Faculty Forum President’s Letter

As we begin a new fall semester near the anniversary of one of America’s most recent dark days, we are encouraged by the resilience of the American people and a resurgence of the power of prayer. As the new semester offers each of us a new beginning, let us keep in mind the hope of making real differences in the lives of our students and fellow faculty members.

One way to reach out to your fellow faculty members is to be actively involved in Faculty Forum. The Faculty Forum gives individual voices the understanding audience that is apparent in its stated purpose, “to provide a means for the faculty to express its interests/concerns to The Greater Faculty and the Provost, and to make recommendations about issues affecting Union University.” The Faculty Forum has, historically, made valuable inquiries and recommendations regarding areas such as curriculum, facilities, services, safety, fringe benefits and salary. Your participation provides input which can help to improve the overall quality of Union University in its mission to be Excellence-Driven, Christ-Centered, People-Focused, and Future-Directed.

Another way the Faculty Forum gives individual voices an opportunity to be heard is through The Journal of the Union Faculty Forum (JUFF). This journal offers an opportunity to read the wide range of scholarly work that Union University’s faculty produces. I encourage you to read this volume of JUFF, listen to their voices, and see how your colleagues have excelled. Moreover, your aspirations may become accomplishments and appear in the next issue of JUFF.

Your Faculty Forum officers for this academic year 2002-2003 are Roger Stanley, editor of JUFF; Brenda Alexander, Secretary; Michael McMahan, Vice-President; and Terry Weaver, President.

Please lend your voice to the Forum this year through your involvement. The other officers and I look forward to serving you in the coming year. I know it will be a productive and interesting one.

Sincerely,

Terry L. Weaver
A Word from the Editor

I was thoroughly delighted late last spring to receive in my home mail a copy of A Review of Faculty Scholarship 1998—2001. This Center for Faculty Development publication provided a near comprehensive listing of recent faculty “research”—defined broadly to encompass books, book chapters, articles, exhibits and performances, presentations, grant activities, reviews, and dissertations. From our president on through the administrative and faculty ranks, many Union scholars are clearly doing varied, substantive work across the disciplines. I trust that JUFF will prove to be a supplement to, will constitute a certain fleshing out of the bibliographical listings in the Center’s publication. As I enter my eighth year as editor or co-editor of our Forum’s journal, I sense a continued need for a viable in-house venue to complement the many outlets our colleagues have sought to disseminate the fruits of their research to the broader academic community.

I am also delighted to report that of the eight writers or co-writers of the seven articles which follow, six are cross-listed in A Review of Faculty Scholarship. That being said, each person represented here is making his or her debut in JUFF. Come with us through these pages as a visual artist, a librarian, a literary sojourner, two natural scientists, and a trio of mathematicians integrate faith and learning in diverse but always compelling ways.

JUFF makes no apologies for the unabashedly personal (though by no means solipsistic) nature of most of the material which follows, believing that a personal investment in scholarship and writing is vital. Thus this fall’s issue is framed on one end by Lee Benson speaking of an evolving call to what has become his profession, on the other by Pam Sutton living out her pedagogical beliefs in the mountains and on the trains of China. In-between, expect to be stirred by professional librarian Pat Morris’ obvious love of books and reading, chemist Marlyn Newhouse’s great care for her students, and physicist Kyle Hathcox’s hands-on examples of how two contrasting systems of measurement affect the daily life of himself and others. Finally, save a thought for mathematicians Troy Riggs and Bryan Dawson as they maneuver by you on the 45 Bypass and for their colleague Matt Lunsford, who tells how a Frenchman barely out of the teen years made such an impact on his personal and professional life.

As always, thanks to College Services (especially Marjorie Richard) and to Provost Carla Sanderson for logistical and financial support respectively. As President Dockery has reminded us in “A Call to Serious Christian Scholarship,” the fruits of our labors constitute “a high calling indeed as we move forward and faithfully into the 21st Century.” Enjoy.

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Table of Contents

Faculty Forum President’s Letter ................................................................. i

A Word from the Editor ................................................................. ii
Roger Stanley

Table of Contents ................................................................. iii

Presence, Passion, and Power ......................................................... 1
Aaron Lee Benson

The Ideas of Evariste Galois: Recovering Motivation in Abstract Algebra ............... 3
Matt D. Lunsford

Libraries and Main Street ................................................................. 9
Pat Morris

Teaching Strategies ................................................................. 14
Marilyn Newhouse

Highway Relativity ................................................................. 17
Bryan Dawson and Troy Riggs

Should the U. S. Go Metric? ................................................................. 22
Kyle Hathcox

Made in China ................................................................. 24
Pamela Casey Sutton

JUFF Contributors ................................................................. 28
Presence, Passion, and Power

by Aaron Lee Benson

My choice to work in large-scale architectural sculpture came about as a natural progression of my own development as a human. As a young child, my parents would often take us hiking or mountain climbing. One mountain, Big Rock in Crab Orchard, Tennessee, was a favorite destination and formed many of my earliest childhood memories. We lived at the foot of the mountain, and occasionally my parents would lead us up it to climb and explore what to a five-year-old was the highest spot in the world. Big Rock got its name from the many building-size boulders that lay scattered among the trees at the summit. We would spend hours climbing on, over and around these massive objects. The same peace and security I found in the hand of my father I also found, in part, upon these rocks. There was something about the massiveness, the sheer scale of these stones that compelled me to deal with them. The power of their presence demanded that a five-year-old boy develop a relationship with them.

These experiences continued to braid themselves in and out of my life. Often on hiking trips I would happen upon stone chimneys: solitary reminders of what used to be homes with women and children, men and animals. All that was left were these monolithic stacks of rocks, often in the middle of an overgrown field or buried deep in some woods. I would always stop and rest at these places to consider a lasting tribute to forgotten lives. Who warmed themselves by this place? What was read by its light? What treasures were held on its mantel? What tears were shed on its hearth? (These were great stone time capsules with nothing inside except what my own imaginings could gather. I considered them powerful, moving works of sculpture.) I found the same movement of my soul when I encountered waterfalls, singing wind in great pine forests, great gulfs made by streams and forest floors that would spread away from mountaintops. I would leave these places feeling like, and being, a much better person. I was awed at the ability of these places actually to improve me as a human. Why? Why did this betterment occur? What did such places possess and why was it transferred to me?

In 1979 I entered the United States Navy and once again found myself drawn to the natural power of the sea. The sea wore so many faces, from the cold January fury of the North Atlantic to the dark blue vastness of the South Atlantic. Many times before leaving port, I would fill my pockets with rocks. Eventually we would sail into blue water with nothing but the sky, the sea and the ship as reality. Late at night I would steal back to the helicopter deck. One by one, I would cast the rocks into the sea and contemplate in my heart the passage of the stone into the deep vastness. I could never understand why I did this. It had something to do with making a closer connection with the sea. I could not walk in its depths, I could not swim in its depths, I could not touch its depths. It gave me an immense sense of peace, but I did not (and do not) know why this was so. So the question remained: “What is it that these natural bodies give us?” More penetratingly, “Why do these bodies give it to us?” They give us something and they generally give it to everyone. So what is it and why does it occur?

When I entered art school at the University of Tennessee, pursuing my MFA in ceramics, I was once again confronted on this deeper level. This time, instead of natural objects I was shaken by the great architectural achievements of mankind, specifically the European cathedrals of the late Middle Ages. The deep moving of my spirit by mountains and trees was now taking place as images of Chartes, Amiens and Notre Dame appeared upon the art history slide screen. I was
stunned by this realization. Objects, things man can make, could actually call my spirit to attention, could possibly call all human spirits to attention. The power of these structures was so great that it could actually be transferred to a slide, then to me. It was one of the great revelations of my career.

I began to work on methods of producing large-scale ceramics. It was a new field and I found little in history to help me accomplish it. It was generally a case of trial and error, with initial errors far outweighing occasional successes. However, I began to realize that failure is perhaps the greatest teacher and passion is the greatest motivator.

Night after night, alone in my studio, I began to make some basic discoveries technically, aesthetically and more importantly, psychologically. The power of anything comes from the intensity of the experience it provides the viewer. To understand how nature develops this intensity was beyond my mental and spiritual capabilities, but to understand man's success was only a matter of sustained and intense study. The overriding theme behind all the great architectural achievements of the Middle Ages was passion for what people were trying to accomplish. Therein lay the key to my own work. It must be of, for and about something that I am so passionate about that this passion would be transferred to the viewer. I began to formulate an idea about the destruction of much of the natural areas that I loved so much. I wanted to produce works, to create spaces where mankind could again be humankind. As Americans have become more urbanized, we have lost the places that so often offered themselves to our ancestors for such a purpose: secluded streams, large boulders lost in the woods, trees reaching to the sky, filtered sunlight in the deep forest. God offered these things as gifts of His love, freely imparted to us. But as man has cleared his living out of the land, with it he has cleared the gift. We were so intent on the care of our physical needs that we forgot our spiritual ones. We built sterile edifices to create a money. We covered the land with plastic, steel and concrete to secure for us the highest standard of living, forgetting the Higher. We have slowly narrowed mankind into nothing more than a machine to make, acquire and spend money, and in the process have forgotten the more basic, the deeper, the more sacred—our souls. My intent for my work then was to bring humans back to the first, to secure for us in our environment a place of solitude and solstice—a still, quiet whisper of what is more profound. In the last fifteen years, I have studied intently the use of space to encapsulate the sacred. It is impossible. The sacred will not be encased. It will only be partnered with the intense soul of the determined.
The Ideas of Evariste Galois: 
Recovering Motivation in Abstract Algebra

by Matt D. Lunsford

Introduction

Ever since my days in graduate school, I have been fascinated by the brief life and work of Evariste Galois. Until recently, however, I failed to grasp the content of Galois’ achievement and its proper place in the historical development of the discipline. I also failed to see how one could successfully incorporate Galois’ ideas into a first course in abstract algebra. In an attempt to address these matters, I shall present an overview of Galois’ ideas, place them in their proper historical context, and discuss how they can enhance the teaching of undergraduate algebra.

Galois’ Life

One of the great tragedies in the history of mathematics was the untimely death of Evariste Galois. Galois (1811-1832) was born near Paris and lived his brief life during a turbulent time in the history of France. By the age of sixteen, Galois knew he was a gifted mathematician. However, in his lifetime, Galois’ mathematical abilities never received the recognition they deserved. Twice he was denied admission to the elite Ecole Polytechnique. One paper sent to the prestigious Academy of Sciences in Paris was apparently misplaced by Cauchy, and a second paper was lost when Fourier, the secretary of the Academy, died. His third submission resulted in a return of the paper by Poisson with a request for proofs.

Obviously disillusioned, Galois turned his attention to the political issues of France. In 1831, he spent several months in jail as a prisoner of King Louis Philippe. Shortly after his release, Galois accepted a challenge to a duel. On the night before, he wrote a letter to his friend and schoolmate Chevalier which contained notes on his mathematical discoveries. Galois was shot in the duel and died the following day, at age twenty. In 1846, the French mathematician Liouville edited several memoirs and manuscripts of Galois and published them along with the letter to Chevalier in the Journal de Mathematiques. This publication marked the beginning of the dissemination of Galois’ ideas.

The most famous of Galois’ papers, Memoir on the Conditions for Solvability of Equations by Radicals, contained a novel approach to answering the fundamental question in the theory of equations: whether or not a given polynomial equation could be solved by purely algebraic techniques (i.e. field operations and the extraction of roots). In this memoir, Galois provided a basis for answering the solvability question as well as a framework for a theory with far reaching applications. To place Galois’ memoir in its proper perspective, we must briefly discuss the history of the theory of equations.

History of Polynomial Equations

Polynomial equations have been an object of study since antiquity. Babylonian mathematicians around 1600 B.C. gave a verbal recipe for the solution of various forms of quadratic equations. Greek mathematicians added a geometric flair to solutions of polynomial
equations by using standard straight-edge and compass constructions along with conic sections. The Arab mathematician al-Khwarizmi provided a systematic account of the solution of all known quadratic equations in his work *The Condensed Book on the Calculation of al-Jabr and al-Muqabala*. It is, of course, from this work that we have derived the modern term *algebra*. Solutions to cubic equations were studied by another Arabic mathematician (and poet) Omar Khayyam, and solutions were presented using conic sections in his text *Treatise on Demonstrations of Problems of al-Jabr and al-Muqabala*.

Most mathematicians of antiquity and the Middle Ages believed that an algebraic formula for the solution of all types of cubic equations was not possible. However, sixteenth century Italian mathematicians proved this wrong. Cardano, in his monumental work *Ars Magna (The Great Art)*, demonstrated general methods for solving both cubic and quartic equations. These formulas involved the use of algebraic operations only—i.e. addition, subtraction, multiplication, division, and the extraction of roots. An interesting account of the major figures who were involved in these discoveries can be found in Dunham [D, chapter 6]. With Cardano’s publication, the quest for a general formula for solving quintic equations began. By the end of the eighteenth century, no such formula had been found. As in the case of the cubic, some began to doubt the existence of such a formula.

In 1770-1, Lagrange published *Reflections on the Resolution of Algebraic Equations*. In this work, Lagrange recounted the various known methods for solving polynomial equations of degree two, three, and four. Furthermore, Lagrange made a noble attempt to synthesize these methods into a coherent theory that might be used to address the solvability of higher degree equations. His focus was on the relationships that existed between the roots of the most general polynomial equation and its coefficients. In particular, Lagrange used the Fundamental Theorem of Symmetric Polynomials and the fact that the coefficients of the general polynomial equation are given by the elementary symmetric polynomials in the roots of that equation. He showed that all symmetric polynomials in the roots are in fact expressible in terms of the coefficients of the given equation. Consider the following example for the general quadratic equation.

Let \( f(x) = x^2 + px + q \), \( p, q \in C \), where \( C \) is the field of complex numbers, and let \( a, b \) be the roots of the equation \( f(x) = 0 \). Then \( p \) and \( q \) can be written in terms of the roots as follows: \( p = -(a + b) \) and \( q = ab \). As any symmetric polynomial can be written in terms of elementary symmetric polynomials (by the Fundamental Theorem), it follows easily that any symmetric polynomial in the roots \( a \) and \( b \) can be expressed in terms of the coefficients \( p \) and \( q \).

To exploit this idea, Lagrange introduced the idea of a resolvent. For Lagrange, the resolvent for an equation was an expression rationally expressible in terms of the roots of the equation and other known quantities such that each root of the equation could be expressed rationally in terms of the resolvent and known quantities. Lagrange hoped that this resolvent would also be the root of a solvable equation and thus would produce solutions for the original equation.

Let’s consider the general quadratic polynomial mentioned above. Lagrange resolvents for \( f(x) \) are given by the expressions \( t_1 = a - b \) and \( t_2 = b - a \). Each of the roots can be expressed in terms of one of the above resolvents and other known quantities. In particular, \( a = \frac{t_1 - p}{2} \) and \( b = \frac{-t_1 + p}{2} \). Furthermore, as the discriminant \((a - b)^2\) is a symmetric polynomial in the roots of \( f(x) = 0 \), it can be expressed in terms of the coefficients \( p \) and \( q \), specifically
\((a - b)^2 = p^2 - 4q\). Hence \(t_1\) and \(t_2\) are the roots of a solvable polynomial equation with known coefficients, namely \(F(X) = X^2 - (a - b)^2\). Finally, the roots \(a\) and \(b\) are given succinctly by the radical expression \(\frac{-p \pm \sqrt{p^2 - 4q}}{2}\).

In 1826, Niels H. Abel, a Norwegian mathematician who also died at an early age, built upon the work of Lagrange and was able to prove that the general quintic equation was not solvable by radicals. His work not only answered the question for the quintic but also demonstrated that the general polynomial equation of degree \(n, n > 4\) is not solvable by radicals. Thus the conjecture that no general formula existed was proven correct. Of course, specific polynomial equations might be solvable by radicals. In fact, Gauss had shown previously that the so-called “cyclotomic” polynomial equations of arbitrary degree are solvable by radicals.

**Galois’ Contribution**

Galois addressed the question of solvability by radicals in his 1831 memoir. Following the lead of Lagrange, Galois was able to show that a “Lagrange-type” resolvent always exists but that the resolvent may not necessarily be the root of a solvable equation. Hence, the Lagrange resolvent may not lead directly to an algebraic expression for the roots of the original equation. So, Galois established his own idea of a resolvent and used it to analyze the structure of the splitting field of the equation to determine if the equation was indeed solvable by algebraic methods only. Below is an outline of Galois’ approach. I will follow closely the remarkable presentation by Edwards [E].

First, assume that we have a polynomial equation \(f(x) = 0\) of degree \(n\) with coefficients from some field \(K\) of characteristic zero. Further, assume that \(f\) has \(n\) roots, namely \(a, b, c, \ldots\), which exist in some extension field \(K(a, b, c, \ldots)\) of \(K\), which we call a splitting field of \(f\), and that these roots are distinct. Galois proved that there exists a Galois resolvent \(t\), which can be written as a linear polynomial with integer coefficients in the roots of \(f\) (i.e. \(t = Aa + Bb + Cc + \cdots\)) with the property that every permutation of the roots, that is every permutation of \(S_n\) applied to \(t\), produces a distinct numerical result in the splitting field \(K(a, b, c, \ldots)\). Obviously the condition that \(f\) has distinct roots is necessary to achieve this condition. Moreover, let \(t = t_1, t_2, \ldots, t_n\) represent the \(n!\) values obtained by permuting the roots of \(f\) in the Galois resolvent \(t\).

Now, form the polynomial \(F(X)\) of degree \(n!\) as follows:
\[
F(X) = (X - t_1)(X - t_2)\cdots(X - t_n).
\]

From a corollary in Lagrange’s paper of 1770-1, we know that \(F(X) \in K[X]\) and that the roots of the original equation \(f(x) = 0\) can be expressed rationally in terms of any one of the roots of \(F(X)\). Hence, each of the roots \(a, b, c, \ldots\) is expressible in terms of the Galois resolvent \(t\). Factor \(F(X)\) into irreducible factors over the field \(K\) and let \(G_i(X)\) represent the irreducible factor that has \(t = t_i\) as one of its roots. Let the other roots of \(G_i(X)\), known as conjugates of \(t\), be given by \(t', t'', t'''\ldots\). We are now ready to describe the permutation group associated to \(f(x) = 0\).

The Galois group of the equation \(f(x) = 0\) over the coefficient field \(K\)– denoted by \(G(f, K)\)– is the set consisting of all permutations in \(S_n\) that send the Galois resolvent \(t\) to one of
its conjugates. This includes, of course, the permutation sending $t$ to itself. This definition certainly does not tell the entire story. In introducing this new concept, Galois used rows of arrangements of the roots of the equation and defined the Galois group $G(f,K)$ to be the subset of $S_n$ comprising all permutations that transform the first row of this presentation into each of the other rows. It remains to show that these definitions coincide and that this subset of $S_n$ does indeed form a subgroup. Complete details can be found in Edwards [E]. A comparison between Galois’ definition of a group and the contemporary approach is discussed in detail in the appendix to Chapter 14 of Tignol [T].

By way of example, consider once again the general quadratic $f(x) = x^2 + px + q$, $p, q \in K$, where $K$ is a field of characteristic zero. Furthermore, assume that the equation $f(x) = 0$ has distinct roots $a \neq b$. Then, a Galois resolvent for $f(x)$ is given by $t = t_1 = a - b$. The only other value obtained by permuting the roots is $t_2 = b - a$. If we assume that $a, b \not\in K$, then $t_1, t_2 \not\in K$ and together $t_1$ and $t_2$ are the conjugates associated with the polynomial

$$F(X) = (X - t_1)(X - t_2) = X^2 - (a - b)^2 \in K[X],$$

which is irreducible over $K$. Moreover, $G(f,K)$ is simply the permutation group $S_2$.

After associating a permutation group with a polynomial equation, Galois addressed the question of how that group relates to the solvability of the equation. Galois noted that the adjunction of elements to the field $K$ could decrease the number of permutations in $G(f,K)$. Suppose $K'$ denotes a field extension of the base field $K$, and let $G(f,K')$ denote the corresponding Galois group of $f(x) = 0$ over the enlarged field $K'$. Then, the relationship between the subgroups $G(f,K)$ and $G(f,K')$ of $S_n$ is determined by the reducibility of the polynomial $G_1(X)$ over the enlarged field $K'$. If $G_1(X)$ factors non-trivially, then the number of conjugates of the resolvent $t$ will decrease and likewise the number of permutations in $G(f,K')$ will be fewer than the number in $G(f,K)$. The question now becomes whether or not it is possible to describe mathematically the relationship between these two groups. As we shall see, Galois was able to do just this for particular extensions $K'$.

Furthermore, Galois recognized the importance of those subgroups of a permutation group that are normal. For Galois, a subgroup of a permutation group was normal if the various presentations (rows of arrangements) of the subgroup had the remarkable property that one permutation was required to send a presentation to another presentation (see [E, pp.50-1] for complete details). Galois showed that the Galois group over $K'$, where $K'$ is an extension field obtained by the adjunction of a $p^{th}$ root of the base field $K$, where $p$ is prime, is either the same group or is a normal subgroup of the Galois group over $K$. Conversely, if the Galois group over $K$ has a normal subgroup of index $p$, where $p$ is prime, then this subgroup is the Galois group over an extension field $K'$ obtained by the adjunction of some $p^{th}$ root of an element in the base field $K$. Galois assumed the presence of $p^{th}$ roots of unity in the field extension $K'$ described above. This assumption can be made without loss of generality since any field extension involving the adjunction of $p^{th}$ roots of unity is solvable by radicals, as had been shown earlier by Gauss [E, pp. 28-29] and [T, pp. 192-196].

