The Gamut: A Journal of Ideas and Information, No. 22, Fall/Winter 1987

Cleveland State University

Follow this and additional works at: https://engagedscholarship.csuohio.edu/gamut_archives

Part of the Arts and Humanities Commons, and the Social and Behavioral Sciences Commons

How does access to this work benefit you? Let us know!

Recommended Citation
https://engagedscholarship.csuohio.edu/gamut_archives/20

This Book is brought to you for free and open access by the Publications at EngagedScholarship@CSU. It has been accepted for inclusion in The Gamut Archives by an authorized administrator of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.
To show our appreciation of your long-term commitment to The Gamut, we have reprinted seven of our articles about Cleveland in a paperback called The Gamut Looks at Cleveland. It is yours, free, if you renew at the Lifetime ($100) or three-year rate ($25).
Don't miss this excellent opportunity.

The Gamut Looks at Cleveland:

- Cemeteries in Cleveland, 1797-1984
- Geoffrion's Landmark Complex
- Livable Cleveland Houses
- Cleveland's Terminal Tower
- Severance Hall
- Movable Bridges Over the Cuyahoga
- The New Mayfield

THE GAMUT
RT 1216 • Cleveland State University
Cleveland, Ohio 44115
Number 22
Fall/Winter 1987

Louis T. Milic  2  Editorial
Reading the Author Out of the Story

Kelly Cunnane  6  Come Out on the Daylight
A Peace Corps worker's Kenya Journal

Karen Ahner  27  Cameras Without Lenses
The artistic uses of the pinhole camera

Dwight Brown  31  Universal Public Service
The salvation of American youth may lie in this
"moral equivalent of war"

Philippa Kiraly  37  The Music of Bows
All about the little stick that makes stringed
instruments sing

The Gamut's Pick of Poets

Leonard M. Trawick  49  Many Are Called . . .
Contemporary poetry flourishes in neglect

Daniel Liebert  52  Last Summer
Snapshot at Twenty

Marjorie Power  53  Woman in Snowlight

Laura Winton  54  A Lone Life

James Cushing  55  Old Man River

John Bennett  56  Anima

Margot Livesey  57  Fiction
According to Arthur

Keith M. Kendig  69  Topology: Mathematics' Wonderful New
Flexible Tool
Why a topologist can't tell the difference between a
doughnut and a coffee cup

Alan S. Rosenbaum  85  Presidential Accountability
Constitutional and moral implications of the Iran-Contra
affair, Robert Bork's nomination, and the President's stand
on religion in the schools

Back Matter

Bruce A. Beatie  92  Comparing "City" Magazines

Jesse Bier  95  Confessions of a Franglais-phile
Reading the Author out of the Story

In our last issue we printed a short story by an Irish writer, Ethna Carroll (“The Mortal Cauliflower”). In this issue we present “According to Arthur” by Margot Livesey, a native of Scotland who has lived in Canada and the United States. Ms. Carroll’s story takes place in an Irish family and is based on everyday incidents. Ms. Livesey’s story concerns a variety of marginally related characters in unusual interactions and takes place in Toronto.

We have previously published fiction that Clevelanders would recognize as situated here, but we have made no special effort to accommodate our local audience. And yet the matter of setting, or locale, raises an interesting question with broad implications for the reading (and writing) of fiction: what does the reader have to know to understand a story, as the writer would wish? Kelly Cunnane’s piece on Kenya in this issue (which is not fictional) addresses the question by the constant provision of explanatory material. But fiction writers don’t feel obligated to do that: Ms. Carroll doesn’t apprise us of the peculiar meaning of “mortal” in Irish informal speech, and Ms. Livesey doesn’t actually tell us that her story is laid in Toronto, although some of her characters speak of having taken courses at the University of Toronto and of walking on Yonge and Bay Streets. An author may feel that it is neither necessary nor relevant to do so. Perhaps they are right, but reading a story like the Lady Murasaki’s Tale of Genji or the eighteenth-century Chinese novel, Dream of the Red Chamber, gives us the sense that we are in a very
strange country whose inhabitants are very different from us.

By some literary critics (Wolfgang Iser, Norman Holland, Harold Bloom) this question of understanding the writer's meaning or intention is considered unimportant. They believe that the reader's task is not to discover what the writer had in mind or intended to convey; rather, the reader in his interaction with the text creates something new, based on his individual response. Accordingly there could be as many versions of a work (or new creations) as there are readers. Although this view may seem extreme, it is plausible. I shall adopt it for a brief look at Ms. Livesey's story, even though my tendency is to seek for an understanding of the writer.

