

# KU THE UNIVERSITY OF KANSAS

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Research



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# **The Journal of Undergraduate Research**

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## **ON THE COVER**

Jayhawk Boulevard winds between Fraser Hall (left) and Lippincott and Dyché halls on the Lawrence campus. Courtesy University Relations at the University of Kansas.

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To the University of Kansas Community,

We would like to thank you for reading the inaugural issue of the University of Kansas Journal of Undergraduate Research (JUR). The JUR is a biannual peer-reviewed publication of undergraduate research at KU from a range of academic fields. The purpose of the JUR is to provide an avenue for undergraduates to publish their original research. Despite the large amount of research performed by undergraduates at KU, there exists no method of publishing research through the University. A number of students are able to successfully submit their research to specialty, national, and international journals, but it is rare that undergraduate research can be obviously and easily presented to the KU community.

The JUR demands a high level of quality from its submissions. At the same time, the JUR requires submissions to be easily accessible to the general public. We hope that the unique research published in the JUR will transcend academic boundaries and encourage undergraduates at KU to pursue research initiatives of their own.

In this issue, in addition to six reports of original research done by undergraduates, we have a feature on current KU professor Dr. Paul Hanson regarding undergraduate research in the Chemistry Department.

Publishing the inaugural issue of the JUR was a difficult, though ultimately rewarding task. This is our first publication experience and a number of unexpected obstacles oftentimes complicated publishing the JUR. Yet, similar to our researchers, we persevered through difficulty to provide a final product of which we are quite proud.

The JUR is a student run organization and we would like to thank our staff for their incredible effort in putting this journal together. We would also like to thank Ron Johnson, whose design expertise was essential to completing this project. Finally, we would especially like to thank Dr. Christopher Haufler for patiently facilitating the whole publication process and the KU Honors Program for the financial and institutional support necessary to see this project through to the end. You can also find our first issue online at <http://web.ku.edu/~kujur/>. The website contains full-size figures of our articles and information concerning future publications.

Sincerely,



Ryan Ellis



Andrew Hodgson



Nate Johnson

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## SUMMER 2008 CONTENTS

<b>The Grassroots Transformation of the African National Congress in the 1940s-1950s.....</b>	<b>7</b>
Andrew MacDonald	
<b>Beyond Mortar and Bricks</b>	
<i>The Symbolic Function of the Berlin Wall .....</i>	<b>15</b>
Anne Kretsinger	
<b>Gender Roles and the Princess in American Literature and Society.....</b>	<b>25</b>
Caitlin Shanks	
<b>Exploring the Possibility of Same-Sex Love in Late Ming China .....</b>	<b>35</b>
Kyle Shernuk	
<b>Queen of Hearts (and Communications)</b>	
<i>How Elizabeth I and Princess Diana Related with Their Publics .....</i>	<b>49</b>
Shanxi Upsdell	
<b>Fabrication of Semiconductors by Wet Chemical Etch</b>	
<i>Selective Etching of GaAs Over InGaP in Dilute <math>H_2SO_4:H_2O_2</math> .....</i>	<b>57</b>
Laura Francoviglia	
<b>Focus on Faculty</b>	
<i>Dr. Paul Hanson, Chemistry Department .....</i>	<b>63</b>
Ryan Ellis	



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The University of Kansas Journal of Undergraduate Research will begin accepting submissions early in the Fall of 2008. Please check the website for more specific deadlines as the semester approaches.

## The Grassroots Transformation of the African National Congress in the 1940s-1950s

Nelson Mandela's 1994 inauguration as South Africa's first democratically elected president soothed decades of racial tensions in that country. State-sanctioned racism, known as apartheid, crumbled under the spasms of the violence that shook Johannesburg and other cities in the 1980s, but apartheid's eventual destruction became possible because of strategic changes among the left in the 1940s and 1950s. The African National Congress (ANC), originally founded as an interest group for the educated African elite, in the 1940s and 1950s forged a wide coalition of workers and intellectuals to challenge apartheid's legitimacy. Together with the South African Communist Party (SACP), the mid-century ANC became a broad-based grassroots organization committed to nonracial democracy. The ANC's transformation happened because demographic and economic changes in the 1930s and 1940s shifted the ANC's constituent base from rural areas to the cities, especially Johannesburg, and the new members pushed the Congress toward more confrontational and ambitious ends. Recogniz-

ing the latent power of the frustrated urban masses, new leadership in the ANC incorporated organic strikes and boycotts in the 1940s into a more coherent and durable movement during the 1950s. The masses and leadership developed a symbiotic relationship; the former offered economic leverage and popular legitimacy, while the latter articulated a vision of racial equality to counter the Nationalists' oppressive paternalism. The state cracked down on the better organized ANC-led movement in the 1960s, but the closer relationship between the ANC leadership and grassroots carried the movement through its difficult times on the long walk to freedom. South Africa still faces serious racial disparities, but its progress from the apartheid age shows the efficacy of a broad-based movement in affecting significant change. Contemporary progressives might model the ANC's structure and strategy as they pursue their agendas.

The Dutch first settled in South Africa in 1657, but their small population and rural lifestyle precluded any racial dominance.<sup>1</sup> Occasional skirmishes over land or cattle peppered an

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otherwise peaceful racial coexistence until the discovery of precious metals in the 1860s. The British, who had come to South Africa during the Napoleonic Wars, became interested in the mineral-rich interior. The descendants of the Dutch settlers, now known as Afrikaners, resented the British incursions and fought the South African War at the turn of the century. The British won a costly victory for control over the natural resources, but reached an understanding with the agriculturally inclined Afrikaners to together exploit African labor on the farms and in the mines. As historian Bernard Muga-bane notes, "Africans and their welfare were sacrificed to promote an abiding settlement for the whites."<sup>2</sup> The Treaty of Vereengiging ended hostilities in 1902 and precipitated a series of laws that solidified economic and political dominance by whites.

The British and Afrikaners consummated their peace in the 1910 Union Act, which established the regions of Natal, Cape, Transvaal and the Orange Free State as a single British colony. The economic needs of the British mine owners influenced the political agreement between the British and Afrikaners.<sup>3</sup> The newly unified South African state passed several laws that forced African men to work part of the year in the mines or on Afrikaner farms, and spend the rest on barren reserves. Harold Wolpe, a South African specialist, terms this arrangement the "dual economy," since Africans split their time between industrial and agrarian labor.<sup>4</sup> Uprooted from their homes, Africans became more vulnerable to whites' economic hegemony.

The new government augmented its economic disenfranchisement of the African community with socially debilitating policies that divided the

African population. For example, the 1927 Native Administration Act empowered compliant tribal chiefs in the reserves to deter any unified African resistance. More importantly, social legislation constructed a regime of racial hierarchies that informed later Nationalist policy. This state ideology posited a world strictly separated by racial groups of varying degrees of advancement, and healthy social relations depended on clearly defined group roles. The compliant tribal chiefs, then, promoted the state's racial paradigm, since they accepted and profited from the racial divisions. Some groups began to challenge this framework in the early 20th century by forwarding new conceptions of group relations. African nationalists, black trade unionists, and Marxist groups challenged the economic and social order by rejecting the state's interpretation of race. Unfortunately, internecine disputes and the respective groups' strict organizational structures stymied their efforts to change South Africa at the beginning of the 20th century. Political resistance to white rule took shape in the 1910s, but floundered until the ANC and SACP together embraced grassroots influence.<sup>1</sup>

The first unified African nationalist movement began when Pixley Ka Izake Seme, an African educated in the United States and Britain, called on 60 educated Africans to meet at Bloemfontein on Jan 8th, 1912 to "together devise ways and means of forming our national union for the purpose of creating national unity and defending our rights and privileges" by forming a National Congress, the forerunner to the ANC.<sup>5</sup> Few Africans had any rights or privileges to defend, making this nascent ANC an intrinsically elitist organization. The Congress accepted

*i. I distinguish political resistance from military resistance, which effectively ended after the British annexation of Zululand in 1887.*

support from sympathetic whites, but welcomed no non-Africans to its membership. Its narrow focus led it to concentrate on small issues germane only to the small African upper class. For example, its first major campaign attempted to defend the limited African franchise in the Western Cape Province, where blacks able to pass a "civilization test" could vote. The ANC's effort garnered little support outside those few Africans concerned with limited voting rights, and ultimately failed to protect what rights that some Africans could claim at the time.<sup>6</sup> The ANC failed to attract a large following in the decades after its birth, and labor groups soon eclipsed it as Africans' political voice.

While the early ANC was focusing on the political rights of "civilized" Africans, the state continued to push most of the black population into the capitalist economy. Draconian labor laws like the 1916 Labor Registration Act funneled Africans into low-wage, unskilled labor. Wretched conditions, especially in the gold mines, eventually provoked organic resistance, but black workers lacked the organization to effectively wield their latent economic power. In 1920, forty thousand Africans walked out of the mines on the Rand, prompting one newspaper to observe that "The strike is undoubtedly an instinctive mass revolt against their whole status ...The Native Congress had very little to (do) with the movement...The strike is in no man's control."<sup>7</sup> The ANC's hands-off approach is unsurprising, given its outlook in 1920. Conditions in the gold mines had little to do with the ANC's emphasis on voting rights in Western Cape; the mineworkers' goals fell outside the ANC's mission, namely, to protect rather than extend the limited African rights.

The African mineworkers also fell outside the constituency of the Communist Party. Though tens of thou-

sands of striking workers would likely have garnered communist support in any European country, South Africa's racial dynamics estranged the striking black miners from the white workers who made up the International Socialist League (ISL), the forerunner the SACP. Though one ISL leader, S.P. Bunting, fought to unite white and black workers, his pleas came to no avail. Despite the racial progressivism of one its leaders, the ISL responded to its white base and idly observed the strike.<sup>8</sup> The communists surrendered their chance to lead a multiracial working class movement in 1922, when it supported white demands for preferential racial treatment.

The 1922 strike began when the Chamber of Mines announced a higher ratio of black to white workers, prompting fears among whites that African workers would depress wages and threaten jobs. Groups of Afrikaner workers branded themselves "commandos", on the model of Boer guerrillas from the South African War, and led the strike under the slogan "Workers of the World unite for a White South Africa."<sup>9</sup> Though some communist leaders discouraged such outright racial animosity, most dismissed African workers as irrelevant "pre-proletariats", prompting many black workers to associate communism with the white working class. The communists' acquiescence to white racism alienated the Party from most black workers, but it hardly won it deep support among whites. A Labor-Nationalist Pact government won the 1924 election with the support of the white working class, co-opting the communists' white base.<sup>10</sup> Abandoned by the white working class, the communists tried to repair relations with the black population, but it took nearly thirty years for the Communist Party to integrate with the ANC.

The racial tensions on the Rand foreshadowed the friction to come

with South Africa's impending demographic upheaval. Whereas blacks had mostly lived in rural areas and worked seasonally on the fields or in the mines, that "dual economy" began to collapse in the 1920s, precipitating an exodus to urban areas and a revolution within the political movements. A drought in 1922-23 devastated small black farms across the country, making city life marginally superior to the subsistence farming that had supported Africans for half the year.<sup>11</sup> A trickle toward the cities turned into a flood when the Second World War soon increased urban labor demands, and this industrialization attracted most of the former subsistence farmers to cities, especially Johannesburg. The population of Africans living in urban areas more than doubled from 1921 to 1945, and Johannesburg's 5,500 new factories drew over 150,000 new black residents in that period.<sup>12</sup>

The African political leadership only slowly adjusted to the new demographic realities. The International Commercial Workers Union briefly unified over a hundred thousand newly urbanized Africans in the 1920s, but failed to mount any powerful strikes or leverage any concessions for its members. Lacking any accomplishments, the ICU's support dwindled toward the end of the 1920s, but the ANC hardly sought to organize the ICU's constituency of new urban blacks.<sup>13</sup> Instead, it focused its efforts on opposing Prime Minister Hertzog's Native Bills, which completely removed Africans from the voting rolls in Western Cape Province.<sup>14</sup> The ANC's failure to halt the Afrikaner assault on blacks' limited political rights brought the ANC to a crossroads. It could quietly dissolve itself, as some old-guard members suggested, or it could re-orient its goals and tactics by embracing the plight of the new urban black population.<sup>15</sup> Inspired by organic resistance among urban Africans, young

ANC activists like Nelson Mandela and Oliver Tambo sought to incorporate city dwelling Africans and their causes into the ANC. Younger ANC members pushed a structural overhaul of the organization that encouraged wider participation among the African masses, and their participation in turn changed the ANC's mission and strategy.

A series of clashes over housing and transportation rights outside Johannesburg gave impetus to those arguing for a broader base and mission for the ANC. Tens of thousands of Africans filled factory jobs in Johannesburg, but restrictive land laws shunted the newcomers to the city's periphery. Tents and shanties popped up on the strips of vacant land surrounding Johannesburg, the population reliant upon white owned bus companies to take them to work in the downtown factories.<sup>16</sup> The bus companies exploited their very captive market by arbitrarily raising rates in 1942, prompting a mass town-meeting, unsanctioned by the ANC, which resulted in a bus boycott. For eleven months, tens of thousands of Africans walked 24 miles round-trip to the factories every day, eventually forcing the bus companies to reduce their fares.<sup>17</sup>

Just like the 1920 Rand mine strike, the bus boycott proceeded without much organizational support. Unlike that earlier incarnation of African resistance, though, the progressive leadership this time sought to turn popular discontent into a viable political force. Dr. Alfred Xuma took the reins of the ANC in 1940, and though a moderate himself, he recognized that the ANC needed to expand its recruitment, lest it follow the ICU's path to oblivion. The ANC's failure to stop the Hertzog Native Bills was indicative of a weak organization, and its membership numbered less than 4000 — hardly enough to represent the hundreds of thousands Africans that were just permanently entering the white-controlled

economy.<sup>18</sup> Xuma presided over the 1942 ANC Convention, which birthed two important developments. First, it authorized Anton Lembede, A.P. Mda, Oliver Tambo, Walter Sisulu and Nelson Mandela to form a Youth League to promote causes relevant to the mostly young new urban African class. Second, these first Youth Leaguers successfully pushed the Congress to hire a community organizer to build better relations with people like the bus boycotters.<sup>19</sup> The existence of a community organizer signaled a shift within the ANC. No longer would it limit itself to protest letters and deputations, which do not require broad participation, but it would build upon the groundswell of political unrest begun by the bus boycotters. By hiring a community organizer, the ANC made clear its commitment to ally itself with the urban masses.

The new ANC leaders branched out to both the larger black population, as well as to leftist white leaders. The ANC adopted a new constitution at its 1943 convention that welcomed anyone, regardless of race, that supported its goals.<sup>20</sup> Though some black nationalists initially distrusted white and Indian allies, they worked together to articulate a platform acceptable to all. The CPSA, then the only viable political home for progressive whites, also sought common ground with the ANC.<sup>ii</sup> The Council of Non-European Trade Unions (CNETU), a previously marginal player, elected J.B. Marks its leader in 1943.<sup>21</sup> As a leader in both the Communist Party and the ANC, Marks strengthened the bridges between the two groups and encouraged more assertive action, especially by organized labor.