Let’s return to our example of the general quadratic. It is clear that $F(X)$ factors into linear terms over the extension field $K' = K(t)$. As the roots of $f(x) = 0$ are expressible in terms of the Galois resolvent $t$, $K'$ is the splitting field for $f(x)$ and is obtained from $K$ by the
adjunction of a square root of the discriminant \((a - b)^2 = p^2 - 4q \in K\). Moreover, the Galois group \(G(f,K) = S_2\) is reduced to the only proper normal subgroup—the trivial group, i.e. \(G(f,K') = \{\text{identity permutation}\}\).

Thus Galois was able to analyze the splitting field of a polynomial using its Galois group. His results completely characterized the situation: a polynomial is solvable by radicals precisely when its Galois group admits a series of normal subgroups in which the quotient of consecutive subgroups form cyclic factor groups. A finite group with this property is now called solvable.

**Applications to Pedagogy**

When discussing the pedagogy of a first course in abstract algebra, of fundamental importance is the presentation of the basic algebraic structures of group, ring, and field. Joseph Gallian [G] in his book *Contemporary Abstract Algebra* states, “The goal of abstract algebra is to discover truths about algebraic systems (that is, sets with one or more binary operations) that are independent of the specific nature of the operations.” While this modern approach, because of its generality, provides a unifying element to the study of mathematics, it conceals from the student many of the great ideas generated by significant problems in the history of the discipline. B. Melvin Kiernan [Ki] asserts that "without a clear historical perspective it is difficult to see or even imagine the connection between the [abstract] algebra of the present day and the computational problems from which it arose." Similarly, John Stillwell [S] in his text *Elements of Algebra* says that "it seems to be one of the laws of mathematical history that if a concept can be detached from its origins, it will be."

The concerns raised by Kiernan and Stillwell can be addressed without compromising sound pedagogy. Using the ideas of Galois in his *Memoir on the Conditions for Solvability of Equations by Radicals*, it is possible to introduce groups, rings, and fields in a first course in a natural way. One approach is to begin with the usual preliminary topics (e.g., equivalence relations, mathematical induction, divisibility and congruences in the set \(\mathbb{Z}\) of integers, Fundamental Theorem of Arithmetic, etc.). Follow this with a discussion of the basic properties of the set \(\mathbb{Q}[X]\) of polynomials with rational coefficients. Then, use the similarities between the sets \(\mathbb{Z}\) and \(\mathbb{Q}[X]\) to motivate the definitions of ring and integral domain.

After examining the properties of the polynomial ring \(\mathbb{Q}[X]\), explore exact solutions of polynomial equations with rational, real, or complex coefficients. Closure under the operations of addition, subtraction, multiplication, and division is a desired property for both the set containing the coefficients of a polynomial equation and the set containing all the roots of the equation. Galois referred to subsets of \(\mathbb{C}\) with this property as “rational quantities” [E, appendix I]. Use this concept to inspire the definition of a field.

Next, exploit the connection between solutions of polynomial equations and their coefficients by stating the Fundamental Theorem on Symmetric Polynomials. This result introduces the notion of symmetry and forces the definition of the general symmetric group \(S_n\). Follow this with a presentation of finite permutation groups and the definition of an abstract group.

Once the key algebraic structures have been defined and some of their basic properties have been discussed, then continue with more advanced topics (e.g. homomorphisms, normal subgroups and ideals, quotient structures, etc.). Finally, expose how all of these concepts answer the question of solvability of polynomial equations by purely algebraic methods.
Conclusion

Classical Galois Theory, with its interplay of polynomial rings, field extensions, and permutation groups, provides a wonderful context for introducing the basic topics of abstract algebra. In addition, the use of concrete problems from the history of the discipline motivates the subject matter and interjects humanity into the enterprise. The approach presented above, while far from unique, accomplishes the following two objectives: 1) presents major topics in a context that respects both the origins of the discipline and the pedagogical needs of the student and 2) motivates major topics through the examination of concrete mathematical problems from which they arose. A different approach to teaching abstract algebra from a historical perspective can be found in Kleiner [KI].

References

Libraries and Main Street

by Pat Morris

In Sinclair Lewis’s Main Street, published in 1920, we see the picture he has painted of small-town American life on the prairie and his use of the fictional town Gopher Prairie, Minnesota, to expose the provincial ideas of American life of that time. In this book, we also see Lewis’s description of readers and thinkers; this paper will analyze the ideas presented through his characters as they relate to reading and the state of libraries. All numbers in parentheses refer to pages in the edition of this work cited at the end of the paper.

The character Carol Milford grew up in a judge’s home in a New England-style town in Minnesota and was encouraged to read whatever she pleased from her father’s personal library—authors such as Rabelais, Thoreau, and Max Muller. In fact, she learned the alphabet from the letters on the spines of the encyclopedia and astonished guests as she repeated, “A-And, And-Aus, Aus-Bis…” (9) Carol was always something of a free-thinker, and while attending Blodgett College, located on the edge of Minneapolis and a “bulwark of sound religion” (5), was often at odds with her classmates because she wanted to be something other than a wife and mother, to do something else with her life.

Serious discussions took place between Carol and her friends on the college library steps or in the halls of other buildings around campus about what they would do after graduation. Most of the girls not already engaged to be married were planning to be teachers, but Carol considered “studying law, writing motion-picture scenarios, professional nursing, and marrying an unidentified hero” (7). She was characterized as one who used the library for supplemental reading in areas which interested her, and “almost all subjects did” (9). It was from one of these texts on village improvement that she first felt the “calling” which would take her to the prairie: “That’s what I will do after college! I’ll get my hands on one of these prairie towns and make it beautiful. Be an inspiration” (9).

An English professor, however, advised her to be more practical and to extend her studies to professional library school in Chicago. The idea appealed to her, and she could see herself encouraging children to read charming fairy tales and helping others find just the right materials. She would be perceived as “the light of the library, an authority on books, invited to dinner with poets and explorers, reading a paper at an association of distinguished scholars” (12). She was challenged to do things. “I don’t understand myself, but I want—everything in the world! Maybe I can be an influence in library work. Just suppose I encouraged some boy and he became a great artist! I will! I will do it!” (13).

She described her year in Chicago studying librarianship, learning the mundane technical aspects of the library, as a time when she almost gave up library work to become one of the brainless young women whose life she so thoroughly despised. However, she completed her course of study and took a job in the St. Paul Public Library, assured that she would be able to influence society for the better. She was disappointed when, despite all the exciting books on the shelves, patrons would select a copy of the “Leather Goods Gazette from last February” or a “good, light, exciting love story” to read while their husbands were away (15). When asked how she liked her work, she replied, “It’s pleasant, but sometimes I feel shut off from things—the steel stacks and the everlasting cards smeared all over with red rubber stamps” (17).
She did, however, avail herself of her proximity to books and read on such varied subjects as “Hindu recipes, voyages to the Solomon Islands, and the business of real estate” (15). While she enjoyed the seemingly limitless supply of fresh reading material, she found few opportunities, even in St. Paul, to discuss her ideas. It was through a circle of friends that she met Dr. Will Kennicott, a bachelor some years her senior, of Gopher Prairie, a town of about three thousand. He was so enthusiastic about the place he lived and the people there that Carol again felt the call to “village improvement.”

After a short courtship, Carol and Will married and honeymooned in Colorado. On their trip back to Gopher Prairie—all day and all night with no sleeping compartments or comfortable seating—she was amazed that the travelers were not reading, but were playing cards or talking. She did notice that one “young-old mother” had a “paper-covered book about dreams which the news-butcher had coaxed her into buying” (24) and that Dr. Kennicott himself “opened a magazine of saffron detective stories” (29). She realized she had a large task ahead of her, even “improving” her own husband.

After they arrived in Gopher Prairie, she told herself, “I’m going for a walk. I’ll see the town by myself. My first view of the empire I’m going to conquer!” (37). From that first excursion, she decided that the town needed a new city hall and a new school; Gopher Prairie should fix up the ladies’ rest-room and help the poor. There was much work to do.

Kennicott’s friends gathered to meet his bride and to welcome her to their town. Realizing that Carol was a librarian and trying to draw her into the conversation, Chet Dashaway asked if she had been reading the serial “‘Two Out’ in Tingling Tales? Corking yarn! Gosh, the fellow that wrote it certainly can sling baseball slang!” (57) As the others tried to look literary, Harry Haydock bragged that his wife, Juanita, read the “more high-class stuff,” like Mid the Magnolias and Riders of Ranch Reckless. He added, importantly, that he was so busy he did not have much time to read (57).

In a few days, the newspaper reported in its social section that “Mrs. Kennicott is a lady of manifold charms, not only of striking charm of appearance but is also a distinguished graduate of a school in the East and has for the past year been prominently connected in an important position of responsibility with St. Paul Public Library” (68). As wife of one of the three doctors in the town, she was welcomed into the social life of Gopher Prairie.

Her first female friend was Vida Sherwin, an English and French teacher at the high school, and she recommended that Carol join the women’s study club, the Thantatopsis, which Carol found unchallenging and boring. Vida asked Carol what she had been reading, and Carol replied that she had been re-reading The Damnation of Theron Ware and asked if she were familiar with it. Vida said, “Yes. It was clever. But hard. Men wanted to tear down, not build up. Cynical. Oh, I do hope I’m not a sentimentalist. But I can’t see any use in this high-art stuff that doesn’t encourage us day-laborers to plod on” (73).

It was natural for Carol to feel a kinship with and to seek out the town librarian, Ethel Villetts, who proudly boasted that Gopher Prairie had “two thousand more books than Wakamin,” a nearby town. But the two women quickly found their philosophies of librarianship to be quite different. Ethel, the preservationist, said, “It may be all well in cities, where they have unlimited funds, to let nasty children ruin books and just deliberately tear them up, and fresh young men take more books out than they are entitled to by regulations, but I’m never going to permit it in this library.” Carol, the educator, replied, “What if some children are destructive? They learn to read. Books are cheaper than minds.” According to Ethel, “Nothing is cheaper than the minds of some of these children that come in and bother me simply because their mothers don’t keep
them home where they belong. Some librarians may choose to be so wishy-washy and turn their libraries into nursing-homes and kindergartens, but as long as I’m in charge, the Gopher Prairie library is going to be quiet and decent and the books well kept!” Then each concisely stated her philosophy. Carol remarked that “the chief task of a librarian is to get people to read.” Ethel quickly declared, “…I am merely quoting the librarian of a very large college,...the first duty of a conscientious librarian is to preserve books” (101).

Carol’s encounters with the men of Gopher Prairie give us other pictures of the town. When she asked Jack Elder of the planing mill about any labor problems he might have, he replied, “Don’t need so many skilled workmen in my place, and it’s a lot of those cranky, wage-hogging, half-baked skilled mechanics that start trouble—reading a lot of this anarchist literature and union papers and all” (56). In Guy Pollock, a lawyer educated in New York, she found a love for Sir Thomas Brown, Thoreau, Agnes Repplier, Arthur Symons, Claude Washburn, and Charles Flandrau. His office library sported “a row of books unfamiliar to Gopher Prairie: Mosher editions of the poets, black and red German novels, a Charles Lamb in crushed levant” (74). Guy told her that he had determined to keep up his interests by reading Browning and going to the theatre in Minneapolis, but that one day he realized he had been feeling intellectually superior to his former partner, Julius. He had been “turning over pages of a book by Charles Flandrau that [he] already knew by heart” while Julius was plowing through the Literary Digest and the Outlook (171).

Raymie Witherspoon, who worked at the men’s clothing shop, the Bon Ton, after expressing interest in poetry, confessed that he did not have much time for reading, but he was much excited about “the dandiest professional reciter at the Pythian sisters sociable last winter” (66). Though he had tried to encourage others in reading poetry or in forming a drama group, he could not gather much interest among his fellow townsfolk. He explained his interest in movies to Carol:

I do love the movies. I’m a real fan. One trouble with books is that they’re not so thoroughly safe-guarded by intelligent censors as the movies are, and when you drop into the library and take out a book, you never know what you’re wasting your time on. What I like in books is a wholesome, really improving story, and sometimes—Why, once I started a novel by this fellow Balzac that you read about, and it told how a lady wasn’t living with her husband, I mean she wasn’t his wife. It went into details, disgustingly! And the English was real poor. I spoke to the library about it, and they took it off the shelves. I’m not narrow, but I must say I don’t see any use in this deliberately dragging in immorality! Life itself is so full of temptations that in literature one wants only that which is pure and uplifting. (67)

In Miles Bjornstam, the town handyman who eventually married Carol’s maid, Carol found someone who she fancied read a good deal. When asked, he replied, “Yep, in a hit-or-miss way” (127). In his cabin she found “…a row of books incredibly assorted; Byron and Tennyson and Stevenson, a manual of gas-engines, a book by Thorstein Veblen, and a spotty treatise on ‘The Care, Feeding, Diseases, and Breeding of Poultry and Cattle’” (129). She thoroughly enjoyed talking to him, though none of the other citizens could understand why. Bjornstam gave her his short list of those in town with “real imaginative brains”: Carol, him, Guy Pollock, and the foreman at the flour mill (128).

Her husband did not escape her critical eye. When Carol learned that he had been a champion-grade tobacco-chewing spitter, she compared that to literature she had read. Trying to understand the sport, “she could not remember any fascinatingly wicked hero of fiction who
chewed tobacco” (116). Kennicott’s idea of how a house should be furnished included “…the barred, shut, forbidding unit bookcases that were half-filled with swashbuckler novels and unread-looking sets of Dickens, Kipling, O. Henry, and Elbert Hubbard” (58). One could find on their coffee table “a volume of Conrad from the library, copies of the Saturday Evening Post, the Literary Digest, and Kennicott’s National Geographic Magazine” (121).

Carol was able to draw together a small group interested in drama to show the town what was possible. As they gathered to discuss which play their theatre group would present, Raymie said he had read all the plays in the public library to get ready for their discussion. He was astonished by the “irreligious ideas” of Shaw, whom Carol had championed, and called him “downright improper” (237). Carol gave into the desires of the group as they voted to present The Girl from Kankakee, and they selected her as director. After the production, no one had much desire to continue the group, and they decided to “present the high school with a full set of Stoddard’s travel lectures” with the money derived from the play, at the suggestion of Vida (237).

Early on, Carol had surveyed the library, open three afternoons and four evenings a week and quartered adequately, if not attractively, in an old house (141). The periodicals were housed in a room much like her grandmother’s attic, and to her great surprise, she found periodicals on home decorating, town planning, and a “six-year file of National Geographic” (143). Apparently the Thantatopsis Club had not appreciated Miss Villets’ talents as they had not appreciated Carol’s efforts, for while Miss Villets had presented a well-researched and much-acclaimed paper on “The Cathedrals of England,” she had never been asked to give another (142).

When Carol was eventually selected to the library board, she felt she finally had the opportunity to use her professional library expertise and her knowledge of books to the benefit of the town. True to form, Carol intended to “revolutionize the whole system” (251). She was shocked to learn that her fellow board members were well-read, though they had little interest in expanding the collection to include current materials other than the popular items—“the Henty books and the Elsie books and the latest optimism by moral female novelists and virile clergymen” and the classics they themselves enjoyed (252). She quickly learned that after paying for such items as the rent, heat, light, and Miss Villets’ salary, there was barely one hundred dollars a year to use for purchasing books. She tried to get a commitment of fifteen dollars from each board member to purchase “thirty European novels of the last ten years, with twenty important books on psychology, education, and economics” found to be lacking in the library, but they all refused, citing the fear of setting a precedent (252). She finally gave up all hope of doing something meaningful when the board met at length and called in the librarian to determine why there was seventeen cents less than there should be in the fund. She attended regularly but did nothing to upset the status quo further until her two-year term was over and the board appointed Vida Sherwin in her place (253).

When Carol became pregnant, the matrons of the town told her that she would have to “get over all these ideas…and settle down” (261). One time after she had been without a maid for a while and the baby was particularly trying, they seemed right. She found “she had no desire to read eloquent little newspaper essays in praise of labor which are daily written by white-browed journalistic prophets” (320). She was content to collapse in bed at the end of the day—and the sooner the better!

For the most part, however, even after their son was born and Carol actually had less time of her own, she continued to “read an astonishing number of books from the public library and
from city shops” (285). Kennicott could not understand the need to buy books when there were several thousand of them in the public library, free. He finally decided that this was “one of the Funny Ideas which she caught as a librarian and from which she would never entirely recover” (285). She was reading authors such as Anatole France, Shaw, Edgar Lee Masters, Theodore Dreiser, Sherwood Anderson “and other subversive philosophers and artists” (285). From them she derived her views of Gopher Prairie and other similar towns.

Carol was attracted to men who read and liked to discuss the ideas gleaned from literature. When Erik Valborg, a young tailor, came to Gopher Prairie, he quickly earned the reputation of the one who checked “more books out of the library than anyone else in town” (359). Carol sought him out, and he described his attraction to books: “I had never read a novel til I got DorothyVernon of Haddon Hall out of the library at Curlew. I thought it the loveliest thing in the world. Next I read Barriers Burned Away and then Pope’s translation of Homer...When I went to Minneapolis two years ago, I guess I had read pretty much everything in the Curlew library, but I’d never heard of Rossetti or John Sargent or Balzac or Brahms” (369).

Seeing her older husband as provincial and the younger Erik as exciting and malleable, she came to a crisis in her marriage. Carol was “a woman with a working brain and no work” (94), and the conflict within was taking its toll. When Carol said she wanted to get away to a big city for a few days, Kennicott replied, “Who’s been feeding you meat? You got that...out of one of those fool stories about wives who don’t know when they are well off” (391). She and Kennicott did finally “escape” Gopher Prairie with a three-and-a-half month trip to California. There she began reading motion-picture magazines (434).

As she had always done when life became almost unbearable, she would dream of escape to exciting places in the world—places she had visited in the fiction she read (254). After being unsuccessful in rejuvenating her marriage, she took their son and moved to Washington, D.C., where she found employment in the Bureau of War Risk Insurance, though World War I was over by that time. For two years she received letters and visitors from Gopher Prairie, including her husband, until she finally realized she had come to a “fairer attitude toward the town” (478). She returned “home” to tell her husband he was going to be a father as their second child grew within her.

Lewis presents us with much to ponder, and there are several inferences we might draw. Librarianship is portrayed as a profession attractive to the idealist, as well as to the practical members of society. A tension always exists between the idea of preservation of materials and use for education and enjoyment, along with the tension between censorship and free access. Reading is the key to the educated life. Well-read and imaginative people are sought out because they are interesting. There are those who are busy, but who make time for reading, and those who consider themselves too busy to read. Some people read to escape daily life, others read for information to improve their daily lives, and still others read to engage their minds with those of the great thinkers of past and present. Finally, regardless of the quality of a public library, there will always be private libraries owned by those who love books and need to be surrounded by their “friends.”

Work Cited

Teaching Strategies

by Marilyn Newhouse

Editor’s Note: This is the first of what I hope will be an ongoing series of short JUFF pieces about hands-on pedagogical practices. JUFF hopes to publish one similar article from a faculty member in a different discipline in our Fall 2003 issue.

My teaching experience is diverse, spanning elementary and junior high levels through college and adult learning. My teaching strategies are based on proven principles that work for students of all ages. My proven approach is desirable for students who have much to learn and for students who have been confused and have had trouble learning science in the past.

Twenty-nine Years of Teaching Experience

I am fond of saying that I spent six years in sixth grade teaching it. I explain things simply, using personification whenever applicable. Humanities students understand those kinds of relationships.

Daily Assignments

Students have to turn in something every class meeting. No absences are tolerated without a nurse’s or doctor’s note (or a ball team away trip). I encourage students to call and make arrangements to make up missed work. There are no “drop grades.” There are few absences.

Weekly Quizzes

At least weekly and sometimes every class meeting, I give a quiz that encourages students to have to “crack the book” and learn some bite-sized piece of information before the next class meeting. Sometimes it is worth only five points, sometimes as much as fifteen points. I almost always announce what the quiz will cover.

Use of Counseling Services for Students

At first, I taught the Physical Science 111 lecture only in the winter term. Most of my students were (and are still) seniors desperately wanting to graduate, some of whom had tried the course earlier in their scholastic careers and had dropped or failed. This group is a tremendous challenge, not because of a lack of stewardship or desire, but because of the high level of anxiety. Math anxieties, test anxieties, and right brain vs. left brain prevalence all are evident as learning barriers. One of the activities I use is to invite the resident school counselor to come and give a presentation on test-taking skills and relaxation techniques. She comes one or two lecture sessions prior to our first exam. Just prior to the first hour exam, I usually lead the students in deep breathing exercises as I pass out the test.
Multiple Choice and Essays

Humanities students (especially Christian Studies majors) tend to do better on essay questions. I try to have at least two essay questions on each hour exam. I usually announce them ahead of time. Sometimes when we “survey the chapter” or while discussing the topic, I may say, “This is a good essay topic.” For essays, two definitions are required and a statement of comparing or contrasting. Thus, each essay question is worth three points.