As a reader of "According to Arthur," I am in a privileged position because I have visited Toronto a number of times and I have the pleasure of knowing Ms. Livesey and some of her other writings. As a result I feel confident that my readerly response will not be too creative. In orderly fashion, I address myself first to the title, which has struck me as interesting. It reminds me of the Gospels ("According to Matthew," etc.). The consequence of this decision would lead me to feel that Arthur (one of the three main characters) is telling the story and that the story happened as he tells it. But the story is in fact a third-person narrative with the narrator out of sight. I also hear in the title an echo of "According to Hoyle," or everything done properly, which is the reverse of the actual case. This second alternative would be ironical. On the other hand, the first allows the belief that what Judith (the main character) understands is the truth "according to Arthur," and therefore fantasy. I like both meanings, but I must be familiar with both phrases to make something of them.

This story also contains a profusion of proper names. The first paragraph presents the reader with the names of two places (Birdy's, the Varsity Arena), two kinds of beer (Molson's, Labatt's) and four characters' names (Charles and Arthur, Judith and Charlyce). The first three are the main ones. We are free to wonder about these choices. Characters must have names (mainly for convenience of reference), though some writers (e.g., Stephen Crane in the Red Badge of Courage) have managed without. Names also carry symbolic meanings: Clarissa (with its echo of clara, illustrious), D'Arcy, whose French particle and echoes of Norman French bespeak aristocracy, Sancho Panza, whose surname (paunch in Spanish) confirms his obsession with food. Charles, Judith, and Arthur give me altogether different vibrations. Charles, although it has been a royal name in Europe for centuries, is nowadays common and generic. It is like Adam, as it originates in the word carl, man, akin to the pejorative churl. Judith, the Biblical assassin of the Assyrian king Holofernes, literally means "Jewess" and has been in use in England since Anglo-Saxon times. Judith is a strong, independent woman, capable of forceful decision. Arthur, by its associations, is generally supposed to be Celtic, but scholars prefer to think of it as having a Latin origin. It may be far-fetched to see the etymological ambiguity in the
character's identity [man/woman, liar, timid rebel, false friend] perceptible in his name, but I find it consistent with my other inferences. In addition, the royal echo in the name is reflected in Arthur's regal carelessness about money and people, although it could also be perceived as childish.

Other characters are named Charlyce, Arnold, David, Buzzati, Ian, Danielle, and Suzie. Charlyce (oddly derived from Charles) is another waitress whose over-fancy name fits with her bad taste in wearing a miniskirt to work, Arnold and David are a couple in a story within the story, Mr. Buzzati is Judith's landlord (with a name I recognize as Italian), Ian is a bartender where Judith works (with a Scotch name not unusual in Canada, one which permits him to fade into the background of the story), Danielle (a feminine derivative) is Charles's girl, and Suzie (a nonentity with a commonplace name) watches over Arthur's street stand.

Geographical references abound and might be confusing if I had not some knowledge of the locale: street names (Yonge, Bay, Concord, St. George), suburbs or sections of the city (Spadina, Scarborough, Sarnia, Sudbury), cafes and stores (Birdy's, Rivoli, Hole in the Wall, Canadian Cafe, Tel Aviv, Loblaw's). In addition, there are some literary and artistic allusions: Munch, Genet, Picasso, Chekhov, Pynchon, Burroughs, and Laura (a character in a play), all of which are part of the structure. If the reader doesn't recognize Genet and Burroughs, he will be puzzled. The same events could be narrated without the symbolism or the allusions, but they would lack the rich suggestiveness provided by names and places. What if the first paragraph read thus:

It was cocktail hour in the tavern. Heavy rain had forced the football team to abandon their practice across the street and they were milling around the bar. The waitress pushed her way through the crowd, holding fast to her small tray full of bottled beers. It was only six-thirty and she had already failed to receive tips several times. The other waitress, who was wearing a bright red miniskirt, claimed to be getting a lot of tips. The first waitress was watching the other one and trying hard to feel superior when suddenly a male friend of hers appeared. "Have you got a minute?" he said, "My friend is here."

Without names, reference becomes awkward, and without the jargon of the trade (happy hour, stiffed, circumlocution becomes necessary. All fiction presupposes a community of meanings understood to some degree by all readers but the difficulty concerns the degree. The reader of this story may imagine what he will but he needs to know that taverns serve drinks at specified hours, that drinkers are accustomed to seek these in groups, that football is a game played by adult young men who like to congregate, that waitresses do not subsist on salaries but on gratuities which male patrons give them for pleasant service and for a sexually stimulating appearance, like a skirt short enough to display the upper thighs, and that some women disapprove of ("feel superior to") those who perform in this way, etc. . . .