The Communist Party welcomed

closer ties with the ANC, and had been trying to improve relations with the black community since the 1922 white strike debacle. The Party sponsored broad-ranging night schools for African workers and organized black unions. The Communist Party also published a "Native Republic Thesis" that situated South Africa's racial tensions within a larger class narrative. Importantly, the Thesis called for nonracial democracy as a step toward a classless society, thereby aligning itself closely with the ANC's stated goals. The state banned the Party in 1950, pushing many of its members into the ANC. The party reformed underground as a more dynamic and diverse organization than previously existed. To evade the law, small, independent "discussion clubs" met in private homes. Absent a stultifying Central Committee, the SACP pursued closer cooperation with the ANC.<sup>22</sup> Some ANC Youth Leaguers met the mostly white SACP with suspicion, but the two groups both sought nonracial democracy, and by the early 1950s they became officially aligned. The SACP imbued the growing ANC with more activist zeal, and together the groups organized the mass protests of the 1950s.

State racism wore heavily on black South Africa for the first half of the twentieth century, but the 1948 election of the Nationalist Party made a bad situation worse. The Nationalists campaigned on a platform of white chauvinism, and their policy of "separate development" ossified South Africa's already stark racial divide. Just as the formation of a united South Africa in 1910 preceded a flurry of discriminatory legislation, the election of the Afrikaner government unleashed a cascade of racial laws. The Popula-

ii. *Cape Province hosted a small Liberal Party, but it had virtually no voice in interracial dialogue in the 1940s. See: Richard Dale "Review: Liberalism's Failure in South Africa" The Review of Politics 35.4 (1973), 573.*

tion Registration Act of 1950 assigned all citizens a specific race — white, African, South Asian, or Coloured. The Mixed Marriages Act prohibited interracial marriage, while the Group Areas Act strengthened the government's hand in racial zoning and pass laws. Unlike the left's inchoate response in the 1910s, though, progressives in the 1950s unified and fought for an alternative vision for South Africa, based on equality rather than group hierarchy

The ANC's 1949 Annual Conference showcased the movement's more coherent and assertive approach. Youth League leaders Nelson Mandela, Oliver Tambo, and Walter Sisulu drafted a Programme of Action to outline the ANC's response to the new government. The ANC's new manifesto invited closer cooperation with allied groups, leading to a Joint Planning Council to coordinate strategy with organizations like the South African Indian Congress.<sup>23</sup> The Council soon undertook the largest and most intellectually coherent endeavor ever staged by government opponents. On November 8, 1951, the Council resolved to stage a nationwide campaign of civil disobedience to target apartheid's six cornerstone laws (Population Registration Act, Group Areas Act, Separate Registration of Voters Act, Bantu Authorities Act, Natives Act, and Suppression of Communism Act).<sup>24</sup> This Defiance Campaign, set to begin June 26th, 1952, invited all apartheid opponents to join. Walter Sisulu, J.B. Marks, and other ANC and trade union leaders canvassed the country, speaking at rallies and meetings, to encourage widespread participation. As National Volunteer-in-Chief, Mandela traveled the country to set up committees at every ANC branch, with local Volunteers-in-Chief spearheading recruitment efforts.<sup>25</sup> The masses had proven their willingness push against the state during the bus boycotts; with

an active organizing campaign, the ANC turned popular enthusiasm into a targeted and sustained mission. On June 26th, 1952, thousands of black South Africans, as well as allied Indians and whites, purposefully broke apartheid's cornerstone laws. Blacks entered white areas and anti-government speakers gave public addresses, forcing police to arrest nonviolent activists. Peaceful protesters filled up jails across the country, signaling popular commitment to the ANC's new assertive agenda. Unlike the intermittent protests and unorganized strikes on the early 20th century, the Defiance Campaign funneled popular anger into a well defined mission to expose apartheid's absurdity.

Apartheid survived the Defiance Campaign. Few volunteers could afford to miss work, and the ANC feared that a fizzling campaign would devolve into violence. Riots broke out in Port Elizabeth and Johannesburg in November as police arrested peaceful protesters. The Campaign's organizers faced more serious charges for inciting the unrest, and the ANC began to focus on their legal defense. Nonetheless, the Campaign established the ANC as a mass movement. Its membership swelled by tens of thousands, convincing its leaders to solicit popular suggestions for a new manifesto written its constituents.<sup>26</sup> The public enthusiastically responded; Mandela recalls that contributions "came on serviettes, on paper torn from exercise books, on scraps of foolscap, and the backs of our own leaflets. It was humbling to see how the suggestions of ordinary people were often far ahead of the leaders."<sup>27</sup> The ANC compiled the responses into the Freedom Charter, which it presented to an enthusiastic rally outside Johannesburg on June 25th, 1955. The Freedom Charter defined the ANC's mission, namely, to create a nonracial social democracy in South Africa.<sup>28</sup> All the ANC's subse-

quent actions rested upon the thoughts articulated in the Freedom Charter.

The Freedom Charter's inspiring language served its compilers well. The government feared a popular movement grounded in clear thinking. The state banned the Congress in 1960, forcing its leaders into exile or hiding. Mandela and five other leaders were convicted of treason in 1964 and sentenced to life imprisonment; for nearly 30 years they drew strength from the knowledge that their actions earned popular support. Indeed, the ANC survived brutal government crackdowns because of the bonds it built with the South African masses. Though its strategy varied through the years, the ANC ultimately forced and won free elections in 1994 because it maintained the grassroots model developed in the 1940s and 1950s.

Contemporary movements can learn from the ANC's bottom-up model. The Congress failed as an interest group for the elite, but thrived when it incorporated a broader base. Its suc-

cess depended, though, on its ability to cogently articulate the popular agenda. The Freedom Charter expressed the hopes of the African masses, and embodied the relationship the ANC developed between its leadership and member base in the preceding decades. The ANC organized and compiled the public suggestions, but the public authored the message. Political groups today could learn from the ANC's balance of popular legitimacy and visionary leadership. The present anti-war movement, for example, consists of countless eccentric groups pursuing different strategies; the leaders of organized labor, on the other hand, seem more intent on maintaining access to power than representing most workers. No one can expect utopia from human led endeavors, and contemporary struggles can only hope for progress toward their goals, but South Africa's transition from apartheid to democracy shows that broad based movements can build lasting and fruitful connections with the public.

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# Beyond Mortar and Bricks

## *The Symbolic Function of the Berlin Wall*



Fig. 1.  
*Standing Berlin Wall*<sup>1</sup>



Fig. 2.  
*Fall of the Berlin Wall*<sup>2</sup>

Throughout history, civilizations have built walls to create boundaries and to protect against attackers. However, the unique purpose of the Berlin Wall — to prevent the German citizens from traveling freely within their own country — sets the wall apart from other similar structures. Clearly, the Berlin Wall was never simply an object or mere piece of history, but rather functioned as a symbol of oppression. This essay proves this assertion by offering a brief history of the

Berlin Wall, followed by a discussion of the audience reactions and symbolism of the wall. Then, evidence will demonstrate that, while the Berlin Wall was symbolic of oppression as it stood, its destruction also served as a visual argument. In conclusion, this article will compare the Berlin Wall and a present-day wall — the Israeli West-Bank barrier — in order to exemplify how the analysis of the Berlin Wall provides important insight into the function, nature, and symbolism of walls.

**ANNE KRETSINGER** is a 2008 graduate from Communication Studies Department at the University of Kansas.



Fig. 3.  
*The Construction of the Berlin Wall*<sup>7</sup>

## THE HISTORY OF THE BERLIN WALL

To begin, one must consider the history behind the Berlin Wall. Between 1949 and 1961, 2.6 million East Germans attempted to evade the “repressions of the Communist system” by escaping from Soviet-controlled East Germany to West Berlin.<sup>3</sup> This population rearrangement posed a serious threat of economic collapse in East Germany. As a result of this threat and mounting Cold War tensions, the East German government decided to prevent migration to West Berlin by constructing the Berlin Wall, “a Wall that divided Berlin for nearly three decades.”<sup>4</sup> The Communist regime in the German Democratic Republic authorized construction of the Berlin Wall, and the process of assembly, which one can see in Fig.1, began on August 13, 1961.<sup>5</sup> Stretching along the border between East and West Berlin, the wall was twenty-six miles in length and ranged from 7 to 13 feet high.<sup>6</sup>

The wall was created with “uprooted trees and barbed wire entanglements; wire fencing was erected, road surfaces torn up, ditches dug and so on.”<sup>8</sup> Railroads between the East and West were destroyed during the construction of the Berlin Wall, and “windows facing towards the border were

barricaded or bricked up so as not to serve for escape purposes.”<sup>9</sup> Clearly, the presence of the Berlin wall altered life for German citizens, depriving people of their ability to move freely in their own nation.

## AUDIENCE INTERPRETATION OF THE BERLIN WALL

Although the Soviets constructed the Berlin Wall in an attempt to prevent the impending economic collapse in East Germany, the effects of the structure caused the wall’s audiences, including East and West Berliners and Americans, to view the Berlin Wall as a symbol for a number of different ideas. These viewpoints are reflections of the different “terministic screens,” held by each audience member, that filtered or shaped the way that people viewed the Berlin Wall. Kenneth Burke describes the role of terministic screens when he states, “Even if any given terminology is a reflection of reality, by its very nature as a terminology it must be a selection of reality; and to this extent it must function also as a deflection of reality.”<sup>10</sup> Each Berlin Wall audience held terministic screens formed by past experiences surrounding Berlin’s political state, mounted Cold War tensions, and the creation

of the wall. These terministic screens greatly shaped the way that each audience viewed the Berlin Wall.

Two main audiences of the Berlin Wall included citizens of East and West Germany. Although the Communist regime in the German Democratic Republic instigated the erection of the Berlin Wall, the structure affected the lives of the citizens of both sides of the wall.<sup>11</sup> The Soviets forcibly evicted many people living near the wall, and a large number of citizens from both East and West Berlin had family members located on opposing sides of the wall.<sup>12</sup> Aside from abolishing travel and dividing families, however, one of the most dramatic effects of the wall was the “lost opportunity of exchanging life in the GDR [German Democratic Republic] for life in the Federal Republic. The denial of this opportunity, it has been observed, depresses morale... resulting in resignation and desperation.”<sup>13</sup> Thus, the Berlin Wall acted as a symbol of oppression for both East Germans and West Berliners for twenty-eight years until the fall of the Berlin Wall occurred on November 9, 1989.

A second audience of the Berlin Wall includes Americans. Ronald Reagan’s speech, “Tear Down This Wall,” demonstrates how the views of this American audience greatly contrast with the German audience feelings toward the Berlin Wall. Delivered in West Berlin on June 12, 1987, Reagan’s speech reflects the symbolic meaning of the Berlin Wall, as depicted by the American audience. The line ‘tear down this wall’ in Reagan’s speech “has been treated as a wonderful applause line, which it certainly was, but it was more than that.”<sup>14</sup> The line is a symbolic expression of the need to end the oppression of Berliners. Reagan’s speech depicts “the courage and determination of the citizens of Berlin, people with whom America and the rest of the world share common in-

terests,” while demonstrating the fact that, like the citizens of Berlin, America also saw the necessity of tearing down the wall.<sup>15</sup> In his speech, “by embracing both principled ideological and moral opposition to the Soviets and in other contexts a pragmatic viewpoint, Reagan was able to take a strong moral position in opposition to tyranny, but also to lessen the risk of conflict and set the stage for successful negotiation between the two nations.”<sup>16</sup> In contrast to Berliners, Americans did not experience the direct effects of living in a city divided by the Berlin Wall; however, it is apparent that much of the world viewed the standing Berlin Wall as a symbol of the Cold War and of the oppression of Berliners. Because the Cold War was largely a post-World War II economic political struggle between the United States and the Soviet Union, America supported and encouraged removal of the Berlin Wall. Reagan’s speech clearly reflects these post-World War II American goals and ideas, while providing insight into the reaction and mindset of the American audience, regarding the Berlin Wall.

## **THE SYMBOLISM OF THE BERLIN WALL**

After examining the history behind the Berlin Wall, as well as the reactions of the wall’s audiences, it is necessary to determine exactly what significance the structure holds. To begin, in order to understand why civilizations create walls, such as the one in Berlin, one must examine the fundamental nature of humans. In places where there are no natural boundaries, humans often have the tendency to “impose boundaries — marking off territory so that it has an inside and a bounding surface — whether a wall, a fence, or an abstract line or plane. There are few human instincts more basic than territoriality. And such defining of a territory, putting a boundary

around it, is an act of quantification.”<sup>16</sup> It is clear that the East German government’s creation of the Berlin Wall is a reflection of this basic human instinct to create boundaries. The implementation of the Berlin Wall created a barrier that contained the German citizens within either the East or West by physically constraining travel.

However, just as Lakoff and Johnson claim it is human nature to create walls, it is also the nature of humans to resist the constraints such boundaries impose. This is likely because people see these boundaries not just as structures, but rather as symbols for larger ideas. For example, after the construction of the Berlin Wall, it became apparent that the symbolism of the structure made the wall “a state of mind as much as... a physical structure.”<sup>17</sup> Supporting this argument is the fact that while the Berlin Wall stood, “East Germans were prohibited from mentioning the term ‘wall’.. The preferred term was the ‘anti-fascist protection bulwark.’”<sup>18</sup> The East German government knew that the citizens would be hostile to the idea of the Berlin Wall; as a result, the government restricted the language that citizens could use to refer to the structure in an attempt to prevent backlash of angry Berliners. By creating a new label for the structure, the East German government was attempting to change the symbolic meaning of the Berlin Wall for the German people. The term ‘anti-fascist protection bulwark’ is a euphemism for ‘wall,’ intended to lessen the sense that the government was using the structure to oppress the German citizens. However, “the presence of the wall was, nevertheless, a dominating feature.”<sup>20</sup>

Furthermore, studies have shown that there are many “deleterious social and psychological consequences of a society encircled by a wall” including “a novel psychological disease: ‘the wall disorder.’”<sup>21</sup> This disorder refers to

how “the feeling of ‘being locked up,’ in addition to wall-induced separation and social isolation from friends and family, could produce various psychological disorders such as psychosis, schizophrenia, and behavioral problems including alcoholism, depression, anger, dependency, dejection, and suicide.”<sup>22</sup> Even after the wall fell, “psychologists and psychoanalysts maintained that the wall reappeared as ‘die Mauer in den Köpfen’ or ‘the wall in the heads’ of the German people.”<sup>23</sup> These assertions reflect the idea that, aside from its physical imposition, the Berlin Wall also affected the psychological make-up of many Germans who lived with the wall. Evidently, the Berlin Wall is not merely a physical structure, but rather is symbolic of a number of ideas and emotions that caused conflict in the minds of the German people.