Opportunities to Excel

Extra credit is given for each additional idea presented beyond the required information in an essay question. The bulk of the exam questions are multiple choice right out of the test bank provided with our materials. Some of the test bank questions cover topics we as a group of instructors have designated as beyond the needs of our students or just don’t have time to cover. I have not deleted these from my exams. When the chapters are “surveyed,” the sections are identified as “extra” and any questions pertaining to them as “extra credit.” To my delight, some students will go out of their way to learn that material.

Whole Class Participation

I call on students individually and collectively. We do a lot of choral repetition. A recent example is that every time I say the word “mole,” the whole group responds, “6.02 times 10 to the 23rd” in a manner somewhat like a cheer. A recent example of calling on people individually is an assignment on naming compounds. Everyone in the classroom is called to give the cation or anion in one of the compounds on a worksheet. I deliberately give the more difficult ones to those I feel sure know the answer correctly, but everyone has a turn.

Teaching Techniques Shared with Education Majors

I share with all my students, and especially the education majors, when I am using a particular teaching technique such as “the discovery method” in an electrical science experiment. Another example is “personification” when talking about the halogens as the Mafia and the godfather of them all being fluorine.

Lots of Concrete

Whenever possible, I try to show a physical representation of especially difficult unseen principles. An example of this is in explaining radioactivity and isotopes. My favorite model is using colored miniature marshmallows. I tell my students, “the pink ones are for protons, the green ones are for neutrons, the yellow ones are for electrons, and the orange ones are for eating!” While most scientists would shudder at the prospect of eating in the lab, it is a different scenario when approached as a suggested activity for teaching sixth grade science.
Sensitivity to Students’ Needs

I spend many hours (in fifteen-minute intervals) listening to students individually and encouraging them to seek options they may not have thought of in solving their anxieties about learning physical science. I assure students that no question is unworthy and demonstrate this attitude often when I say, “You know, of course, if you already knew everything about this, I’d be out of a job.”

My work speaks for itself. My students are the customers, the consumers if you will, and I am in demand.
Highway Relativity
by Bryan Dawson and Troy Riggs

Have you ever been driving just below the speed limit on the highway, and felt that most of the cars on the road were speeding? You may have been correct, or it may have been an illusion.

We will assume that on the highway you primarily observe cars that are immediately around your vehicle. Then for traffic traveling at a variety of speeds, most of these cars that you observe are passing you, or you are passing them. Now, if you are traveling a little slower than average, more are passing you. We shall see that even if you accurately judge the speed of each individual car that you see, by traveling slower than the average speed of traffic, your perception of that average will be exaggerated.

Perhaps most of this agrees with your intuition up to this point. However, it may surprise you to hear that this effect is more pronounced near the average speed than far below the average. In fact, if you are driving very slowly, your perception ought to be pretty accurate.

Suppose that the speeds of vehicles on a highway are normally distributed with mean 68 mph and standard deviation 4 mph. Hence, the density function is

\[ f(x) = \frac{1}{4\sqrt{2\pi}} e^{-\frac{1}{2}(x-68)^2} \]

with the graph given below (figure 1).

![Graph of the normal distribution with mean 68 and standard deviation 4](image)

**Figure 1.** Assumed distribution of speeds on a highway.

Suppose further that you are traveling at a speed of 65 mph. What is the distribution of speeds that you observe? We will assume that you accurately observe the speed of cars as they either pass you, or are passed by you; and that these are the only cars that you observe. The frequency with which you observe cars driving at speed \(x\) is thus in proportion to \(|x-65|\) — the difference between the respective speeds. Hence, the distribution of speeds that you observe, after normalization, is

\[ g(x) = \frac{|x-65|f(x)}{\int_{-\infty}^{\infty} |t-65|f(t) \, dt} \]
with the graph given below (figure 2).

![Graph of distribution of observed speeds at 65 mph.](image)

**Figure 2.** Distribution of observed speeds at 65 mph.

Notice that in our observations we have greatly reduced those cars going close to our speed, and proportionately increased the number of "speed demons" and "slow pokes." The mean for this distribution, $E[X]$, is approximately 70.16 mph. This exceeds the true average by over 2 mph.

Now we may wonder about the nature and size of this effect at other speeds. Suppose you are traveling at speed $s$; let $A(s)$ represent the perceived average speed of the other vehicles. Then

$$A(s) = \frac{x - s}{s} \cdot \frac{\int_{-\infty}^{\infty} |x - s| f(x) \, dx}{\int_{-\infty}^{\infty} |t - s| f(t) \, dt}$$

The graph of $A(s)$ below represents the perceived average speed as a function of your speed (figure 3).

![Graph of perceived average speed vs. speed.](image)

**Figure 3.** Your speed vs. perceived average speed.

Notice that this effect is most pronounced around 64 or 65 mph. If you are driving exactly 68 mph, then your perception is accurate. If you are driving very slowly, your perception is only
slightly exaggerated; in fact, \( y = 68 \) is a horizontal asymptote for the graph. When you are driving faster than the average, the effect is reversed. Also, notice that if you are traveling at a speed near the actual average speed, then as you increase your speed, it seems as if the average speed of the other vehicles is decreasing. Conversely, as you decrease your speed, it seems as if the average speed of the other vehicles increases. In effect, traveling near the average speed here, your accelerator and brake appear more “touchy” than they actually are.

Let’s turn our attention to an attempt to prove some of these observed effects for more general distributions. Our first result says that if the actual distribution of speeds is symmetric, and you are traveling at the average speed, then your perception of the average speed of traffic will be accurate.

**Theorem 1.** Let \( f \) be the probability density function of the speeds of vehicles on the highway, let \( \mu \) be the average value of \( f \), and let \( A(s) \) be the perceived average speed of vehicles for a driver traveling at speed \( s \). If \( f \) is symmetric, then \( A(\mu) = \mu \).

**Proof.** Since \( f \) is symmetric (about \( \mu \)), then so is \( |x-\mu|f(x) \). Hence,

\[
\varphi(x) = \frac{|x - \mu|f(x)}{\int_{-\infty}^{\infty} |t - \mu|f(t) \, dt},
\]

the probability distribution in question, is as well. Thus,

\[
A(\mu) = \mu \varphi = \mu.
\]

\[\blacksquare\]

This result does not hold for non-symmetric distributions, in general. Consider the shifted exponential distribution, also with mean 68 mph and standard deviation 4 mph, whose pdf is

\[
f(x) = \frac{1}{4}e^{-(x-64)/4}, \quad x \geq 64.
\]

When you travel at the actual average speed of 68 mph, you observe an average speed of approximately 70.56 mph. However, here \( A(s) \) does have a fixed point, \( s_f \) (i.e., \( A(s_f) = s_f \)). It is approximately 69.2 mph. The graph of \( A(s) \) appears below (figure 4).

![Figure 4. Your speed vs. perceived average speed, shifted exponential assumption.](image-url)
The next result gives an interesting property of \( A(s) \) at a fixed point. It holds whether or not the distribution is symmetric.

**Theorem 2.** Let \( f \) be the probability density function of the speeds of vehicles on the highway, let \( A(s) \) be the average speed of vehicles observed by a driver traveling at speed \( s \), and let \( s_f \) be a fixed point of \( A \). Then \( A'(s_f) = -1 \).

**Proof.** Notice

\[
A(s) = \frac{\int_{-\infty}^{\infty} x|x - s|f(x) \, dx}{\int_{-\infty}^{\infty} |x - s|f(x) \, dx} = \frac{\int_{-\infty}^{s} x(s - x)f(x) \, dx + \int_{s}^{\infty} x(x - s)f(x) \, dx}{\int_{-\infty}^{s} (s - x)f(x) \, dx + \int_{s}^{\infty} (x - s)f(x) \, dx}.
\]

Then, using the quotient rule, Leibniz' rule, and bot, top for the denominator and numerator of the previous fraction, respectively,

\[
A'(s) = \frac{\text{bot} \cdot \left( \int_{-\infty}^{s} xf(x) \, dx + \int_{s}^{\infty} -xf(x) \, dx \right)}{\text{bot}^2} - \frac{\text{top} \cdot \left( \int_{-\infty}^{s} f(x) \, dx + \int_{s}^{\infty} -f(x) \, dx \right)}{\text{bot}^2}.
\]

However, if we wish to evaluate this at the fixed point \( s_f \), i.e., where \( A(s_f) = s_f \), then from above we see that \( \text{top} = s_f \cdot \text{bot} \), and

\[
A'(s_f) = \frac{\text{bot} \cdot \left( \int_{-\infty}^{s_f} xf(x) \, dx + \int_{s_f}^{\infty} -xf(x) \, dx \right)}{\text{bot}^2} - \frac{s_f \cdot \text{bot} \cdot \left( \int_{-\infty}^{s_f} f(x) \, dx + \int_{s_f}^{\infty} -f(x) \, dx \right)}{\text{bot}^2} = \frac{\int_{-\infty}^{s_f} xf(x) \, dx + \int_{s_f}^{\infty} -xf(x) \, dx - s_f \int_{-\infty}^{s_f} f(x) \, dx + s_f \int_{s_f}^{\infty} f(x) \, dx}{\int_{-\infty}^{s_f} (s_f - x)f(x) \, dx + \int_{s_f}^{\infty} (x - s_f)f(x) \, dx} = \frac{\int_{-\infty}^{s_f} (x - s_f)f(x) \, dx + \int_{s_f}^{\infty} (s_f - x)f(x) \, dx}{\int_{-\infty}^{s_f} (s_f - x)f(x) \, dx + \int_{s_f}^{\infty} (x - s_f)f(x) \, dx} = -1.
\]

Notice, then, that the difference between your speed and the observed average speed of other vehicles, \( s - A(s) \), has derivative 2 at a fixed point of \( A \). If you are in traffic that is heavy enough that observed differences may be noticed relatively quickly, and you are driving at the speed that you perceive to be the average, then the accelerator and brake of your vehicle appear
to have twice the effect that they actually have, i.e., appear twice as sensitive as normal. This assumes that you are judging the effect of the accelerator and brake by the change in \( s - A(s) \), instead of by the change in \( s \), which is a reasonable assumption in heavy traffic where one is watching other vehicles and not objects at the side of the road. We are also assuming that, even though traffic is heavy, it is not congested, so that our assumptions about speeds of vehicles still hold.

Perhaps this is one reason why driving in heavy traffic can be so nerve-wracking. As we attend to the motion of the traffic, the relative changes in our motion due to braking and accelerating appear amplified by a factor of two!

This amplification factor appears to be maximized at the mean (fixed point) for symmetric distributions, but that is not necessarily the case for non-symmetric distributions. For instance, in the shifted exponential distribution given above the maximum effect is greater than 2 and occurs at a point that is less than both the mean and the fixed point.

Others have observed questions of distorted highway perceptions, as well; see [1] and [3]. See also [2] for an interesting discussion of how to determine the actual average speed of the cars on the highway. For the interested reader, Mathematica files exploring this topic are available at http://www.uu.edu/personal/bdawson/highwayrelativity.html.

So the next time you're on the road, although you may feel that traffic is getting the best of you, remember that perception is not always reality!

References

Should the U.S. Go Metric?

by Kyle Hathcox

Should the United States continue to use the British system of measurement or join the rest of the world and go completely metric? Most people oppose a change to metric. However, the facts about measurement in the United States might surprise you.

Systems of measurement originated because of a need for communication among people—for barter, building, manufacturing, travel, land ownership, coinage, and dozens of other areas of civilization. In order to have fair dealings, a standard system of measurement was necessary. Consider the fact that every time you quote a number, a word or combination of words accompanies the number to designate what it means. For example, your weight, pounds; the temperature, degrees; a speed, miles per hour; a distance, feet. All these contain names of units. All such words are from some system of measurement.

Science is the heart of technology, and the very heart of science is the experiments. Measurements collected during experiments suggest relationships to scientists and help them discover new laws. Some standardized system of measurement is necessary for everyone to understand exactly what another person is saying. Ancient measurements, the remnants of which form the British system, were based on parts of the body. Measurements such as the foot, hand, cubit, and fathom used human sizes. Although you always had a handy reference, for example your foot, the reference varied greatly from one person to another.

Kings attempted to standardize measurements by using their personal sizes. The yard was defined as the distance from the tip of the nose of King Edgar (959-975 A.D.) to the tip of his middle finger. However, a few years later, King Henry (1100-1135 A.D.) decreed that a yard was the distance from the tip of his nose to the end of his thumb. One king decreed that the rod was the sum of the length of sixteen men's feet chosen at random upon leaving church. Thus many different measurement standards developed over time. By the seventeenth century, the British had established a highly coherent system that has remained until today. However, there was no standard on the European continent, where measurements differed from one country to another.

A French abbé, Gabriel Mouton (1618-1694), proposed a comprehensive decimal system in 1670 using a fundamental length based on the size of the earth. In 1789, Charles Talleyrand proposed a uniform system of measurement for the French National Assembly. The metre was defined as one ten millionth of the distance from the North Pole to the Equator. The gram was defined as the mass of one cubic centimeter of water. Eventually standards constructed of a platinum-based metal were made for the meter and kilogram in 1799. Thus began the metric system.

The public did not enthusiastically accept the metric system at first. However, because of its decimalization and ease of conversions (everything based on ten), it was highly acceptable to scientists and engineers. Eventually other Europeans saw the benefit in having a uniform system of measurement based on ten. England, however, maintained the British system, which had been made more consistent over time.

In the United States, the Constitution gives Congress the power to set standards of measurement. In 1786, decimalized coinage was adopted. In 1790, Thomas Jefferson was asked to propose a plan for a decimal system of measurement, which he did. Although a decimal system was adopted, it still contained terminology from the British system. In 1821, a report on the
British and metric systems was presented to Congress. Slowly various departments began to adopt uniform standards, and in 1866 the metric system was made the official system of measurement in the United States. On May 20, 1875, the international Conference of the Metre was held and the "Treaty of the Meter" recognizing uniform standards was drawn up. Seventeen countries signed it, including the United States. Thus since the late 1800's, the metric system has served as the official U.S. standard, with units such as the yard and pound actually being defined in terms of international metric standards.

Originally the activities of the International Bureau of Weights and Measurements were limited to measurements of length and mass. However, with the work in electrical phenomena around the turn of the century, standards were extended to electricity in 1927. As new discoveries were made in other fields, a need for additional standards occurred, and these were developed: photometry and radiometry (light and EM waves) in 1937; ionizing radiation (nuclear) in 1960; and time in 1988 (astronomy had supplied time units before 1988). About forty-five physicists work at world headquarters conducting research dealing with the calibrating of standards in all these areas.

The International Bureau of Weights and Measurements is headquartered in Sevres, France, and coordinates a meeting every six to ten years of representatives for a general conference that reviews, adjusts, and ratifies any changes in standards. In 1960 major revisions of the metric system brought about what is today called the SI system, Le Systeme International d'Units (International System of Units). With minor revisions, the SI system of 1960 is the world standard internationally accepted today (web site: www.bipm.fr/enus/3_SI).

In the SI system, every measurement in the world is based upon seven basic quantities. Each of these quantities has an oversight committee that is in charge of that one particular standard. The seven quantities upon which all other measurements in the world are based are as follows: length, time, mass, temperature, electric current, light intensity, and amount of substance. All of these quantities are referenced to physical phenomena except mass, which is still based on a platinum object kept in a vault in France. By combining these seven basic entities in different combinations, one can create the thousands of different quantities (units) that are used today in science and engineering. Speed, for example, is a combination of length and time, miles per hour.

Since 1866, the U.S. official system has been metric, but the public never embraced it. Nor were people forced to use it. Now that the SI system is standard for all international trade, it is only logical to adopt this system throughout our culture. The SI system is easier to use (everything based on ten or decimalized), and all common quantities have similar root words (for example, all mass measurements contain grams as a root word: kilograms, centigrams, milligrams, etc.; whereas in the British system every unit is different: ounces, pounds, tons, etc.—no common root word). The U.S. is the only major country and one of only three countries (Liberia, Burma, U.S.) which continue to use exclusively the British measurement units (Great Britain uses a mix of metric and British). Major companies have found that workers make far fewer mistakes with the metric system and can complete their work much faster. Motor vehicles, farm machinery, and computer equipment already utilize metric standards. Metrics is a much more efficient system of measurement; that is why it was adopted as our standard over a hundred years ago. Whether we like it or not, it is time to accept the more logical and easier system of measurement which our ancestors chose as our official system. Some international organizations have even threatened to restrict U.S. imports that do not conform to metric standards. As we begin the twenty-first century, it would be a good time for the entire United States to switch to the system used by the rest of the world.
Made in China

by Pamela Casey Sutton

I arrived in Beijing on Saturday, May 24, around 4:30 p.m. and met three teachers (besides Jan Wilms and me from Union University) who were also there for the week as Visiting Professors in China with the English Language Institute. With more questions than answers, we all agreed we were there on faith. When I left my home in Tennessee, my college son was leaving to drive alone to Pennsylvania for a summer of baseball, my high school son was leaving for Young Life camp in Colorado, and my father (with my mother by his side) was in a rehabilitation hospital in Texas. I left for China and unknown, unseeable experiences. Faith is walking to the edge of the darkness and taking one more step. I stepped.

After orientation on Sunday morning with Charlie from ELIC, who was able to answer a few of our questions but encouraged us to be flexible, officials from our prospective campuses came to pick us up at the Yu Long Hotel in Beijing. Yi Yong, Vice Dean of the Department of Foreign Language and Literature at Qufu (pronounced Choofoo) Teachers University in the Shandong Province, her ten-year-old son Victor, Mr. Wong from the department, and a driver picked me up by car. We then drove about eight hours back to Qufu, south of Beijing, stopping once in Beijing for shopping and again to eat. It was on the third stop that I sprained my ankle. I can now say I'm a klutz on two continents. We iced it at the restaurant and later went to the health clinic on the campus of Qufu Teachers University. The doctor there recommended an x-ray, so I had the opportunity to tour a Chinese hospital at 10:00 p.m., not a place most tourists have the opportunity to see. The hospital was very dark and dirty, so I was glad my injury didn't involve needles, though I had had my shots. With everyone speaking Chinese and Yi Yong translating occasionally, I was at their mercy. It's very overwhelming to be the only Westerner on the dark streets of a foreign country.

I made it to the apartment on campus, my home for the next five nights. Finally, a Western bathroom and not a squatty potty! For those of you who don't know, most bathrooms in China have toilets sunk into the floor. Toilet paper is also rare, so I was thankful for the last minute decision to pack purse-size Kleenex. So much do we take for granted!

David Koontz, one of four ELIC teachers on campus, arrived to introduce himself. On Monday I would meet Joni Strohm and later Sarah Czaika, who arrived with her parents, visitors from Vicksburg, Mississippi.

On Monday I was forced to stay off my ankle, but this also gave me time to rest from jet and car lag; a twelve-hour flight from Chicago to Beijing, an eight-hour car ride from Beijing to Qufu. Yi Yong and Meiling, the Foreign Affairs Officer, checked on me and arranged for lunch to be delivered. Monday night I gave my first lecture (“The English Language”) to a packed lecture hall. That night I also introduced myself and told stories of people in my life. With the exception of a reference to deodorant, with which the Chinese are not familiar, I think the lecture went okay. When I asked for questions, everyone just smiled and nodded. So I asked everyone to take a piece of paper and write me a question in English. It took me quite a while to answer all the questions passed to the front, but this ended up being a wonderful opportunity.

On Tuesday morning I visited Joni’s class of graduate students, fifty teachers who have returned to school to work on a master’s degree; the class was discussing intercultural conflicts, with skits on nonverbal communication. At noon the department had a banquet in my honor

24
with Joni, Dave, Yi Yong, Mr. Chi, Sarah, and Sarah’s parents. The meal included turtle, pork, seafood, tofu, turnips/beef soup, and vegetables like green beans with cashews (I was now able to pick up whole cashews with chopsticks!). Even Yi Yong noticed my improved use of chopsticks.

That afternoon I attended one of Dave’s classes, a junior-level culture class which had seen the movie Parent Trap. The class discussed cultural difference among England, the United States, and China. Dave illustrated how names can be shortened to show comfort of relationships in Western cultures; he used every student’s American name (all 42!) as examples. I participated in one small group discussion in which a student kept asking me my opinion. Fortunately, I had seen the movie and was able to participate.

Tuesday night I gave my second lecture ("Studies in Short Fiction"), discussing how we all have stories to tell. Using the media equipment, I showed pictures of family, friends, Union, and other aspects of my life. The female students “ahhed” when I showed pictures of my sons and my great-niece and nephew. As I talked, I noticed I was getting better at using examples to which the students could relate. I also noticed that I was not using contractions and was using more synonyms for every English word I wasn’t sure students would understand.

On Wednesday, I went with Sarah and her parents to scenic Mt. Tai, one of five sacred mountains in China, about an hour and a half from Qufu. The ankle held up; it helped that Sarah’s mother, who had had knee surgery a year and a half earlier, also walked slowly. We were the only Westerners on the mountain. The only English word I heard, other than those spoken by Sarah and her parents, was “beautiful,” spoken by an older Chinese gentleman. I was surprised more Chinese didn’t want to practice their English with us.

Later on Wednesday I lectured at 2:30 p.m. ("Family Issues in Literature") and 7:30 p.m. ("Teaching Writing Education"). This was quite a feat since I had climbed a mountain earlier that day!

On Thursday I took an early morning walk through the wheat fields and villages outside the campus wall with Joni. It was very overwhelming and emotional to see the actual lifestyles of the Chinese farmers, and also provided a sense of burden for me to know that many of these people may never have heard Christ’s message.

