounded character (5), non-moral virtues and character traits (2), and an appreciation for those non-moral virtues and character traits (3), but that these aspects, which the unrestricted Kantian Moral Saint lacks, are good things that are desirable and praiseworthy traits for an individual to have in and of themselves. Such an intuition is validated by common sense and everyday experience: there are famous painters, scientists, mathematicians, musicians, politicians, and professional athletes around the world who are far from moral saints, and yet the world holds their personal achievements and contributions to society in high regard. Furthermore, individuals often appreciate such ends in their own lives as intrinsically valuable. The lack of such valuable traits in and of themselves within unrestricted Kantian Moral Sainthood does not bode well, Wolf argues, for the desirability of the ideal, but the lack of an appreciation for these traits is worse still. As she explains, “the fact that the moral saint would be without qualities which we have and which, indeed, we like to have, does not itself provide reason to condemn the ideal of the moral saint. The fact that some of these qualities are good qualities, however, and that they are qualities we ought to like, does provide reason to discourage this ideal” (Wolf 204).

Premise (5). Susan Wolf’s next premise is simply the result of a conjunction of (1), (2), (3), and (4). Based upon the description so far of the kind of lifestyle that unrestricted Kantian Moral Saints would be required to have, and the kind of lifestyle that they would have to forego, and the kind of person that unrestricted Kantian Moral Saints would be required to be and not be. Wolf believes it is obvious that such an ideal would not produce desirable individuals.

Premise (6). The author’s penultimate premise follows directly from (5). Since the ideal of the unrestricted Kantian Moral Saint would produce undesirable persons, Wolf argues that it would not make sense for anyone to pursue the ideal in his or her own life.

Premise (7). The conclusion of Wolf’s objection follows most directly from premise (6). Since unrestricted Kantian Moral Sainthood does not constitute a model of personal well-being toward which it would be rational, good, or desirable for any individual to strive, Wolf concludes that it should not be pursued by all as a personal ideal.
Section III: My Defense

Having clearly presented and explained Susan Wolf’s objection to unrestricted Kantian Moral Sainthood as a worthwhile and desirable moral paradigm towards which to strive, I will now offer my response in defense of the ideal. The way in which my response avoids Susan Wolf’s objection and reaffirms unrestricted Kantian Moral Sainthood as valuable and worthy of pursuit should become clear as we go. As in the previous explanation of Wolf’s objection, I will begin with a general sketch of my overall defense in the Presentation, before moving to more precisely explore each step along the way in the Explanation.

Presentation

1. Unrestricted Kantian Moral Sainthood is impossible for individuals to achieve. (1)
2. The hypothetical, undesirable effects of attaining unrestricted Kantian Moral Sainthood cannot be used as evidence against the actual effects of its pursuit in the real world. (2)
3. Approximation towards unrestricted Kantian Moral Sainthood produces very desirable persons. (3)
4. Unrestricted Kantian Moral Sainthood does constitute a model of personal well-being toward which it would be rational, good, or desirable for an individual to strive. (4)
5. Therefore, unrestricted Kantian Moral Sainthood can be pursued by all as an ideal. (5)

Explanation

Premise (1). If you recall, the majority, if not all, of Susan Wolf’s objection to the ideal of the unrestricted Kantian Moral Saint was built upon the notion that if someone were actually to attain it, that he or she would not represent a model lifestyle that it would be rational to aspire towards. However, I believe that the ideal of the unrestricted Kantian Moral Saint, given its infinite positive nature, is entirely impossible for any human being to ever achieve. Remember that there is always more that could be done in the positive sense of one’s obligation to the moral law for an aspiring unrestricted Kantian Moral Saint—unless he or she has helped to satisfy the permissible ends of every human being he or she is in a position to help, then there still remains more that they could do to help others out of respect for their positive, imperfect duties to the moral law. Furthermore, if there is more that the aspiring unrestricted Kantian Moral Saint could do, then he or she is not truly an unrestricted Kantian Moral Saint yet. Since unrestricted Kantian Moral Saints have such limitless obligations to fulfill their positive, imperfect duties towards others, and because it would be impossible for any single individual to ever complete such a daunting task, it can safely be concluded that an unrestricted Kantian Moral Saint will never exist in the fullest sense in the actual world.

To further support this claim that unrestricted Kantian Moral Sainthood is impossible to achieve, consider that Kant himself speaks of virtue (which he understands as duty to the moral law) in an infinite sense. He argues that “virtue is an ideal which is unattainable” (Kant 1964, 17). However, Kant argues further that despite the impossibility of attaining true virtue, “our duty is constantly to approximate to it” (Kant 1964, 71). In other words, unrestricted Kantian Moral Sainthood—attaining virtue by perfectly and constantly fulfilling our duties to the moral law in every respect—is impossible, but we are still obligated to try our best to achieve it at all times nonetheless.

Premise (2). My second premise posits that since unrestricted Kantian Moral Sainthood is impossible to achieve, the hypothetical, negative consequences, which Wolf claims would result from its attainment, cannot and should not be used as evidence against its legitimacy as a worthwhile and desirable ideal in the real world. Because the negative consequences of attaining true, unrestricted Kantian Moral Sainthood will never be actualized in the real world as a result of human limitation, these hypothetical consequences are irrelevant for assessment of the effects that pursuing the ideal would have in the real world.

Premise (3). Given that unrestricted Kantian Moral Saints cannot ever exist in the fullest sense, one must examine in what form they can exist, as individuals aspiring to or approximating towards unrestricted Kantian Moral Sainthood, in order to judge whether unrestricted Kantian Moral Sainthood stands up as a worthwhile personal ideal. Of course judging whether an individual is actually aspiring towards unrestricted Kantian Moral Sainthood at any given moment may well be impossible, as to do so would require knowledge of that individual’s motivations to see whether he or she is acting strictly out of duty towards the moral law. However, it is easy to imagine what the lifestyle of someone approximating toward unrestricted Kantian Moral Sainthood would look like, even if his or her motivations remain a mystery, and so we must set the question of motivation aside for a moment to examine the kind of lifestyle an aspiring unrestricted Kantian Moral Saint would live in order to judge its desirability. Those aspiring to unrestricted Kantian Moral Sainthood would be the kind of individuals who always try their best to treat others as they would like to be treated, not because the threat of eternal damnation or the promise of eternal bliss hangs in the balance, but simply because treating people with kindness and respect is the right thing to do. These individuals would attempt wholeheartedly to act always in such a way that they would will for their actions to become universal law. Approximating unrestricted Kantian Moral Saints would endeavor to never treat another human being merely as a means, but always as an end only. They would try to always live in such a way that respects the humanity both within themselves and also within others at all times and in all circumstances regardless of their relationship with that individual or their attitude that day.