Analysis of the Berlin Wall as a visual argument furthers the idea that the structure is not just a cement obstruction, but a symbol of the control and oppression of the German people. According to Sonja Foss, “to qualify as visual rhetoric, an image must go beyond serving as a sign, however, and be symbolic, with that image only indirectly connected to its referent.”<sup>24</sup> The function of the Berlin Wall exemplifies this idea, extending beyond serving as a sign. Despite the fact that the East German government erected the Berlin Wall in an attempt to salvage the economic and political situation in Germany, the German citizens interpreted the structure as the government’s attempt to symbolically demonstrate its power. In support of this German mindset, it is interesting to recognize that “the great walls of the past were erected to repel invaders and barbarians. The Wall in Berlin is unique because its object is to prevent the men and women behind it from reaching freedom.”<sup>25</sup> While the Great Wall of China protected Chinese



Fig. 4. Berliners celebrate the fall of the Berlin Wall in 1989.<sup>27</sup>

dynasties from the attacks of nomadic tribes and Hadrian's Wall prevented the Roman Empire from raids by tribes in current-day Scotland, the East German Government established the Berlin Wall to prevent travel of citizens within their own nation. Armed East German border guards lined the Berlin Wall to prevent people from crossing from one side of the wall to the other. During the twenty-eight years that the wall stood, "over 40, 000 people tried to cross illegally, and 95 died while attempting to do so."<sup>26</sup> The large number of killings — both provoked and unprovoked — over the twenty-eight years that the wall stood empirically demonstrate the atmosphere of fear the wall created.

#### **DEFIANCE OF HUMAN RIGHTS**

Aside from creating an ambiance of fear, the imposition of the Berlin Wall actually defied human rights. The Congress for Cultural Freedom, consisting of "thirty authors of world re-

pute," signed a declaration on August 29, 1961, that stated, "It is one thing for a social order to force its citizens, by the millions, to seek asylum elsewhere. It is still more reprehensible to cut off their escape by means of walls and barbed wire across city streets, to threaten them at the point of bayonets, to shoot at them in flight as if they were runaway slaves."<sup>28</sup> The Congress for Cultural Freedom continued their assertion by describing how the Berlin Wall defies "the most elementary respect for a human right — and one which all the nations of the civilized world are on record as having recognized."<sup>29</sup> According to the Universal Declaration of Human Rights, created by the General Assembly of the United Nations, "Everyone has the right to leave any country, including his own."<sup>30</sup> The Berlin Wall violates this basic human right in two ways: by physically acting as a barrier preventing travel and by imposing psychological barriers upon the minds of the German citizens. It is apparent that "the Wall that prevent[ed] the citizens of the GDR [German Dem-

ocratic Republic] and East Berlin from choosing freedom [could] not conceal the injustice perpetrated behind it. Its construction through the heart of the city [had] neither legal nor moral justification.”<sup>31</sup> Thus, the Berlin Wall stood as a symbol of oppression by depriving German citizens of their basic human rights.

## THE FALL OF THE WALL AND THE OVERTHROW OF A SYMBOL

While the Berlin Wall was symbolic of oppression as it stood, its demolition also served as a visual argument. The “fall of the Berlin Wall” occurred on November 9, 1989. From this day forth, Berliners could travel across the border created by the wall. At this time, the wall was not physically torn down, but “a new law to lift the travel restrictions for East German citizens” was established.<sup>32</sup> The true power of the Berlin Wall as a visual argument became evident when the government announced the fall of the wall and crowds screamed and cheered loudly, celebrating the end of the oppression embodied by the Berlin Wall (as seen in Fig. 2).

On the day that the destruction of the wall’s physical form began, the structure lost its ability to impose movement restrictions on the German people; consequently, the message of the Berlin Wall as a symbol of oppression ended. Ronald Reagan demonstrates this symbolic function of the fall of the Berlin Wall in his speech, “Tear Down This Wall,” when he states:

*“...as long as the gate is closed, as long as this scar of a wall is permitted to stand, it is not the German question alone that remains open, but the question of freedom for all mankind. Yet I do not come here to lament. For I find in Berlin a message of hope, even in the shadow of this wall, a message of triumph.”*<sup>33</sup>

Reagan emphasizes this symbolic nature of the Berlin Wall when he asserts:

*“As I looked out a moment ago from the Reichstag, that embodiment of German unity, I noticed words crudely spray-painted upon the wall, perhaps by a young Berliner: ‘This wall will fall. Beliefs become reality.’ Yes, across Europe, this wall will fall. For it cannot withstand faith; it cannot withstand freedom.”*<sup>34</sup>

Clearly, Reagan understands the symbolic nature of the Berlin Wall, and calls to overthrow the symbol of oppression in his speech, challenging, “General Secretary Gorbachev, if you seek prosperity for the Soviet Union and Eastern Europe, if you seek liberation: Come here to this gate! Mr. Gorbachev, open this gate! Mr. Gorbachev, tear down this wall!”<sup>35</sup> Two years after Reagan’s speech, the wall fell and the symbol of oppression and of the Cold War was overthrown.

## CONCLUSIONS

Clearly, the Berlin Wall acted as a symbol of oppression as it stood and portrayed a message of freedom when dismantled. Analysis of the Berlin Wall provides valuable insight into the nature and effects of walls, which one can apply to similar present-day structures. For instance, consider the role of a controversial wall in the status quo: The Israeli West-Bank barrier. In 2005, an Israeli court ruled that the country should have the “authority to build a separation wall in the West Bank, beyond Israel’s internationally recognized 1967 borders, for security reasons, signaling that Israel would continue to build the barrier despite Palestinian and international objections.”<sup>36</sup> However, in order to gain more access to major West Bank cities, Palestinian villages appealed this decision, and as a result, Israeli justices decided to rethink the proposed

plan for the wall.<sup>37</sup> The fact that the Israeli government took into consideration the lives of the people that the wall would affect before erecting the structure contrasts with the unilateral decision of the East German government to construct a wall dividing Berlin. The goals of the Israeli West-Bank wall — to prevent attacks, solve political unrest, and salvage the economy in the area — are similar to some extent to the functions of the Berlin Wall, which served to prevent possible economic collapse and salvage the political situation at the time. Although governments created both the Berlin Wall and the Israeli West-Bank wall to rectify political and economic problems, the two walls became symbols of control and oppression for certain audiences. In Berlin, the wall restricted travel, split families, and inflicted fear upon those who lived near the structure. Similarly, people who oppose the Israeli West-Bank barrier feel that the wall will restrict travel for Palestinians who live in the West Bank and work in Israel. However, although the intentions for both walls might be similar, it is clear that the creation of the Israeli West-Bank wall is more justified because it is necessary for security purposes, whereas the implementation of the Berlin Wall is widely accepted

to be a violation of the human rights of German citizens. While the Berlin Wall functioned as a symbol of oppression, the Israeli West-Bank wall stands as a symbol or reminder of the need to resolve the political unrest in the Israel/West Bank area. Thus, when the Israeli West-Bank barrier is torn down, the dismantling will symbolize the rectification of political problems and the achievement of newfound freedom and peace. In the case of each of the two walls in Berlin and Israel/West Bank it is clear that the building of walls serves as a visual way to assert larger issues of politics, economics, safety, and control.

In conclusion, the history, audience reaction, and role in creating an atmosphere of fear offer important insight into the symbolic nature of the Berlin Wall. By relating the analysis of the Wall in Berlin to the Israeli West-Bank wall, it is clear that the Berlin Wall redefines the significance of walls. Thus, what purpose does a wall hold? Before examining the Berlin Wall, one might have asserted that walls function to contain, block, or guard. While these things are true, the analysis of the Berlin Wall points to a higher purpose of walls: to visually symbolize larger ideas of political control, loss of rights, and oppression.

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## Gender Roles and the Princess in American Literature and Society

The Disney characters that proliferate American culture encapsulate the traditional princess character in illustrated children's books published in the United States. Sleeping Beauty, Cinderella, and Snow White were, and in many cases still are, the popular princesses that sell. However, their influence has not remained unchallenged. Starting in the 1980's, picture books such as *Princess Smartypants*, *Cinder Edna*, and *The Paper Bag Princess*, began to include princesses who defied traditional gender roles. Yet, much like the readers who buy these stories, these princesses never completely transcend the traditional plot and personality of a princess. Through plot structure and development that is intended to challenge cultural norms, the characters unavoidably reinforce some aspects of traditional gender roles. Due to a variety of factors such as beauty, assertiveness, modesty, desire for marriage, and reliance on magic to solve problems, these stories present a range of characters with reversed gender characteristics. Thus, while these books are important because they serve as a cultural counter-weight to

traditional princess tales, they are also a part of a general system that maintains gender roles because even when they challenge their traditional roles, they are unable to fully transcend the restrictions of their gender.

Children's books are an important aspect of American culture because they reflect the changing values within American society. The books parents buy their children, and the messages that they send, impact the way children accept or reject particular ideologies. In picture books, the characters "embody societal values and provide a means to observe shifts in such values... [They] are a major means by which children assimilate to culture."<sup>1</sup> Thus, books are a way in which culture is reflected. This is not to say that they always embrace dominant culture. However, these stories are important because they are both a reflection of cultural change and a means by which change is created.

Since books like *Princess Smartypants* and *Cinder Edna* are reactions to traditional fairy tales, they are in some ways defined by their ability to reverse the archetype. An example of the tra-

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*Figure 1. Cinderella, as illustrated by Kevin O'Malley in Ellen Jackson's 1994 illustrated children's book, Cinder Edna. Her distant gaze and immersion beneath the blankets, indicate her passive nature. She appears sullen, yet unable to assert change upon her situation without the help of others. This is an example of the princess prototype.*

ditional form and character in a princess story is Cinderella. Although this tale is not unfamiliar, the moral behind the story is a reflection of an outdated notion of gender roles because it enforces passivity. For example, Cinderella patiently waits for the harassment of her mother and stepsisters to end. She is submissive, complying with their demands. Only magic is able to get her to act differently. Although she does finally speak up and demand to have the slipper tried on her foot, the prince has to come to her first. Finally, she is rescued from being her family's maid and lives "happily ever after"

only because the prince saves her. The values that these stories seek to impart on young girls, such as the importance of beauty, passivity, and submission support what is known as the feminine beauty ideal. This ideal is characterized by "the socially constructed notion that physical attractiveness is one of women's most important assets, and something all women should strive to achieve and maintain."<sup>2</sup> The princess is saved because of her beauty, despite, or perhaps even partially due to, her passivity.

The traditional princess, however, is not always reflective of the ideas girls

have. This is manifested in the girls in Ella Westland's 1993 study, which demonstrates the love/hate relationship that exists between children and fairy tale princesses. In her study, she asked both boys and girls to draw their "favourite character from Snow White, Sleeping Beauty, or Cinderella."<sup>3</sup> Surprisingly, although many girls — *had indulged in painting princesses, the girls were almost unanimous in denying that they would want to be princesses themselves....What came across strongly in many of the girls' comments was the desire for independence. No-one was prepared to admit that the 'best thing' about being a princess was having a prince to protect you.... The children saw princesses and princes as representing more extreme versions of the gender models they experienced themselves: princesses had the most negative associations of girlhood...*<sup>4</sup>

The reactions of these 9-11 year olds demonstrate that while many girls enjoy fairy tales, they are also able to realize the implication of the gender roles within the stories. Though the children in this study were older than the target age group for most picture books, their reactions demonstrate the impact that fairy tales have on their notions of gender. Their dislike for the princesses specifically because they are not independent characters demonstrates that children are ready for princesses that break the gender ideal. This might represent a new trend, because just as these books are relatively recent in challenging gender roles, girls have not always been exposed to these ideas.

The first American author to directly challenge the archetypal princess and sell millions of books was Robert Munsch, who reversed the roles of the prince and princess in *The Paper Bag Princess*. According to Munsch, the inspiration for the story was a comment from his wife, who worked at the same daycare as him, and said, "How come you always have the prince save

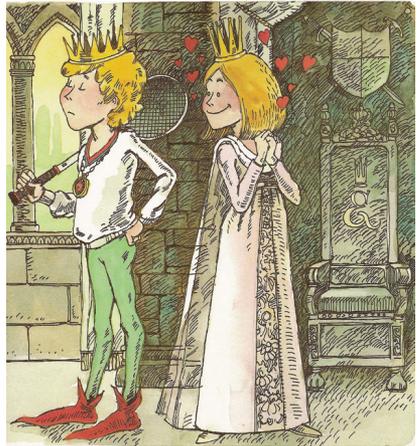


Figure 2: Elizabeth as depicted by Michael Martchenko in *The Paper Bag Princess*. She is originally shown as a traditional princess who loves and adores her prince. As the picture illustrates, with her dress, crown, and love-struck hearts, she is originally identified as a typical princess in the illustrations and text.

the princess? Why can't the princess save the prince?"<sup>5</sup> This basic inquiry became the basis for a story that encourages young readers to ask the same question.

Munsch starts by introducing the main character, writing, "Elizabeth was a beautiful princess. She lived in castle and had expensive princess clothes. She was going to marry a prince named Ronald."<sup>6</sup> In these three sentences, Munsch establishes information that indicates the traditional princess pattern. She is praised as beautiful, rich, and she desires to marry. Like Cinderella or Sleeping Beauty, at first Elizabeth seems to fit the traditional princess mold. This sets the reader up to believe that he/she will be hearing a more traditional story.

However, when the dragon burns down her castle and carries away her prince, she switches places with the traditional prince and becomes the hero. It becomes her job to rescue Ronald, and he, like the traditional

princess, must be saved. This reversal is the basic plot structure that allows the reversal to occur. Elizabeth's role as "the prince" is not, as it might seem, absolute. For example, her first problem is that her clothing has been burnt by the dragon's fiery breath. Her modesty, typically seen as a feminine virtue, requires that she find clothing instead of pursuing the dragon naked. Elizabeth "look[s] everywhere for something to wear, but the only thing she could find that was not burnt was a paper bag. So she put[s] on the paper bag and follow[s] the dragon."<sup>7</sup> In this scene, Elizabeth rejects her gender role by wearing a paper bag instead of a fancy frilly dress, but is unable to fully reverse her place because she cannot wear nothing at all. The paper bag, which now serves as a marker of her reversal and acceptance of her presupposed role, will follow her throughout the book and creates the paradox upon which the title of the book *The Paper Bag Princess* is based.

Elizabeth then traces the dragon to his cave to find Prince Ronald. Although this task is described as "easy,"<sup>8</sup> Elizabeth's intelligence is later proven by the clever way in which she lulls the dragon to sleep. She tricks him by appealing to his ego and asking him questions like, "Is it true...that you can burn up ten forests with your fiery breath?"<sup>9</sup> and instructing him to repeat actions, like burning forests, over and over until he wears himself out. Here Elizabeth again acts contrary to her presupposed role. She uses intelligence and perseverance, two characteristics of a traditional prince, to beat the dragon. However, this scene can also be seen as an example of Elizabeth using her feminine charms to flatter the dragon. Therefore, in outsmarting the dragon her role in the story is reversed, however in a way it still conforms to the traditional cultural norms.

After the dragon falls asleep, Elizabeth is able to save Prince Ron-

ald. At this point in a traditional princess story, they would have kissed and married "happily ever after." However, Elizabeth's transgression of her role as the princess is evident to Prince Ronald. It is so apparent, in fact, that he proceeds to scold her for not behaving and appearing as a princess should. In his directions for her to "come back" later when she is ready to act like a real princess, he implies that he is not as upset about Elizabeth transgressing her gender role and saving him as he is about her not looking beautiful while she does it. His views represent the stereotypes of a typical prince, and he insinuates, correctly so, that the archetypal princess is, above all else, valued for her beauty. Elizabeth directly counters him with a strong argument that reflects her character. She says to him, "your clothes are really pretty and your hair is very neat. You look like a real prince, but you are a bum."<sup>10</sup> In her address to Prince Ronald, Elizabeth asserts her authority, which reverses not only her role in the story, but the ending of a traditional fairy tale too.