Since Qufu is the birthplace of Confucius, the university wanted me to see his temple, mansion, and burial place. Apple (most Chinese choose American names), an English student, was my tour guide for Confucius’s temple and mansion on Thursday morning. Between those two sites we rode a bicycle rickshaw. Later, Apple and I ate lunch together, and she had many questions about the United States.

Thursday afternoon I visited Sarah’s class, where she was teaching intonation. Her parents also attended, so Sarah had us introduce ourselves and take questions from the students.

Thursday night the department had a banquet to honor Sarah’s parents who were leaving to return to Beijing; I passed on the octopus.

Friday morning Wendy, another student, accompanied me to the Woods, the burial place of Confucius. Later Joni and I went to Yi Yong’s home for lunch. I met Yi Yong’s husband, who teaches chemistry, and saw Victor, her son who had traveled from Beijing to Qufu with us on Sunday. Victor repeated a drum performance from a school program. At that meal, I passed on the donkey; I had seen too many donkeys pulling carts in the village. Yi Yong presented me with a set of ten chopsticks (since she had noted how I had improved during the week) and a beautiful box which contained two types of Chinese tea.
Friday afternoon I gave my final lecture. Originally, when I applied to ELIC, I had titled this lecture “Being a Christian in a Secular Setting.” Later I was advised to change the title, even though my application still had the original title. ELIC was surprised when I was chosen to teach, even with that title included. My new lecture title became “Teaching Outside the Text.” I imagine my surprise when I arrived on campus and saw signs advertising my lectures with the original title. One of the first questions by students was about the title change. I didn’t explain the real story, but told them that teaching involves many things besides the material. My teaching philosophy is that for students to learn in my classroom I need to know them and they me. So I discussed the “name game” I play to get to know students’ names, hometowns, and unique elements by the second day of class. I explained that my students know I’m a Christian, I have two sons who play baseball, I have a dog named Molly, and I enjoy working in my yard. I attempt to form relationships not only with my students, but also between students. I explained that I basically operate by the Golden Rule, “Do unto others as [I] would have them do unto [me],” found in the New Testament.

One student questioned whether I would come to China to teach, which gave me the opportunity to explain a very important lesson I have learned: to be in God’s hands is the best place, wherever that is. I explained that a year ago I didn’t know I would be standing in front of them, but here I was. My worldview has been changed because of this trip. China now has faces, and the phrase “made in China” is one I will not merely glance at and/or overlook. My eyes have changed. Education, relationships, and experience affect change.

After that last lecture on Friday night, we watched The Joy Luck Club. Mr. Wong dropped by and presented me gifts from the department, a book of Confucius in Chinese and English and a beautiful bracelet. Later Meiling, from the Foreign Affairs Office, brought me a shirt, a set of writing pens, and a wallet. At 11:30 that night, Yi Yong and Meiling put me on a train to Beijing. They had arranged a soft sleeper, which means four per compartment, as opposed to a hard sleeper, or six per compartment. My traveling companions for the night were three Chinese businessmen who knew as much English as I knew Chinese.

I arrived in Beijing around 9:30 a.m. on Saturday where I met Rose, my tour guide for the day, and a driver. We went to the Forbidden City and the Great Wall of China. Because I paid in American money, Rose took me to a seldom-visited section of the wall, so I have a “great” picture of me on the Great Wall—with only me!

Saturday night the visiting professors for the week went to Pizza Hut in Beijing for dinner, swapping stories of our teaching adventures over Western food, enjoying ice cubes in our sodas, and realizing that our lives, teaching and otherwise, had changed.

Sunday morning I went to the Beijing International (Church) Service with Debbie, also of ELIC and a friend of Joni’s. This was an awesome service with a blend of all cultures, but sadly, Chinese Nationals are not allowed to attend this gathering. This service was the highlight of my trip.

After the service, I returned to the hotel, retrieved my luggage, and went to the airport to return home, leaving Beijing at 4:30 p.m. on Sunday and arriving in Chicago at 4:30 p.m. on Sunday. The customs agent in Chicago asked me what I did. I told him I was a teacher. He said, “Welcome home.” Tears formed in my eyes. Returning home, I found my college son safely in Pennsylvania, my high school son back from a “mountain-top experience” in Colorado, and my father and mother at home in Arkansas. God is good, all the time.

One fourth of the world lives in China, a country about the size of the United States. Would I participate in the English Language Institute Visiting Professor Program again? Yes!
In fact, I’ve applied for the next academic year when Viet Nam is opening its doors for professors to bring knowledge in their respective fields to college students and faculty. Did I ever feel scared while in a Communist country? To be honest, I never felt in jeopardy, but maybe my eyes were overwhelmed by the landscape. The only thing I feared was the twelve-hour flight, having only been on a plane for three hours maximum. But my faith overcame my fears.

Confucius said that the world looked small from the top of Mt. Tai. But I believe my trip to China has shown me how big the world truly is.
JUFF Contributors

Aaron Lee Benson, Associate Professor of Art, is the current mace-bearing Union University Faculty of the Year.

Bryan Dawson just completed a term as president of the Faculty Forum and now assumes the mantle of Department Chair of Mathematics and Computer Science.

Kyle Hathcox frequently encounters decimalization in his roles as Professor of Physics and Coordinator of that same discipline.

Matt D. Lunsford has just returned to full-time teaching (and full Faculty Forum-voting status) after a stint as Associate Dean of the College of Arts and Sciences; he is Associate Professor of Mathematics.

Pat Morris joins a long list of JUFF contributors/professional librarians; her title is Professor of Library Services.

Marlyn Newhouse has taught in the Department of Chemistry and Physics since 1992, where she is currently Associate Professor of Chemistry.

Troy Riggs, Associate Professor of Mathematics, returned to Union in 2000 from a stint in the Dakotas; his term of University service began in 1993.

Roger Stanley was a multiple contributor to JUFF in the early and mid-90's before assuming the editorship in 1996; he is Assistant Professor of English.

Pamela Casey Sutton plans on further pedagogical exploration of the Orient from her post as Associate Professor of English.

Terry Weaver has negotiated the ascension from Faculty Forum secretary (2000-2001) through vice-president (2001-2002) to his current status as the organization's president; he is Associate Professor of Education and Special Education.
research process. Ideally, the mentor should support quality research that leads the scholar toward publication. The mentor can work with the scholar to identify and acquire additional skills which enhance the ability to produce scholarship. The successful scholar-mentor relationship will employ various approaches, including the following:

1. Visit with young colleagues and discuss areas of interest.
2. Encourage faculty to publish from dissertation.
3. Help faculty explore different possibilities for presentations/publications in field and match their style to the various publications.
4. Discuss how to rewrite conference papers into journal articles, and how to identify appropriate journals in the field for publication.
5. Help new scholars perfect the craft of submitting abstracts for presentations.
6. Encourage faculty members to submit work to state, regional and national conferences.
7. Develop learning circles to explore grant opportunities.
8. Share relevant articles/research.
9. Help mentorees develop strategies to build on their research.

The scholar-mentor also can help faculty with task management. A common complaint in academe is not having enough time to do research. I remember a conversation I had with my mentor, Dr. Faye Julian, Dean of Undergraduate Academic Affairs at the University of Tennessee. We were talking at a professional conference and I lamented the lack of time to do research. Fresh from completion of my Ph.D., I had accepted a chair position and for two years had pored myself into the administrative tasks needed for my job. I knew my skills were getting rusty, but didn’t see how I could fit one more thing into my day. She replied with great wisdom, “Kina, write about what you do. Write about being a department chair.” As a result of her encouragement, I combined my theoretical knowledge of communication theory with my practical experience as chair of the communication arts department and began writing for The Department Chair Newsletter and other publications.

Administrators and faculty developers can help nurture mentors and mentorees by providing opportunities for the pairs to share their experiences in public forums. Some scholar-mentor programs will result in joint research projects, while others will help faculty build relationships and respect for different research topics and research methods. Stipends for scholar-mentors can provide incentive for recruiting new mentors, but the motivation for continuing as a mentor will come from within.

While scholar-mentoring is a formal way to pair those with common research interests, the ideal situation would be the emergence of a community of dialogue. The new generation of scholars craves collaboration and community. The common academic lore that academic research is a solitary activity is not supported by the literature. Creswell (1985) found that the most productive and cited writers in academe spend as much time networking with colleagues as they do writing. A tenured painting professor at Union University in Jackson, Tennessee, attended a faculty development session on scholarship and reminisced about his graduate school days. “I would get up in the morning and paint the entire day,” he said. “Others who shared the studio with me made comments about my work, and faculty were ready and willing to critique what I was doing. That’s what I miss most about graduate school—the community that helped me be productive.”
Parker Palmer would most likely understand the meaning in that faculty member’s reflection—and perhaps we all do. In order to discover the soul of scholarship, professors need a community that encourages the kind of productivity that comes from formal and informal faculty interaction. I envision a community where dialogue is prevalent, energizing and productive. I experienced this community while writing this paper. I discussed the concept of soul informally with my Christian Studies colleagues and offered my writing to a communications professor within my discipline and a history colleague outside of my discipline for formal criticism. Their comments and suggestions motivated me to revise, refine, and rethink. This paper is stronger as a result of the respect and trust my colleagues and I share. A spirit of helpfulness and collaboration is imperative for creating a community of dialogue.

To understand and practice the soul of scholarship, academicians need a paradigm shift. We need to come down from our lofty perches in our ivory towers and reach out to our colleagues. I offer three strategies to guide campus leaders in changing their department, school, and university culture.

- Foster collaboration, not competition. Resources in higher education are sparse. Only a handful of scholars will receive competitive grants, be chosen for coveted release time to write, achieve entry into the top journals in their field, and be recognized nationally for their work. There are never enough spoils to go around, and good scholars don’t always receive the reward they need. Competition is inevitable, but leaders can work hard to squelch the ills of jealousy and competition. To foster a culture of collaboration, administrators can earmark some research money for collaborative projects, some large development funds can be divided into smaller awards so more faculty can take advantage of them, and departments can hold colloquia for their majors where faculty work together to plan and share research projects.

- Strive to encourage, not discourage. Academicians are known for being critical and cynical. Reaching for the soul of scholarship means intentionally looking for opportunities to encourage your colleagues. Constructive criticism is valuable when asked for and given appropriately, but when unsolicited, it halts research productivity. Look for opportunities to ask colleagues how their research is progressing, to send notes or e-mails when you read about a publication or presentation they have given, and to offer suggestions when prompted. The act of encouragement takes little time and is free. It does take some energy on the part of the encourager, but increases energy for the encouraged.

- Value diversity, not dissention. Research in the academy can be as different as the individual personalities of the professors. My research looks very different from the research of the theatre professor in my department, and my university’s definition of scholarship may be quite different from scholarship at other universities. It is easy for scholars in different disciplines to lapse into criticism and create dissention among colleagues. Much of the criticism is based on a lack of understanding of different fields of study. Faculty development personnel and deans can provide both formal and informal opportunities for scholars to share their research with each other. Interdepartment and cross-campus learning communities can also be established to discuss research and develop research goals.
In conclusion, a new value in scholarship is to envision and relate to the whole scholar—
to the soul—a culmination of the scholar’s passion, action, and heart. And as we relate to these
scholars as individuals, considering their career stage, we bring them together in community
with an emphasis on scholar-mentoring programs and venues for scholarship-sharing. This
community of scholars will then work together to establish research principles, programs and
processes that reflect an interest in the people behind the product—the soul behind the
scholarship.

Note: This article is a book chapter in Scholarship in A Postmodern Era: New Venues, New

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To borrow a phrase from the renowned writer Charles Dickens, “It was the best of times, it was the worst of times.” It was the best of times because the Civil War had come to a close and black citizens were trying, through hardship and endurance, after slavery, to establish their rightful place in these United States of America. It was the best of times because emancipation brought about new attitudes as the former slaves encountered new opportunities and privileges. It was the worst of times for those who felt it best to remain with their former owners because this seemed to be the most logical thing to do. William Coleman, for example, who lived in Jackson, Tennessee, was afraid of working for a stranger and knew of no white man who might hire him. He was forced, therefore, to beg permission from his owner to keep working for just room and board. Coleman was one of four million former slaves wandering around in the defeated South. Although some blacks received land in the South under the Southern Homestead Act of 1866, the impression that every ex-slave would receive “forty acres and a mule” as a gift of the government never became a reality (Robinson 210-211). There were a few so attached to their owners that they ignored their freedom as long as they could.
Miles Vandahurst Lynk, a pioneer of medicine for the black race, was born in West Tennessee (near Brownsville) in June 1871. His parents, Mary Louis and John Henry Lynk, were born slaves and were not in a position to give him the education he desired. However, at the close of the Civil War, they took private lessons in reading and writing and became proficient in reading the Bible; they were both members of the Southern Methodist Episcopal Church before the Christian Methodist Episcopal Church was organized.

The sudden death of Miles’ father left his mother with no visible means of support, but she remembered God’s word from Psalm 146: “The Lord preserveth the strangers; He relieth the fatherless and widow.” A woman of deep Christian faith, she was encouraged by these words as she raised her children and took care of the fifty-acre farm. By the age of eleven, Miles was the head of the farm.

For Miles Vandahurst Lynk, it was the best of times because at the early age of thirteen, he was able to home-school himself, along with some public schooling. With the limited education he received from public school and home schooling, he passed the teacher’s examination. Because of his age, he could not use his certificate. Determined to teach, he set out to the next county to find employment. The opportunity presented itself, and with a certificate of good moral character, signed by a white man, he could be employed. It was William Lynk, his parents’ former slave master, who referred Miles to Colonel Bradford, an ex-confederate solider (Lynk 23). Also at age thirteen, he became interested in becoming a physician. After a year of tutoring with a local doctor, Dr. J. C. Hairton, he entered Meharry Medical College in Nashville. At the age of nineteen, he graduated second in a class of thirteen. After graduation, he announced that he would open a practice in Jackson, Tennessee. Family and friends from Haywood County advised him not to because of the climate for blacks following the Civil War. However, he opened his practice as planned and found the atmosphere in Jackson to be just the opposite of what he was told, receiving a favorable response. Miles introduced himself to the leading physicians and pharmacists and communicated with them his intent to practice scientific and ethical medicine. He was often called by white physicians to consult with them on important cases.

The first black medical journal published in America was founded and edited by Miles Lynk, at the age of twenty-one. The first issue was published on December 1, 1892, a monthly called The Medical and Surgical Observer. When the new medical journal arrived at the Library of the Surgeon General’s Office in Washington, DC, the staff wrote “Only Negro M. J. in America” at the top of the serials-received book. The first issue included three articles: “Case of Malarial Fever,” by G. W. Rolerfort, M.D.; “Chronic Metritis—Its Etiology and Treatment,” by M. Vandahurst Lynk, M.D.; and “Amputation at the Wrist Joint,” by James M. May, M.D. Despite the lack of financial support, The Medical and Surgical Observer was published monthly for two years. It was a journal that recognized the necessity for a higher standard of medical education and whatever was conducive to its advancement. The purpose of the journal was twofold: to promote the science of medicine by stimulating research, and to bring unity and self-awareness to black medical professionals (53). The journal received written contributions from both black and white physicians.

This premier issue was published in Jackson, Tennessee, by Miles Vandahurst Lynk, M.D. Monthly subscriptions were available for $2.00 per year, in advance, and $1.00 per year, in advance, for students. The Medical and Surgical Observer was devoted to the interests of
medicine, dentistry and pharmacy. The journal included original communications, which were articles submitted by black physicians throughout the United States, with as many as three or four articles per issue. Included also were excerpts from articles re-printed from other medical journals such as the *St. Louis Medical and Surgical Journal* and *The Medical News*, editorials, book reviews, news items, and personals.

Included in the journal were advertisements for black medical schools such as Leonard Medical School at Shaw University in Raleigh, N.C., and Meharry Medical Department of Central Tennessee College, Nashville, Tennessee. Additional advertisements included listings for medical supplies, equipment, services, and subscriptions. Subscriptions and revenue from advertisements were essential to the survival of the journal, which ceased publication with the last issue, dated January 1894. This final issue, according to Todd L. Savitt in the *Journal of the National Medical Association*, did not explain or announce the suspension of operation. However, much can be said as to why the journal ceased. The most revealing reasons were the decline of advertisements, the reduced subscription price, and the scarcity of original articles.

With history in the making, nearly three years after the founding of the medical journal, a medical organization for black physicians was organized in Atlanta, Georgia, in 1895. Three men were instrumental in its formation—Miles V. Lynk; R. F. Boyd, professor of Clinical Medicine of Meharry Medical College; and Prof. I. Garland, Commissioner of the Negro Department of the Cotton State and International Exposition. With Dr. Garland presiding, the name given to the organization was The National Association of Colored Physicians, Dentists, and Pharmacists. Dr. Boyd was elected as its first president. In 1903, the name of the association was changed to the National Medical Association, and the official journal for the association was called *The Journal of the National Medical Association*.

Again, it was the best of times for Miles V. Lynk, a man of vision who approached Bishop Isaac Lane, President of the Trustee Board at Lane College, and asked if he could bring a law school to the college. Bishop Lane responded that if Lynk would be personally responsible for all expenses, then the law class could be taught at Lane. With this promise from the Bishop, Miles found an instructor to teach, the prominent Memphis lawyer H.R. Sadler. Miles then developed a standard three-year law curriculum and began to recruit members for the class (60).

Enrolled in the first class were J. F. Lane, professor at Lane College, later president; G.A. Payne, principal, Jackson Public School; C. A. Leftwich, teacher at Lane College; Rev. R. E. Hart, pastor of C.M.E. Church; Rev. J. H. Grant, pastor of A.M.E. Church; J. H. Trimble, U.S. letter carrier; C. R. Neely, public school teacher; Sanders Jordan, industrialist; and M.V. Lynk. Law classes began June 1, 1900, with daily classes held at Lane College or in Lynk’s office.

After nine months of study, according to Attorney Sadler, Miles Lynk was ready for examination to be admitted to the Bar. A motion was made to the Circuit Court of Madison County that a committee of the Bar be appointed to examine Miles Lynk to determine if he were morally and mentally fit for admission to the Bar. The Examining Committee included A.W. Stovall, C.E. Pigford, and R. I. Chester, all prominent attorneys. Judge Taylor and Chancellor A. G. Hawkins questioned Lynk to satisfy both the letter and the spirit of the law. According to the minutes of the Circuit Court of Jackson, Tennessee, dated February 13, 1901, Wednesday morning, at 9:00, presiding Judge J. M. Taylor ordered that M. V. Lynk be duly licensed to practice law in the courts of Tennessee.
Again, it was the best of times for Miles Lynk, for this time he learned through a survey he had conducted that facilities for training members of his race for the medical field were inadequate. There was an urgent need for more and better trained black doctors and lawyers. In Tennessee, facilities for white students were plentiful, but as he was concerned to note the lack of such facilities for blacks, he decided to do something about it. He approached black citizens of Jackson such as Rev. R. E. Hart, pastor of the C.M.E. Church; Mr. J. H. Trimble, postman; and Drs. J. L. Light and S. H. Broome, physicians. They applied to the State of Tennessee and were granted a charter of incorporation with liberal powers to conduct a school in the name of the University of West Tennessee. He and the group then looked for a site and facilities for the school. A four-room house with a concrete basement was contracted, and they sent printed announcements to prospective students stating the school would open September 15, 1900.

Miles and his wife mortgaged their home to purchase equipment and furniture for the school. The school was to teach medicine (a four-year course), dentistry (a four-year course), pharmacy (a three-year course), law (a three-year course) and nurse training. There were more than thirty students representing six states enrolled in dentistry, medicine, pharmacy and law. Emphasis was placed upon thoroughness of preparation before the University placed its stamp of approval upon the students.

The school operated in Jackson, graduating three classes in medicine, one in dentistry, one in pharmacy and one in law. All of the graduates passed several state board examinations and were licensed to practice. The students organized a medical society, The M. V. Lynk Medical Society, which met every Saturday afternoon. The first officers of the Society were A. W. Thomas, president, and W. M. Paxton, secretary. This organization gave students an opportunity to discuss medical subjects and thus broaden the scope of their information. Other student organizations included the Young Men’s Christian Association, the Alpha Literary Society, the Athletic Association, and the Vandahurst Musical Quartette.


From its inception, the University attracted students from as many as twenty-two states and foreign countries, including British West Indies, Colombia, Japan, Liberia, the Republic of Panama, the Philippines, and Trinidad. However, the University finally closed its doors in 1923 in Memphis, Tennessee, due to financial reasons. During the twenty-three years of existence (1900-1923), it graduated two hundred sixty-six students. Some of its graduates became renowned physicians, such as Dr. Willard M. Lane, assistant professor of surgery at Howard University, and Dr. John S. Perry, president of the Medico-Chirurgical Society of Washington, D. C. (63).

On May 11, 1941, the Bluff City Medical Society celebrated Lynk’s fifty years in the practice of medicine. His wife, Bebe (Steven) Lynk, worked alongside him for fifty-five years to
support his many accomplishments. After her death in 1948, he got married again in 1949, to Mrs. Ola Herin Moore, a graduate of Tuskegee Institute. Miles died on December 29, 1957, at the age of 86 in Memphis. He is buried in Memphis’ New City Park ("Tennessee’s Legendary Physician" 5).