It is important to note that approximating unrestricted Kantian Moral Saints would not be perfect. They would try their hardest to be perfect, and they would fully believe against all odds that perfection is possible, but giv-
Kantian Moral Saints would realize their own faults and limitations, they would work to become morally better every day, and they would never be satisfied with their current level of moral goodness, because the approximating unrestricted Kantian Moral Saint knows that there is always more that can be done both to improve themselves morally and to help others.

Given this picture of the aspiring unrestricted Kantian Moral Saint, I think many would agree that, despite the theoretical negative consequences that Wolf claims would result from achieving this ideal, the actual consequences of those approximating towards it in the real world are extremely beneficial and desirable nonetheless. No one could object to a world full of people consistently trying their best to be morally perfect, despite the impossibility of such a venture, alongside their other pursuits. If my description of the aspiring unrestricted Kantian Moral Saint is reasonable, then it follows that he represent a personal ideal that we could rationally encourage everyone to pursue.

Premise (4). This next premise follows from the previous premises. Just as with Wolf’s objection, where theoretically undesirable results were enough to dismiss unrestricted Kantian Moral Sainthood as a theoretically worthwhile ideal, in my defense the desirable results of aspirants to the ideal in the real world are enough to reinforce unrestricted Kantian Moral Sainthood against any theoretical objections. In this way, unrestricted Kantian Moral Sainthood can once again be a moral paradigm that it is rational, good, and desirable to strive towards.

Premise (5). The conclusion of my defense follows most directly from premise (4). Since unrestricted Kantian Moral Sainthood is desirable to strive towards in the real world, as it produces desirable persons when approximated towards, but never reached, then it follows that this ideal is one that can be encouraged in the real world.

Section IV: Evaluating My Defense

Having clearly presented and explained my response to Wolf’s objection in defense of the unrestricted Kantian Moral Saint as a worthwhile ideal, I will now examine a few objections that may be raised in response to my defense and offer responses to them to further strengthen my claims before concluding.

Kantian Consequentialism Objection

This first objection leveled at my defense’s evaluation is the worthiness of a Kantian ideal based on the results that it produces within individuals and society. The objection claims that it seems to miss the entire point of Kant’s philosophy—which cares nothing for results and only for intentions—to evaluate a Kantian moral ideology based upon its consequences, and to this objection I must submit. It is an unfortunate necessity that we must judge a Kantian ideal focused entirely on motivation and intention solely by the results that it produces, but I fear that there is no other way that evaluation could even take place. It would be impossible to objectively measure and evaluate the quality of an aspiring unrestricted Kantian Moral Saint’s will in the actual world, because to do so would require perfect knowledge of the mind of another. Until the impossibility of such a venture changes, judging the desirability of unrestricted Kantian Moral Sainthood by looking to the kind of lifestyle it promotes and individuals it produces are our only options.

Another possible response to this objection is to point out that evaluating the worth of a personal ideal within a moral theory is not necessarily the same as evaluating the worth of that moral theory itself. Simply because Kant’s moral theory does not value consequences is not sufficient reason to conclude that the value of living like a Kantian must also be judged without giving any weight to consequences. Judgments about the philosophical content of a theory and its actual results in the real world can be two very different types of judgments, and in this way it is not only necessary but worthwhile to judge a Kantian moral ideal based upon its consequences.

At any rate, this objection does little to damage the strength of my evaluation of the ideal—or of Wolf’s evaluation for that matter—because the desirability of the persons the ideal produces is the only benchmark by which we can judge its merit.

Delusions of Grandeur Objection

This second objection is leveled against premise (3). It questions the desirability of persons living with the false belief that they can achieve unrestricted Kantian moral perfection. Recall that aspiring unrestricted Kantian Moral Saints must believe wholeheartedly that they can achieve the impossible requirements of the ideal, despite knowing this fact to be false, or else they will not be able to legitimately give their fullest effort towards pursuing the requirements of the ideal. This objection criticizes that fact and questions whether the ideal can remain valuable, regardless of its moral
benefits, if it will undoubtedly produce individuals with false beliefs who are also fully aware of the beliefs’ falsity.

In order to respond to this objection, I will first agree that having this false belief is necessary for aspiring unrestricted Kantian Moral Saints, but I will then argue that the ideal remains valuable despite this fact. Although the belief that one can achieve unrestricted Kantian moral perfection is obviously false, it can be used by individuals as motivation to try their hardest despite their inevitable failure, and that ability to motivate is what makes the belief valuable despite its falsity. This distinction between the truth of a belief and its motivational benefits is one that is well known in epistemology. As Richard Feldman has argued, “there can be cases in which believing a proposition is beneficial, and thus perhaps prudentially rational or justified, but not epistemically rational,” and, furthermore, “perhaps some beliefs are morally justified when they add moral value to the world. But this has nothing much to do with epistemic rationality or justification” (Conee and Feldman 112). The epistemically unjustified belief that moral perfection can be achieved required of aspiring unrestricted Kantian Moral Saints, then, remains justified and valuable because of its practical and moral benefits, despite its obvious falsity. In this way, the objection can be avoided.

Section V: Conclusion

Having clearly presented and explained both Wolf’s criticism and my defense of unrestricted Kantian Moral Sainthood, and having responded to some objections to my defense, I believe that the ideal of unrestricted Kantian Moral Sainthood remains a worthwhile personal paradigm towards which it is desirable for people to strive. Despite the hypothetical negative consequences that Susan Wolf claims would result from its achievement, the ideal can safely be encouraged, because those negative consequences will never be realized. Furthermore, as individuals are trying their best to achieve the impossible requirements of the ideal without letting failure discourage them, they are also bringing out the best within themselves morally and producing a very valuable, constantly self-improving moral character.