In critiquing the work of authors like Munsch, Deborah Thacker notes that these stories are often not as thought provoking or complex as they could be. She says,

*In most cases, these texts merely switch roles around but retain the stereotyped features of male and female characterization, so that strength, activity, and triumph are still opposed to passivity, beauty, and gentleness. In this way books that attempt to act as a corrective only impose another way of thinking and reading conventionally, rather than challenging readers with a new way of approaching gender or inviting them to question the imposition of socially constructed modes of behavior.*<sup>11</sup>

In relation to the plotline, this critique seems to fit. Elizabeth is the triumphant savior and Prince Ronald becomes the beautiful yet passive victim. However when this analysis is applied to the way in which the charac-



Figure 3: Elizabeth as depicted by Michael Martchenko in *The Paper Bag Princess*. She is shocked, yet unlike the typical Cinderella she decides to fight for the prince she desires. However, first she needs to put on her paper bag, because she is unable to fully transcend social precedent and save him unclothed.

ters operate it fails to correctly explain their complex behavior. For example, Elizabeth is assertive when she knocks on the dragon's door until he finally hears her speak, but she also tricks the dragon with flattery, which is a meeker approach to dragon slaying than the typical sword. Furthermore, even prince Ronald, whose masculinity is reduced because he is called "pretty,"<sup>12</sup> demonstrates assertiveness when he commands Elizabeth to "come back."<sup>13</sup> Thus, while the plot of *The Paper Bag Princess* does preserve passive and ac-

tive roles that are hegemonic, the dialogue demonstrates that the characters are much more complex than their reductive roles might otherwise indicate. One explanation for this phenomenon is that the author kept the basic gender roles intact but reversed them in order to create a comic effect. By preserving the basic premise of a traditional fairy tale, Munsch creates a story that is familiar enough to challenge young readers without alienating them.

One of the first books with a similar princess to follow *The Paper Bag*



Figure 4. *Princess Smartypants*, as illustrated by Babette Cole in her 1997 children's book. In the picture she is unkempt and in a dirty room, which conveys the image of her as atypical for either a prince or a princess.

*Princess* successfully in publication was Babette Cole's *Princess Smartypants*. Unlike, Munsch, however, Cole did not write a story that reversed the gender role so obviously within the story. Whereas *The Paper Bag Princess* is easily identified as a reversal story, because it reverses the characters' places within a traditional plot, *Princess Smartypants* is different because the princess is initially identified as atypical for either role. This does not mean, however, that her reversed role is less apparent. For example, the first line of the story identifies clearly that she is not going to act like a princess because she does "not want to get married."<sup>14</sup> Thus, in this way, Cole's approach to the nontraditional princess is much more straightforward than Munsch's, who initially depicts Eliza-

beth as an average princess before he breaks the traditional conventions.

Cole does not dismiss the conventions entirely. On the second page she describes *Princess Smartypants* and applies the marks of the traditional princess to her. She is "very pretty and rich, all the princes wanted her to be their Mrs."<sup>15</sup> These descriptions are in contrast with the first statement in the book, because the description of her beauty and wealth align her with the traditional princess. In contrast to Thacker's criticism, which argues that these stories problematically maintain "the stereotyped features of male and female characterization,"<sup>16</sup> Cole starts the story by creating the framework for *Princess Smartypants* to be both beautiful and triumphant. Furthermore, as the title *Princess Smartypants* im-

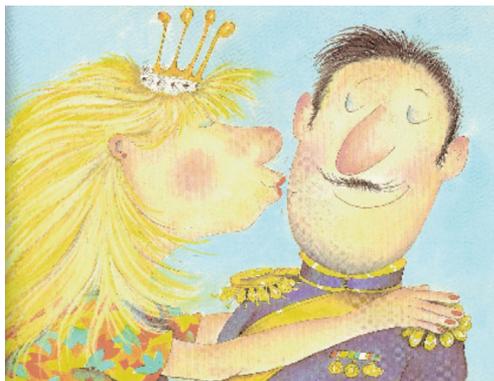


Figure 5. *Princess Smartypants kissing the prince, as illustrated by Babette Cole in her 1997 illustrated children's book *Princess Smartypants*. Although the princess is depicted as a tomboy wearing overalls earlier in the book, when it comes time for her to kiss the prince she becomes more feminine. By depicting her as a typical princess, Cole is setting the viewer up to believe that the kiss will end in her marrying the prince.*

plies, she is also allowed to reverse the mindset of the traditional princess by being strong-willed. Thus, from the beginning, Cole creates characters that are complex mixtures of the polarizing sets of gender characteristics usually seen in princess tales. In this sense, although her characters challenge the dominant culture, they also at times reinforce it.

*Princess Smartypants* fulfills her name when she cleverly outwits the usual authorities within a princess book: her parents and her suitors. She does this by creating challenges that the prince must complete before they can enter into a marriage that she clearly dislikes but that her parents insist on having. While some of these tasks, like rescuing her from a tower made of glass, have roots in traditional tales, others, like riding a motobike and roller-disco, are challenges that are unique to *Princess Smartypants*.<sup>17</sup> In these ways her character becomes increasingly complex. Although she still relies upon the traditional idea that whoever completes the tasks can marry her, she is unique because she creates the obstacles herself instead of having them imposed on her. Likewise, the princes who are vying for her attention have originality because they are not trying to save *Princess Smart-*

*ypants* from any evil, rather they are submitting to the conditions she created in an attempt to win her heart. In these ways, the book is structured so that the plot is reminiscent of, but not entirely conformant to, the traditional plot of a princess tale.

In accordance with a typical plot, a prince eventually appears who is able to complete the seemingly impossible tasks. Then, like a traditional princess, *Princess Smartypants* kisses him,<sup>18</sup> an act that normally would lead to a marriage and a happily ever after ending. The expectation that she marry the prince is nevertheless rejected because her "magic kiss"<sup>19</sup> turns him into a toad and he leaves. This break with the conventions is key because it explains that *Princess Smartypants* is not only more clever than the prince but also is independent. Furthermore, her happy ending demonstrates that despite the expectations of the people surrounding her, even a beautiful, rich princess does not need to marry to be happy. However, her reliance on magic to escape marriage, despite her determination and wit, is a regression in behavior reminiscent of a traditional princess. Again, the structure of the story indicates that even a strong princess cannot reverse all the conditions that culture places upon her.

Although Princess Elizabeth and *Princess Smartypants* did not marry their princes, some authors have allowed their princesses to embrace the traditional role and marry. One such author is Ellen Jackson whose Cinderella spoof, *Cinder Edna* follows two neighbor girls who face similar problems. Whereas the other books did not directly mention the princess model that their heroines opposed, her book directly addresses the problems with the traditional princess by comparing her to a more modern princess. The plot, which tracks the lives of Cinderella and Cinder Edna, has the two princesses progress through the same challenges at the same time.<sup>20</sup> In this parallel, Cinderella represents the traditional princess in the conventional role, and Cinder Edna is presented as a new, reversed alternative that is Cinderella's complete opposite.

Unlike the characters in *The Paper Bag Princess* and *Princess Smartypants*, Cinder Edna is not immediately defined by the characteristics that typically mark a princess, like beauty and wealth, although her counterpart Cinderella is. While Cinderella is "quite beautiful"<sup>21</sup> and behaves passively, sitting "among the cinders to keep warm, thinking about her troubles,"<sup>22</sup> Cinder Edna is defined and depicted as a completely different type of girl. Cinder Edna is described as "strong and spunky"<sup>23</sup> and the narrator admits that Cinder Edna, unlike Cinderella, "wasn't much to look at."<sup>24</sup> Thus, from the beginning, the namesake of the story, Cinder Edna, is a foil to Cinderella, and is unlike her in every way. The structure of this story, which posits the two characters as opposites, one thriving on the princess tradition and one rejecting it, offers to show by example that a princess need not be passive or pretty to achieve a happy ending.

One key difference between the characteristics embodied by Cinder Edna is initiative. Unlike Cinderella,

who relies on the customary fairy godmother to fix all of her problems for her, Cinder Edna, "[does]n't believe in fairy godmothers."<sup>25</sup> Instead, she relies on the money she has saved by working after her chores are done to buy her own dress and take a bus to the ball.<sup>26</sup> In a reversal of the archetypal plot, she decides to take control of her own fate. However, like Princess Elizabeth and *Princess Smartypants*, she is not a complete reversal of a typical princess. She is still marked as feminine because she is depicted wearing a dress at the ball and is asked by the prince, instead of asking him herself, to dance. In these ways, even though she is set up to be Cinderella's opposite, Cinder Edna does not fully transgress her cultural role.

Another way in which the plot of *Cinder Edna* reinforces cultural hegemony is in her marriage at the end of the story. Even though she is happy to marry, because Cinder Edna uses marriage as a way to escape her "wicked stepmother and stepsisters,"<sup>27</sup> it reinforces the old message that marriage is the only way a princess can escape a bad situation. This is problematic because even for Cinder Edna, who is hard working, strong, and witty, marriage is the only solution to escaping her oppressive family. Why is it that she cannot first conquer them and then marry? One possible reason is the structure of the story. Since Cinder Edna's situation needs to parallel that of Cinderella throughout the story for the gimmick of the spoof to be complete, a break in the plot would challenge the story's form. Thus, although Cinder Edna's character and personality seem to completely reject the archetype of the princess, the way she escapes her stepmother and stepsisters reinforces the notion that a princess is saved only through her marriage to a prince.

The reversal structure within these stories is one way in which the dominant idea of the princess is challenged.

As they demonstrate, even books with a structure designed to oppose a hegemonic norm can at times reinforce the very positions they intend to challenge. Like humans, the princesses in these stories they can neither completely escape, nor completely reverse, the culture that surrounds them and

the expectations placed upon them. It is this realistic quality that makes characters, like *Cinder Edna* or *Princess Smartypants* rich and relatable figures. By conveying a message, and working within the dominant discourse, these princesses are able to challenge the stereotypical princess.

## ACKNOWLEDGEMENTS

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## Exploring the Possibility of Same-Sex Love in Late Ming China

Identity categories are constantly being renegotiated. Over time, all things are bound to present themselves in unique and potentially contradictory forms. The tradition of same-sex love has emerged in different places and times and refuses to manifest itself uniformly across those spaces. Its practice has existed in China for more than two thousand years and the treatment of such performances has varied widely. Same-sex love in dynastic China is subject to many perspectives and these views are mediated by legal, social, and literary forces.

### **DISCURSIVE CHOICES AND THE CHINESE SEXUAL SUBJECT**

Modern notions and words used to describe instances of same-sex love differ across space and time and are entirely inadequate to describe such relationships as they existed in past contexts. Words that exist in one culture are not capable of accurately reflecting the cultural nuances that are inevitably different across communities. Unlike Western culture, the dynastic Chinese did not believe in ex-

clusive sexual object choice; people were not forced to make a permanent decision privileging one sex or the other. The Chinese believed that one's object choice could change in accordance with the shifting preferences of an individual.<sup>1</sup> This is an important distinction between many of the modern notions of same-sex love and that of the dynastic Chinese. The idea of gay or homosexual that exists in modern Western culture is not present in dynastic China and a different understanding is necessary when approaching the topic of same-sex love in that period.

The language used to describe the subject also needs clarification. Early references to same-sex love in China are hard to clearly identify, as the earliest forms of the Chinese language contain a built-in indefiniteness and are unmarked sexually, thereby complicating the process of compiling reliable references.<sup>2</sup> Same-sex love appeared as early as the Zhou dynasty, when the emperor could choose to bestow "favor" upon any individual he deemed worthy. The sex of the individual did not factor into his selection.

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In fact, it is noted in the Records of the Grand Historian that men often became the sexual objects of their superiors in order to gain political favor: "... it was not women alone who can use their looks to attract the eyes of the ruler; courtiers and eunuchs can play at that game as well. Many were the men of ancient times who gained favor this way."<sup>4</sup> What is worth noting is that individuals were not defined by their sexual object choice but rather by their relationship to another person, in this case the emperor. Same-sex love does not create a primary identity but instead is an activity that is participated in by an individual who is defined by his/her social relationships.

Another example of a reference to same-sex love resides in the term cut-sleeve.<sup>5</sup> Cut-sleeve was the term for a male who filled the sexual and emotional needs of the emperor. The name has its roots in a story where the Emperor Ai and his lover Dong Xian have fallen asleep and Emperor Ai needs to get up but Dong Xian is lying on his sleeve. Rather than wake Dong, the Emperor cuts off his own sleeve. This term, then, does not represent a primary identity for Dong Xian but rather is descriptive of his relationship to Emperor Ai: he is one for whom the emperor will cut his sleeve.

There is a habit in the Chinese language of using modifiers to describe a person who engages in same-sex love as opposed to labeling him/her with a singular, identity-forming noun. For the Chinese sexual subject, same-sex love was something a person could do; one could play the role of the cut-sleeve, but one was not a cut-sleeve. The Western subject, however, takes same-sex love as a way of being. This paper will use the term "same-sex love" as its reference to the Chinese sexual subject who engages in sexual or emotional relationships with someone of the same sex, as it best avoids creating a primary identity while up-

holding the descriptive nature inherent to the Chinese language.

## THE CHINESE JUDICIAL WORLD

Laws emerged as early as the Song dynasty regarding transgender issues and same-sex object choice. The focus of these laws, however, was not on the immorality of the activity but instead on its relationship to an individual's status:

*The apparent purpose of Song lawmakers was to fix boundaries: To prevent persons of commoner status (liang min) from being degraded by occupation to mean status (jian min—which included prostitutes) and to prevent males from being degraded by penetration or cross-dressing into females.*<sup>6</sup>

The problem with sodomy is not related to any sort of deviance associated with the act itself; instead, lawmakers focused on preventing people from engaging in activities that would lower their social status. Even here the law is concerned with how one relates to others and not about an identity or label they may ascribe to the persecuted individual. The concerns expressed in the above section concerning language choice are also espoused by Matthew Sommer. He recognizes that words like homosexual assume that one's social identity is built around his/her sexual object choice, which is not the case in China. In fact, "[i]n many societies, the sex of one's object of desire has yielded in priority to an hierarchical division between penetrant and penetrated."<sup>7</sup> The reason that penetration was the focus of the Song and later dynasties' legal codes is not because it established some sort of homosexual identity, but because it "profoundly destabilized the gendered social hierarchy by treating some men (the penetrated) like women."<sup>8</sup> The Song law, therefore, was focused on legally regulating men into activities that would not confuse their place in the social hierarchy. The hier-

archy was important for two reasons. First, it embodied the norm of the time; people had structured their lives around Confucian values for hundreds of years and these values placed people into a very specific social hierarchy. Challenging norms in any society is destined to be met with resistance. It was also important to the government because the destabilization of the system that told people to be obedient to the government could prove threatening to the ruling order. Safe-guarding these societal roles was critical to the maintenance of the regime.