The first black medical schools in the South were Howard University School of Medicine (1869) and Meharry Medical School (1876). These schools were initially established for the sole purpose of training black doctors to tend to the health needs of their race. "National academic requirements for the M.D. degree required only two years attendance at prescribed lectures with a school year lasting 5-6 months" (Watson 24-25).

In Tennessee by the turn of the century, there were six medical schools established: (1) The Knoxville College Medical Department (1895-1900), formally called the Colored Department at the University of Tennessee; (2) Knoxville Medical College (1900-1910), an independent institution organized in the city of Knoxville after the Knoxville College Medical College closed its doors; (3) The Hannibal Medical College (1889-1896), which was located in Memphis with a racially mixed faculty and graduated five students; (4) Chattanooga National Medical College (1899-1908); (5) Meharry Medical College (1869-ongoing); and (6) Medical Department of the University of West Tennessee (1900-1923), which graduated over two hundred students with thirty-seven percent (37%) passing the State Medical Boards. Only one of these colleges is still in existence, Meharry Medical School in Nashville.

In 1909, Abraham Flexner made a visit to the University of West Tennessee Medical Department to gather data in order to publish a report to the Carnegie Foundation on medical education in the United States. His report revealed the following information about the University: the entrance requirements were nominal; there were forty students in attendance; there were fourteen teaching faculty, all of whom were professors; fees were $2000; the chemistry, pharmacy, and microscopy laboratory facilities had meager equipment, while otherwise the rooms were bare; the students had access to eight to ten beds twice weekly in a small hospital nearby; and there was a dispensary in the school building. Flexner strongly suggested that the University be closed because it could not make any contribution of value to the goal of properly trained physicians, which could only be done by good schools (Flexner 181,305).

Yes, it was the best of times and the worst of times, but in spite of some hard times, Miles V. Lynk was able to overcome many obstacles and accomplish many goals. He left behind a legacy that helped organized black medicine throughout the United States. A man of many talents, his literary ability has not yet been mentioned. He also edited a magazine on black history, literature, and culture and established a publishing house to print and sell books and magazines. He also authored several books.

One cannot help but be inspired by Miles Vandahurst Lynk; his success was due to his faith in God, his desire to help his race, and his humble beginning.
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Ethics in the Pressure Cooker:  
The Example of Dietrich Bonhoeffer

by Walton Padelford

Dietrich Bonhoeffer lived in the maelstrom of Nazi Germany before and during World War II. He was born February 4, 1906, in Breslau, Germany, and he died at the hands of the Nazis in the Bavarian village of Schönberg on April 9, 1945, at the age of thirty-nine. He came from an outstanding family of professional people. His father was a psychiatrist on the teaching faculty of Berlin University, and his great-grandfather had been a well-known professor of church history in Jena. Bonhoeffer was also a talented musician, but he failed to win a piano scholarship for which he applied. After this, he made the decision to study theology. He began his studies at age eighteen at Berlin University, from which he graduated with a licentiate in 1927.

Young Bonhoeffer became a world traveler, holding a pastorate in a German-speaking congregation in Barcelona in 1928-29, then studying theology at Union Theological Seminary in New York in 1930. While in New York, he studied under Rheinhold Niebuhr, and through his friendship with Franklin Fisher, a black seminarian, he was introduced to life in the black community in New York. He attended the Abyssinian Baptist Church, where he experienced the power of the preached word, and, no doubt, gained a perspective on what it means to be excluded from the mainstream of national life. Writing from his cell in the Tegel prison in Berlin in 1943, Bonhoeffer states in “The View from Below”:

There remains an experience of incomparable value. We have for once learnt to see the great events of world history from below, from the perspective of the outcast, the suspects, the maltreated, the powerless, the oppressed, the reviled - in short, from the perspective of those who suffer. The important thing is that neither bitterness nor envy should have gnawed at the heart during this time, that we should have come to look with new eyes at matters great and small, sorrow and joy, strength and weakness, that our perception of generosity, humanity, justice and mercy should have become clearer, freer, less corruptible. We have to learn that personal suffering is a more effective key, a more rewarding principle for exploring the world in thought and action than personal good fortune. This perspective from below must not become the partisan possession of those who are eternally dissatisfied; rather, we must do justice to life in all its dimensions from a higher satisfaction, whose foundation is beyond any talk of “from below” or “from above.” This is the way in which we may affirm it.

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3 Dietrich Bonhoeffer, Memories and Perspectives, Gateway Films, 1982.  
In 1933-35 he served as pastor of a German-speaking congregation in London. Pastor Bonhoeffer was forbidden to teach publicly by the National Socialists in 1936 and thus ended his association with the University of Berlin, where he had been on the faculty since 1931. In all these travels, Bonhoeffer was developing contacts that enabled him to function for a time as a double agent for the Abwehr, or intelligence service of the Third Reich. He would go abroad on some ostensible errand and at the same time have talks with English or Danish churchmen about the true nature of the resistance to Hitler in Germany.

Since the appointment of Hitler as Chancellor of Germany by Hindenburg in 1933, the church had been influenced and co-opted into embracing a Nazified theology. The group in the church that pledged loyalty to Hitler was called the German Christians. The opposition group was known as the Confessing Church, of which Bonhoeffer was a leader. The resulting church struggle saw the establishment of an underground seminary by the Confessing Church, and Bonhoeffer was appointed teacher of the first group of seminarians at Finkenwalde in 1935:

In 1935 Bonhoeffer, already one of the leaders of the Confessional Church, returned to Germany. He went to Pomerania to direct an illegal Church Training College, first in a small peninsula in the Baltic, later on in Finkenwalde near Stettin. This College was not formed after any existing model. It was not an order comprising men living in ascetic seclusion; nor was it a Training College in the ordinary sense of the word. The attempt was made here to live the “community life” of a Christian as described in one of Dietrich Bonhoeffer's shorter writings. Young ministers who came from all over the Reich learned here what is so sorely needed today - namely, how in the twentieth century a Christian life should be lived in a spirit of genuine brotherhood, and how such a life could naturally and freely grow if there were only men who entirely belonged to the Lord and, therefore, in brotherly love to one another. It was not until 1940 that the College was finally closed down by the Gestapo.5

The young ministerial students were amazed to discover that Bonhoeffer was a pacifist. This was a position that was obviously unknown in the Reich. One's life could be taken for holding such a position, particularly in the face of the fast-approaching military draft. A Swedish seminarian once asked Bonhoeffer: "If it comes to the military draft, and you must take up arms, what will you do?" He spent a long time in reflection, and at last replied: "I hope that God will give me the power not to take up arms," which, of course, meant that he would be willing to suffer death rather than to fight.6

The point here is that a young German theologian was organizing his theology around the theme of peace-making, peace-keeping, and non-resistance: "peace is the opposite of security."7 He taught that we must take risks for the sake of peace. It is here that the dilemma of Bonhoeffer's ethical journey begins to develop. As he taught his young students at the underground seminary through the Sermon on the Mount, it became clear to them that bearing arms was contrary to the spirit of the New Testament. As one of the seminarians said when he was conscripted, "We went into the army with a bad conscience. The pacifism taught us by

6 Memories and Perspectives.
7 Ibid.
Bonhoeffer, the will to resist fascism and dictatorship had been planted so firmly in me that these seven years as a soldier were utter hell for me."8

The situation in Germany was deteriorating rapidly. The infamous Crystal Night, or the Night of Broken Glass, occurred on November 10, 1938. The Nazi brownshirts broke out the storefronts of Jewish businesses all over Berlin. Bonhoeffer read about this event while he was away from Berlin in the underground seminary. He marked in his Bible the date Nov. 10, 1938 by the passage he was reading that day from Psalms 74:8-9: "They have cast fire into thy sanctuary, they have defiled by casting down the dwelling place of thy name to the ground. They said in their hearts, Let us destroy them together; they have burned up all the synagogues of God in the land."

Through connections with Dr. Karl Bonhoeffer, Dietrich's father, an exit visa was arranged for the United States, and on June 12, 1939, he arrived once again in New York--this time not as a student, but with a career as a teacher, writer, and theologian ahead of him away from the Third Reich. Nevertheless, he was troubled by his relative safety while his friends and family and students were in such grave danger.

From New York he wrote: "I do not understand why I am here....The short prayer in which we thought of our German brothers, almost overwhelmed me....If matters become more uncertain I shall certainly return to Germany....In the event of war I shall not stay in America."9

In his further reflections on his situation in America, he wrote:

I shall have no right to participate in the reconstruction of Christianity in Germany after the war if I did not share in the trials of this time with my people. Christians in Germany face the terrible alternative of willing the defeat of their nation in order that civilization may survive, or willing the victory of their nation and thereby destroying civilization. I know which of these alternatives I must choose, but I cannot make that choice in security.10

July 7, 1939 was Bonhoeffer's last day in America. He took one of the last ships back to Germany before war broke out. Once back in Germany, he began his involvement in the resistance to Hitler, first by working for Army Intelligence as mentioned, then being brought further into the conspiracy to overthrow Hitler by his brother-in-law Hans von Dohnanyi. His sister-in-law Emmi Bonhoeffer, the wife of Klaus Bonhoeffer, was also instrumental in the thinking of Bonhoeffer at this juncture. She asked him: "How is it with you Christians? You will not kill, yet if someone else does it, you are glad." He responded: "It is out of the question for a Christian to ask someone else to do the dirty work, so that he can keep his own hands clean. If one sees that something needs to be done then one must be prepared to do it; whether one is a Christian or not. If one sees the task is necessary according to one’s own conscience."11

And so, with General Ludwig Beck, Admiral William Canaris, Colonel Hans Oster, Hans von Dohnanyi, Klaus Bonhoeffer, and others, Dietrich Bonhoeffer began to play a small role in a grand conspiracy to make a coup d'etat by killing Hitler. In April, 1943, Bonhoeffer was arrested. The coup failed as many other attempts had failed, in July 1944. This failure, in effect, sentenced Bonhoeffer to death.

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8 Ibid.
10 Memories and Perspectives.
11 Ibid.
This brings us to the dynamic ethical situation in which Bonhoeffer lived. How is it possible for an individual to move from a position as a pacifist to participation, albeit oblique, in an assassination plot? Emmi Bonhoeffer says: "It's not a break in his life....moving from being a pacifist to being a 'politician.' There is a clear line of development. The situation changed and the tasks changed."\(^{12}\)

This is the paradox. Situations change and tasks change, but do we have an ethical center to which we can hold, or is the ethical center changing with the tasks in a kind of continual ethical relativism? One word that is continually heard in connection with Dietrich Bonhoeffer is that he is "misunderstood." This must be true. How can one person fully understand another? Bonhoeffer's intellectual and moral struggle for an answer to the great questions of his day was best understood by Bonhoeffer himself. As Ivan Denisovich says in Alexander Solzhenitsyn's great book, "How can a person who is warm understand a person who is cold?" Nevertheless, if we can get a little closer to the struggle that Bonhoeffer went through, this might help us to have courage in our own ethical decision-making.

Bonhoeffer's movement from pacifist to conspirator can be explained by his teaching that there is not a separate morality for the world and for the church.

[There is not] one morality for the world and another morality for the congregation, one for the heathen and another for the Christian, one for the Christian in the secular sphere and another for the homo religiosus. The whole law and the whole gospel of God belong equally to all men. If it is objected that in the world the Church demands the maintenance of justice, of property and of marriage, but that from Christians she demands the renunciation of all these things, if it is objected that in the world retaliation and violence must be practised, but that Christians must practise forgiveness and unlawfulness, then these objections, which have as their goal a double Christian morality, and which are very widespread, proceed from a false understanding of the word of God.\(^{13}\)

There was only one morality for Bonhoeffer: to serve God and to do justice in the world. In Bonhoeffer's reading of the Sermon on the Mount, doing justice in the world meant not taking up arms against others. In his reading of the Proverbs, justice meant holding back those who were heading for death. "If thou forbear to deliver them that are drawn unto death, and those that are ready to be slain; if thou sayest, behold, we knew it not; doth not he that pondereth the heart consider it? And he that keepeth thy soul, doth not he know it? And shall not he render to every man according to his work?" (Proverbs 24:11-12).

Evidently, Bonhoeffer concluded that the only way to deliver those who were marked for death was to conspire with others in the killing of the head of the whole evil system. The will of God comes to us in the clear speech of Scripture, and Bonhoeffer saw the will of God as a moving and developing thing:

The will of God is not a system of rules which is established from the outset; it is something new and different in each different situation in life, and for this reason a man must ever anew examine what the will of God may be. The

\(^{12}\) Ibid.

\(^{13}\) Dietrich Bonhoeffer, Ethics (New York: Simon & Schuster, 1995), 353.
heart, the understanding, observation and experience must all collaborate in this task. It is no longer a matter of a man's own knowledge of good and evil, but solely of the living will of God; our knowledge of God's will is not something over which we ourselves dispose, but it depends solely upon the grace of God, and this grace is and requires to be new every morning.¹⁴

The problem here also involves the question of doing wrong to accomplish a greater good. Although we must be extremely careful here, Bonhoeffer acknowledges that sometimes a person will be called on to incur guilt for the sake of a greater good.

From the principle of truthfulness Kant draws the grotesque conclusion that I must even return an honest "yes" to the enquiry of the murderer who breaks into my house and asks whether my friend whom he is pursuing has taken refuge there; in such a case self-righteousness of conscience has become outrageous presumption and blocks the path of reasonable action. Responsibility is the total and realistic response of man to the claim of God and of our neighbour; but this example shows in its true light how the response of a conscience which is bound by principles is only a partial one. If I refuse to incur guilt against the principle of truthfulness for the sake of my friend, if I refuse to tell a robust lie for the sake of my friend (for it is only the self-righteously law-abiding conscience which will pretend that, in fact, no lie is involved), if, in other words, I refuse to bear guilt for charity's sake, then my action is in contradiction to my responsibility which has its foundation in reality. Here again it is precisely in the responsible acceptance of guilt that a conscience which is bound solely to Christ will best prove its innocence.¹⁵

Dietrich Bonhoeffer, in the pressure cooker of Nazi Germany, was forced to live in a total way the ethical stance he had developed through his experiences and his writings. What Bonhoeffer did as a conspirator was not exactly a "normal" ethical response, nor were the times normal. It is difficult to know beforehand what response we will take as events unfold. This uncertain situation is the theme of one of Bonhoeffer's famous poems.

Who Am I?

Who am I? They often tell me
I would step from my cell's confinement
calmly, cheerfully, firmly,
like a squire from his country house.

Who am I? They often tell me
I would talk to my warders
Freely and friendly and clearly,
As though it were mine to command.

¹⁴ Ethics, 41.
Who am I? They also tell me
I would bear the days of misfortune
equably, smilingly, proudly,
like one accustomed to win.

Am I then really all that which other men tell of?
Or am I only what I know of myself,
Restless and longing and sick, like a bird in a cage,
Struggling for breath, as though hands were compressing my throat,
yearning for colours, for flowers, for the voices of birds,
thirsting for words of kindness, for neighbourliness,
trembling with anger at despoticisms and petty humiliation,
tossing in expectation of great events,
powerlessly trembling for friends at an infinite distance,
weary and empty at praying, at thinking, at making,
faint, and ready to say farewell to it all?

Who am I? This or the other?
Am I one person today, and tomorrow another?
Am I both at once? A hypocrite before others,
And before myself a contemptibly woebegone weakling?
Or is something within me still like a beaten army,
Fleeing in disorder from victory already achieved?

Who am I? They mock me, these lonely questions of mine.
Whoever I am, thou knowest, O God, I am thine.\(^{16}\)

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Necessary Evils:  
Gargoyles, Grotesqueries, and Miss O’Connor

by Karen L. Mulder

In a 1999 New Yorker article on the Southern-driven photography of Sally Mann, Village Voice critic Hilton Als wrote

There have been so many interpretations of the South, and yet it’s still unreconstructed. It’s a landscape choked with words, and its authors—Faulkner, Porter, McCullers, Percy—all write, write, write as if waging war against themselves....Perhaps it’s the air, the tense air that Elizabeth Hardwick, a native Kentuckian, says is part of the region’s gestalt. Or perhaps it’s the tension of colored people and white people living together in a marriage whose civilized veneer coats a history of domestic violence.¹

Als commends one Southern author because she never reduced the South to word pictures evoked by such icons as gumbo, fried green tomatoes, white trash or watermelon crepe myrtle: Flannery O’Connor. She is one of the first Southern artists, Als asserts, who pitted her irony against her times. He applauds her tenacious habit of letting the hard questions go unanswered, and her consistent way of releasing what is called “Southern lyricism” rather than forcing it upon the reader. The lyricism of an O’Connor story seeps out of her characters as if almost against their wills; she lets it ooze in luscious drips or crack like a whip out of people who never internalized the romantic stew that most of us know as the antebellum South. Her people probably never truly accepted the existence of Tara, and a “fiddle-de-DEE” or a “la-de-DAH” coming from their cracked lips would have been tantamount to an obscenity.

O’Connor’s love of the absurdity of human beings, and the self-deprecating sense of humor she applies to her people, are said by some to be genetically-imprinted in the true Southern soul. Yet these qualities are merely the skin of her creations, the container for souls pulsing with sacramental matter. Without her embrace of this deeper substance, she would not be able to absolve the patent flaws, the Aristotelian hamartia, of each one—that fatal flaw which complicates life unbearably and multiplies exponentially as more characters are added to the storyline.

One story which exemplifies this interplay is “Parker’s Back,” the title of which refers both to the physical back of one Obadiah Elihue Parker, as well as to Parker’s return to his own personhood. It implicates the necessary evil that is Parker’s wife, one dour and bony Sarah Ruth Cates whom he woos with an obscenity and is utterly ill-matched with him, and who Parker assumes is a Christian. In fact Sarah Ruth is nine-tenths of the law, and that is the extent of her religiosity; Sarah Ruth doesn’t believe in churches because she believes people do idolatrous things in them.²

Parker’s unique “skin” is a body covered with tattoos, and he becomes aware in the story that this skin is merely a container for a yawning emptiness. Inspired by the exotic otherworldliness of the tattooed man at a circus sideshow in his youth, Parker attempted to carve out a similar quality with his panoply of tattoos. But he failed. Each of his tattoos, and their juxtaposition to one another, can be analyzed as exhaustively as Hieronymus Bosch’s Garden of
Earthly Delights, with as little comprehension as a result of the process. O’Connor has packed associations into their placement, or lack of it, and their content. But, as Jill Baumgartner points out in Flannery O’Connor: A Proper Scaring, “All his tattoos have no unity. Arranged haphazardly and incongruently, they do not move together. Parker’s body is the emblem of his spiritual condition.”

In the midst of Parker’s dissatisfaction with himself, he is knocked off his tractor, and his shoes are literally blown off of his feet—an experience which Baumgartner likens to Moses and the burning bush. He decides to order a final tattoo on his back, but realizes with sacramental omniscience that it is the last tattoo, the Omega tattoo, and must bring the unity to his disjointed skin and be greater than just the Bible. In fact, it must even be greater than just the symbol of the unifying Christ—it must be Christ himself. Parker, reviewing all the tattoo artist’s designs, chooses to cover his back with the Pantocrator, “the Byzantine Christ,” as O’Connor puts it. As soon as the image is melded to his flesh, he drinks a massive amount of whiskey, gets into a bar brawl, and lands shoeless in the homeless shelter for the night—at the utter end of himself.

Sarah Ruth, representing merciless and reckless justice, meets him with accusations of infidelity, but when she sees the tattoo, she erupts into an absolute rage. “Look at it,” he says. “It ain’t anybody I know. It’s Him. God.” “What do you know how God looks? You ain’t seen him.” Sarah snarls. She then beats Parker so severely with her broom that red welts and blood crusts form on both his back and Christ himself. The Word is truly made flesh; Parker shares bodily in the physical sacrifice. Parker comes home to himself, because it is the only option left.

In some ways, all of O’Connor’s characters compare equitably with the grotesques of the medieval ages as caricatures of reality that contain the possibility of grace and redemption. But unless the reader starts at a place of relative security in the operative strength of grace and redemption, O’Connor’s stories will only be a skin-deep and sassy assessment of human character flaws. And there is so much more, as there was to the imagery of one of the most puzzling periods of church art: the grotesque visages of medieval Romanesque capitals and tympana which featured, among images of grace and redemption, and in a manner as jumbled as Parker’s skin, gargoyles and ghoulish beings worthy of a Tim Burton film, or a Hieronymus Bosch altarpiece.

I imagine that O’Connor’s detractors raise objections to her imaginative ethic that are not much different from the objections of a twelfth century reformer who started the Cistercian order. St. Bernard of Clairvaux vociferously complained about the material excesses and grotesque decorations of the Cluniac churches in his apologia to Abbot William Suger, the Parisian cleric credited with inspiring the beginning of the Gothic style at St. Denis. Bernard first writes testily about the amount of gold and wealth displayed in the cathedrals. “Do you think such appurtenances are meant to stir the penitents to compunction,” he writes, “or rather to make sightseers agog? Oh vanity of vanities, whose vanity is rivaled only by its insanity! The walls of the church are aglow, but the poor grow hungry!”

Suger was definitely not on the same page. Justifying his lavish expenditures and bursting coffers, Suger daintily covers his motives in a booklet about the renovations of St. Denis, expostulating that

when...the loveliness of the many colored gems has called me from external cares, and worthy meditation has induced me to reflect, transferring that which is material to that which is immaterial, on the diversity of the sacred
virtues: then it seems to me that...by the grace of God, I can be transported from this inferior to that higher world in an anagogical manner. 