Although Wolf was at first concerned that the ideal of unrestricted Kantian Moral Sainthood would produce undesirable moral fanatics consumed by their insatiable need to be morally perfect, I believe that my response has shown how in reality pursuing the ideal can only produce aspiring moral exemplars who take the call to moral perfection very seriously but, as a result of human limitations, cannot be overtaken by to an unhealthy extent. These individuals are far from perfect to be sure, but they would be a welcome improvement to the current state of affairs. Considering that there is no harm in trying to better ourselves morally by aspiring, but never achieving, unrestricted Kantian Moral Sainthood, I do not see how one could argue that we should not all attempt to do just that.

References


Acetone Production

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INTRODUCTION

The intention of establishing an acetone factory particularly within the city of Basra, Iraq, is meant to satisfy three specific purposes. First, Iraq is geographically located between Europe, the Arabian Gulf, and west Asia; therefore, it is centrally situated and thus presents an opportune location for exporting acetone. Second, Iraq's budget is entirely dependent on the production of petroleum. However, numerous factories have struggled with production costs and a lack of government funding due to various wars, terrorist activities, and globally fluctuating oil prices. In addition, and most notably, petroleum is a limited natural resource (Moore & Parker, 2007). The foremost question the Iraqi government faces is how best to manage this issue. Arguably, the acetone production factory suggested in this study can satisfy the country’s economic needs and increase Iraq’s budget since it would be a profitable project. Third, one of the largest cities in Iraq, Basra, has been chosen for the production factory location due to its close proximity to countries where raw materials can be acquired. In addition, the proposed factory location is near the Euphrates, Tigris, and Arabian Gulf. These bodies of water can be used as a source for the cooling and heating systems.

Table 1: Consumption of Acetone (2005) (PubChem)

<table>
<thead>
<tr>
<th>Acetone Consumption (Global Demand)</th>
<th>5 Million Tons per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a solvent</td>
<td>31%</td>
</tr>
<tr>
<td>Acetone cyanohydrin (MMA)</td>
<td>30%</td>
</tr>
<tr>
<td>Bisphenol A</td>
<td>20%</td>
</tr>
<tr>
<td>Aldol chemicals</td>
<td>11%</td>
</tr>
<tr>
<td>Other uses</td>
<td>8%</td>
</tr>
</tbody>
</table>

The factory is designed theoretically with a low cost based on the calculations presented in the Results section. Moreover, the raw material is isopropyl alcohol and water. The reaction is endothermic. Therefore, the reaction needs a certain amount of heat to decompose the H-atom from the isopropyl alcohol.

Acetone is a colorless liquid that is a very important solvent for some kinds of fibers and plastics. Acetone is one of the most vital materials due to its many different uses and purposes. The main use for acetone is in the production of methyl methacrylate and bisphenol A (BPA). Acetone is also used as a solvent in the pharmaceutical industry and in the production of synthetic fibers, in the preparation of metal before painting, in the application of biological research, and in the cleaning of various materials and surfaces, including cleaning residue from glass, laboratory tools, fibers, and as nail polish remover (Hudson, 2015; Coulson et al., 1999b).

However, acetone is toxic and flammable, so it should be kept away from any source of fire or ignition due to its flammable chemical nature. It should be stored in a safe environment, and pregnant women and children should avoid working with it. In addition, those who work with acetone gas should be careful since acetone can dry out skin and cause other health issues like eye sensitivity.

Methodology

There are many methods to synthesize acetone. One of the most efficient methods is the decomposition of isopropyl alcohol, which is the proposed method in this project. Another method to synthesize acetone is called the cumene process, in which benzene (C6H6) reacts with propylene (C3H6) to form cumene (C9H12). After reaction, cumene is oxidized to form acetone (CH3)2CO with phenol (C6H6O), as is clarified in the equations below (Hudson, 2015; Coulson et al., 1999b). The cumene process method is quite expensive, since it requires the raw materials and extra separation equipment to separate acetone from many different materials (Moore & Parker, 2007; Coulson et al., 1999b). Therefore, this study focuses on the more economic method of decomposition of isopropyl alcohol over the cumene process method.

The proposed method in this project is the decomposition of isopropyl alcohol (C3H8O) with water (H2O) as a catalyst—water is not reacted with isopropyl alcohol. Isopropyl alcohol (C3H8O) and water (H2O) together enter the reaction at 298 K (25°C) with 101.325 kPa (1 bar). In these conditions, the reaction is endothermic. The heat is supplied to the Plug Flow Reactor (PFR) via hot water at 700 K, with hot water supplied from a fired heater. The produced materials from the reaction are acetone (C3H6O) and hydrogen (H2), and the amount of acetone produced at 63346 kmol/hr (Table 4) (Coulson et al., 1999b; Scorecard).
Distillation Column 1 (D-1)

Reactors are usually followed by a separation unit. In this process, a distillation column is proposed to separate the components due to the materials’ very different boiling points. Stream 5 enters the distillation column as a liquid mixture with a temperature of 278 K. In this distillation column, the temperature of the mixture is greater than the boiling point of hydrogen, which results in the hydrogen’s evaporation. When the temperature of the distillation reaches the boiling points of H₂, the H₂ transfers to the upper part of distillation and then is condensed (Richardson et al., 2002).

Condenser 1 (C-1)

H₂ along with a small amount of acetone, isopropyl alcohol, and water release to the top of the distillation in a vapor phase. The condenser liquidizes the materials to return to the distillation in a liquid phase. The condenser cools the vapor mixture as reflux materials. However, five percent of acetone remains in a gas phase with H₂. Five percent of acetone accompanies H₂ out of the condenser to the refrigeration unit (R-1) (Richardson et al., 2002).

Boiler 1 (B-1)

In the first distillation, the operation temperature should be greater than the boiling point of H₂. A boiler is required to warm the mixture. The boiler evaporates the amount of H₂ that is not evaporated through the first step of distillation since the system is continuous (Richardson et al., 2002; Sinnott, 2005a).

Refrigeration Unit 1 (R-1)

The output of the first condenser (C-1) is a mixture of H₂ and five percent of acetone. The mixture must be liquidized in order to separate the small amount of acetone. The mixture is cooled in order to separate the small amount of acetone. Refrigeration cools the mixture and separates the components based on the difference in boiling points. Therefore, Stream 4 is cooled to 278 K, which is the temperature of Stream 5. Water is used to cool the mixture in HE-1 (Richardson et al., 2002).