As I was reading this, I found that I had little difficulty creating a story that the author would recognize as related to
her own. But in one scene, I found myself at sea. I did not immediately interpret the mysterious reference to a "Tom Waits album." An album to me is a book or binder in whose pages something [photographs, dried flowers] is placed to be preserved but this particular album is something that can be "put on." Even after I had deduced that this album was a recording, I still was not able to invest it with meaning, since I could only conclude that it was something that pleased Arthur, who had so far not revealed any inkling of his musical preferences. Unless Tom Waits was the name of a group, it must be a singer, possibly one who accompanied himself on a guitar. Since no comment about the music, if it is music, is made during this scene, I cannot integrate the incident into the rest of the story, whereas I can easily settle on a meaning for the oversized sweater with the hole under the arm. If I must make a connection between Tom Waits and the story and I am impelled to do so, seeking after meaning as a dog after a buried bone, it is the last name that tells me something. Waits: Judith [the giver] is a waitress; or as it is the Christmas season, waits are those public musicians who pop up at that time; or if it is a verb it forecasts what Judith will have to do to get her money or her things; or . . . is it a real name, a real musician, an actual recording, requiring or permitting an allusive reading?

[Soon after writing this I read a newspaper interview with Tom Waits, who is described as a "sound scavenger," a seeker after objects that make interesting sounds, which he incorporates into his songs. His identification is with social outcasts and he speaks in a manner reminiscent of the "beat" poets of the sixties. If I had read this account of Tom Waits earlier, my response to the "Tom Waits album" would have been different: narrower, more specific and more meaningful, in that the odd sounds and the preference for derelicts would have supported and clarified my reading of Arthur's and Judith's personae.]

The kind of reader I am, even when disguised as a reader-responder, looks for a conclusion with a moral of some kind. Although this story does not have an overt one, my reading of it constructs one. Judith cannot forgive Arthur for his deceit, but she cannot blame him for being what he is: irresponsible, deceitful, dishonest. She has learned something, like Hamlet or like Emma. The conclusion is not happy, but it has made the world different, which is what stories do for us.

Without engaging in a public quarrel with the reader-response critics, this exercise confirms me in my belief that whereas an author's intention is unknowable, the story itself in its words, its trail of associations and allusions, cannot fail to direct the reader in a way which permits agreement among the readers who have the requisite knowledge. So the answer to my original question is that the reader who does not know Genet or the habits of people in bars may construct a satisfactory story but one that will not permit useful interchange with members of the community to whom the signals are comprehensible.

[Signature]
Come Out on the Daylight

A Kenya Journal

Kelly Cunnane

When I was nine years old my mother gave me a diary to write about visiting my grandparents in Florida. Each day for two weeks I carefully recorded what I had eaten for breakfast, for lunch and for dinner. Everything else was lost. When I began traveling years later, I kept journals again to record things I did not want to lose.

I had two empty books with gilt-edged pages when I went to Africa. They were large books, with deep red covers and perhaps two hundred pages in each. I began to write in the journals when I started work as a Peace Corps teacher in Kenya at a very rural school maintained by the Kalenjin tribe. In 1979-1981 I lived in Lelboinet village, approximately two hundred miles northwest of Nairobi, not far from the border of Uganda. Lelboinet is not on any map, but it is located on the western edge of the Rift Valley (a two-thousand-mile-long escarpment that cuts longitudinally through Kenya) at a point in the Elgeyo Marakwet District that rises to an altitude of nine thousand feet. There I taught in the school and worked with the villagers to build a medical clinic. I was the only white person and the only one who minded the lack of running water or electricity.

Two years later, when my contract was over, the books were full. I had made a substantial entry at least every three days. I described Kenya and my travels there and to other African countries. I described the people I met, my village and Peace Corps friends, my feelings of loneliness, bewilderment, frustration, and wonder. The pages that follow contain excerpts from these journals.

A Complete Spectacle

I expect to be looked at.

I am used to the one child who spies me out walking the dirt road and runs off leaving the cows he is tending to tell the others to come see the white person, the mzungu. I have learned to live with the familiar chant of "mzungu, mzungu!" from any child anywhere. In the village center of Kapilimo are two children I meet each week on the road to the local shops.

Kelly Cunnane was born in New Hampshire and now lives in Greene, Maine. In between, she has lived in China, Colombia, Rwanda, Zaire, Greece, Ecuador, and Peru, among other countries. Her stay in Kenya, recalled in these journal extracts (somewhat condensed by The Gamut), provided the material for her M.A. thesis at Cleveland State University. "I always thought Africa was a dream, but walked there and got to know the people and land a bit. I always kept journals, so put the two together." She and her husband Sam Hunkler [a former Peace Corps colleague] now live with their two children in a 150-year-old farmhouse they are restoring, where she is at work on a children's book and various other projects.