Anagogical justification, it would seem, has been passed down through the centuries, virtually unchanged, to any number of televangelists--although bouffant wigs or toupees and ersatz Louis Catorze furniture compare rather weakly with gemstones and pure gold.

Returning to the twelfth century: Bernard consequently parted ways with the Cluniacs and innovated the Cistercian order, which set its abbeys far from city centers, maintaining a stance of chastity and poverty. Cistercian architecture was stolid and plain, and beautiful in its solid simplicity. Windows were made of clear glass, not the richly colored glass of St. Denis, allowing the sole decoration of the interior to be the light of the sun, an analogue for God’s purity and light. If a Cistercian order took over a sanctuary, in fact, the abbot and prior were to see to it that within a year and a half all colored glass was removed--else they ran the risk of eating only bread and water until the glass was replaced.

But the portion of Bernard’s jeremiad which relates more directly to O’Connor is more to the point. Bernard condemns the use of grotesquity in the sanctuary, and in so doing, leaves nothing to the imagination.

What are those ridiculous monstrosities doing, an amazing kind of deformed beauty and yet a beautiful deformity? What are the filthy apes doing there? The fierce lions? The monstrous centaurs? The creatures, part man and part beast? You may see many bodies under one head, and conversely, many heads on one body. On one side the tail of a serpent is seen on a quadruped, on the other side the head of a quadruped is on the body of a fish...In short, everywhere so plentiful and astonishing a variety of contradictory forms is seen that one would rather read in the marble than in books, and spend the whole day wondering at every single one of them rather than in meditating on the law of God. Good God! If one is not ashamed of the absurdity, why is one not at least troubled at the expense?

In fact, the laundry list of excesses is longer than I’ve allowed here, and in its very length and detail might reveal Bernard’s personal fascination with the very beasts he describes. Moreover, it can be argued that the chiasmic overload of such works did, in fact, “stir the penitents to compunction,” although today it sets the sightseers agog, because twentieth century sightseers are the only people entering (and financially buttressing) these cathedrals.

We cannot know the exact imaginative ethic of the medieval carvers because they worked with stone and not with words. It is presumed that they carved to enhance the understanding of the congregation, which was also illiterate. Honorius of Autun, the town where the exemplary concentration of grotesquity is displayed at Saint Lazare, wrote that art was acceptable if it beautified the House of God; if it called to mind the lives of religious figures; and if it served as literature to the laity.

As the grotesques contemplated thus far would be considered agents of beautification only in a Maurice Sendak book and represent no saints we would wish to imagine, we must also question whether such works received the bishop’s absolution as “literature to the laity.” This rationale is also compromised by the fact that such capitals, approximately two or three feet in height, are positioned at least thirty feet above the ground, where the unbespectacled medieval
viewer—since glasses had not yet been invented—might not even be able to see them. Tympana are also twenty feet above the ground, perched over huge doors. Could it be that these images, which we so handily view in our mass-produced textbooks, conveniently enlarged, were designed solely as a presence before God, beyond the view of the nearsighted—in other words, can it be that the carver’s justification for grotesquery was precisely that such images were far enough from the congregation to do no harm, yet close enough to heaven to perhaps titillate God? Does this represent the irony of their times?

A list of grotesqueries, similar to St. Bernard’s in syntax if not content, is repeated in a scene from Umberto Eco’s medieval detective mystery The Name of The Rose. Eco merged his erudition of the medieval world, seen most particularly in his book Art and Beauty in the Middle Ages, with a vivid imagination that gives readers a palpable grasp of the feel and stink, if not the paranoid millennial fear, of the age. Mindful of the vast and superstitious sense of mystery which marks the period, Eco describes the thoughts of a naive Franciscan novice, Axel, who stumbles into the narthex of a great basilica for the first time. Before he virtually passes out from visual overload, Axel describes at least twenty of Bernard’s “deformed beauties” and “beautiful deformities” of which, Axel remarks, “only the vague reports of travelers speak slightly.”

...[M]any of them were unfamiliar to me, others I identified. For example, brutes with six fingers on each hand;...sirens with scaly tails who seduce sailors; Scylla, with a girl’s head and bosom, a she-wolf’s belly, and a dolphin’s tail; the hairy men of India who live in swamps; the synocephali, who cannot say a word without barking; sciopods, who run swiftly on their single leg and when they want to take shelter from the sun stretch out and hold up their great foot like an umbrella...

Eco does not describe the rest of the program, which invariably included dire representations of the fates of the damned and the fates of the saved—in which case, just as in medieval literature and drama, hell was always far more entertaining than the floating, serene haze of heaven. Gislebertus, who even signed the tympanum at Autun with Gislebertus Hoc Fecit [Gislebertus made this], also carved into the grand lintel, “Let all who see this terror be appalled.” While this is a tantalizing clue about the rationale of these carvings, it is not enough to anchor an academic repute or specialty. 10

Eco does not leave the novice’s experience at the level of stupefaction. In the novel, Axel makes a concise but reasonable apologetic for the weird variety of necessary evils carved into the sanctuary. Although Eco does not say it, most of these programs always featured Christ in the center of the tympanum, over the door, in His cosmic mandorla, extending a hand over both the realm of salvation as well as that of the damned. So Axel is able to conclude, without artifice, that the doorway “bore witness that the Word had reached all the known world, and was extending to the unknown...Thus, the doorway was a joyous promise of concord, of unity achieved in the world of Christ.”12

Do we really believe this? Is this acceptable? Perhaps our generic skepticism is our birthright. It is no mystery that medieval theatergoers hooted most loudly when the devil took the stage, or the sinner was unmasked, or the hellmouth opened its yawp to consume the damned. These were plot twists that persons could really sink their teeth into, so to say. A perfectly balanced realm of light and understanding and resolution, however...how does the artist portray
it? Not very well, but artists can hardly be blamed for having limited imaginations. For who has seen Paradise? We can only long for the resolution that heaven is supposed to be, with very little descriptive material to go on, and this does not good art make. Generally, it makes flannelgrams, banners and Sunday school curricula.

Dante himself was inspired by Giotto’s mosaics from the late thirteenth century, and Giotto had probably seen carvings like those of Autun and Vezelay, which in turn may have been influenced by so-called eyewitness reports of underworld sojourners such as Tondal, Thirkill, Drythelm, and Albericus in the fifth through ninth centuries. Dante’s Inferno is not purely the writer’s invention, but rather the ultimate synthesis of all which came before it plus a great dose of Dante’s inventive genius; it is still the most widely read book of The Divine Comedy, whose Paradiso seems rather stuffy, bucolic and static by comparison. 13

The riot, the visual cacophony of these Romanesque stones represents, possibly, the most inventive imaginative schema—or, alternatively, the least derivative schema—to be found in Christian art. This is a style that is clearly far removed from the neoclassicism of the Renaissance, and certainly not reiterated from the symbolization of something empirically filtered out of nature, which fueled the eighteenth and nineteenth century religious landscapes of Constable, David Friedrich Caspar, Thomas Cole, or the Hudson River School. This is informed by an interior landscape all its own—the cartography of the imagination. Yet as Eco’s study on Augustinian aesthetics reveals, medieval taste was concerned neither with the autonomy of art nor the autonomy of nature. It involved, as Eco explains, the more complicated apprehension of “all of the relations, imaginative and supernatural, subsisting between the contemplated object and a cosmos which opened on to the transcendent. It meant discerning in the concrete object an ontological reflection of, and participation in, the being and the power of God.” 14

If the being and the power of God is the rock-bottom foundation of the artist, then the contemplation of evil can be frank, and its portrayal can be freed up from fear. After all, the reason people do not receive difficult imagery, or difficult art, or difficult literature, is often justified as a preference for beauty over the horrific, quite understandably. But I would go so far as to say that certain individuals grapple with personal fears in the face of threatening visual imagery. Medievals faced the same millennial fear and pessimism we recently faced on the eve of the year 2000, but canned foods, wheatgrinders and home generators were not a solution for them. Faith, and getting straight with God, was the only option big enough for the Western Christian to combat the coming destruction, if there were to be destruction.

Anthony di Renzo’s assessment in American Gargoyles: Flannery O’Connor and the Medieval Grotesque makes one of the most assertive connections between the imaginative rationale of O’Connor and medieval art. He suggests that the potency of O’Connor’s characters, in their clearly evidenced human weakness and gross disjunction with life in general, is a modern counterpart of the medieval carvings from French Romanesque cathedrals of the tenth through twelfth century. And I admit that the parallelism is attractive, but only if you take into account the possible motivations behind the imaginations of medieval sculptors, and the possible motivations of an opinionated Catholic writer from Georgia.

Unfortunately, the motivations behind art-making, or the intentional grid of the artist in historical periods other than ours, is banned from contemporary criticism in academia—which therefore robs us of a deep vein of sensibilities which we, as moderns, may have discounted—much as O’Connor’s grizzly scenarios are discredited by that populace in the pews which prefers to candy-coat human nature—a blatant form of whitewashing using the sugar of confected and gracious manners.
It is only from a confident vantage point of belief in a unified and immutable Absolute that one can harness grotesquely with the ultimate goal of redeeming an image to produce grace. Gargoyles remind us that our moral propensity is to sin and to err, and that we are ugly in God’s sight and less useful than a one-footed sciopod or a synocephalus. The consequences of meanness and small thinking lead Flannery O’Connor’s grotesques into situations that the reader knows could have been avoided. But as Anthony di Renzo writes, “In the cathedral of Flannery O’Connor’s fiction, the gargoyles have the last laugh.”¹⁵ Their perversity subverts all efforts to reduce her art to a sermon or a jeremiad—just as medieval workers sabotaged the Euclidean blueprints of church architects by embellishing them with a thousand improvised monstrosities. O’Connor’s grotesques are the emancipators of her fiction. Their maddening ambiguity guarantees her readers an interpretive freedom, a chance to participate in the construction of poetic meaning, as di Renzo has noted.

Beyond the limitations of reasoning and observation, grotesques delve into the reality of the holy— and for this reason, I am of the opinion that they should not be discredited and discounted in contemporary imagery conceived by Christians. As God is infinite and creative, setting no parameters in the Old or New Testament other than the warning against idolatry, we must assume that artists of faith are free to ply an infinitely creative number of solutions to image-making.

Even John Ruskin, the venerable art critic and self-proclaimed advocate for the figurative tradition of painting in the 1800s, appraised gargoyles and grotesques as “the signs of the life and liberty of every workman who struck the stone; a freedom of thought [which ranks] in scale of being, such as no laws, no charters, no charities can secure.”¹⁶

What we have forgotten is the ability to hold things in paradox, to suspend belief in honor of a transcendent cosmos, and to allow a diversity of expression within a general unity of thought. Because unity is no more. We want polyphony, but we hear dissonance; we sense fragmentation, when we long for integration and wholeness. We desire to make big statements with our art, but we can only make small subjective observations.

Here is the greatest paradox of all. Creative liberty is truly at its freest within the orderly confines of a universal absolute. Flannery O’Connor is a timeless contributor to the genre because she understood this; she could envision the small statements—the human details which clog life—in their larger context. O’Connor’s gargoyles are more relevant now to us than, perhaps, the Romanesque demons and beasts, but no less tied into the tradition of grotesquy that is meant to appall and to “stir the penitents to compunction.” And Christ has remained the unifying presence between the realm of the damned and the realm of the saved; the one who must be believed to be seen, as Parker learned from the beating on his back; the one who urges us to forgive seven times seventy times, so that we might grasp our own forgiveness and land in a place where grotesqueries have no use, and where the necessary evil of gargoyles is forever dispelled.
FOOTNOTES


5 Abbot Suger. From “On What Was Done Under His Administration” from Janson’s *History of Art*, p.389.


8 The carvings portrayed are a representative selection from St. Lazare in Autun, the Basilica of Vezelay, and Chartres Cathedral, France.

9 *Honofrius of Autun, Gemma Animaee*, chap.132 (PL, 172, col.586) [also in Eco, p.16].


13 While Gustave Dore and William Blake are most widely known for illustrating Dante’s *Divine Comedy*, hundreds of artists throughout history have begun but not concluded similar projects, including Botticelli. This author created a comprehensive visual catalog for Dante scholar Peter Hawkins at Yale University in 1997; c/o Peter Hawkins, ISM, 409 Prospect Street, New Haven, CT 06511.


16 Ruskin in Di Renzo, p.225.
**JUFF Contributors**

_Steve Baker_, Director of the Library and Associate Professor of Library Services, is a frequent JUFF contributor on such topics as the role of women in church history and the evolution of the Bemis, Tennessee community.

_Mark Bingham_ enters his fourth year at Union as the 2000-2001 president of the Faculty Forum; he is Associate Professor of English.

_W. Terry Lindley_ is Associate Professor of History and a frequent researcher into the intersection of church history and contemporary worship trends.

_Melissa Moore_, Associate Professor of Library Services, follows up last year's JUFF article on children's literature with this piece, reflective of the several English courses she has taken at Union for graduate credit.

_Karen L. Mulder_, currently on leave pursuing doctoral study at the University of Virginia at Charlottesville, is a first-time JUFF contributor; she is Assistant Professor of Art.

_Walton Padelford_ is a multiple JUFF contributor whose last offering was a bilingual (English/Spanish) original poem in the 1998 issue; he is Chair of the School of Business Administration and Professor of Economics.

_Roger Stanley_ is Assistant Professor of English and has edited or co-edited JUFF for the last six years.

_Wayne Wofford_ is Director of the Edward P. Hammons Center for Scientific Studies and Professor of Biology; this year's article is a companion piece to his 1999 JUFF contribution on area pollution.
honorable, which became widely popular in the Middle Ages. Honorius Augustodunensis writes
that Mary Magdalene merited her singular Christophany ("angelum videre meruit Dominusque
resurgens primo omnium ei publice apparuit"), and that Christ sent her as an apostle to his
Apostles ("eaemque apostolam apostolis suis misit"); Honorius sees Mary as a second Eve
bearing the message of eternal life instead of subjecting humankind to mortality ("et sicut prima
femina mortem viro traderet, ita nunc femina perhennem vitam viris nunciaret"; PL 172.981). In
Joseph Szövérffy’s survey of medieval Magdalene hymns, Apostola is one of four principal titles
that she is repeatedly given (92). Vernacular authors such as Osbern Bokenham (139) and
Nicholas Love (206) also observe this distinction in their praise of the Magdalene, and Joseph
Harris has argued that the ballad "Maiden in the Mor Lay" draws upon similar Magdalene
traditions (79). Possibly the most dramatic illustration of her apostolic role can be found in an
English twelfth-century psalter probably prepared for Christina of Markyate. Here the
Magdalene, with hand raised, extends her finger in a gesture of address, recounting the news of
the Resurrection to eleven wide-eyed Apostles who hang on her every word. This iconography
is not common, but it can be found in multiple manuscript illustrations, carvings, and stained glass
beginning in the eleventh century (Haskins 220, 452).

Conscience’s suggestion that the Magdalene noise her news indiscriminately abroad
undermines her quasi-evangelical authority. Even his summarizing statement, “Thus cam it out
hat crist overcoom, recouerede and lyuede,” implies a random relaying of information. The
language of the Vulgate, confirmed by patristic, hagiographic, dramatic, and lyric traditions,
stresses Mary Magdalene’s role as an appointed envoy to the Apostles, not the indiscriminate
speaker we find in Conscience’s account.

III

Conscience’s portrayal of a garrulous Magdalene offers an ideal opportunity to employ
the proverb “What a woman knows may not well remain secret.” The garrulity of women was a
proverbial commonplace, and its appearance in one of the most encyclopedic poems of the
English Middle Ages may therefore be unsurprising. Examination of the contexts in which this
proverb occurs elsewhere, however, reveals more specific, and more specifically ideological,
agendas which condition its use and which motivate Conscience’s apparently gratuitous
denigration of the Magdalene.

The “counsel” proverb’s first English attestation comes from the widely popular
Proverbs of Alfred, in which we are told that King Alfred was “pe wysuste mon þat wes
englelon on” (lines 23-24). For the author or compiler of the Proverbs, part of the king’s
wisdom involved a facility with misogynistic traditions. At “Sifird,” before a gathering of
bishops and earls, knights and clerks, Alfred counsels his men: “Be never so insane nor so drunk
with wine that you ever tell your wife all your plans, because she will reveal all in front of all
your enemies . . . for woman is word-crazy and has a tongue too swift, and even though she

Le Culte de Marie Madeleine en Occident, des origines à la fin du moyen âge.

I translate from the J text (Jesus College Oxford MS. 29). The “counsel” proverb is item
W534 in the Whitings’ proverb dictionary; compare items F426 and W485, and Tilley’s item W649.
might want to, she cannot withhold anything.” In the *Proverbs of Alfred* we first witness what will become a recurrent narrative context for this proverb: the secrets which a “word-wod” woman divulges will be hazardous to men.

No text more strongly emphasizes the danger of confiding in wives than Jean de Meun’s portion of the *Roman de la Rose*, in which the female personification Nature “confesses” to a male Genius for creating that most reprehensible of all creatures, Man. What ensues is a broad parody of Catholic confession in which a priestly Genius uses his authority not only to counsel Nature, but also to embark on a diatribe against the seductive menace and verbal infidelity of women, employing the same sententious advice found a century earlier in the *Proverbs of Alfred*:

No man born of woman, unless he is drunk or demented, should reveal anything to a woman that should be kept hidden, if he doesn’t want to hear it from someone else . . . for if, just one single time he ever dares grouch at her or scold her or get angry, he puts his life in danger—if he deserved death for his deed—that she will have him hanged by the neck, if the judges catch him, or secretly murdered by friends. (276)

As in the *Proverbs of Alfred*, we see the details of the insanity or drunkenness that must afflict a foolish man who speaks his mind to his wife, as well as the disastrous consequence which would befall him. A few lines later, Genius dramatizes the proverb by portraying a sexually seductive wife who weasels her husband’s secret out of him, saying:

I see all these other women who are sufficiently mistresses of their houses so that their husbands confide in them enough to tell them all their secrets. They all take counsel with their wives when they lie awake together in their beds, and they confess themselves privately so that there is nothing left to them to tell. Truth to tell, they even do so more often than they do to the priest. I know it well from them themselves, for many times I have heard them; they have revealed to me everything, whatever they have heard and seen and even all that they think. In this way they purge and empty themselves. However, I am not the same sort. (278)

Jean de Meun’s mention of priests in this passage transforms these loose-lipped wives into metaphorical confessors—a metaphor further explored below.

Chaucer would make liberal use of the “counseille” proverb, employing some form of it in *The Wife of Bath’s Tale* (the digression on Midas and his ass’s ears, line 980), *The Monk’s Tale* (2015-30; 2090-94), and *The Tale of Melibee* (1060). Chaucer’s Monk, for example, does not ascribe Samson’s downfall to fortune, but to his error of confiding in women:

Of Sampson now wol I namoore sayn.  
Beth war by this ensample oold and playn  
That no men telle hir conseil til hir wyves  
Of swich thyng as they wolde hany secree fayn,  
If that it touche hir lymes or hir lyves.  

(*MkT* 2090-94)
The Wife of Bath is especially fond of quoting proverbs, even to the disparagement of her own
gender. In her tale, when she discusses the suggestion that a woman most desires her husband’s
confidence, she embarks on a long digression employing, and radically altering, the familiar
myth of King Midas and his ass’s ears—a digression in which Midas’s wife, not his barber,
betrays his embarrassing secret. She further affirms the truth of the proverb in a confessional
passage concerning the secrets of Jankin:

My fifthe housbonde—God his soule blesse!—
Which that I took for love, and no richesse,
He som tyme was a clerk of Oxenforde,
And hadde left scote, and went at hom to borg
With my gossib, dwellynge in oure toun;
She knew myn herte, and eek myn priveete,
Bet than oure parisshe preest, so moot I thee!
To hire biwreyed I my conseil al.
For hadde my housbonde pisse on a wal,
Or doon a thynge that sholde han cost his lyf,
To hire, and to another worthy wyf,
And to my nece, which that I loved weel,
I wolde han toold his conseil every deel.
And so I dide ful ofte, God it woot,
That made his face often reed and hoot
For verray shame, and blamed hymself for he
Had toold to me so greet a pryvete.

(Prol. WBT 531-42)

Thus Jankin joins husbands from the *Proverbs of Alfred*, the *Roman de la Rose*, and the Wife’s
own tale as men whose lives are ruined or jeopardized by their loose-lipped wives.7

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7 One might also observe that the verbal promiscuity of these women frequently possesses
a sexual correlative. The wife of Genius’s *Roman de la Rose* diatribe partially undresses as she
solicits her husband’s secret, while Delilah and the Wife of Bath are both portrayed as sexually
powerful and potentially dangerous. The “counsiell” proverb also features prominently in
Thomas Hoccleve’s *Tale of Jonathas*, in which the prying woman is the prostitute Felicula.
This correlation between verbal and sexual promiscuity might have prompted Langland’s
audience to recall the Magdalene’s traditional status as a reformed prostitute, thereby associating
her with the Venerien Wife of Bath, the prostitute Felicula, the temptress Delilah, and the
seductive wife of Genius’s diatribe in a sorority of sexually and verbally dangerous women.
Langland alludes to the Magdalene’s sexuality in passus 5, lines 496-498 and passus 10, line
428, presenting the Magdalene as one of salvation history’s greatest sinners whose redemption
illustrates God’s abundant grace. No one, according to the Dreamer, could have led a worse life
in the world than her. Conscience, however, does not make the Magdalene’s presumed sexual
past an issue in passus 19.
This selective but representative narrative history of the proverb reveals that loose-lipped and prying women jeopardize men’s crucial secrets, and sometimes their very lives. And in two instances the usually domestic “counseillé” proverb carries with it implicit ecclesiastical associations. Genius’s diatribe in the *Roman de la Rose*, with its portrayal of women as irresponsible secular confessors, reinforces the exclusively male role of confessor by pointing out a woman’s inability to hold an office so dependent upon the ability to “keep counseillé.” Chaucer was to repeat these ecclesiastical associations in the *Wife of Bath’s Prologue*, in which Alisoun asserts that her gossip “knew myn herte, and eek my privatye, / Bet than our parisshe preest . . . .” If this is how women keep counsel, so the argument would run, they surely would make disastrous priests. In the *Roman de la Rose* and the *Wife of Bath’s Prologue*, the proverbial garrulity of women is expanded from a domestic sphere to reflect a religious one.