Heat Exchanger 2 (HE-2)

A shell and tube heat exchanger is used to heat Stream 10. Stream 10 has to be warmed to reach the boiling point of the material that should be separated, from 274 K to 347 K. Heating Stream 10 is done by using hot water through HE-2. The outlet from HE-2 is Stream 11, which enters the second distillation column (Appendix A) (Richardson et al., 2002; Sinnott, 2005a).
**Distillation Column 2 (D-2)**

Stream 11 enters the second distillation column at 347 K. The operation temperature of the distillation column reaches the boiling point of acetone, at 329.2 K (56.2°C). Acetone is evaporated with a small amount of isopropyl alcohol, and a small portion of isopropyl alcohol is separated from the acetone and raised to the top of the distillation. In turn, isopropyl alcohol returns to the distillation as reflux material through the condenser (C-2). Water and isopropyl alcohol leave the column from the bottom. This distillation column also has a boiler at the bottom and a condenser at the top (Richardson et al., 2002).

**Condenser 2 (C-2)**

The condenser cools the vapor mixture of acetone and isopropyl alcohol. In addition, the amount of isopropyl alcohol returns to the distillation as reflux material. Then acetone is produced in Stream 14 (Appendix A). The purpose of using the second refrigerator is to turn acetone from a gas phase to a liquid phase due to the difficulty of storing acetone as a gas. The amount of the produced acetone from C-2 is 63346 kmol/hr, which is stored in Vessel 2, as shown in Table 4 (Richardson et al., 2002).

**Boiler 2 (B-2)**

The function of the boiler is to heat the rest of the acetone to reach its boiling point. Acetone then separates from the mixture. The operation temperature of the second distillation column is established based on the boiler (Richardson et al., 2002).

**Heat Exchanger 3 (HE-3)**

To reach the boiling point of isopropyl alcohol, Stream 16 is heated before the mixture enters the third distillation column by HE-3. The process principle is the same as the previous heat exchangers as well as the same design. All of the exchangers are called shell and tube heat exchangers, a kind of heat exchanger that is distinguished by the high efficiency of heat transfer because the amount of heat distributes over the number of tubes, which makes the heat transfer occur more quickly (Sinnott, 2005a).

**Distillation Column 3 (D-3)**

Isopropyl alcohol is separated from water through D-3 after the operation temperature reaches the boiling point of isopropyl alcohol. Isopropyl alcohol transfers up to D-3 with a small amount of water. In tandem, the water transfers down D-3 with a small amount of isopropyl alcohol (Richardson et al., 2002).

**Condenser 3 (C-3)**

The vapor mixture is cooled, and isopropyl alcohol is separated from the rest of the water. Isopropyl alcohol leaves C-3 in a vapor phase to a refrigeration unit (R-3), and water returns to D-3 and then leaves the distillation column through Stream 19 (Richardson et al., 2002).

**Boiler 3 (B-3)**

The boiler’s function is to warm the mixture and to maintain the operation temperature of D-3 in order to reach the boiling point of isopropyl alcohol. This boiler warms the mixture at the boiling point of isopropyl alcohol, and then isopropyl alcohol evaporates and transfers to the top of the distillation column. The refrigerator then turns the isopropyl alcohol from a vapor phase to a liquid phase and it is recycled to the reactor (Richardson et al., 2002).

**Waste Stream**

There are three components of the waste stream in this process. First, the hydrogen (Stream 8) is separated from the first distillation column; hydrogen can be a byproduct. All the focus in this study is on acetone production, therefore the technical and economic feasibility of hydrogen is not studied. Second, isopropyl alcohol is separated from the third distillation column; because this component feeds the reactor, it is recycled from the third distillation column to the reactor through Stream 21 (Figure 1). Finally, the water component is separated from the third distillation column, which could be used as catalyst for the reactor. However, water is not recycled to the reactor in this process for two reasons. The distance between the third distillation column and the reactor is quite far, as demonstrated in Table 2. To recycle water from the third distillation column to the reactor could be quite expensive, given the need to provide and install the pipe with valves, as well as provide for periodic maintenance (Richardson et al., 2002).
Results and Discussion

The mole flow rate is calculated for each material in each stream, as shown in Table 4. The amount of heat for each piece of equipment is shown in Table 5. Pressure and temperature are calculated for each piece of equipment and stream. Antonio equations and constants are used to calculate the pressures and temperatures (Richardson et al., 2002; Sinnott, 2005b).

\[ \text{2-Propanol} \quad \text{Acetone + Hydrogen} \]
\[ \begin{array}{c}
A \\
B \\
C + D
\end{array} \]

Let A = 2-propanol, B = Water, C = Acetone, and D = Hydrogen

After calculating the total mole flow rate for each stream, the change in enthalpy can be calculated by using Antonio equations with Raoult’s Law.

**Antonia equations:**

\[ \Delta H = n \int_{T_{ref}}^{T} C_p dT \]  
\[ CP = A + BT + CT^2 + DT^3 \]  
\[ \log (P_i^T) = A - \frac{B}{CT_i} \]

**Raoult’s Law:**

\[ P_i = P_i^T \cdot Y_i \]

\[ Y_i = \frac{\text{mole of } i}{\text{total no. of moles}} \]

The amount of heat for each piece of equipment is calculated through Equation 6, and the added heat amount of the reactor is calculated through Equation 7:

For equipment:

\[ Q = \sum \Delta H_{in} - \sum \Delta H_{out} \]

For the reactor:

\[ \sum \Delta H_{(in)} + Q = \Delta H_r + \sum \Delta H_{(out)} \]
Table 4: Material and Energy Balance Results