Drawings by Kelly Cunnane
They will burst into hysterical tears and cower behind their mother, who merely looks amused. When she is not with them I wave my arms and make monster faces as I go by. They scream just the same.

But I do not expect to be a complete spectacle.

On top of the hill above the row of teachers' houses the children of the primary school have chopped a track out with machetes and hacked out jumping pits now filled with sand. They put up high jumps of bamboo. From my cabin I hear the harsh clap of two boards slapped together by the starter. With all the neighboring primary schools, Lelboinet begins a track competition.

Lelboinet means white antelope, but there aren't any, of course. It's high on the escarpment, a small village set in hills of eucalyptus trees, smooth-barked and willow-leaved, cedars, and tall scraggy pines. The road is baked, cool red mud which cracks and winds through the maize and shamba-covered hills, gently rising nine thousand feet to the western edge of the Rift Valley—a spectacular scar on the earth's face with mountains theatrically rising, gouging the sky.

I go up the rise toward the track meet. Sun bright, and the green ridges dotted with conical huts and plantations of daisies, cultivated for the making of insect repellent, stretch down to the plains wrapped around the base of Mt. Elgon in the distance. My cabin with the bark still peeling off the outside, perched on the slope of tilled earth, looks small, its tin roof heating in the sun.

They see me as soon as I come onto the grounds and rush over laughing, showing all their teeth, "Jambo mzungu, mzungu jambo!" I repeat the greeting as more come running over, "JAMBO, JAMBO, JAMBO!" They shout in their tattered uniforms and bare feet, laughing uncontrollably at my response. I stop saying jambo as I realize they only repeat it over and over, louder and louder.

I head past the group toward an event. I am a magnet to the children. All of them. Seven hundred children. There are
no events to head to, only a teacher here and there, clapperboards dangling in their hands. The children in a huge squirming huddle around my whiteness fall into a panic, some in mortal fear if I advance in their direction. The smaller ones begin to cry, realizing I can touch any one of them. They scramble frantically against the sea of clustered blue and green uniforms, and stumble over the brown legs that hem them in. Others cheer as I try to move faster. A few reach out to touch me and then pull their hands back as quickly as possible to the noisy web.

I grow more and more annoyed, tripping over the bobbing bodies and feeling the small grabs and slaps against my arms and clothes. I change directions, for if I stand still they press in closer and closer, gawking and shouting. I see older men and women, my students, and even Bashir watching from the trees, laughing.

I run away down the hill leaving the roar of the children behind.

I slam the cedar door and flounce on my bed, and I don’t really understand why I am crying, but the tears run down my face, even though a few stragglers peek in the open shutter of my room and bang excitedly on the timbers of the cabin. I just stay there. Then Bashir comes still laughing at the situation, and Wini comes, shooing the curious children away, clicking her tongue, laughing and calling to me.

**Bashir**

“What are you doing?” he asks in Swahili, chin lifted, eyes shadowed with heavy lids. His shirt is undone and his hair is crazy. It stands up in thick clumps like a reggae man’s from Jamaica. His two front teeth are missing.

That afternoon I am preparing props for the secondary school drama contest. “Painting,” I reply in English. I wonder if I should go put a skirt on over my shorts. I wore jeans once to fetch water and Mama Kattam smoothed her hands over her fat belly and pressed the cloth tightly against her thighs, and then said to me, “Bad, not good,” as she let the outline of her abdomen and upper legs disappear in the puff of her old dress. I haven’t worn pants in the village since. “Painting for the school’s drama group,” I say instead. I wave my stick, the tip covered with red paint. “Speak Swahili,” he says in a husky voice as if in imitation of a bad guy. I’m not sure he isn’t. He lowers his lids even more and looks down at me.

I attempt my limited Swahili. “But I know very, very, VERY little.” I pick a blade of grass to emphasize the extent of my knowledge. His whole face breaks, and ripples into a smile, his eyes big and gentle. He stops himself and lifts his chin once again, but I can still see a little shine in his eyes.
"Unamwalimuounini? Unatokawapi? Unafanyanini?"
"WHAT? Please speak slowly." I stumble over the words. "You speak too fast." He slows down. "Please say again." He does. I use the stock phrases I know of Swahili. "I am a teacher." I cannot remember how to say biology. "I am from America and I am Kelly." He looks at the old blackboard with the outline of a bull splashed on in red. "This," I point elaborately with my stick, "is for drama." I am surprised he understands my Swahili, and laughs again, eyes open and sweetly dark.

"Mimi ni Bashir."