However, the author who provides the clearest connection between the “counseillé” proverb and anxieties over women’s religious authority is Langland himself. In passus 5, Wrath, a former friar, slanders all women while confessing to Repentance:

I haue an Aunte to Nonne and an Abbesse bope;
Hir were leure swowe or swelte þan suffice any payne.
I haue be cook in hir kiche and þe Couent serued
Manye Monþes wiþ hem, and wiþ Monkes bope.
I was þe Prioresse potage and opere pouere ladies,
And maad hem Ioutes of langlyng þat dame Iohane was a bastard,
And dame Clarice a knyþtes douȝter ac a cokewold was hir sire,
And dame Pernele a preestes fyle; Prioresse worþ she neuere
For she hadde child in chirietyme; al oure Chapistre it wiste.
Of wikkedede wordes I, wråþe, hire wortes made
Til “þow lixt!” and “þow lixt!” lopen out at ones
And eiper hitte oþer vnder þe cheke.
Hadde þei had knyues, by crist! hir eþer hadde kild oþer.
Seint Gregory was a good pope, and hadde a good forwit:
That no Prioresse were preest, for þat he purueiede;
They hadde þanne ben Infamis, þei kan so yuele hele counseil.

(5.153-68)

For Wrath, the “counseillé” proverb involves no mere metaphor but stands as the principal argument against women priests. Wrath dismisses the prioresses’ assumptions of authority with the same reproach that Conscience levels at the Magdalene, using the same proverb; they cannot restrain their “janglyng” mouths.

IV

Up to now my focus has been on literary traditions that may help make sense of Langland’s problematical Magdalene, but it is in a social context that Conscience’s proverbial denigration of the Magdalene can be better understood, and gendered controversies of the late fourteenth and early fifteenth centuries recommend such an approach. In the first half of the
thirteenth century, it appears that some priresses were testing the limits of their religious authority despite the oft-repeated injunctions of 1 Timothy 2:11-12, encroaching upon the priestly duty of hearing nuns’ confessions. Their presumption led to a sharp rebuke by Pope Gregory IX, who forbade priresses to assume such duties. It is this decretal to which Wrath alludes in passus 5, and Wrath’s use of the “couseille” proverb implies an association on some level in Langland’s mind between the Magdalene and these priresses who had overstepped their bounds.

Perhaps Langland was concerned with these gendered tensions because his age was uniquely marked by an increasingly public feminine religiosity that became associated with everything subversive and dangerous. The explosion of lay piety, affective devotion, and vernacular translation of Scripture threatened to circumvent the already-besieged clerical community in England. Mystics such as Julian of Norwich were recording their spiritual experiences while Langland was writing his poem, and those who received visions from God authorizing non-traditional actions would prove most difficult to contain. Jean de Gerson, the staunch defender of orthodoxy best known for his vigorous persecution of Wyclif’s continental counterpart, Jan Hus, felt compelled to remind Langland’s generation that “the female sex is forbidden on apostolic authority to teach in public, that is either by word or by writing . . . . All women’s teaching, particularly formal teaching by word and by writing, is to be held suspect unless it has been diligently examined, and much more fully than men’s” (Colledge and Walsh 151). Here we may be reminded of a Canterbury monk’s reaction to Margery Kempe: “I wold hoy wer closyd in an hows of ston hat per schuld no man speke wyth pe” (27).

If contemporary accounts can be trusted, there were not enough houses of stone in all of England to contain the women who were supposedly assuming important roles in heretical movements of Langland’s day. Lollardy especially offered opportunities for women that orthodox Catholicism would never have allowed, as women assumed important but hazardous roles as readers and interpreters of Scripture. Yet the extent to which women were actually involved in Lollardy is the subject of considerable debate. Claire Cross has suggested that through being central to the family unit by which Lollardy thrived, women were spiritual leaders in the heresy. According to Cross, women were active teachers mainly through Conventicle recitation of memorized Scripture (360, 370-71). Margaret Aston continued Cross’s line of inquiry, additionally addressing rumors that Lollard women were actually functioning as priests. However, Shannon McSheffrey has cautioned against exaggerating women’s roles, reminding us that most of these women were illiterate and ancillary to a definite male leadership structure. McSheffrey writes, “Even most influential female Lollards confined their endeavors to informal situations rather than public teaching roles” (21).

Although the extent of women’s actual involvement in Lollardy is debatable, one thing is certain: women were perceived to be usurping traditionally male roles in heretical movements, including preaching and expounding Scripture, and this usurpation was to be a source of great anxiety. Margery Kempe’s public religiosity repeatedly earned her the accusation of “fals loller,” suggesting an association among her contemporaries between the heresy and preaching

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8 See Friedberg, Decretal Gregor. IX Lib. V. Tit. XXXVIII. cap. x (cols. 886-7).
women. It may be no coincidence that the two great persecutors of Wycliffite and Hussite belief, Thomas Arundel and Jean de Gerson, also made a point of condemning women preachers. Margaret Aston adduces considerable evidence from chronicle and sermon literature, poetry, and polemical tracts to reveal widespread concern over women’s roles among the champions of orthodoxy. By the 1390s rumors were circulating throughout London that women were celebrating masses, and Hocecleve’s oft-quoted verbal assault on Oldcastle shows how women were already established as vigorous heretical interpreters of Scripture in the minds of the orthodox by this time:

Some wommen eke, thogh hir wit be thynne,
Wole argumentes make in holy writ!
Lewe calates! sittith doun and spynne,
And kakele of sumwhat elles, for your wit
Is al to feeble to despute of it!
To Clerkes grete apparteneth þat aart
The knowleche of þat, god hath fro yow shyt;
Stynte and leue of for right scendre is your paart. (13)

Hoccleve responds to the threat of Lollard women scholars in what is by now a predictable pattern: by impugning their authority through misogynistic portrayals of small minds and big mouths. The imagined “kakeling” of Hoccleve’s women is a revealing correlative to Langland’s depiction of “janglyng” prioresses and an indiscriminate Magdalene. The charge of garrulity seems to have been a multi-purpose putdown for any group of presumptuous women.

Aston discusses the most compelling evidence for a late fourteenth-century debate over women’s religious authority in the case of Walter Brut (or Brit), arrested in 1391 on heresy charges. Brought before the Bishop of Hereford, John Trefnant, Brut contended that women did indeed have priestly powers denied them by orthodoxy, expressing such powers in explicitly Petrine terms (e.g., they have the power “to bind and to loose”). Prominent theologians were convened to counter Brut’s claims, and his case evolved into a kind of referendum on whether women could attain religious privileges formerly reserved to men. In the debate between Brut and his opponents, the Magdalene was introduced as proof of the defensibility of women preachers: “multe mulieres constanter predicaverunt verbum quando sacerdotes et alii non audebant verbum loqui et patet de Magdalena et Martha” (“Many women steadfastly preached the Word when priests and others did not dare speak the Word, as evinced by the Magdalene and Martha” (Aston 52; my translation). Brut’s case demonstrates that the symbolic power of the Magdalene’s voice could be and was appropriated by proponents of expanded female religious liberties.9

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9 William White was also alleged to have used these Petrine terms in the early fifteenth century; see Aston 52, 59.

10 Here one might also be mindful of allegations made toward Waldensian women. In his Summa adversus Catharos et Valdenses (ca. 1241), the Dominican Moneta of Cremona asserts that “the Waldensians appealed to the example of Mary Magdalene to justify preaching
Brut’s defense benefitted from hagiographical traditions that made Mary and Martha outstanding women evangelists. In the *Legenda Aurea*, St. Peter entrusts Mary Magdalene to the care of Maximin fourteen years after the Resurrection. When the disciples disperse to spread the gospel, Maximin, Mary, Martha, Lazarus, and others are cast out to sea in a rudderless ship by unbelievers. Miraculously arriving safely at Marseilles, the Magdalene immediately sets to work converting heathens through the power of her speech. The composer of the *vita* invests the Magdalene’s lips with both erotic and rhetorical power:

When blessed Mary Magdalene saw the people gathering at the shrine to offer sacrifice to the idols, she came forward, her manner calm and her face serene, and with well-chosen words called them away from the cult of idols and preached Christ fervidly to them. All who heard her were in admiration at her beauty, her eloquence, and the sweetness of her message...and no wonder, that the mouth which had pressed such pious and beautiful kisses on the Savior’s feet should breathe forth the perfume of the word of God more profusely than others could. (376-77)

It is no wonder then, given Mary Magdalene’s status as an emblem of the value—even the privilege—of women’s speech, that she could be perceived as a dangerous role model by later clerics. A figure outside the male apostolic circle of Christ but who was still clearly favored by him, the Magdalene would serve as an inspiration for a growing body of late medieval women who similarly sought an affective bond with Christ independent of a male clerical “inner circle.” Prominent women such as Christina of Markyate and possibly even Richard II’s Queen Isabella owned Psalters depicting the Magdalene proclaiming the Resurrection to the other Apostles. Osbern Bokenham tells us that Lady Bouchier, Countess of Eu, commissioned the English translation of her *vita*, with pointed emphasis on her apostolic role:

“I have,” quod she, “of pure affeccyoun
Ful longe tym had a synguler deucocyoun
To þat holy wumman, wych, as I gesse,
Is clepyd of apostyls þe apostyllesse;
Blyssyd Mary mawdelyn y mene,
Whom cryste from syn made pure & clene,
As þe clercks seyn, ful mercyfully,
Whos lyf in englysshe I desyre sothly
To han maad, & for my sake
If ye lykyd þe labour for to take,
& for reuerence of hyr, I wold you preye.”

(5065-75)

And when Margery Kempe portrays herself repeatedly answering the question, “Why wepist þu so, woman?” surely she is engaging in more than a little self-fashioning. Conscience’s proverbial

by women” (Kienzle 105). Of course, since this *Summa* was intended to point out the errors of the heresy, its allegations may be distortions of actual Waldensian practice.
denigration of the Magdalene, then, reflects contemporary tension between a male clerical orthodoxy struggling to maintain ecclesiastical control in opposition to a growing number of women who, like the Magdalene, refused to be silent, who believed in the validity of their spiritual experience, and who sought a greater public authority in matters of the soul.

V

We are finally confronted with an issue raised at the outset of this study: if Conscience is such a courteous character in passus 19, why attribute this proverbial misogyny to him? Any discussion of Conscience’s role must begin with a definition of his function in faculty psychology, and Mary Carruthers offers a useful summary of scholarly readings. According to Carruthers, scholastics held that Conscience represented basic “moral sense,” a blend of synderesis and conscience. Quoting Aquinas, Carruthers defines synderesis as a “habit, a natural disposition of the practical intellect, ‘the first practical principles bestowed on us by nature,’ by means of which the practical intellect is inclined to the good and is able ‘to discover, and to judge of what [it has] discovered’” (Schroeder 15). Conscience, then, is a catch-all term for several “intellectual habits” derived from synderesis, and is a faculty devoted to making distinctions and applying knowledge. Carruthers further comments, “The role of conscience was able to include not only the function of moral judge but also that of intellectual judge distinguishing between truth and falsehood” (16). Given this definition, it appears strange that Conscience would depart from Scripture and portray an indiscriminate Magdalene by means of an antifeminist proverb in his account of the Resurrection. Perhaps Carruthers’ discussion of Conscience’s collective role explains the portrayal. Citing the work of Morton Bloomfield, Carruthers observes that Conscience’s role as knight “may indeed reflect an aspect of the monastic conception of conscience—not only as the guide and protector of the individual soul but as a collective conscience defending the collective soul of the Church” (17-18).

I would suggest that Conscience’s account of the Resurrection results from his collective role as defender of Holy Church, and his use of proverbial misogyny constitutes an attempt to unify and defend an increasingly fractured Catholic orthodoxy. This is a role he will play in greater detail as the final two passus unfold—building and defending the Barn of Unity. Immediately after employing the “counselor” proverb, Conscience tells us that “Peter parcyued al pis and pursued after, / Boipe james and Johan, Iesu to seke, / Thaddee and ten mo wiþ Thomas of Inde.” Conscience emphasizes Peter’s intellectual understanding of Mary Magdalene’s words, for these words prompt him and other Apostles to await Christ’s appearance before the Eleven. The sense of 19:157-69 is that Mary Magdalene indiscriminately broadcasts the news of the Resurrection, but it is Peter who first fully understands its ramifications and, with the other Apostles, takes action. Here Langland may have been influenced by an interpretation best developed by Aquinas, who argued that the Magdalene’s Christophany was flawed, that she was unfit to preach and needed the male Apostles to translate her information into action (Børresen 245-46).

Perhaps Conscience, in devaluing Mary Magdalene’s authority and affirming Peter’s, is making clear just who exactly has the power to bind and loose. Given the historical rivalry that
obtains between the two figures, it may be no coincidence that the divestment of Mary’s authority and the investment of Peter’s occurs in the space of a mere thirty-four lines, culminating with the papal privilege given to St. Peter:

And whan þis dede was doon do best he þouȝte,
   And yaf Piers pardon, and power he grauntede hym,
Myght men to assoille of alle manere synnes,
   To alle maner men mercy and forȝifnesse
In couenaunt þat þei come and kneveliche to paie
To Piers pardon þe Plowman redde quod debes.
Thus hap Piers power, be his pardon paied,
   To bynde and vnbynde boþe here and ellis,
And assoille men of alle synnes saue of dette one. (19.182-90)

Here Conscience replaces Christ’s post-Resurrection commission to all of the Apostles (John

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\[1\] Christ’s command to Mary Magdalene to bear the news of the Resurrection specifically to Peter entwines these two figures forever in the narrative of the greatest authority-conferring experience in church history, and calls attention to Peter’s dependence upon Mary Magdalene for the news. The Magdalene’s Christophany granted her a privilege unattained even by Peter, the foremost of the Apostles and the “rock” upon which the church is founded. The respective designations of Mary Magdalene and Peter even betray a kind of hierarchical rivalry, as apostola apostolorum and princeps apostolorum both make special claims for themselves. This rivalry was much more than a nominal one. Gnostic gospels reveal a well-documented and strongly gendered tension between Mary Magdalene and Peter in nascent Christianity. (On the Magdalene in Gnostic writings, generally see Malvern 42-56; Pagels 12-14, 22, 64-66; and Haskins 42. For other early texts that depict a gendered tension among the Apostles, see Schüssler-Fiorenza 304-9, 332-33.) Perhaps Gnostic and medieval writers were elaborating on the same tensions suggested in New Testament accounts in which Peter seems to doubt the Magdalene’s words (e.g., Luke 24:12). Most importantly, Mary’s unequivocal privilege of seeing Christ first was undermined by Paul’s mention of Peter and omission of Mary in the Resurrection account of 1 Corinthians 15:5, thus making them competitors for the distinction and fostering a debate that would prove to be of the highest importance in establishing papal power and the roles of women in the church. In the figure of Peter, medieval dramatists would depict an Apostle angrily dismissive of the Magdalene in terms that emphasized her gender. The Towneley Thomas Indie, for example, begins with Mary Magdalene bringing the news to the Apostles; Peter shouts her down with an impassioned “Do way, woman, thou carpys wast!” (line 7). The exchange continues at length, with the Magdalene accusing Peter of heresy and Peter vigorously maintaining that the Magdalene’s lying is shameful. For other medieval texts which depict Peter’s skepticism of the Magdalene, see the Coventry (“Corpus Christi”) Appearance to Mary Magdalene (Davies 343-46), and the Ms. e Museo 160 Christ’s Resurrection (726-29; Baker 191). This rivalry would provide Langland with an inviting narrative context in which to insert a misogynistic proverb so dependent upon gendered tension and mistrust.
20:19-23) with Peter’s singular commission (Matt. 16:18-19). Conscience also undermines the communal sense of John 20 by referring to the gathering as “Peter and... his Apostles”—a foregrounding of Peter not found in Scripture. Peter’s special commission is similar to the communal commission, but it occurs well before the Resurrection, even before Christ’s transfiguration. Perhaps Conscience makes these changes in the belief that a resurrected Christ would have greater divine authority to bestow on Peter; the sequence of events is shifted accordingly.

Given Langland’s skepticism regarding the ecclesiastical abuses of the post-apostolic church, perhaps Conscience’s portrayal of the Magdalene is meant to demonstrate how earthly power can corrupt this essential faculty. (Conscience’s unwise decision to allow the friars, particularly Frere Flaterere, entrance into the Barn of Unity will later demonstrate his debilitated powers of discernment.) In Conscience we see a figure enhancing the authority of Peter (and, by extension, papal authority) at all costs, even at the expense of a beloved saint. And of course the Great Schism forms the contemporary backdrop for Langland’s narrative—a backdrop of divisiveness in which church authority was fragmented among two and three popes between 1378-1417, and to which Langland alludes in 19.417-27. Conscience’s efforts in the name of unity illustrate the impulses that yield such a state of affairs; his attempts to consolidate Peter’s authority necessarily detract from Mary Magdalene’s. For a church to have one earthly leader, there can be no division of power.

Although it is true that Langland was in many ways a social conservative who probably would have opposed women’s pursuit of greater ecclesiastical authority, Conscience seems too deeply flawed for his views to be considered authorial. Langland might have supported the end of his arguments, but not the means, characterized as they are by a mocking application of proverbial misogyny. Conscience’s prejudices involving Mary Magdalene cannot be attributed merely to a confusion of traditions; Langland manifests a strong familiarity with relevant Scripture and Magdalene hagiography elsewhere. There are six references to Mary Magdalene in Piers Plowman. In 5.497 Repentance says that Christ appeared to the Magdalene first to show that he died for sinners. In 10.428 Will refers to her sinful nature to justify a self-indulgent predestinarianism since even some of the most iniquitous are saved: “Than Marie Maudeleyne who my3te do worse?” In the speech attributed to Trajan in 11.250-58, Langland employs the interpretation of Luke 10:40-42 that casts Mary Magdalene as a representation of the contemplative life in order to praise poverty. In 13.194 Conscience praises poverty as well, noting that Mary Magdalene gained more from her box of ointment than Zacchaeus did from half his riches. Anima also associates the Magdalene with virtuous poverty in 15.294, observing the extra-biblical tradition that she lived on roots and dew and her devotion to God in her later life. The Resurrection account of 19.157-62 marks the final appearance of Mary Magdalene in Piers Plowman. It seems, then, that for Langland’s characters, as well as for principal actors in church history, Mary Magdalene could be whatever each figure needed her to be—saint, sinner, whore, apostle, gossip—and Conscience is no different. His interest in affirming male ecclesiastical authority leads him to apply the proverb “he womman witeb may no3t wel be counseile,” with all of its unflattering narrative associations, in depicting a “word-wod” Magdalene unworthy of the momentous news she bears, incapable of using it to establish Holy Church. For Langland, Conscience is the revisionist historian of a church lamentably estranged from a once unified, divine origin.
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The Status of Pollution in Tennessee

by H. W. Wofford

What places come to mind when you think about polluted sites in the United States? Perhaps you think about Love Canal in Niagara Falls, New York, where the Hooker Chemicals and Plastics Co. buried 22,000 tons of chemical waste in a half-dug canal and where a housing development was built on top of it (1). Or maybe Lake Erie comes to mind. It was so heavily contaminated by industrial wastes and sewage that it was closed for fishing and swimming, and many species of lake fish were on the verge of extinction. In 1965, almost one-fourth of the lake was so polluted that its oxygen supply was virtually depleted (2). What about Los Angeles, California? Los Angeles is located in a geological bowl which traps air pollution, and during the sixties smog sometimes got so bad that industries and motor vehicle traffic had to be shut down for several days a year. You may not be as familiar with Boston harbor. At one time it was so polluted that there were reports of rats walking across the harbor on the floating debris!

When people are asked to name polluted states, New Jersey is often mentioned. This is probably because of areas on the coast such as Newark, with its sprawling railroad yards and chemical refineries. Much of Newark is an eyesore, prompting a friend of mine from New Jersey to describe it as the “arm pit of the universe.” However, this is probably not a fair way to characterize New Jersey as a whole. When you get away from the industrial areas, the countryside in New Jersey is among the most beautiful and undisturbed in the United States. Sometimes Texas and Louisiana will be added to the list because of the expansive petrochemical industries on the Gulf Coast of these states.