<table>
<thead>
<tr>
<th>Stream</th>
<th>Component (kmol/hr)</th>
<th>Pressure (kPa)</th>
<th>Temp (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>63033.74 32164.85</td>
<td>32164.85</td>
<td>800</td>
</tr>
<tr>
<td>2</td>
<td>62500 32164.85</td>
<td>32164.85</td>
<td>101325</td>
</tr>
<tr>
<td>3</td>
<td>35852.7</td>
<td>3282.184</td>
<td>600</td>
</tr>
<tr>
<td>4</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>600</td>
</tr>
<tr>
<td>5</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>400</td>
</tr>
<tr>
<td>6</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>300</td>
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<tr>
<td>7</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>8</td>
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<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>9</td>
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<td>62499.99</td>
<td>300</td>
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<td>10</td>
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<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>11</td>
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<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>12</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>13</td>
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<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>14</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>300</td>
</tr>
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<td>15</td>
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<td>16</td>
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<td>62499.99</td>
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<td>17</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>18</td>
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<td>62499.99</td>
<td>300</td>
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<td>19</td>
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<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>20</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>300</td>
</tr>
<tr>
<td>21</td>
<td>6944.44 32164.85</td>
<td>62499.99</td>
<td>300</td>
</tr>
</tbody>
</table>

Table 5: The Amount of Heat (Q) for the Major Pieces

<table>
<thead>
<tr>
<th>Pieces</th>
<th>Symbol</th>
<th>Q (MJ/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactor</td>
<td>R</td>
<td>3.5783*10^6</td>
</tr>
<tr>
<td>Distillation 1</td>
<td>D-1</td>
<td>847702.059</td>
</tr>
<tr>
<td>Distillation 2</td>
<td>D-2</td>
<td>56623.17745</td>
</tr>
<tr>
<td>Distillation 3</td>
<td>D-3</td>
<td>5497.0041</td>
</tr>
<tr>
<td>Heat Exchanger 1</td>
<td>H.E-1</td>
<td>3.5828*10^4</td>
</tr>
<tr>
<td>Heat Exchanger 2</td>
<td>H.E-2</td>
<td>800965.6423</td>
</tr>
<tr>
<td>Heat Exchanger 3</td>
<td>H.E-3</td>
<td>10319.0527</td>
</tr>
<tr>
<td>Refrigerator 1</td>
<td>RF-1</td>
<td>2.29*10^6</td>
</tr>
<tr>
<td>Refrigerator 2</td>
<td>RF-2</td>
<td>178611.1377</td>
</tr>
<tr>
<td>Refrigerator 3</td>
<td>RF-3</td>
<td>6961.601</td>
</tr>
<tr>
<td>Pump 1</td>
<td>P-1</td>
<td>56556.10861</td>
</tr>
</tbody>
</table>

Economic Feasibility

The cost of the factory, in U.S. dollars, is shown in detail in Tables 6, 7, and 8. This acetone production factory is profitable since ROI is 1.13, which is greater than one (ROI >1), as shown in Table 7. The production of acetone from this factory is 63346 kmol / hr, which is a significantly high amount, and it meets the needs of acetone demand in Iraq and the Middle Eastern region for export (Index of process equipment; Process equipment costs; ICIS; ReAgent).
### Table 6: Expenses in U.S. Dollars per Year

<table>
<thead>
<tr>
<th>Expense</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material</td>
<td>354,710,993</td>
</tr>
<tr>
<td>Maintenance</td>
<td>1,498,986,711</td>
</tr>
<tr>
<td>Supplies</td>
<td>1,316,183,453</td>
</tr>
<tr>
<td>Operating labor</td>
<td>2,920,000</td>
</tr>
<tr>
<td>Burden</td>
<td>2,211,075,387</td>
</tr>
<tr>
<td>Utilities</td>
<td>2,200,000</td>
</tr>
<tr>
<td>Supervisory and other labor</td>
<td>438,000</td>
</tr>
<tr>
<td>Catalyst</td>
<td>15,000</td>
</tr>
<tr>
<td>Auxiliaries</td>
<td>1,241,606,515</td>
</tr>
<tr>
<td>Patent and royalty charge</td>
<td>1,096,889,54</td>
</tr>
<tr>
<td>Cooperate overhead</td>
<td>1,097,008,169</td>
</tr>
<tr>
<td>Ad valorem tax</td>
<td>1,096,889,544</td>
</tr>
<tr>
<td>Research expenses</td>
<td>731,213,02</td>
</tr>
<tr>
<td>Total expenses</td>
<td>370,573,705,3</td>
</tr>
</tbody>
</table>

### Table 7: Cash Flow Summary

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Value or scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCI</td>
<td>965,606,514.48</td>
</tr>
<tr>
<td>PP</td>
<td>1.61</td>
</tr>
<tr>
<td>Average Annual Cash Flow</td>
<td>83,160,87 $</td>
</tr>
<tr>
<td>B/C</td>
<td>11.64</td>
</tr>
<tr>
<td>Summation (+DCF)</td>
<td>58,223,710 $</td>
</tr>
<tr>
<td>(B/C) modified</td>
<td>6.03</td>
</tr>
<tr>
<td>Summation (+cash flow)</td>
<td>112,492,869 $</td>
</tr>
<tr>
<td>Average profit</td>
<td>109,212,804 $</td>
</tr>
<tr>
<td>ROI</td>
<td>1.13</td>
</tr>
</tbody>
</table>
Conclusion

As stated, the proposed method is the thermal decomposition for isopropyl alcohol (Coulson et al., 1999b). This method is one of the more affordable methods used to produce acetone. In addition, the amount of produced acetone is 63346 kmol/hr, as shown in Table 4. In this method, only this one raw material is needed, and it should be used with water as inert to produce acetone, wherein water does not react but works as a catalyst. In contrast, the cumene process is significantly more expensive, particularly in the provision of raw materials and extra equipment. This is the justification for why this study has focused on the isopropyl alcohol decomposition method rather than the cumene process method.

The factory is proposed to be constructed in Basra City, Iraq, with the Euphrates and Tigris Rivers providing the water for the factory’s cooling and heating systems. During the steps of production, hydrogen is formed in the factory. The hydrogen can be considered a second productive material to be utilized in different fields. However, the primary purpose of this factory is acetone production. In addition to the accessibility of raw materials, the other primary reason to establish acetone production in Iraq is economic. The proposed factory is profitable due to the positive long term economic implications in regard to the return on investment (ROI=1.13). The average profit for six years of running the factory is $109,212,804, as demonstrated in Table 7.

Recommendation

As previously discussed, another benefit of this factory is the production of hydrogen. While this factory concept focuses exclusively on the production of acetone, it can also be utilized for the production of hydrogen as it is produced from the first distillation column. Essentially, it can be beneficial to utilize the hydrogen with less cost since it is already produced as a byproduct in this process. This additional concept would need to have designed unit operations to extract and store the hydrogen.