Actually Too Shy

Lelboinet is a secondary school, a "Harambee" school—"pulled together" by the villagers. It is they who take care of it with fundraisers and school fees. It's just a cement block building with broken windows and broken desks. I depend solely on my imagination and the books I have brought with me. It's half day- and half boarding-school, the boarders living in a roughly-hewn wooden dorm with empty windows and dirt floor. They sleep in flimsy bunks with pitifully thin mattresses. In the classrooms at night they study, kerosene lanterns weirdly lighting the gloom.

The first week the headmaster, Ezekiel Tarus, calls me to his desk. He's a tiny man with a giggly voice, always shrugging his shoulders and tipping his head down into his collar. Today he rubs his hands together, smiling and smiling. He clears his throat and after a few minutes of glances out the window and talking in English I realize he wants me to do something about the Rift Valley Drama Contest.

I am reluctant. Although new and wanting to appear capable, I feel swamped with the class load I already have. Forty kids stare out at me in each of my four classes. There are no books, and the chalk crumbles off the tar painted onto the cement walls of the classroom, the students furiously copying the words as they fall. Not listening, only getting the information into their notebooks to memorize, or at least to have.

He insists. "You know these students of ours are actually too shy." He laughs a funny little nervous laugh, shrugs and smiles, then puts on a solemn face. "They've been defeated at the neighbor school, Kapkenda for girls. Those girls," he leans over the desk with his nervous heeheeheeheehee, "found not a student from Lelboinet dared to speak above a whisper actually."

I choose a play called "Bones" about a butcher, originally written in Swahili.

• • • *

My students, huddled on rickety benches, their equally rickety desks riddled with graffiti before them, are barely audible in answering me in class.

"I'm sorry, Kelvin... How do you pronounce your last name again?"

"... gma... u."
"You don't need to stand up every time you answer really, that's okay. But I still did not hear you. Maybe if you took your hand away from your mouth, I could understand better. Now what is your last name, your surname?" The boy, the one the students call the brown one, looks at me with an uncomfortable smile. He is half standing and half leaning into his seat. "Am I speaking too fast?" I ask extremely slowly. Kelvin sits down. "Kelvin, if you—or anyone—doesn't understand my English, just say 'I don't understand.' Just speak a bit louder and tell me your last name. No, no really you don't have to stand up." I can't hear his answer nor can I hear anyone else, especially the few girls who visibly shrink when called upon. I pantomime teaching, just mouthing the words, and then ask them out loud, "Okay, everyone understand?" I whisper quickly, a lesson off the top of my head. Some students smile. Then I shout, "I can't hear anyone in this class." They laugh.

I have to get used to the accents of people who speak three languages: their tribal language, which in Lelboinet is mostly Kalenjin; the national language of Kenya, Swahili; and the international language, English spoken with a British accent.

Wini

The first time, my student Eunice brought me to Wini's. I waited for them to grease their legs for a long Sunday walk. A nicely dressed man talked with me and in his perfect English told me he would marry me if I wanted. He was serious.

We left him for our walk. Groups of staring children stood at the edges of their fields. "Why are you looking?" I asked, and they replied, "We've never seen a person like you before." Women, their elbows thrust forward, arms cocked over their heads, stalked along with maize on their backs.

The second time, I am alone. She pulls me into her mud hut, ducking her skinny swaying body, stepping lightly over the pots on the mud floor. She swings a tiny stool over to me. Still clasping my wrist she urges me to sit, her mouth open in a continuous smile, gurgling my name, Kelly, Kelly, and laughing as she moves over to a small square cut in the floor. She stirs the coals, blows on them and builds a fire as I totter on the stool and adjust my eyes to the blackness, broken only by a shaft of light from a narrow open shutter. The soot covers the shutter like moss. Wini opens an earthen pot of water set in the curve of the wall, dips a rusty can in, and begins to clean the teapot and two glasses with the speed of one long accustomed to doing so.
"Hii ni nini?" This is what?, I ask about everything. Sometimes I understand her quick Swahili, most of the time, not.

"That's Esther," Wini says as a sheep bumbles over the doorstep and into the hut. "That is Poison," she continues, pointing at the dog who looks in quickly and trots off.

"Poison? Poison in English is bad!"

"All dogs bad," she says, "That one is Kugo's." Kugo is the grandfather.

The fire curves around the tea, a sweet mixture of mostly milk and sugar, the milk kept in a big pan on the floor covered sometimes with a cloth, the sugar kept in a tiny cupboard which threatens to fall over. The light shines on her brown skin and thin chapped legs as she makes little noises in Kalenjin. Her hair is not shorn like the other villagers. It is soft and loose. In Swahili I ask Wini about her children.