The Song, however, is not the only dynasty to attempt to regulate people's behavior. "...[F]rom the Song dynasty through the Qing, judicial interest in male homosexual [same-sex] acts consistently focused on phallic penetration of the anus, the division of sexual roles thereby implied, and the stigma of the penetrated male."<sup>9</sup> The social hierarchy they tried to protect was intimately tied to the notion of penetration, as a man was supposed to penetrate and a woman was supposed to be penetrated; to allow a man to be penetrated destroyed the coherent fashion by which society was ordered. It was not until the Ming dynasty, during the Jiajing reign (1522-1567), however, that an actual law was established that prohibited sexual intercourse between men. The law was implemented via a supplementary code that applied statutes by analogy. These laws each cited laws from the original Ming code that, via similar situations, behaviors and contexts, were meant to help guide rulings in a wider range of cases brought before the courts. This statute applied by analogy reads: "Whoever inserts his penis into another man's anus for lascivious play (jiang shenjing fang ru ren fenmen nei yin xi) shall receive 100 blows of the heavy bamboo, in application by analogy of the statue on 'pouring foul material into the mouth of another person'..."<sup>10</sup> The stat-

ute used to create this new, parallel, law-applied-by-analogy is also useful in revealing societal sentiments that surround penetration and help explain why the law went to such lengths to prevent it. While the law is aware of the bodily ramifications that may arise from penetration, those were far from its central concern. Sommer notes that the idea of foul material "suggests pollution and humiliation more than physical danger."<sup>11</sup> There is also a directionality associated with the original Ming statute that implied that the sully of the body was only incurred by a single person: the penetrated into whose mouth the foul material was poured. Moreover, it seems to imply that the person who is actively pouring the foul material is not complicit with the social humiliation; it is only the receiver who is shamed. The penetrated suffers because his masculinity had been damaged, while the penetrant, because he played the masculine role, was free from stigma.<sup>12</sup> From this law it is clear that there is no mark of being homosexual in the Western sense; if there were a similar understanding then both parties would be subjected to the shame that, in this law, is only associated with being penetrated.

Same-sex love between women in dynastic legal codes also deserves attention for the very reason that it is not mentioned in the codes themselves. Sex between women was not perceived as threatening, most likely because of the law's fixation on penetration. The phallocentrism built-in to the law made women seem innocent because no degradation of character could be committed and a woman's chastity was not in danger. The pollution of a woman's chastity and the degradation of a man's masculinity, while functionally very different, both threaten the gender hierarchy upon which society rests and are still subject to societal reevaluations in contemporary China.<sup>13</sup>

## EVOLUTION OF SOCIAL AND LITERARY ATTITUDES

While the law makes clear its views about same-sex love, or more particularly male love, these opinions are rooted in a deeper ideology that permeated all of Chinese society. The late Ming saw the rise of a new way of looking at the world, one in which things were not required to be positioned in dichotomous opposition to one another but could be conveyed as hybrids, exhibiting characteristics of multiple personae. This new movement, that created reality as an amalgam of perspectives, is referred to as syncretism. Giovanni Vitiello is quick to distinguish between the syncretism of dynastic China and the kind associated with the Western tradition. While the West's view of this hybridity is characterized by irrationality and as "random eclecticism," the Chinese form was one of inclusivity, without requiring a reconciliation as is preferred by the rational Western order.<sup>14</sup> Vitiello best describes the effect of syncretism on Chinese culture, saying:

*... syncretism may be viewed as the constructive counterpart of that erosion (if not erasure) of boundaries that many scholars (already in the Ming) have recognized as a mark of that culture. The special density of processes of negotiation and translation featured by the late Ming culture corresponds to a blurring of boundaries at a variety of levels—of philosophical and religious boundaries, surely, but also social (most notably, between literati and merchants), and of literary boundaries, both in terms of languages and genre (classical and vernacular/elite and popular literature).<sup>15</sup>*

This philosophical move towards hybrid spaces helped to collapse many of the social barriers that had existed for centuries in the Chinese culture. The founder of neo-Confucianism, Zhu Xi, had created a world where the spiritual was separated from the material and created an ontology that

forced the subject to use reason to regulate his/her feelings and desires. The late Ming philosophical tradition, however, as treated by Wang Yang-ming, breaks from this distinction between spirit and matter, believing that people had innate knowledge and that they did not have to rationally determine and police their behaviors. This erasure of boundaries allowed for the emergence of new world views, ones that were previously denied description and repressed due to their inability to fit neatly into predetermined categories. This blurring of what were once distinct categories fundamentally reoriented Chinese thought and broke with the neo-Confucian tradition that had previously gained prominence.<sup>16</sup>

This disruption in traditional thought was not only what the law was trying to prevent through the creation of fixed categories, but was also what gave rise to new forms of literature. This did not simply mean reworking old categories in new ways, but entirely breaking free from the conventions that had bound authors and their writings. No longer was it necessary to write in strict classical Chinese, and people instead began to write in the vernacular, which made literature accessible to a wider range of readers. This broadening in audience, from the literatus to include the commoner, also justified writing in new styles and genres that appealed to the new-found, wider readership.

As a result of the increased freedom in writing, there was an increase in literature concerning same-sex issues. This is not to say that same-sex love was the primary topic of a vast number of works, but that it became an integral point of debate among the writers of the time. Many people take this increase in writings about same-sex love to indicate an increasing tolerance of homosexuality within late Ming culture, but this argument is

problematic on several levels. First, this increase in discussion does not directly correlate with an increase in the practice of same-sex activities but, rather, that debating about it had become popular at that time. There may have been a vogue for male love as well, but that is not proven solely by an increase in literary discussion. In fact, “Michel Foucault famously contended that the ‘steady proliferation of discourses concerned with sex’ in the eighteenth century in Europe marked the onset of a degree of repression previously unknown, so that speaking of the sexual had in fact become a way of policing it.”<sup>17</sup> And while this was the case in Europe, there is nothing exclusively European about the phenomenon precluding its application to dynastic China. Secondly, the notion of tolerance is also problematic. Tolerance is a trait that reflects a society that is centered around protecting diversity and individual rights; this is a far cry from the collectivist politics and social mentality to which the majority of the Chinese population subscribed.<sup>18</sup> It is a very Western leap to assume that the end goal of all politics and theory is based on securing an individual right to expression.

### **THE POWER OF QING AND LITERARY MANIFESTATIONS OF SAME-SEX LOVE**

One extant work from the 17th century treats same-sex love directly, as its protagonists are perceived as exceptional precisely because they are able to blur traditional gender and sex boundaries.<sup>19</sup> This work, *Bian er chai*, translated by Keith McMahan as *Hairpins Beneath His Cap*, goes so far as to depict love between men and women as less than the love between two men. The caveat being that love between two men is fleeting and that they must eventually separate to fill their prescribed societal roles.<sup>20</sup>

What force allowed those men to engage in same-sex relationships and reshape social boundaries is an important aspect of late Ming and early Qing writings. The boundary-breaking activities the protagonists engage in are mediated by the power of qing. While there is no appropriate translation for qing, it, at the very least, embodies the emotional, sentimental and loving feelings and actions that two individuals can share.

The idea that qing could shatter identity categories was not reserved for *Hairpins* alone and, in fact, the use of qing in *Hairpins* was merely an extension of the use of qing from another famous play by Tang Xianzu called “*Peony Pavilion*.” In Xianzu’s “*Peony Pavilion*,” the female protagonists, Du Liniang, meets the love of her life in a dream and dies after she awakens due to her pining for him. When the man that was in her dreams finds her grave she is resurrected and they are wed. In this work, the power of qing defies death “and as such overrides distinctions between dream and reality or youthful volition and parental authority...”<sup>21</sup> The author of *Hairpins* simply expands this barrier-breaking notion of qing and applies it to the destruction of socially constructed gender roles.

*Hairpins* contains four novellas that each pair qing with one of its supposed counterparts (chastity, chivalry, self-sacrifice and the supernatural) in order to highlight the potential for both to coexist.<sup>22</sup> The first of these novellas, “*A Chronicle of True Love*,” tells the story of a scholar who pretends to be a student in order to seduce a fellow classmate. After successfully sexually engaging with the boy, the academician assuages the boy’s fears by propounding the following philosophy:

*If we go by the logic of Reason, then what we have done today is wrong; but if we use the logic of Love, then we are right. For a man can become a woman and a woman can*

*become a man. It is possible to go from life to death as well as from death to life. Those who are bound by the differences between man and woman or life and death don't know what real love is about. I have often said, 'The sea may become dry, the mountains may erode, but Love alone cannot surrender to Reason!'*<sup>23</sup>

The academician embodies the new Ming mentality of syncretism wherein artificial distinctions, such as man and woman or life and death, no longer have any reality. He also indicates that the power of love is something that is beyond the ability of Reason to understand and regulate and, therefore, those so-called reasonable categories that the boy is accustomed to living his life by can legitimately be forsaken in the name of love.

The second story of Hairpins, "Chronicle of Chivalric Love," concerns the man Zhang Ji. The protagonist, Zhang Ji, has proven himself a complete talent as a Confucian-educated man and is now confronted with the love of a man, Zhong Tunan (whose name can be read as "Intensely Desiring the South" or with the play on words which it conceals, as "Desiring/Pursuing Men"). Zhong Tunan drugs Zhang Ji and penetrates Zhang Ji in his sleep. Despite the expected reaction to the event, Zhang Ji actually enjoys himself:

*'In his drunken dream state Zhang felt he was no longer in control of his body. Inside it felt as if some insect were trying to bore out of his anus. It felt like a sting but didn't sting. He wanted to take it into himself but wasn't able... So buried in sleep he was that he didn't seem to know whether his body was a man's or a woman's.'*<sup>24</sup>

When Zhang Ji awakens to realize what has happened he moves to behead the offender (Zhong Tunan) but refrains when confronted with Zhong Tunan's complete lack of fear in the face of death; Zhong Tunan was willing to sacrifice his life to achieve his ul-

timate desire. Here, qing demonstrates its transformative power. In a situation that should have required the life of the offender, the expression of true love denied Reason's natural response. Zhang Ji even concedes that Zhong is a more true romantic "and declares, although a man, he will be his woman."<sup>25</sup> Zhang Ji's concession continues to use heterosexual terminologies to refer to his same-sex relationship thereby destabilizing the idea of normalcy and also makes his new world view quite clear: he no longer feels constrained by the social barriers that had previously bounded his existence.

While the novella could have ended at this point and still have communicated its message, the author proceeds to resolve the story of two educated women warriors that Zhang Ji met earlier in the storyline. In society at that time, a woman of such a nature would be considered, for all practical societal purposes, a man. He ends up marrying the two daughters he had met earlier who are trained in the ways of the military and literary arts; typically those traits are considered too masculine for women. His wives are gender hybrids and adopt male personae that make them appealing. Zhang Ji's consummation of the marriage makes clear his heteroerotic desires and reinforces the fact that sexual object choice was not static and exclusive but could change with the dynamic desires of the subject. At the end of the novella, Zhang Ji sacrifices his heteroerotic relationship in favor of his relationship with Zhong Tunan; this sends a strong message: the same-sex bond is more desirable than the heteroerotic one.<sup>26</sup>

Of the third novella, "Chronicle of Sacrificing Love," very little remains. McMahon pieces together what remains of the story to determine that a theater boy becomes a concubine for a man named Yun Han. "At one point Yun Han has the boy dress as a

*The Way of the Academicians*  
From *Hua Ying Chin Chen* (*Variiegated*  
*Positions of the Flower Battle*) China, Ming  
dynasty (1368–1644)

*These are two men engaging in same-sex behavior. It can be stated with confidence that the person on top is a man because his bare foot can be seen. A woman at this time would have her feet bound and even without her shoes on one would not be able to see her bare foot because it would be deformed.*



woman, makes love to him, and then says: “There might be women as beautiful as you, but none could be as passionate or as talented or as sensuous.”<sup>27</sup> This shows how the emotional bond that was supposedly reserved for men and women could actually be felt between two men; it proves, as well, that their attraction goes beyond the physical. At another juncture in the story, the boy, Wen Yun, must convince Yun Han to get married. Yun Han was going to reject a marriage proposal in order to stay faithful to the boy. Just as in a heterosexual relationship, the idea exists that both partners need to remain loyal to each other. This creates a greater air of legitimacy around same-sex love because it begins to be represented more in terms that reflect what is considered to be part of so-called normal relationships.

The final novella, “Chronicle of Strange Love,” concerns a boy from a male brothel, Li Youxian, and the man who buys him out of that life, Kuang Shi. Kuang brings Li into his house by disguising him as a female concubine and even “softens his feet by means of a special liquid which allows perfect bound feet within a month.”<sup>28</sup> This directly reflects the desire to create a hy-

brid person, where the man physically is transformed into a woman by having his feet bound. When disaster befalls the family, Li flees with Kuang’s son and raises him, living the rest of his life as a nun.

Something that makes this relationship even more ground-breaking than the others is that it is explicitly noted that, the first time they have sexual contact, “the sexual encounter between him [Youxian] and Kuang is described as one of mutual pleasure.”<sup>29</sup> Pleasure, as seen by Shen, Xie and others, was only to be had by the penetrant. This seems to indicate that both men participated in the penetration of the other in order to avoid a power differential between them and fully express their love for one another. It erases the power differential because, legally, both men are guilty of having “foul material poured into one’s mouth,” while socially both men’s masculinity is equally tarnished and elevated by being penetrated and by participating in the act of penetration.

Li, while a man, fills all the social roles appropriated for a woman and also undergoes the binding of his feet to physically resemble a woman. This is a case of a man wanting to become

a woman, and as such embodies an early account of what might now be labeled as a transsexual and/or transgendered existence. He is willing to forsake the privileges given to men by society and is willing to accept the suffering that is associated with living the life of a woman. This is not without purpose, however, as "...the one who is willing to forego [sic] both the better lot of being a man and the comforts of heaven is the one who enjoys the most pleasure, suffers the most pain, and, in doing so, live the most valuable life."<sup>30</sup> By being willing to live under all conditions that life has to offer Li has the most valuable life possible. Li's hybrid existence, therefore, is superior to that of either a man's or a woman's.

The heroes of *Hairpins* are men and women who actively synthesize characteristics of both genders and sexes and attempt to articulate new ways of living their lives beyond their prescribed social roles. "The protagonists of the novellas are constructed through a transplanting of gendered moral values; they are moral hybrids whose romantic originality is produced by setting, like a gemstone, the ultimate female virtue in an equally virtuous male body and intelligence."<sup>31</sup> *Hairpins*' stories of moral negotiations are mediated by the power of qing and its ability to allow for play with the stable categories that society and Reason try to maintain.

Another work that pays attention to same-sex love is *The Anatomy of Passion*. This work embodies the emerging literary tradition of the time and uses heterosexual terminologies to refer to events of same-sex love. The contexts in which same-sex love occur, however, are described as a deviant variant of the norm that, due to its bizarre nature, recreates a desire for the normal. The "Way of Male Love" is like an image from a mirror in a fun-house, it is so distorted that it creates a desire for the normal or so-called original

image. In this way, "[m]ale love is the frontier, the boundary that defines the center. But it is also immanent within the center."<sup>32</sup> Same-sex love is pushed to the periphery, from the center of society, allowing the center to exist without it. As a result of having originated in the center and been pushed aside, same-sex love, however distorted, contains traits that are inherent to the center itself.