Table 8: Purchased Equipment Cost (PEC) in U.S. Dollars

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Symbol</th>
<th>Cost F.O.B.</th>
<th>Cost for Delivering and Installment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactor R</td>
<td>111700</td>
<td>662,381</td>
<td></td>
</tr>
<tr>
<td>1st heat exchanger HE-1</td>
<td>42000</td>
<td>249,060</td>
<td></td>
</tr>
<tr>
<td>2nd heat exchanger HE-2</td>
<td>37647.88</td>
<td>223,251.9</td>
<td></td>
</tr>
<tr>
<td>3rd heat exchanger HE-3</td>
<td>30394.8</td>
<td>180,241.16</td>
<td></td>
</tr>
<tr>
<td>Re-boiler-1 B-1</td>
<td>20000</td>
<td>118,600</td>
<td></td>
</tr>
<tr>
<td>Re-boiler-2 B-2</td>
<td>17758.17</td>
<td>105,305.94</td>
<td></td>
</tr>
<tr>
<td>Re-boiler-3 B-3</td>
<td>15653.09</td>
<td>92,822.82</td>
<td></td>
</tr>
<tr>
<td>1st refrigerator R-1</td>
<td>79600</td>
<td>472,028</td>
<td></td>
</tr>
<tr>
<td>2nd refrigerator R-2</td>
<td>79600</td>
<td>472,028</td>
<td></td>
</tr>
<tr>
<td>3rd refrigerator R-3</td>
<td>79600</td>
<td>472,028</td>
<td></td>
</tr>
<tr>
<td>1st condenser C-1</td>
<td>37900</td>
<td>224,747</td>
<td></td>
</tr>
<tr>
<td>2nd condenser C-2</td>
<td>32167.7</td>
<td>190,754.46</td>
<td></td>
</tr>
<tr>
<td>3rd condenser C-3</td>
<td>22136.47</td>
<td>131,269.26</td>
<td></td>
</tr>
<tr>
<td>1st distillation column D-1</td>
<td>199040.4</td>
<td>1,180,309.5</td>
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<tr>
<td>2nd distillation column D-2</td>
<td>176462</td>
<td>1,046,419</td>
<td></td>
</tr>
<tr>
<td>3rd distillation column D-3</td>
<td>124018.8</td>
<td>735,431.4</td>
<td></td>
</tr>
<tr>
<td>The fired heater FH</td>
<td>10000</td>
<td>59,300</td>
<td></td>
</tr>
<tr>
<td>The pump P-1</td>
<td>8400</td>
<td>49,812</td>
<td></td>
</tr>
<tr>
<td>1st vessel V-1</td>
<td>69100</td>
<td>409,763</td>
<td></td>
</tr>
<tr>
<td>2nd vessel V-2</td>
<td>39894.9</td>
<td>236,576.757</td>
<td></td>
</tr>
<tr>
<td>Total of PEC</td>
<td>1,233,074.21</td>
<td>7,312,130.296</td>
<td></td>
</tr>
</tbody>
</table>
References


Metrohm Applikon. Cumene process: Analysis of sulfuric acid in acetone and phenol.


Appendix A
Layout of Acetone Factory

Appendix B
Nomenclature
Q°: Volumetric Flow Rate m³/hr
Q: The Amount of Heat Transfer (kJ/kmol)
EUAC: Equivalent Uniform Annual Cost
PP: Payback Period
TCI: Total Capital Investment
FCI: Fixed Capital Investment
WC: Working Capital
ROI: Return on Investment BFIT
DEP: Depreciation
BV: Book Value
EXP: Expenses
INV: Investment
PEC: Purchased Equipment Cost
NTU: Number of Transfer Units
DF: Discount Factor DCF: Discount Cash Flow
NPV: Net Present Value
CF: Cash Flow
EUAW: Equipment Uniform Annual Worth
ΔH: Enthalpy Change
ΔHᵣ: The Enthalpy Change of a Reaction
Pᵣ: Total Pressure
Pᵢ: Vapor Pressure for component i
Yᵢ: The vapor Molar Fraction of Component i
Quantifying the Spiritual: 
Incorporating Subjective Spirituality 
in Biomedical Research

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INTRODUCTION

Biomedical objectivity is a dominant health paradigm in the United States today. This paradigm views the body mostly as an object to be studied by objective means. These objective means are taken for granted as universal categories for comprehending truth in biomedicine. Lack of theoretical reflection leaves vital subjective attributes of experience out of the picture of health and healing, including lived subjective spiritual experience. This partly stems from definitions of spirituality that are lacking in explicating many elements of lived spiritual experience. Flawed definitions of spirituality are the result of both unchecked biomedical authoritative theoretical assumptions, and a lack of familiarity with scholarship in the social sciences and humanities.

Concepts have been developed in the social sciences and humanities to attempt to account for subjective experience in research. These include the concepts of embodiment, metaphor, and performance. These concepts add depth to approaches to spirituality by incorporating subjective elements of lived spiritual experience, which can then be incorporated into biomedical research. This can be accomplished through both refining the definition of spirituality in quantitative research, and in utilizing qualitative approaches to accompany and contextualize quantitative research.

This article builds the case for the incorporation of concepts in the social sciences and humanities into conceptualizations of spirituality in biomedical research. This article also assesses the ways in which the institution of biomedicine defines and theoretically approaches spirituality. It challenges biomedical conceptualizations of spirituality from the perspective of the social sciences and humanities to better accommodate subjective spiritual experience in biomedical research.

Approaching Spirituality

Spirituality in the contemporary world can be comprehended in variety of ways: as, for instance, that which opposes materiality; a personal transcendence; an ideal of religious devotion (King 1997). More inclusive definitions have been attempted. As King writes:

"Spirituality has been defined in a general, inclusive manner as an exploration of what is involved in becoming human . . . In somewhat more detail, spirituality has been called an ‘attempt to grow in sensitivity, to self, to others, to non-human creation and to God who is within and beyond this totality’. . . . Spirituality has also been described as ‘the way in which a person understands and lives within his or her historical context that aspect of his or her religion, philosophy or ethic that is viewed as the loftiest, the noblest, the most calculated to lead to the fullness of the ideal or perfection being sought’ (668)."