"I have five," she says. We drink tea. I take two sips and she rises to fill the glass to the top, laughing till she coughs when I protest. "I was fifteen for the oldest," she tells me.

"The father lived far away. His wife, too big, and he, too little, so I came back to my mother. I had another child and lived there with the father. Good, and then something not good. Money make him ... " She twirls a finger around her ear, "zungu zungu. He beat his parents. His head very bad, very, until ..." I cannot understand and Wini repeats. I don't know those words, and she demonstrates a noose and chokes herself. "He died." She seems to think this is fine.

"Then what, Wini?"

"I came here to my parents. I have two more children, but that man, no give money. It is not easy. His wife he said,
but I know he is the one." Her almost permanent smile turns to a disgusted look. She clacks her tongue, then laughs and pours more tea.

**Whazzup??**

In the beginning I carry things like picture books or photographs to show Bashir so he will speak more Swahili with me. In the dust of the road in front of the weather-beaten shacks of Kaplimo I meet him scuffing along, his eyes in the shadow of a low-slung hat, his chin up, and he stops.

Kaplimo looks like an abandoned Western town, the pine-boarded shops very rough and shaky, each with its own porch and roof, and each with its own supplies: soda, canned margarine, can openers, dresses, and old winter coats piled on the side. Also among the shops standing along the side of the rain-washed path is a small tea house with picnic benches long ago painted sky blue. Chepatis, pieces of fried dough, set in a screened box. Bashir makes them and pours the tea there.

"Jambo Mama," he says as if joking, using the typical greeting and shaking my hand.


"Whazzup??" he says, cocking his head and looking at me.

"Yah," I say like of course you know what I mean, and I go on to give five equivalents in Swahili, all the ways I've learned to say hello, using a New York street accent. Bashir laughs out loud.

"Where are you going?"

"To the shops," I tell him, digging in my bag for the American coins I want to show him. "Do you know this?" Bashir doesn't. I try to explain, letting him fill in the words I fumble with. It is a good lesson. I go over to a cow by the side of the road. "Hey cow, you want this stupid American money? You can go to America with it, okay? It's not good for me—I live in Kenya."

Bashir laughs again. "Hey," he says, using my English. I ask him if he wants the coins because the cow doesn't understand my Swahili, and put them into his hand. "Bye Bwana."

"Bye Mama."

**Better Late Than Never**

I know it is time for class, although my students at the secondary school are still rushing around the cookshack with their tin plates filled with maize and beans, the rest of the students out on the lawn waiting to see who will make them move. I have a lot to do today. I carry my posters on digestion up the hill, the headmaster visible in the door of his house, still eating.

The school clock indicates five minutes after class time. I give them five more minutes while I paste up the paper charts that the wind, up from the valley through the broken win-
dows, will eventually blow down. I go out, pass the students and pick up the longest stick I can find. Even as I just stand up, I see them getting up and running. The older ones are more clever and pretend they are asleep. The younger ones surge into my classroom and bang into their dilapidated chairs. They are the ones I care about.

Segite, the math teacher, comes and says to the others, "What are you all doing? Shall we have classes late today and into the night? Oh no, I get too hungry at night." He nudges a boy lying face down on the hill. "Hey where are your shoes?" The boy ignores him, and Segite nudges the blue flip-flops, "Hey . . . " I go into my class wondering why he just doesn't tell them to get to class. Later as I teach I hear the students clattering into the room next door shouting. The headmaster has finally arrived. Better late than never, the students and teachers say about tardiness. The young class before me wave their hands wildly, slapping their fingers together in loud snaps so I will call on them. Cows tromp on the gladiolas outside the window.

When the period ends no bell is rung. Someone hid it so well this morning it has not been found. Before morning exercises Peter came to me with his sad face. "Madam, I cannot ring the bell," he announced. He is kind and slow and one student I trust. "The math teacher on duty has not come." It is late, so to begin the day in the usual way, I round up the students for morning prayer. A member of the Christian Club flies through a verse from the Bible. I give a little pep talk on
cooperation, and ask if the bell could please be returned. The dark boys clumped together at the back of the circle smirk and shuffle; the morning wind blows papers around our feet. We go to class although the other teachers have not arrived. Many students are absent too, as this is the week they must pay school fees. They will come when they have the money.