Qing, in the same fashion, is typically described in opposition to se, which occurs when a qing-style attraction is based too much on physical attraction. Volpp contends to the contrary, that rather than being in opposition, these two forces are intertwined, with se emerging from qing. Se is immanent within Qing, for Volpp, because se is a variation of the ultimate attraction and feeling between two individuals.

The organization of *Anatomy* has a number of implications for same-sex love. It appears to take the level of qing possessed by each chapter as its organizing principle, placing male love as the 22nd of 24 chapters, after degenerate and ghost qing but before qing with animals. The title of the chapter on male love, qingwai, also presumes that there is a quality of male love that is outside of normal qing, separating those who experience same-sex love from the rest of society. Comparison of that chapter's internal structure to that of the meta-level structure also creates male love as a miniature replica of heteroerotic qing. The chapter on same-sex love begins with chaste love and ends with male love with ghosts; the first chapter of *Anatomy* is heterosexual chastity, and heterosexual love with ghosts precedes the chapter on same-sex love in the overall structure of *Anatomy*. The internal structure is analogous to the larger structure (read: universe) with one exception: it does not contain heterosexual love. This indicates that same-sex qing exists only

in a heteroerotic universe and not the other way around. This problematically places same-sex qing at the center of heteroeroticism (due to its place in the meta-structure) and outside of it by not including it with in the chapter proper.<sup>33</sup> This placement of same-sex love as both inside and outside normal boundaries parallels the tension and confusion that are expressed in both late Ming literature and society.

The language within the chapter also omits the positive categories of qing included in the other chapters of the anthology, instead replacing them with negative categories, highlighting the cautionary nature that surrounds the discussion of same-sex love. Interestingly though, despite the binary that qing and se are supposed to create, the terms are used interchangeably throughout the chapter giving credence to the argument that perhaps qing and se are more related than first thought. The commentator on the chapter, however, tries to reestablish this clear boundary between the two by stating that qing between men is not possible, and that what is taken as qing is, in fact, a debased form of qing comparable to se. The reasoning behind this argument, according to the commentator, was that qing between men can only reflect a physical attraction, not emotional, and that is se by definition.<sup>34</sup>

The 14th chapter of *Anatomy* comes to the rescue of Volpp's argument though, as it presents a situation in which two men experience qing in the absence of physical attraction. In this chapter, a man, Wan, nurses back to health an actor, Zheng, who has lost his looks and, consequently, his se appeal. This demonstrates that qing can exist in same-sex relationships independent of se and not be debased by carnal desires. Se, therefore, exists as a manifestation of qing and is inherently a part of qing. Wan later arranges a marriage for the actor, Zheng, and

has Zheng and Zheng's parents move into his own home. It was in this way that Zheng is able to fulfill his filial duties as a son and also maintain his relationship with Wan. "The narrative implies that if filial piety is the primary expression of male love, no one will question same-sex unions."<sup>35</sup> The object of one's desires, therefore, did not offend society but it was the neglecting of filial duties that is often associated with same-sex object choice that leads to controversy. Wan and Zheng were able to circumvent this obstacle by moving Zheng's family into Wan's home.

For the great amount of discussion same-sex love is given within *Anatomy*, it is odd that the chapter directly concerning same-sex love is not to be found in the index. Without reading the book one would never know that the chapter existed. More importantly, even if one were to open the book to the chapter pertaining to same-sex love he/she would not actually be able to describe the author's actual feelings towards same-sex love. To just read that chapter would lead the reader to believe that the author had a negative image of same-sex love, whereas the positive descriptions it is given earlier in the anthology would be necessary to temper those negative conclusions. The mixed opinions expressed in *Anatomy* are yet another expression of the syncretism that characterized late Ming culture.<sup>36</sup>

The erotic discourse that developed in the late Ming culture did more than give rise to works like *Hairpins* and *Anatomy*, as that language of erotic description allowed for the invention of an entirely new genre, pornography. And while pornography's era was short-lived, the number of works produced were many.<sup>37</sup> Pornography often meets with disdain in modern culture, but it actually represents a critical component for the history of sexuality, as well as gender roles,

across the empire. The government was quick to begin censoring pornography as it was perceived as a threat to the normal function of literature, and any breakdown in the traditional structure of society was perceived as a threat to the government's legitimacy. It also for this reason that references to pornographic works are not contained within many governmental works except in the form of reprimand and criticism. Because of this, Li Yu notes in the sixth story of his *Silent Operas* that "the homoerotic [same-sex] case he is about to report is one that 'official history doesn't need to record, but that unofficial history cannot fail to record.' Sexuality, we are told, deserves its history, and it is thus the charge of fiction, as 'unofficial history,' to record it."<sup>38</sup> This is why, with a determined body of literati working to record same-sex love, the body of works produced was prolific, even if the age of pornography was not long-lived. Master Moon-Heart, the author of *Hairpins*, also authored another work entitled *Fragrant Essences of Spring*. The work opens with a poem by which the focus of the work can be determined:

*... If in the world there were no passion,  
I would want it to exist; but, if the whole  
world sank into passion, then I would be  
anxious about dissipation because when  
passion reaches dissipation, it is a harm for  
the world. Dissipation belongs to passion  
and at the same time is what harms it.*<sup>39</sup>

The work thus focuses on the dangers inherent in passion becoming the singular focus of one's existence while simultaneously praising its necessity for human happiness. Passion was something to be performed in moderation because the destructive force of dissipation exists only in cases of over-indulgence in passion.

The last story contained in *Fragrant Essences* is called Niu Jun, "A Dreamy Ugly Boy," and represents passion in both its forms, destruction and

pleasure. The story is rooted in Buddhist traditions that focus on liberation from desire, and the protagonist, Niu Jun, is confronted by the "unrestrainable resurgence of desire itself... In this sense, it is the story of a revelation that must be seen as double: the revelation of desire is as crucial as the revelation of desire's vacuity."<sup>40</sup> The vehicle used to help Niu Jun achieve these revelations is the dream, a common choice of Daoists and Buddhists who wished to help the non-enlightened find the Way. The difference between dream sequences of traditional literature and those of the 17th century, was that dreams were now used to delve into a person's unconscious and carry out a personal interrogation of that individual's desires as opposed to having a religious figure reveal things external to that person.<sup>41</sup>

Niu Jun's dream-journey occurs after his classmates at school have excluded him from learning about the rites of spring, the equivalent of a Chinese sex education, because he is too ugly. He returns home, begins to dream, and is taken into another world where he is wildly attractive and experiences sex of all kinds. He enters a kingdom of all men (The Kingdom of All-Sons), where half of the men cross-dress as women, and he has sex with the king and falls in love. He is then shifted to a world of all women (The Kingdom of Holy-Yin) where he impregnates the queen with her magic dildo and is forced to flee to the original all-male kingdom. He returns and, as happens with all great loves and last rulers of China, the king becomes overly infatuated with Niu Jun and the people separate the king and his queen (Niu Jun), who is left alone. He is then confronted by a monk who asks him to repent. While in the process of cleansing his body he is awakened by his servant bringing him tea, only to find he has become handsome in reality as well. After having been the constant

object of desire in this dream world he immediately pursues his religious cultivation to avoid further struggle with desire and passion.<sup>42</sup>

Same-sex overtones are present throughout Niu Jun's entire journey. One of the most obvious examples is his falling in love with only one person, a man, the King of All-Sons. In the Kingdom of All-Sons, reproduction occurs by praying at a temple. Niu Jun went to pray for his King to have a son and at the temple, in a dream-within-a-dream, Niu Jun fails to become aroused by the sight of the temple's female goddess and a special device is necessary to complete the sexual encounter. While in the Kingdom of Holy-Yin, the King (a woman) is thrilled at actually getting the chance to experience sex with a man (as opposed to using her magic dildo) but is disappointed to find that "Queen Niu" is, yet again, unable to become aroused by her and she thus decides to sodomize him instead.<sup>43</sup> These experiences openly display same-sex love and make it the most desirable outcome, running counter to traditional behaviors of the late Ming. Not only, however, did Niu Jun choose to have a same-sex relationship, but he was entirely unable to have a heterosexual encounter. His inability to participate in a heterosexual relationship further demonstrates literature's ability to create scenarios that the then-modern mind would not have imagined to exist, thus giving visibility to previously unrecognized and ignored members of society.

All three works, *Hairpins*, *Anatomy*, and *Fragrant Essences* challenge contemporary Ming ideas about gender, sex and sexuality. While *Hairpins* focuses on the potential for mixing and matching the gendered characteristics of the sexes, *Anatomy* socially contextualizes the environment in which same-sex love is being written about and *Fragrant Essences* imagines a world in which the norm is not even a possibility. Whether influenced by the power of *qing* to reshape the world or motivated by a need to police sexual conduct by making it visible, the discursive explosion over same-sex love in the late Ming produced a wealth of literature critical to the reconstruction of the late Ming mentality.

## CONCLUSION

Instances of same-sex love have existed across cultures and time but have manifested themselves in ways that may not be recognizable by modern standards and categories. It is important, therefore, to contextualize one's investigation into the existence of any same-sex tradition and to be open to ways of thinking that are seem different or strange. The same-sex tradition in late Ming China defies conclusion and perhaps that is the point. The syncretism that informed the thought of the time prevents one from making a broad-sweeping statement with which to summarize the period, and in that state of indefiniteness is how it should remain.

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## Queen of Hearts (and Communications)

### *How Elizabeth I and Princess Diana Related With Their Publics*

Queen Elizabeth I once said, “We come for the hearts and allegiance of our subjects.”<sup>1</sup> More than 400 years later, Princess Diana expressed a similar sentiment during a BBC interview: “I’d like to be a queen of people’s hearts.”<sup>2</sup> These comments highlight a certain irony in that these historical figures never met the vast majority of the people who were having their affections so pursued. Both women, therefore, relied upon public relations strategies through whatever media outlets existed at the time.

Elizabeth, as the established monarch, tended to use her public relations to react to events as they occurred during her reign. Diana, as the challenger to the established monarchy, relied more upon proactive public relations to try to set agendas and create public responses. Literary and historical analyses indicate that these differing approaches influenced the immediate media reactions to these historical figures after they died. The media response over Elizabeth’s death was muted and her achievements minimized. Only later did Elizabeth experience a resurgence in public

opinion. Diana, however, appeared in the media after her death as a woman “empowered” and overcoming obstacles. Examining their public relations strategies illustrates how these women in positions of national power (or in Diana’s case, in the national spotlight) depended upon the media to shape their image for their publics — the people of Britain — and ultimately, the world.

The research methods combined several disciplines — from literary and historicist criticism to strategic journalism, particularly contemporary public relations research. To understand both women’s different public relations approaches, one must distinguish between proactive and reactive public relations. The Webster’s New World Dictionary of Media and Communications defines reactive public relations as “[a]n after-the-fact campaign ... conducted in response to events that have already occurred.”<sup>3</sup> Robert Heath, in his study of strategic issues management, explains that a reactive approach “focuses on the search for obstacles.”<sup>4</sup>

The Elizabethan administration

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was generally reactive in searching for challenges to its authority. For example, writers of sixteenth-century historical chronicles, or “histories” of the English monarchs, experienced governmental pressure to write favorably of the regimes in power. Richard Lant the chronicler “was sent ‘to warde’ for publishing an Epitaphe upon the Death of Quene Marie”; afterward, “[t]he ballad was later tactfully altered to include verses in praise of Elizabeth.”<sup>5</sup>

Another news outlet consisted of the Elizabethan news pamphlet, or news quarto. Paul Voss writes that news quartos began to appear in great numbers when civil war broke out in 1589 in France. These pamphlets sent from France to London painted gruesome details of the war and warned readers “about the dangers of civil conflict.” Voss argues that most news pamphlets were not state-manufactured reports even though they reflected such “orthodox positions” as patriotism and civil order, thus serving government interests. The people who produced these quartos included servants, printers, publishers, messengers, translators, and scribes. Like modern-day newspapers, these were “ephemeral publications not intended to survive” because of the nature of their news.<sup>6</sup>

Other Elizabethan forms of mass communication, which shall be considered unofficial media outlets, included slanderous rumors and “libels,” or what Fritz Levy describes as “placards, manuscript poems circulated among friends or posted in conspicuous places — in other words, informal, unofficial, and highly unregulated publication” that the government could not control. These appear to be the tabloid’s ancient ancestors. News now “replaced (or at least supplemented) clothes as the new social marker... . [Informants] became the market for news, whether passed

on by gossip, letter, or print.”<sup>7</sup> Importantly, written materials reinforced traditional oral communications, as alehouses became “provincial post offices” for knowledgeable writers in London to send “private correspondence” to their friends in the rural areas. These would become fodder for oral transmission in the provinces. Finally, because both verbal and written intelligence at the time were easily distorted or inaccurate, “there was often little qualitative difference between the sources of the educated elite and those readily available to the lower orders.” Political and national news would circulate through domestic and personal gossip, including “[a]llegations about people’s personal lives and sexual misdemeanors.” For example, one rumor in the early years of Elizabeth’s reign claimed that her brother, Edward VI, had been wrongfully imprisoned in the Tower of London, thus challenging her queenly authority; another rumor suggested she had given birth to several children from an alliance with the earl of Leicester, Robert Dudley.<sup>8</sup>

All these forms of mass communication, because of their extent and abundance, suggest that the Elizabethan government was less effective — and also less interested — in censorship than has been commonly supposed. Instead of a massive campaign that examined all books before publication, Susan Clegg writes, about half of all texts printed during Elizabeth’s reign in England did not receive government scrutiny — censors keeping largely to areas of “personality, patronage, and national interest.” Clegg also investigates the eleven royal proclamations concerning censorship during Elizabeth’s reign to conclude that their effectiveness to censor printed texts has been overestimated, as they “held no force in the common law courts.” Furthermore, Elizabethan subjects did not always comply with censorship regulations. Clegg records the public’s



The “Rainbow Portrait” of Elizabeth I by Isaac Oliver can be viewed at Hatfield House in Hertfordshire, England. This image, courtesy of [marileecody.com](http://www.marileecody.com), depicts the queen (who was then in her 60s) as an ageless archetype of Astraea, “the virginal heroine of classical literature.” From: <http://www.marileecody.com/eliz1-images.html>.

response to Elizabeth’s proclamation in 1573 requesting that books of religious reform be surrendered to the queen’s Privy Council or to the bishop of the diocese: “Archbishop Parker complained ... ‘Her Majesty’s proclamation took none effect: not one book brought in.’ ” This historical evidence suggests that the Elizabethan policies of prohibition and censorship — both extremely reactive public relations strategies — had limited effectiveness. Opportunities for negative portrayals of the queen existed, though not to the same extent and degree as in the twentieth century. As a result, Clegg describes the Elizabethan administration as incapable of complete censor-

ship and image control — more “reactive rather than proactive” in its public relations.<sup>9</sup>