But what about our state? Where would you rank Tennessee as a polluted state? I don’t think most people in Tennessee would consider our state to be very polluted. After all, we have traditionally been known for our agricultural economy, rather than for our industrial output. I must confess that, until I returned to Tennessee after having spent fifteen years training as an ecotoxicologist, I did not think of Tennessee as polluted. It is interesting how differently you look at the place where you grew up after having been away for some time. You can back off and look at it a little more objectively. Coming back as a trained environmental toxicologist, I looked at Tennessee through new eyes. Over the last twelve years, I have been accumulating information about the state of pollution in Tennessee from newspaper clippings, state and federal publications, and web sites. My goal for this paper is to pass on to you a summary of what I have gleaned from all this information. What you read may surprise you.

I can’t possibly write about every environmental problem in Tennessee in a paper of this length. In order to make the task a bit more manageable, I will begin with some overall statistics concerning the status of pollution in Tennessee, and then focus on our immediate environment, Madison and surrounding counties.
Tennessee’s Environmental Scorecard

There are many ways in which the environmental health of an area can be assessed. These include determination of the amount of air pollution, the amount of water pollution, the amount of waste emptied into the sewer system, the rate of deforestation, the public health status, and the status of environmental education. I have summarized some of them in Table 1. As you can see, Tennessee consistently comes in as one of the ten worst polluted states in the nation.

It is informative to go to the Agricultural Museum in Milan, Tennessee. In this museum, there is an exhibit about soil erosion and conservation efforts made by Tennessee to prevent it. There is a picture in this exhibit of a man standing in a ditch caused by soil erosion. He cannot see out of the ditch! Great strides have been made in recent years to control soil erosion, with no-till farming being the most recent such control measure.

Air pollution is also a big problem in Tennessee. It is probably contributing to the destruction of hundreds of thousands of acres of trees in the Great Smoky Mountains Park. Air pollution, mainly sulfur and nitrogen oxides, from industry and the cars of the millions of tourists who visit this park weakens the trees, making them susceptible to infections by fungi, bacteria and insects (5). I had the opportunity to talk to a technician at the Agricultural Experimental Station here in Jackson. He has been measuring the pH of the rainwater falling on the station for several years. Though it isn’t part of his job, he does it out of interest. On several occasions, the precipitation falling on Jackson was acidic enough to be classified as acid rain. Interestingly, this always happens when the wind is coming from the southwest. This shouldn’t be too surprising, since Memphis, the largest center of industry in West Tennessee, is southwest of us. On one or two occasions he recorded alkaline rain. I have never seen this discussed in the environmental literature. What are we putting into the air in West Tennessee that is making our air more alkaline (basic)?

Tennessee Rivers and Lakes

Another way to assess the environmental health of a state is to examine the health of its rivers and lakes. 60,000 stream miles and 540,000 lake acres can be found within Tennessee (27). One way of determining the health of these waterways is to look at whether or not these waterways have been posted. In other words, have some intended uses of these waterways been restricted? This usually means that either body contact, recreation, or fishing has been restricted or banned. In 1996, twenty-six per cent of stream miles and twenty-two per cent of lake acres in Tennessee were classified as not fully supporting their intended use (27). These waterways have been posted for such diverse causes as presence of fecal coliforms, lead, mercury, PCBs, chlordane, and dioxins.

Two Tennessee rivers, the Forked Deer River and the Obion River (which pass through parts of Madison or Gibson Counties), are classified as completely failing to support their intended use (Table 2). The Mississippi River, which is notorious for its pollution, has been added to the table for purposes of comparison. As you can see from the table, our local river systems are not considered safe for the usages we commonly make of waterways and are considered less safe than the “mighty Mississippi.” Having contracted either Giardia or amebic
dysentery from swimming in the Forked Deer River in the days of my youth, I heartily recommend that you heed the warnings!

**Madison and Gibson Counties’ Environmental Scorecards**

The Environmental Defense Fund maintains a web site that allows individuals to rank almost any site in the country according to its rate of release of toxic chemicals and the health effects of these chemicals (28). In terms of release of Toxics Release Inventory (TRI) chemicals, an inventory of chemicals maintained and monitored by the EPA, Madison County ranks forty-seventh in the state in release of these chemicals, while Gibson County ranks sixteenth. This surprised me. I expected that Madison County would release more chemicals than Gibson County. However, Gibson County has four facilities in the top one hundred for most chemicals released, while Madison County has none. It is important to note that these numbers do not take into consideration non-TRI chemicals, including many agricultural chemicals. I shudder to think of what I was exposed to while “growing up on the farm.”

However, these rankings should not give residents of Madison County too much peace of mind. Although Madison County fares well in comparison to other Tennessee counties, it must be compared to the nation as a whole (28). Madison County ranks in the top twenty per cent of all counties in the U.S. in terms of:

- Release of non-cancer hazards
- Water releases of recognized developmental toxicants
- Water releases of suspected immunotoxicants
- Release of chemicals with ozone-depleting potential.

Gibson County fares even worse. It ranks in the top twenty per cent of all counties in the U.S. in terms of:

- Release of cancer hazards
- Air releases of recognized carcinogens
- Air releases of recognized developmental toxicants
- Air releases of suspected cardiovascular or blood toxicants
- Air releases of suspected reproductive toxicants.

**Problem sites in the Madison County Area - Superfund Sites**

Another criterion that can be used as a yardstick of the environmental health of a region is whether or not that region contains any Superfund sites. Residents of Jackson have the dubious distinction of living within thirty miles of four EPA Superfund sites (Table 3). Two of these are located within the city limits of Jackson and are within two miles of ten of Jackson’s water wells. EPA Superfund sites are sites that are deemed to be so contaminated and pose such a health risk that they are assigned the highest priority for cleanup. The problem with Superfund sites is that when the funding was set up for this program, the cost of the cleanup was grossly
underestimated. As a result, many sites have been identified, but have not been cleaned up. Regarding the four sites in the vicinity of Jackson, only partial cleanup has been undertaken, and cleanup efforts are still underway.

The state of Tennessee also has a Superfund program. Table 3 contains a listing of the Tennessee Superfund sites in Madison and Gibson Counties. As you can see, Tennessee has added an additional seven sites in our area to the Superfund list. Of these sites, only the Owens-Corning site has been declared clean. Table 3 also includes some sites in this area that have not been declared Superfund sites, but have been in the news lately because of environmental problems.

In order to give you a better appreciation of the magnitude of these environmental problems in our area, I have given some of the history and the possible health consequences of some of these sites in the following sections.

**American Creosote Works**

The American Creosote Works was declared an EPA Superfund site in 1987 and is considered to be one of the worst creosote-contaminated sites in the country (21). The plant operated from the early 1930’s until 1981. It was located on fifty-five acres in southwest Jackson just off of State Street, between the Forked Deer River and the 45 Bypass.

Creosote is used as a wood preservative. It is most often seen in old telephone poles and railroad ties. After the wood was treated by placing it in baths of hot creosote, it was stacked on racks outside to dry. The excess creosote dripped onto the ground and has been working its way into the water table. Creosote contains a large number of chemicals called polyaromatic hydrocarbons and related compounds, many of which are potentially carcinogenic (cancer-causing). One PAH, benzo[a]pyrene (BAP), was found in high concentrations in the soil. BAP is one of the five most carcinogenic chemicals that we have currently identified.

In 1991, the EPA started the cleanup of the site. All of the remaining creosote (approximately 200,000 gallons) was removed, and all structures were torn down to the ground. However, funding problems halted the cleanup of the soil at the site (22). The state and federal governments planned to spend $5 to $12 million to clean up this site (21). However, the total projected costs have increased to as much as $50 million. About 8.4 acres of land will be scraped two to five feet deep, removing 35,000 to 88,000 tons of soil. The work was scheduled to begin in 1996 or 1997, but I have not seen evidence of cleanup operations. At one point it was seriously suggested that the site be used as a jail! I can’t imagine how many lawsuits that would have generated. Does being used for bioremediation constitute cruel and unusual punishment?!

**Iselin Railroad Yard**

The Environmental Protection Agency wants to put Jackson’s old Iselin Railroad Yard on its Superfund list of the most serious hazardous waste sites (12). This eighty-acre site is just south of Iselin Street in Southeast Jackson, directly across from Washington-Douglass Elementary School. It is also near ten of JUD’s city water wells. This site was used for the maintenance and repair of railroad engines for many years by the Mobile & Ohio and Illinois
Central railroads (13). The degreasers used to clean the engines and their parts were often allowed to run onto the ground and into a creek that fed into the Forked Deer River. Often, the water in the creek ran black.

Among the chemicals found at the Iselin site are chromium, lead, vinyl chloride, chloroethane, benzene, copper, tetrachloroethane, dichloroethane, ethylbenzene, and xylene. These chemicals carry such possible health risks as cancer, birth defects, liver toxicity, kidney toxicity and neurotoxicity. JUD is currently monitoring the city water for these chemicals and has plans in place for treating the water if necessary.

Cleanup of the Iselin site was predicted to start in 1996, but to the best of my knowledge this process has not started yet (14).

**Milan Army Ammunition Plant**

The Milan Army Ammunition Plant has been in operation since 1942, manufacturing ordinance for the military. From 1942 to 1978, wastewater from the O-line production area was discharged into eleven unlined settling ponds. In 1991, it was discovered that RDX and other potential carcinogens such as TNT, 2,4-dinitrotoluene, nitrobenzene, and HMX used in the manufacture of explosives, had seeped out of these ponds and had gotten into the groundwater that provides the drinking water for Milan (19). In 1992, the U.S. Army started a $9 million study to assess the degree of contamination of the water, eventually drilling four hundred test wells (16, 20). The results of this testing indicated that the city’s drinking water was below the danger point of 2.0 ppb.

In light of concerns that the levels of these chemicals could increase in the future, the Army agreed to spend $9 to build a water treatment facility at the plant and to drill three new water wells for Milan farther away from the arsenal. In May 1995, the levels of the chemicals in the city water had not increased significantly (17). By 1997, the Army had spent $58 million on the cleanup operation. This involved the design and construction of cleanup systems using a combination of high-tech filtration and UV systems, and a low-tech artificial wetlands where native plants and microorganisms break down the chemicals, a process called bioremediation (18). The O-line ponds were also capped with clay to prevent further leaching of the chemicals into the water table. A recent report indicates that the cleanup of the contaminated ground water is on schedule and should be complete by 2009 (29). Unfortunately, parts of the city park will be unavailable for the next six to eight months as wells are being dug which will be used to filter the groundwater.

**Lead Exposure in Jackson**

Jackson is the only city in West Tennessee to be cited by the Environmental Protection Agency (EPA) for having high lead levels in the drinking water. According to EPA guidelines, lead levels in drinking water must not exceed fifteen ppb. Unsafe levels of lead were found in a small number of homes with lead materials in their plumbing and are not due to lead in the JUD water supply. Although a report in 1994 showed that about twenty-two per cent of the children
in Madison County have elevated levels of lead in their blood, it is believed that most of this lead did not come from the water, but from lead-based paint and leaded gasoline.

More recently, residents of East Jackson in the neighborhood of the former H. O. Forgy recycling plant have been tested for lead levels (15). This plant that turned scrap metals into materials for industry allowed lead to seep into the soil for thirty-seven years, from 1946 to 1983. When evaluated for its risk, this site received a score of 85.26. In order for a site to be placed on the EPA Superfund List, it must have a score of 28.5. The score for the H. O. Forgy site is one of the highest ever seen.

**Velsicol Corporation Dump Site**

The Velsicol Corporation is a Memphis-based company involved in the manufacture of insecticides. Several hundred thousand drums (seven million gallons) of waste created from the production of these insecticides were buried on thirty-seven acres between 1964 and 1974 in Hardeman County near Toone, which is just south of Jackson (23). Over time the drums rusted and leaked, allowing the chemicals to leach into the water table. It is estimated that over one thousand acres of groundwater are contaminated because of this leakage (24).

Removing and properly disposing of all these drums could cost in excess of $1 billion. At this point, a ground water treatment plant has been constructed, and the area has been capped with clay to prevent further leaching into the water table. This is all the cleanup that is currently planned. Velsicol has spent $12 million on capping and stabilizing the site to this point (25). However, the clay cap over the site has been found to be only ninety-eight per cent effective (26). It is now being capped with plastic, which will be “one hundred per cent effective.” The workers who went into this site to stabilize it were either very brave or very foolish. This is by far the worst contaminated site that I have ever encountered, and it’s only a thirty-minute drive away!

**Conclusions**

I have presented a large number of facts and figures about the state of pollution in Tennessee. What conclusions can we draw from all of this? The obvious conclusion is that Tennessee is a relatively contaminated state. It is very likely that health problems are and will continue to be a result of this contamination. Many of these sites are areas where chemicals are entering our water table. Adequate quality drinking water may very well be the next great environmental crisis for the whole world, including the United States. West Tennessee is blessed with one of the best aquifers in the world. However, there are many sites in which chemicals are slowly working their way into this aquifer. These chemicals will not stay localized. Hydrologists tell us that the aquifer in West Tennessee flows. As it does, it will carry chemicals to areas that are many miles away from the sites of contamination.

It should be noted that as bad as the status of pollution in Tennessee may seem, it is getting better. Almost every statistic I have mentioned in this paper has shown improvement in the last twenty years. For example, in 1996, twenty-six per cent of stream miles and twenty-two per cent of lake acres in Tennessee were classified as not fully supporting their intended use (27). In
1984, forty-six per cent of stream miles and thirty-four per cent of lake acres were not fully supporting. This constitutes a significant improvement.

How did we get this way? I suspect it has much to do with our state historically having a predominantly rural economy. Thus, some of the problems resulting from urbanization and industrialization have come to us later than for other states, and we are dealing with them much later as a result. Also, I feel there is almost a vacuum of environmental awareness and consciousness in West Tennessee. I was impressed by this when I came back to Tennessee after having spent fifteen years in other parts of the country. Many people think nothing of littering in this area, and they tend to pour out chemicals such as used oil and antifreeze on the ground. This same attitude has carried over into industry. For most of this century, industrial wastes have just been dumped into a ditch. Jackson has only very recently put a tree ordinance in place. In New England, you must get permission from all of your neighbors before you can cut one tree in your yard. Union, as a Christian university, must set an example of environmental stewardship for the community.

I suspect that the contamination of our area also has to do with the loss of contact between our citizens and the environment. As people moved away from the farms, seeking jobs in the cities, they lost their contact with the soil. I grew up on a farm. I spent most of my waking hours prowling around, turning over logs, watching birds fly, and catching insects and tadpoles; in the process, I developed a deep appreciation and love for the environment. The students in my classes have learned this, as I frequently get on my “soap box” about environmental issues. Children who grow up in cities don’t have these opportunities. Studies have shown that inner city children have no idea where their food comes from, other than the store. These children don’t have a connection to the land, and it is less likely that they will show concern about environmental issues. I have been impressed on many occasions by individuals who will get outraged about the fate of whales, which they have never seen, and not be concerned about the destruction of the environment going on behind their own house.

Ultimately, the contamination of Tennessee is about our population. As the population and economy of Tennessee has grown, so has the demand for food and goods. With this increase, there has to be an increase in the utilization of chemicals and subsequent problems of dealing with the byproducts of the manufacture of these chemicals. My dad understands this very well. He is a retired farmer. During his career as a farmer, he has released thousands of pounds of agricultural chemicals into the environment. He despises these chemicals, but he can’t see any way around the use of them. Without the use of pesticides and herbicides, we wouldn’t be able to feed everyone in the U.S., much less export excess food to starving people in other parts of the world.

What can we do about it? We can’t avoid the use of water. There are some things that we can do at a personal level to help protect ourselves. For example, we could drink bottled water. But recent studies have shown that bottled water, despite its cost, is not necessarily any safer than our tap water. It would be a good choice if you live in an area with a known contamination problem.

Filtration of the water might be an option. However, this also has its problems. The type of filtration employed must match the contamination problem. A different approach is necessary to remove bacteria from water than to remove heavy metals or organics. Another problem is
knowing when to change out the filters. In many cases, there is no obvious way to tell when a filter is saturated other than having the water tested. After a filter becomes saturated, it may start to release its absorbed chemicals back into the water and, in some cases, the concentration of the pollutants in the water may be higher than without a filter.

You can have your water tested. This is especially advised if you have reason to believe that it is contaminated. However, unless you can convince the Health Department that there is a problem, you may have to pay for the testing yourself. Depending on the contaminant you are concerned about, this can range from fifteen dollars up to several hundred dollars per test. If you have city water, it should be tested for a wide range of chemicals on a regular basis, and you should be able to get a report from the city.

The best way to get good quality drinking water is to have uncontaminated water in the first place. This requires us to develop a sound environmental ethic about the proper handling of waste products. Here, education is probably the most important factor. Be informed. I suspect that often chemicals have been released into the environment more out of ignorance than out of greed. Get involved. Attend community meetings on environmental issues. There have been many in this area, some very recently. Write your legislators. Remember that in even the worst cases that I have described, the companies involved were not breaking any laws at the time.

After reading this article, has your opinion about the amount of pollution in Tennessee changed? If so, let me know.
Table 1 - Tennessee’s Environmental Scorecard

**Quantity of release**

No. 1 in the nation for soil erosion

2nd worst air-polluting state

- 139 million lbs of toxic chemicals into the air in 1990

12th worst water-polluting state

8th worst state for toxins dumped into sewers

- 21 million lbs of toxic wastes

10th worst state for toxins dumped into sewers

- 15.7 million lbs of toxic wastes

6th worst toxin-emitting facility in the country

- New Johnsonville power plant

3rd worst state in the nation overall

5th worst state in the nation overall

**Health Implications of the release**

2nd worst in the nation for protecting the environment

- Criteria: Drinking water, Food safety, solid-waste recycling, forest management, and impact of growth

9th worst in the nation in release of chemicals which cause birth defects

11th worst in the nation in release of chemicals which cause cancer

Three cities in top 25 % with premature heart- and lung-related deaths linked to particulate air pollution: Nashville, Memphis, Chattanooga
Table 2 - The Health of Local Rivers in Tennessee (27)

<table>
<thead>
<tr>
<th>River</th>
<th>Miles in Tennessee</th>
<th>Fully Supporting</th>
<th>Partially Supporting</th>
<th>Not Supporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forked Deer</td>
<td>20.7</td>
<td>0 %</td>
<td>0 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Obion</td>
<td>71.1</td>
<td>0 %</td>
<td>0 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Mississippi</td>
<td>175.3</td>
<td>0 %</td>
<td>14 %</td>
<td>86%</td>
</tr>
</tbody>
</table>

Supporting - Can be used for body contact, recreation and fishing
Table 3 - Problem Sites in the Madison / Gibson County Areas

<table>
<thead>
<tr>
<th>Site</th>
<th>County</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPA Superfund Sites</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Creosote Works</td>
<td>Madison</td>
<td>Jackson</td>
</tr>
<tr>
<td>Iselin Railroad Yard (Proposed)</td>
<td>Madison</td>
<td>Jackson</td>
</tr>
<tr>
<td>Milan Army Ammunition Plant</td>
<td>Gibson</td>
<td>Milan</td>
</tr>
<tr>
<td>Velsicol Corp. Dump Site</td>
<td>Hardeman</td>
<td>Toone</td>
</tr>
<tr>
<td><strong>Tennessee Superfund Sites</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. O. Forgy and Son</td>
<td>Madison</td>
<td>Jackson</td>
</tr>
<tr>
<td>Boone Dry Cleaners</td>
<td>Madison</td>
<td>Jackson</td>
</tr>
<tr>
<td>Porter-Cable Corporation</td>
<td>Madison</td>
<td></td>
</tr>
<tr>
<td>Noma-ITT</td>
<td>Madison</td>
<td>Jackson</td>
</tr>
<tr>
<td>Owens-Corning (Now declared clean)</td>
<td>Madison</td>
<td></td>
</tr>
<tr>
<td>B &amp; H Transformer</td>
<td>Gibson</td>
<td></td>
</tr>
<tr>
<td>Michie Dump</td>
<td>McNairy</td>
<td>Michie</td>
</tr>
<tr>
<td><strong>Other Problem Sites</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITT Milan (Jones Companies Ltd.)</td>
<td>Gibson</td>
<td>Milan</td>
</tr>
<tr>
<td>Yorkville Elementary School</td>
<td>Gibson</td>
<td>Yorkville</td>
</tr>
</tbody>
</table>
References


82


Juff Contributors

John Jaeger further explores his interest in philosophical issues here, on the heels of his 1998 JUFF piece on Kierkegaard. He is assistant professor of library sciences and holds a master of divinity degree as well.

Randy Johnston is Department Chair and associate professor of chemistry. This is his third article to appear in JUFF since his 1994 arrival at Union.

Barbara McMillin has just been named Dean of the College of Arts and Sciences after serving six years as chair of English. The article here is a reworking of a paper presentation last February at the Tennessee Philological Association meeting in Jackson.

Melissa Moore has contributed multiple articles to JUFF in the area of literary criticism. Currently on maternity leave, she holds the title of associate professor of library services.

Gavin Richardson begins his second year at Union with his JUFF debut. Assistant professor of English, his article is being revised for cross-publication.

Roger Stanley has edited or co-edited JUFF since 1995. He holds the title of assistant professor of English.

Jan Wilms assumes the presidency of the Faculty Forum after serving as its vice-president for 1998-99. He is associate professor of computer science and Chair of mathematics and computer science.

H. W. Wofford is a former president of Union’s Faculty Forum and well known regionally for his acumen on environmental issues. He serves as Director of the Center for Scientific Research and is an associate professor of biology.

Janice Wood enters her second year as co-editor of JUFF and has been a past contributor. She is assistant professor of communication arts.