The plurality of definitions for the term spirituality underscores the importance of subjective experience in assessing the impact of spirituality on health in biomedical research; personal orientations of research participants become significant when assessing research results. Researchers address the problem of holistically defining spirituality by searching for a technical definition that can be reliably quantified (Hill and Pargament 2003; Lodhi 2011; Koenig 2008; 2012; Bessinger and Kuhne 2002). Lodhi, for instance, works out an intricate ten-part system for arriving at a robust definition of spirituality such that it can be used in psychological evaluation (2011). From a biomedical perspective, this system seems methodologically sound. However, this system of definition values ease of quantification for purposes of biomedical research over lived subjective experience: it largely ignores spiritual narrative, as well as embodied and performative dimensions of spiritual experience. This approach also omits irrational, bodily categories of spiritual experience. A holistic approach to spirituality requires approaches to subjective spiritual experience to be considered.

Koenig (2008) and Grant (2012) see problems with utilizing spirituality at all as a domain for scientific inquiry. Koenig recommends utilizing definitions of spirituality in clinical application only to aid in patient care. He argues that separating spirituality from aspects of well-being is too great a challenge to make spirituality a valid domain of biomedical research (Koenig 2008; 2012). Grant sees spirituality as an individualistic search for meaning and the sacred that is different for all people. What constitutes the spiritual also changes over the course of one’s life. For this reason, Grant argues, spirituality is too slippery a term to be incorporated into biomedical research (101).

Koenig recommends we "reinstate a sharper definition of spirituality that retains its historical grounding in religion" (2008:3). In Koenig’s opinion, linking spirituality with religious practice sidesteps the problem of subjectivity when trying to define spirituality (14). In his view, we should focus more on spiritual experience in religious participation for reasons of definability in biomedical studies. However, linking spirituality with religious participation neglects to focus on the subjective experience of spirituality.

Emphasizing religion in an approach to spirituality raises important
questions regarding transcultural application. Religion, like spirituality, is a term that has enormous definitional problems (Smith 1998). Linking spirituality with religious participation also disqualifies many experiential aspects of spirituality from study. This approach downplays spiritual diversity within religious communities, and prevents researchers from understanding the impact that unique spiritual orientations have on health. This link also potentially disqualifies experiences of spirituality that resist categorization in religiosity, such as those who identify as ‘spiritual but not religious’ (Ammerson 2013).

Incorporating Concepts in the Social Sciences and Humanities

When assessing the impact that spirituality has on health, it is necessary to establish an approach to subjective spirituality that incorporates lived spiritual experience. Theorists in the social sciences and humanities have underscored the importance of subjective experience in research. They have also provided the conceptual framework to critique both biomedical objectivity and rationalistic epistemologies. These approaches can be utilized to define a holistic approach to spirituality, allowing researchers to cut through many of the theoretical limitations inherent in rationalistic, objectivity-based paradigms.

Biomedical Theory and Spirituality

A relationship has been demonstrated between religiosity and health outcomes in empirical research (Hill and Pargament 2003; Koenig 2008). For this reason, biomedical literature increasingly recognizes the importance of spirituality in health outcomes (Koenig 2008). This connection points to the need for more sophisticated research concerning spirituality and health from a biomedical perspective. However, before a connection between spirituality and health can be definitively established, criticisms of the biomedical paradigm must be addressed.

Critics question the ability of objectivity to serve as a complete paradigm for knowledge. Biomedicine prefers to assume an objective paradigm as normative and authoritative. However, as Schrodinger puts it, “[t]he part that scientists remove is themselves as conscious knowing subjects.” This is problematic because “the object is affected by our observation. You can’t know it as an object in itself” (Boyd 2001:14). Further complications result when unquestioned objective knowledge becomes normalized as common sense. Over time, this unquestioned objective knowledge becomes synonymous with ‘reality’ (14-15).
Daston argues that scientific objectivity possesses a moral economy. By this, Daston means that scientists selectively approach evidence and objects of study that serve an agenda (Daston 1995:23). As Brown puts it, “science in its current form is itself a culturally constructed category, simultaneously incorporating both scientific approaches and a variety of core sensibilities about the nature of the material world” (Brown 2012: 276). The resulting moral economy affects what comes to be defined as ‘objective,’ and therefore frames the way in which science approaches subjective states, including spirituality. This construction of objectivity is then internalized by people as common sense, eventually becoming synonymous with reality. These assumptions affect the ability of the biomedical establishment to approach spirituality as a valid domain for healing.

Another obstacle in biomedical approaches to spirituality is the problem of subjective experience. Biomedical institutions often neglect subjective aspects of spiritual experience in health research in favor of objective approaches that treat the body in isolation from subjective experience (LaFleur 1998). When subjectivity is neglected, patient experience is potentially lost in the moral economy of authoritative scientific objectivity. Regarding biomedical approaches to the mind, “[t]he dominant representational theories of meaning employed in medicine, psychiatry, anthropology, and cognitive sciences have tended to consider only those aspects of thought that conform to the rationality of an ideal, disembodied mentality” (Kirmayer 1992:325). Kirmayer goes on to say that “[a]ny theory of meaning that hopes to address the experience of illness must give due weight to the primacy of the body not as a vehicle for thought but as itself a vehicle for thinking, feeling, and acting” (Kirmayer 1992:325). The same can be said of subjective spiritual experience. This is what Kleinman asserts when he draws attention to the assumption in biomedicine that illness experience is not as clinically important as objective, biological categories of disease (1988), even though it may dominate psychological perception (Scarry 1989). This subversion of subjective experience to biomedical authority can be extended to spirituality as well. This impacts the ways in which biomedicine can perceive a connection between spirituality and health.

Alternative medicine literature criticizes the conception of the body as an object of inquiry in biomedicine, preferring holistic models of mind/body/soul unity (Fields 2004; Mckee 1988). Biomedical authority denies the validity of these critiques and their resulting alternative approaches as pseudoscientific, and thus invalid. While sometimes well founded, this relegation of alternative approaches points to the authority that biomedicine possesses to shape conceptions of health and illness in the contemporary world. Without challenging these assumptions, spirituality and health research risks relegation to pejorative pseudoscientific categories.