As these and other “slanders” increased during the last years of Elizabeth’s reign — the time, Christopher Haigh contends, when Elizabeth was most reactive in her press relations — so did the state’s restrictions on public expression.<sup>10</sup> One servant, a Henry Collins, was imprisoned in 1592 for threatening to kill the queen. Another laborer, Thomas Farryngton, declared in 1598 that the queen was “Antichrist” — a remark that earned him time in the pillory and caused his ears to be cropped.<sup>11</sup> I would argue that the queen’s withdrawal from public com-

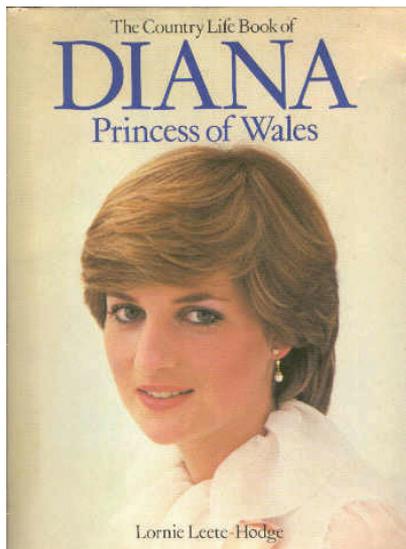
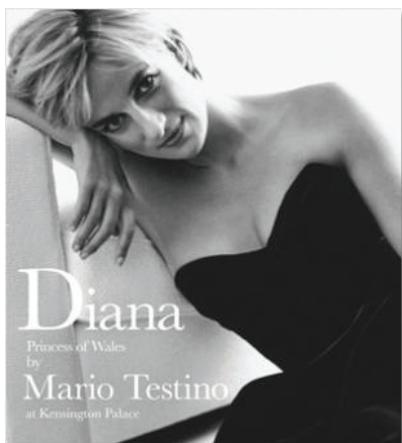
munications during the years before her death directly affected the popular perception of Elizabeth I when she died. Because Elizabeth did not take proactive steps to establish strong public relations among her subjects in her declining years, many responded with indifference or even contempt to her death. Haigh writes that on the evening of March 25, 1603, when Elizabeth's death was announced, the general populace lit bonfires and street parties in celebration of James' accession to the throne. Only afterward in the 1630s did several writers, now disillusioned with Stuart kings, laud her as "the paragon of all princely virtues — principled, as James had not been, and wise, as Charles had not been."<sup>12</sup>

In contrast, a proactive approach involves "anticipating a situation and being prepared to execute a planned communications program (such as an advertising campaign)."<sup>13</sup> Issues management is a two-way process — communicators fare better if they provide information that their audience wants to hear. For businesses and other organizations to survive and thrive, Heath writes that they "must respond with information each public wants."<sup>14</sup> The Princess of Wales showed a remarkable readiness to provide details of her life that she expected would interest her audience — including her bouts with bulimia and her rocky relationships with the House of Windsor.<sup>15</sup> Michael Levine contends that Diana showed her most proactive public relations strategy during the now-famous 1996 BBC Panorama interview — proceeding without the Queen's official permission or knowledge and thus "defying royal precedent." Levine quotes Richard Greene as declaring that the interview was "PR at its best, a brilliant move to have everything controlled, from keeping the interview to one hour to picking who would ask the questions." This is the essence of proactive public relations — anticipating

and controlling events to influence their outcome.<sup>16</sup> Peter Stothard, former editor of *The Times*, writes that Diana showed an acute sophistication about media relationships to be "as 'on message' as the most disciplined determined New Labour apparatchik."<sup>17</sup>

After Diana's separation from Charles, Jude Davies argues that the former Princess of Wales "sought to develop a more dynamic and influential public role" by identifying herself more "as a businesswoman or an independent divorcee." Interestingly, Davies writes that newspapers such as the *Daily Mirror* and the *Mail* helped support this reimagining with newspaper features, headlined with titles such as "Diana — the business" and "Diana: her own woman." Books such as the controversial 1992 *Diana: Her True Story* by Andrew Morton portrayed Diana as a victim of an "oppressively patriarchal" monarchy who had now overcome that institutional repression "to generate a redeeming and empowering relationship with the public through her image."<sup>18</sup> It is interesting to note that Andrew Morton, less than a week after her death, claimed that his source for the book had been Diana herself.<sup>19</sup>

As a result, posthumous media representations have tended to emphasize this portrayal of Diana as evolving along "a trajectory from weakness and naïveté to strength through the control of appearance." Through it, Diana is given personal agency over deciding what sort of image to project through her clothing and physical appearance — "coming to power over self-representation."<sup>20</sup> After her death, Diana is characterized no longer as an empty airhead, but as an independent woman who "eventually used her power to confront the infidelity of her husband and the failings of the Royal Family."<sup>21</sup> This may be a type of wish-fulfillment on the part of the media, especially after the negative atten-



*These photos of book covers about Diana illustrate the fluid public image of the Princess of Wales during her lifetime. Scholars such as Jude Davies and Michael Levine have explored the history of Diana's iconic persona, from "shy Di" to the now-famous "Queen of Hearts."*

tion that the paparazzi drew after Diana's death. But it is significant that Diana's handling of the press, while alive, holds strong potential for media manipulation.

Some scholars argue that Diana's proactive relationship with the media, therefore, led to the apparent mass hysteria that followed Diana's death. J. Mallory Wober writes that Great Britain "was not, after all, as it had been described in the week and month after the death, universally wrung out in grief." Wober argues that print and broadcast media helped whip up a "feeding frenzy" during the week between her death and her funeral, with "special editions looking back on Diana's life and analyzing most conceivable aspects of it" as well as focusing on the visible crowds, "who soon became an important part of the news." In this way, Wober contends that the media reinforced the notion of a public unified in its grief by reporting on

the "similar emotions visible amongst very many of the (visible) public" to conclude that "everyone thought and felt alike."<sup>22</sup>

The influence of Elizabeth and Diana's differing public relations approaches upon their post-mortem images cannot be extended beyond the immediate aftermath of their deaths. Scholar John Watkins notes, "What finally allowed writers to sustain their contradictory admiration for the Queen of famous memory was their ever greater historical distance from her." Thus, Elizabeth I underwent many image makeovers in the relatively short period of Stuart England. During James' reign, people wanted to link him with Elizabeth to provide an appearance of "sovereign continuity to mitigate the experience of dynastic rupture," conveniently minimizing the king's "foreign birth, his inexperience with English legal institutions, his descent from Mary, Queen of Scots

and the Guises, and recurrent suspicions that he might be soft on Catholics." Still later, proto-constitutionalists desiring to limit the monarchy's power tried to mold Elizabeth's image as "an advocate of the rights of free-born Englishmen," presenting her not as "a powerful monarch whose administrative brilliance sealed her people's affections" but as "a queen in a perpetual state of abdication" in favor of empowering her citizens. During the Restoration period, speculations about Elizabeth's private life exploded with the publication of "secret histories," or novels claiming to reveal her secret romances. Watkins argues that novels such as *The Secret History of the Most Renowned Q. Elizabeth and the E. of Essex* recast the queen as a celebrity figure: "For an emerging bourgeois readership, Elizabeth's politics mattered less than her identity as a woman who transgressed increasingly rigid assumptions about women's place in society." Because of her many images, Elizabeth could play virtually any role from "virtuous princess perpetually mourning her mother's death to a homicidal fury poisoning her erotic rivals."<sup>23</sup> It is important to note, however, that images of Elizabeth were predominantly negative immediately after her death. Some reports of her deathbed suggest she was torn up with guilt over the Earl of Essex's execution, the beheading of Mary, Queen of Scots, or her refusal of the Earl of Leicester's courtship. One of the Queen's ladies-in-waiting, Lady Southwell, recounted that her "disemboweled, putrefying body exploded in its casket," which confirmed to then-living Catholics that Elizabeth's "Protestant corruption" had consumed her physical remains. Only afterward was she presented in more favorable and endearing images, showing the ephemeral nature of public memories.<sup>24</sup>

Likewise, the collective "memories" of Diana are also beginning to di-

verge according to people's ever-fainter recollections of her life. Interestingly, the memories appear to be falling the opposite way to the post-mortem images of Elizabeth I — overwhelmingly passionate and loyal at first, but slowly waning to a more tempered, dispassionate approach. Jill Chancey argues that avenues for negative representations of Diana in the media appeared to decline after she died. Chancey writes that "the living and complicated Diana defined by scandals, eating disorders, and friction within the royal family" has slowly been altered to a figure more like the traditional fairytale princess, "codified ... as mother, princess, wife, humanitarian, beautiful, and never, ever, 'inappropriate' or 'unfeminine.'"<sup>25</sup> As a result, Diana's image loses any threat it may once have posed to the royal establishment. Immediately after Diana's death, CNN documented intense loyalty to Diana, then seen as an antagonist to the traditional monarchy, in the form of anti-royal sentiment — one poll showing public approval of the queen at 47 percent, with Prince Charles at less than 33 percent. A 2007 poll, however, gave the queen an 80 percent approval rating, with Prince Charles at 62 percent.<sup>26</sup> If Diana's public relations campaign had worked to win sympathy at the expense of the royal family's public image, her death effectively quelled that strategy for the long term. Ten years later, Michael Elliott speculated in a *TIME* magazine article that Diana's death instituted an "age of emotion" in traditionally stoic Britain with its legacy of Victorian reserve. After the 2005 terrorist attacks in Britain, Elliott writes, this emotional openness subsided and Britain returned to its former stoicism as "the virtues of reason, reserve and order became apparent." Elliott argues that after the brief, intense mania over the Princess of Wales' funeral, Britain was right to adapt to "sterner times than the mid-

1990s,” concluding that “[y]ou can’t fuel a society on flowers alone.” This tribute to Diana mutes the sentimentality of the immediate mourning period and downplays the manipulative, skillful edge that Diana demonstrated in her interactions with the media during her lifetime.<sup>27</sup>

A reactive approach to public relations, as demonstrated by Elizabeth I, tends to minimize that person’s achievements in the public eye simply because the public may not recognize or appreciate them. Elizabeth focused mainly on countering obstacles to her administration; this strategy, however, did not prove overwhelmingly effective. Her subjects found ways to avoid compliance with her authority, especially in her last years on the throne. Only later, in the long term, have people begun to rediscover the significance of Elizabeth’s actions in the context of the educational, social, and political upheavals that were then taking place in early modern England.

A proactive approach to public relations, as exemplified by Diana’s experience, has immediate and often dramatic results. As Diana demonstrated, engaging the media over top-

ics that appealed to a wide variety of cultures and tastes gave her power to set agendas for press coverage and elicited far more public support for her than the traditional monarchy ever received during her life. A proactive approach thus tends to make people appear powerful, especially in the short term. The outpouring of media attention helped Diana seem more influential immediately after her death than she really was. The royal family’s renewed approval ratings, more than 10 years after Diana’s funeral, belie the mass mourning that occurred in 1997.

These two women who both wanted to win the hearts of their respective publics — separated by time and technology — differed radically in their public relations methods, resulting in outcomes almost completely opposed to each other. Only time will tell whether Diana enjoys anything close to the kind of post-mortem fame that Elizabeth I has encountered throughout the centuries. Nevertheless, their professed desire to rule over the “hearts” of their subjects provides an unusual bridge between the Virgin Queen and the Princess of Wales.

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# Fabrication of Semiconductors by Wet Chemical Etch

## *Selective Etching of GaAs Over InGaP in Dilute $H_2SO_4:H_2O_2$*

Fabrication engineering of semiconductor devices has made possible optoelectronic instruments, laser diodes and wireless communication devices among many other modern devices. Beginning with Bardeen, Brittain and Shockley's invention of the transistor in Bell Labs in 1947 and Kilby and Noyce's introduction of the integrated circuit about a decade later, semiconductor devices have dramatically advanced the computing and electronics industries.

Semiconducting materials, such as silicon, germanium, gallium arsenide, and indium phosphide, are neither good insulators nor good conductors, but they have intrinsic electrical properties so that by controlled addition of impurities, their conductivity can be altered. With the need to manufacture devices at the micro- and nanoscale, the semiconductor industry has followed "Moore's Law," the trend that the number of transistors placed on an integrated circuit increases exponentially about every two years. Production of the tiny features to create these integrated circuits is achieved by plasma etching of semiconductor ma-

terial. The plasma etch process is carried out in a chamber in which a gas mixture is partially ionized to create a plasma, or glow discharge. High energy ions in the plasma bombard the semiconductor material and chemically reactive components in the gas mixture form etch products with the semiconductor. The process produces accurately etched features and is one of the primary reasons for the reduction in device size that has made technology such as cell phones and laptop computers possible.

## INTRODUCTION

Semiconductors such as InGaP and InGaAsSb are important for light-emitting devices as well as communications devices and electronics. Fabrication of these devices is achieved by plasma etching in which an ionized gas mixture etches the substrate by both chemical reaction and physical bombardment. In plasma etching for these purposes, indium products are not as volatile and are usually more difficult to remove than other semiconductor materials. For this experiment, only wafers with an existing

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epitaxial GaAs cap layer grown over an underlying InGaP layer were available. For the development of an Inductively Coupled Plasma (ICP) etch process for the InGaP layer, the top GaAs layer must first be etched off to expose the underlying InGaP layer. A common technique used to do this involves a selective wet chemical etch that will remove the GaAs layer without etching or damaging the InGaP layer.<sup>1</sup> Determining the selectivity and etch rate for removing the GaAs layer are the primary goals of chemical wet etch development. Once this has been accomplished, a “recipe” for removing the epitaxial GaAs layer can be created.

Chemical wet etching selectively removes the cap layer of the wafer through a series of chemical reactions in a liquid solution. For this etch process, H<sub>2</sub>SO<sub>4</sub>:H<sub>2</sub>O<sub>2</sub>:deionized water, a common solution for removing GaAs, was used in the proportions of 1:8:640. The reaction occurs in a sequence of steps involving an oxidation reaction of the hydroxide ions when the semiconductor is immersed in an electrolyte system to produce Ga<sub>2</sub>O<sub>3</sub> and As<sub>2</sub>O<sub>3</sub>. These oxides dissolve in the acid of the etchant solution and form soluble salts.<sup>2</sup>

Wafer samples with a 750Å cap layer of GaAs on top, middle layer of InGaP and thick base layer of GaAs were used. The layer structure of these wafers is shown below. Later etching will use InGaAsSb wafers. However, because indium is the most difficult layer to etch, InGaP is a good starting point.