In the afternoon the biology students pile out of the crooked doorway, happily slamming the falling-apart door shut in the next student’s face. I hold it open, and go out shouting in my heart at the sun and grass. An old mama sits on the hillside in front of the path to my house. The knots and ridges in her skull are visible. Her face caves over the eye sockets, and her neck is a collection of folds formed by years of work. I greet her and immediately feel the great distance between us. She sits, beads and copper entwining her bony wrists and hanging in the elongated loops of her earlobes. She sits watching her cows, eyes blued over in half-blindness, her body lost in the pieces of a huge overcoat, although the day is very warm. In her lap is a hollowed gourd, the beadwork almost completed on the cap, the beads spilling from a well-worn leather sack. I want to stare and stare at her African-ness like the primary kids stare at me. “Jambo Mzee! Jambo!” I switch from Swahili to Kalenjin, the language of the village. She hears me but does not answer, turning her head slowly away. To her I do not belong here. I am the one who is changing her Africa. The large flaps of bead-patterned leather in her ears move as she bobs her head as a hen does, held erect. She does the movement slowly, closing her eyes, back into time.

Time is not the same here. I remember when I first came to Lelboinet pressing against the tiny weatherbeaten church with throngs of children at a wedding. The bride was squeezed inside a small car among the crumpled dresses of her attendants. She had been forty-five minutes late but stayed roasting inside the car waiting for the family to come. An hour later they came, very merry, singing of the bride who is like a cow going home (to the Kalenjins this is a great compliment). We surged up against an open window trying to glimpse the ceremony, trying to breathe.

“*What time does the matatu leave?*” I had asked a grinning conductor in Eldoret, swinging precariously from the doorway of the little covered truck already half full of people and sacks, tunes jangling out.

“We are just leaving now. Enter, enter.” The vehicle rocks back and forth impatiently while I duck in. We swoop off. A half hour passes and we are still riding around the town. Thinking maybe I have time to go and eat, I ask, “Hey, what time are we really leaving?” The matatu screeches to a halt in front of some people standing with bundles.

“We are just leaving now! Enter, enter!” We weave around and around the town. Two and a half hours go by.

“When are we leaving?” I almost scream.

“We are just leaving now. Just now. This moment.” We swerve up to a gas station.
The Respected Man

One of the hired hands is chopping cedar on the hillside, his gangly arms and knobby back crooked in routine. I often see him working around the school. They call him the Respected Man.

Once on this same walk to Kaplimo an old woman in bulks of ragged clothing called out to me. I wondered how she knew my name and went over. She clutched me and wept, her lip a raw piece of bloody flesh split in two; one part hung over her chin dripping.

No one in the village to help her. Everyone I asked turned away. Finally I ran to Jeremiah: “Pastor! What, WHAT is the matter with all the people?”

“That woman is not old, she is drunkard. Her bwana—” and he named the Respected Man—“does not drink, never. When he goes to work, she finds some busaa”—millet beer—“and drinks until she cries.” It dawned on me her bwana beat her.

His cuffs are neatly rolled up and he chops hard and steady. For some reason a middlesized feather of down is stuck and curling on the Respected Man’s head. “Hello, how are you?” I ask. He smiles, and it is that smile like a father. He is happy I have greeted him. “Are you a bird?” I ask about the feather, half forgetting I can only joke with persons of my own age.

“Yes,” he answers, “and I am crowing.” He takes the fluffy feather from the top of his head and replaces it, nods and picks up the axe once again.

Thumped Down Into Oz

That first night I arrived, the Respected Man had been the one to unload my table and two chairs, a bed frame with tire strips slung to hold me. Earlier there had been no one. Only Sam, who came up with me and was leaving the next day. The matatu had wound and wound and wound two hundred miles up from Nairobi, finally swinging down the red dirt road of Lelboinet, up through eucalyptus to the school set coolly on the hill. My luggage for two years was thrown down, and the matatu sped off, puffs of red climbing up the trunks of the gum trees. It felt like my house had just thumped down into Oz. Everything was quiet. Where was the headmaster to whom the letter had been sent? Where was my new house, my new life? I was hungry. I looked at Sam, and Sam looked at me.

* * * *

I was going to Lelboinet alone. I figured Sam had gone to his village without saying goodbye. “Typical male,” I say to myself, wandering around in the shadows of the very bright
moon. I climb easily onto the low tiles of the now emptying hotel. The other teachers are packing, or packed and ready to go to their posts. I have my bus ticket and I know Lelboinet is somewhere in the Northwest toward Uganda. It's on the western edge of the Rift Valley exactly opposite Sam's place on the east.

But I feel funny. Why didn't he at least say goodbye?—you know, like a friend. I shuffle my body until it is balanced on the ridge of the roof, and the moon is there, cleared of mossy trees. Why the hell do I feel so bad about him? It hasn't even been three months.

"Hey, what are you doing? Can I come up?" The moon misses him.

"I don't care." Then why does my heart pound?

Sam is more animated than his usual calm self. He tells me the teacher he replaced had taken him up to his station. "It's much better to go with someone, Kelly. The trip is wild. I'll go with you to yours."