What much of this critique suggests is that biomedicine is theoretically able to assess spirituality in biomedical research, but cannot due to the moral economy of science that fears an anti-material approach to health. However, researchers need not assume an anti-materialist approach to spirituality and health. For instance, Leder and Krucoff (2011) suggest a biomedical approach that utilizes an ‘authentic materialism,’ by which is meant a materialist beyond what biomedicine currently accepts as a basis for medical care. This authentic materialism aims at integrating healing domains into more effective treatments (861). Leder and Krucoff go on to say that “we need an enhanced emphasis on the embodied experience of the patient, the physical environments in which treatment unfolds, and the material things we use as agents of healing” (ibid.). This approach provides the framework for a holistic approach to spirituality in biomedicine. It also has the potential to utilize concepts in the social sciences and humanities to better incorporate subjective spiritual experience into biomedical research.

Analysis of scientific objectivity in biomedicine must include an assessment of the cumulative aim of scientific knowledge. Hanna asserts that “[s]cience progresses when higher levels of communicative discourse” are reached. This higher level of discourse requires a refining of objectivity (2004:339). Thus, objectivity is not a static concept, but one that is continually reinterpreted. This approach widens the limits of biomedical theory such that biomedicine can explore spirituality as part of the dynamic subjective experience of the patient. An emphasis on subjective experience can facilitate a higher communicative discourse to build an authentic objective materialism (Hanna 2004; Leder and Krucoff 2011). None of these approaches require a denial of scientific biomedicine, but rather turn the attention to methods of integration. This helps bring a holistic approach to spirituality in dialogue with objective scientific discourse.

Given that science operates by attempting to construct objectivity, and recognizing that what is considered valid research topics – and thus what constitutes objectivity and ‘the real’ – are situated in the moral economy of science, researchers ought to utilize qualitative methods to pave the way for novel research topics and designs. This will expand what constitutes objectivity in scientific investigation by overcoming the limitations of the moral economy of science, expanding what is quantifiable and testable.

Conclusion

A thorough approach to assessing the impact of spirituality on health must incorporate subjective spiritual orientation. Qualitative concepts like embodiment, metaphor, and performance add context to subjective spiritual experience. This enables subjective categories of spiritual experience to be accessible to biomedical research. A biomedical approach that integrates elements of subjective spiritual experience helps researchers comprehend connections between spirituality and health. Incorporating subjectivity into biomedical research also challenges the accepted research norms of biomedicine. Spirituality and health research benefit from a reconceptualization of what constitutes valid research in the biomedical paradigm. Biomedicine can take an approach of authentic materialism to overcome issues generated by the moral economy of science so that the impact that spirituality has on health can be adequately assessed.
References


Creative Writing
to nobody, too

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i am reading poetry in the bathtub
again,
as if those cold sweet plums
or that red wheelbarrow
could take away the sharpness
of your absence
running through me
like thread through a needle
or a needle through my skin
—which is it?
i sense the element of blank
after loving you,
from what i’ve tasted of desire
she walks in beauty, like the night
and wakes to new periods
of pain—
then a formal feeling comes
and along with it age,
i have not been as others were
as the water adds time
to my hands
and softens the words i’m holding
i put my pretense away, but
the words remain,
walking a little behind me:

these come to me days and nights
and go from me again
the water grows cold
like the plums,
as i pretend to forget and smile
as i remember and am sad
and so i read poetry
in the bathtub
a coping mechanism,
a defense—
like an arched cat, threatened
with hairs on end.
Artworks
The Light

Acrylic on Canvas

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Description:
The Light — Signifies the simplicity behind the concept of light that many people fail to embrace and admire. This painting shows a terracotta lamp used in India from ancient times. A cotton wick burns with the help of the oil poured into the lamp to give a serene yellow light. The light from the sun, the light from a camp fire, the street lights, the light from a humble study lamp or the light from grand chandeliers; all have the same purpose. It illuminates and it enables us to see the world as it is. This simplicity and unbiased harmony of “Light” is an unnoticed quality that is similar to the hidden quality of humanity and brotherhood. No matter where we come from, we all stand for one purpose, which is love, peace, brotherhood and co-existence. Boundaries between countries were made for the ease of geographic studies. The color of skin or hair were just biological adaptations of human cells. Do not identify yourself with these simple parameters. Identify yourself as a member of the human race which, like the light is supposed to be harmonious to be capable of great things to make the world as it should be. Respect the differences we share and keep pushing forward together. Be the Light.
Small Seeds Still Bloom

Watercolor and Ink

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Description:
The world can seem bleak, and, especially now, it is vital that we each find ways to spread love, joy and creativity as best we can. As a counseling psychology student, part of my work will be to help people to plant their own seeds. This picture represents the impact of small efforts on the world.

Reflections

Photography

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Unmasked
Acrylic on Canvas
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Description:
This painting shows someone after they have taken off their mask, in this case a “smiling” paper bag. As a graduate assistant, here at WMU I have taught undergraduate courses and I know how important it is to understand what my students might be feeling. Many of them are going through terrible situations I never would have guessed had they not confided in me. With this in mind, I try to treat all my students with kindness and respect, and give them grace when they need it. “Unmasked” has been posted previously on social media but not published online or in print.
Solo

Photography

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Description:
Digital photograph of a lone desert nomad on a camel near the pyramids at Meroe, Sudan.
As we all know pregnancy is a long and sweet waiting to meet that beloved being. In the case of Patricia her wait has been distressing because the loss of two pregnancies and now she is expecting twins. In this picture, we can see her eyes towards the horizon, where she reflects the anguish that has passed but at the same time doubts of celebrating her double happiness.

Sweet Expectation

Photography

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Description:
As we all know pregnancy is a long and sweet waiting to meet that beloved being. In the case of Patricia her wait has been distressing because the loss of two pregnancies and now she is expecting twins. In this picture, we can see her eyes towards the horizon, where she reflects the anguish that has passed but at the same time doubts of celebrating her double happiness.
Reflection of Humanity

Pencil Drawing

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Description:  
A happy school-going girl who is warmhearted try to help people within her capabilities. Once she saw a poor kid who is waving his hands to school children showing his interest to school. Hence, the girl tried to get admission in her school for the poor kid. Finally, she got admission after so many hurdles. This art shows the happiness of girl that her dream was achieved and showing the poor kid on a rusted mirror that how he looks with uniform. Thus, you can see the reflection of humanity in the mirror. Here the reflection of humanity is happiness in their faces.