**Epi Layer Structures of V3338**

350 Å GaAs	5E18 Si Doping (Top)
400 Å GaAs	1E17 Si Doping
160 Å InGaP	not intentionally doped (i)
Delta Si Doping	4.4E12/cm <sup>2</sup>
30 Å AlGaAs	not intentionally doped (i)
130 Å InGaAs	not intentionally doped (i)
30 Å AlGaAs	not intentionally doped (i)

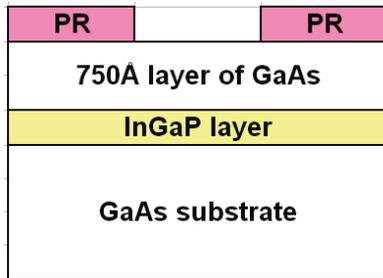
Delta Si Doping	1.1E12/cm <sup>2</sup>
Superlattice Buffer	
GaAs Buffer	
S.I. GaAs Substrate	

**Epi Layer Structures of V3339**

350 Å GaAs	5E18 Si Doping (Top)
400 Å GaAs	1E17 Si Doping
130 Å InGaP	not intentionally doped (i)
Delta Si Doping	4.4E12/cm <sup>2</sup>
30 Å AlGaAs	not intentionally doped (i)
130 Å InGaAs	not intentionally doped (i)
30 Å AlGaAs	not intentionally doped (i)
Delta Si Doping	1.1E12/cm <sup>2</sup>
Superlattice Buffer	
GaAs Buffer	
S.I. GaAs Substrate	

**EXPERIMENTAL**

Using a 1:8:640 chemical wet etch solution of H<sub>2</sub>SO<sub>4</sub>:H<sub>2</sub>O<sub>2</sub>:deionized water, an etch rate of 10 Å/s was expected to remove the 750Å GaAs epitaxial layer and an etch rate of ~ 0 Å/s was expected in the InGaP layer. These results would be indicative of good selectivity.



*Fig. 1 is a simplified representation of the layers of the wafer. On top of the wafer is photoresist. The gap in between the photoresist has been developed in such way that the wafer is ready for chemical wet etching in that region.*

Before etching the wafers, a pattern must first be imprinted on the wafer surface so that a contrast can be seen between the etched and non-etched areas. Photolithography, a process similar to film exposure, was used to imprint the pattern by using a mask to create an image on the wafers in a light-sensitive, protective layer of polymer material called photoresist. The photoresist used was Microposit S1818. The wafers were exposed using a mask aligner, which is a UV exposure system, and were tested under various exposure times until well defined features were seen on the wafer surfaces. An adequate exposure time was 75 seconds for the mask aligner used. (Light intensity can be controlled to help determine proper exposure time, but for this experiment the intensity potentiometer was not available, therefore a trial-and-error method had to be used.) After exposure, the wafers were developed in a NaOH-based solution.

The following is a description of the photolithography and development procedure:

- Cleave wafer into 1 cm x 1 cm samples using tweezers and scribe
- Clean using isopropanol, acetone and again isopropanol in a bath on a hotplate at 90°C for 5 minutes each
- Blow dry with nitrogen
- Coat samples with photoresist using spinner at 3700 rpm for 30 seconds
- Soft bake samples on hotplate for 1 minute at 115°C
- Expose samples under mask aligner for 75 seconds
- Post bake samples on hotplate for 1 minute at 115°C
- Develop samples by agitating in NaOH-based developer for 1 minute
- Rinse wafers in deionized water for 30 seconds
- Blow dry with nitrogen
- Use microscope to look for high definition of features patterned onto samples

The developed wafers were measured with a profilometer (Dektak II)

to get a baseline, pre-etch, topographical profile of the photoresist for each sample. In taking this measurement, it was possible to determine the feature depth prior to etching. It was suspected that the etch solution would attack the photoresist as well as the wafer. The baseline measurement was a preparatory step to establish the initial thickness of photoresist. The wafers were then dipped into a 1:30 solution of NH<sub>4</sub>OH:deionized water and agitated for about 45 seconds, rinsed in deionized water and blown dry with nitrogen in order to remove native oxide.

The exposed wafers were then cleaved into two or three pieces, so that more data would be available for analysis. The etch solution of 1:8:640 of H<sub>2</sub>SO<sub>4</sub>:H<sub>2</sub>O<sub>2</sub>:deionized water was prepared under the hood in manageable proportions of 0.2:1.6:128 mL. Samples were individually immersed in the etch solution and gently agitated. Three etch times were used: 35, 75 and 110 seconds. The lower and upper ranges from the expected etch time of 75 seconds were used to help verify the etch rate and selectivity. After etching, the wafers were measured again using the profilometer to compare to the pre-etch results and estimate etch depth.

## RESULTS AND DISCUSSION

Results were inconclusive after the first round of the etch process. It appeared that the wet etch solution did not selectively etch the wafers. It was hypothesized that the wafers could have been upside down, meaning that the thicker, bottom layer of GaAs was being etched instead of the 750Å top layer. In the second round of the etch process, care was taken to mark the bottom sides of each sample using a scribe. A control wafer was also used in the second round, which was purposefully flipped bottom side

up for etching. In the second round, a sample from each wafer type was also used.

Because the etch solution attacked the photoresist, which can be seen in the negative etch rates in Fig. 3 and in etch depths greater than 750Å in Fig. 4, the wafers had to be stripped of the PR to measure accurate etch depths. This was done by agitating the wafers in acetone for 2 minutes, rinsing with methanol for 2 minutes, and blow dry-

ing the wafers with nitrogen. The process was repeated until all of the photoresist was removed. The wafers were then measured again with the profilometer to determine the actual etch rate and depth. Reproducible etch rates were achieved as shown in Fig. 3. The etch rate for samples stripped of PR averaged 8.37Å/s with a standard deviation of 0.92Å/s, which was near the expected etch rate of 10Å/s.

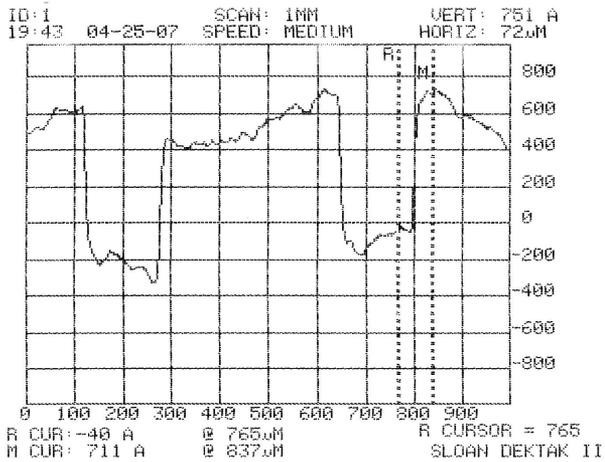


Fig. 2 is an example of the results from the profilometer, which gives a cross-sectional view of the wafer. This sample was in the etchant for 110 seconds and was stripped of photoresist. The results show that this particular sample was etched to a depth of 751Å. Because measurements were taken in angstroms ( $1 \times 10^{-10}$  m), some experimental error is to be expected using the instruments available. There may also be slight variations in the thickness of the grown layers.

The second round of the etch process showed that the 750Å GaAs layer was selectively etched in the H2SO4:H2O2:deionized water solution with an average etch rate of 8.6 Å/s after regression analysis to find the best fit for the data. The results also concluded that the wet etch stopped at the InGaP layer since an etch time greater than

that required to remove the GaAs layer still resulted in the same etch depth. In Fig. 4 the etch selectivity is demonstrated in the measurement without photoresist where the curve levels off. At this point, all of the GaAs layer was etched away leaving the underlying InGaP layer was exposed.

Fig. 3

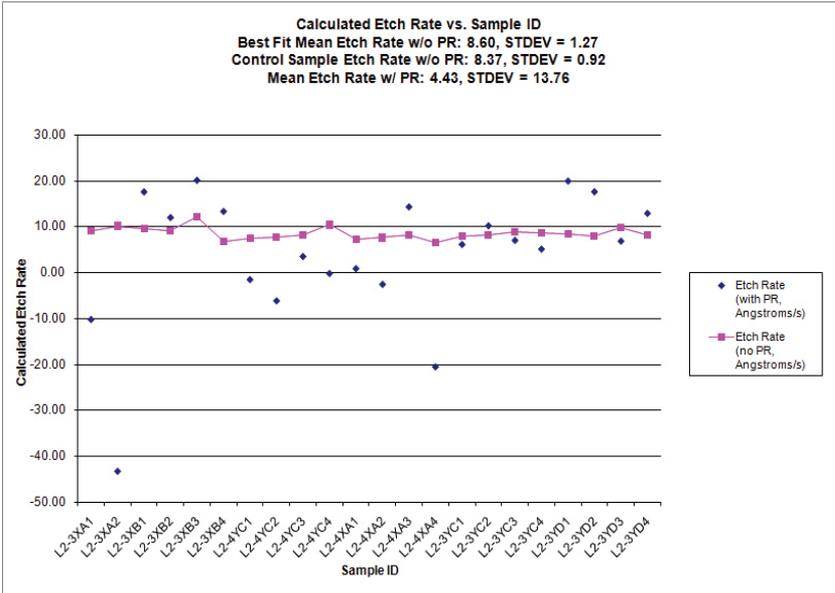
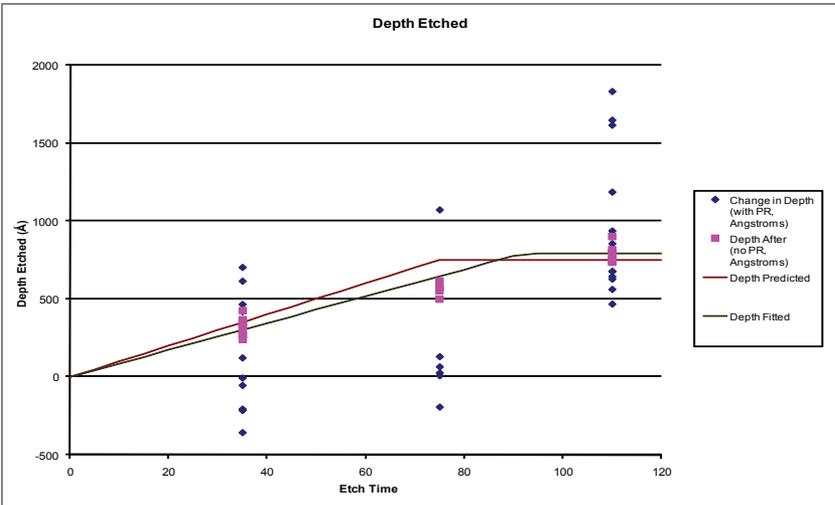


Fig. 4



## **CONCLUSIONS AND FUTURE WORK**

A selective wet etch process to remove GaAs epitaxial cap layers from underlying InGaP layers has been developed using a solution of H<sub>2</sub>SO<sub>4</sub>:H<sub>2</sub>O<sub>2</sub>:deionized water at a rate of ~8.6 Å/s. In future work, this etch will be used to prepare wafers for the most

difficult layer to plasma etch, InGaP, which can be etched by Reactive Ion Etching (RIE) in an Inductively Coupled Plasma (ICP). Finally, the study of InGaP plasma etch rates will lead the way for study of InGaAsSb etch rates, an important semiconductor used in applications such as mid-infrared laser diodes.

## **ACKNOWLEDGEMENTS**

*This research was made possible with the guidance of Dr. Karen Nordheden, the advising professor. Bogdan Pathak, graduate student advisor, provided limitless patience and support in training and data analysis, and Mike Santilli, postdoctoral research advisor, also provided expertise and training support in the photolithography process. Gratitude is also due to Dr. Ming-Yih Kao of TriQuint Semiconductor who provided the chemical wet etch recipe and to the University of Kansas Chemical and Petroleum Engineering Undergraduate Research Program.*

## **END NOTES**

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## Focus on Faculty

*Dr. Paul Hanson, Chemistry Department*

With knowledge of the human body increasing daily, methods of pharmaceutical synthesis are in a constant struggle to keep up. Diseases and other afflictions are identified much more rapidly than their antidotes can be devised and efficiently manufactured in the lab. Even drugs that already exist are constantly being improved upon and optimized to increase their effectiveness. In this context, the research conducted by Dr. Paul Hanson takes on a particular importance.

Since joining the Chemistry Department at the University of Kansas in 1996, Dr. Hanson has concentrated on devising new methods for the generation of molecular building blocks for pharmaceutical purposes. A major project in his group has been the production of organic ring structures containing unique components such as phosphorus and sulfur. These rings, termed heterocycles because of their atypical atoms, are of distinct pharmaceutical relevance. The molecules have inherent chemical properties that make them ideal components for drug synthesis. The Hanson group also focuses on methods involving transition metal catalysis, natural product synthesis, molecular libraries, and immobilized reagents.

Dr. Hanson is extremely influential in the classroom as well. Always a student favorite, he has taught both semesters of the undergraduate organic chemistry course for the last two years, and previously was the instructor for the organic chemistry lab course. He has also taught numerous graduate level classes, mostly dealing with advanced organic synthesis methods.

While Dr. Hanson always enjoyed the sciences, he had not identified chemistry as his career path until late in high school. After thoroughly enjoying the concepts and laboratory work of his high school chemistry course, Dr. Hanson decided to pursue chemistry in his post-secondary studies. After he received a Bachelor of Arts degree from Luther College in 1985, Dr. Hanson moved on to the University of Minnesota to complete his graduate work and obtained a Ph.D. in 1993. Prior to coming to KU, he was a post-doctoral fellow at Stanford University for three years.

As an undergraduate researcher in Dr. Hanson's group, one should not expect to be treated as inferior. During his time at Minnesota and Stanford, Dr. Hanson began to truly value the mentor-mentee environment in the lab. He maintains that the best way to learn a topic is to teach someone else,

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and he encourages his graduate students and post-docs to get involved in the education of undergraduates. Because of this, he readily invites interested undergraduates to try their hand at organic chemistry research. To date, Dr. Hanson has more than twenty individuals working in his lab, with nearly half of those being undergraduates.

Of course, the level of responsibility given to undergraduates in the Hanson Lab requires a certain amount of effort on the part of the student. When first brought onboard, undergraduates should expect to spend numerous hours being trained regarding organic chemistry techniques. The chemical reactions run in Dr. Hanson's lab require a relatively high level of expertise to effectively accomplish experimental goals.

While this sounds like a daunting task, proficiency in organic synthetic methods is a more than attainable goal for a motivated student genuinely interested in research. Continuing to

apply his learning through teaching philosophy, Dr. Hanson offers those undergraduates who are particularly successful with their research to mentor younger students entering the lab.

Dr. Hanson insists that with the proper training, undergraduate research can be an extremely rewarding endeavor. Occasionally, it allows students to see a project through from beginning to end, which Hanson finds particularly valuable. He asserts that students often fall in love with the problem solving and critical thinking involved with laboratory work, and frequently pursue this interest as a career.

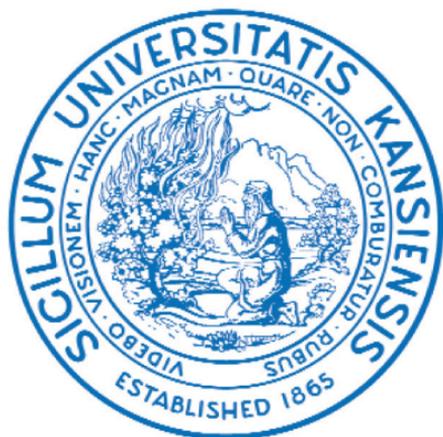
Though the drugs synthesized using Dr. Hanson's building blocks will always change, his role in education at the University of Kansas will remain constant. A respected teacher, talented researcher, and caring mentor, Dr. Hanson will hopefully continue to foster the intellectual growth of KU students for years to come.



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