Sam was right. I hear a small twitter of laughter and look in time to see three or four youngsters turn and hide behind the school. I still hear chirps of giggles. I trot off across the street to the small house in the garden of pink.

We are given a bowl of washed whole carrots, and then two intensely shy girls begin to lead us away from the school over the crooked roads, down and up. I feel like twirling around as I walk, taking in the great green draughts of hills flickering with maize plants and pocked with huts, wind blowing up from the deep valleys, the bamboo thickets. We start going down, slipping on a tiny path, the wind blowing the folds of my skirt, the sun going down. We part the trees and step out into the heart of the wind.

The cliffs drop off in front. Behind us the hills of Lelboinet roll down to the edge where we stand. Far below is a plateau with miniature farms, smoke coiling up. And far, far below a river. And beyond the river's thread, ridges and ridges of the most powerful, explosive mountain ranges, gray and reddish with smoky blue rises.

That night in the flickering of a sooty lantern on the floor, the five men stand in a small official circle, the headmaster translating the words of the tallest and eldest man. The lamp light dashes on and off their dark skin and glows and wavers in our eyes and on the walls. Wind bangs on the tin roof and sweeps in through the cracks. The Respected Man brings in out of the darkness a big plastic basin full of wrapped items. I begin to tear the brown paper, exclaiming, "Look, look! A teapot...oh, and glasses! Four of them, one for you and you and you and you." I laugh happily to myself. These stiff but smiling men bought me a teapot. The headmaster looks a little unsure if I am behaving correctly, unwrapping the pots and pans and utensils down on the cement floor, holding each item up to the light. The tallest man with graying hair laughs. I think he's pleased to see they have taken care of me so well.
Bones
The first semester the maize grows and the sun is cooled with highland winds through the blue gum trees. Sometimes I wonder how the students will ever understand biology without a book or a beaker. I wonder how they will learn grammar with only five books among them.

In the afternoons a group of us stay in the swept classroom with our make-believe butchery to practice our play. At first they are shy. I become the butcher, chopping meat wildly with a flourish, and I become the customers hollering. I am the arrogant inspector exaggerating every move. I am on the desk shouting. I urge them over and over to really be these people. They giggle selfconsciously; then one becomes the butcher chopping madly away, and another becomes a whining customer until they are all someone quite unlike themselves.

Lelboinet is not far from Eldoret, a neat town, and almost a city. Thirty-seven kilometers away to be exact. We load the red bull sign, tables, knives, bones, and ourselves in the matatu, which coasts and jerkily restarts all the way to town. On the outskirts it runs out of gas.

We're late but so is everyone else. We're put on stage sooner than expected. We run out of money. But I borrow enough for bread and jam for us.

By the late afternoon of the actual performance the drama experts and broadcasting people from Nairobi are on their eighth beer at least. One of the broadcasting agents went to buy cigarettes, drove through the bamboo fence and never returned.

Back stage the usual hubbub, a last bit of practice, toying with the set and lights.

The power fails. I almost pray for it to come back. It flickers on forty-five minutes later. Then off. My students teach me the National Anthem in Swahili. It looks like we'll have to perform by candlelight. The lights come back on. And stay.

The lights drop on their faces and their butcher shop and I watch from the darkness. For the first time the group is quite flawless: spontaneous, clear and loud, expressive on cue, and in character. I feel something inside me like love as they swing in and out of the imaginary shop, the footlights cast on their different skin tones and facial structures.

And afterwards, the deep black of their eyes almost shut in smiles, smiles that flash in the dark backstage, their hard and habitual handshakes, the rolling chatter of their tribal languages.

We win third prize, and the Best English Speaking Play, a shock to the other fifteen schools. Lelboinet is just a rural school, a Harambee school, pulled together by the people in the hills.

We swerve back to the hills, a zillion stars clearly cut in the sky, a new moon—orange and low on the horizon. I am isolated because I cannot understand Kalenjin, until we begin to sing. And we sing at the top of our lungs until we reach the dark trees and hills of Lelboinet. Then we scatter in the night.
The One Who Takes Care

"We're very glad you've come," says Reuben's son, his skin glowing in the lantern of the wooden bar he owns. "We like what you have done." His plump body is in a clean suit. He buys me another warm beer. "You know as chief I want Lelboinet to advance." I think if anyone can do it, it would be Ben Kattam. He has a craftiness the other villagers don't have. His eyes are warm but too knowing, like a city person's. A man in a safari suit at the table pushes his beer away and begins to snore on the tipsy table. The bartender serves beer through a little square in the wire enclosed box where he stands, protected from any fights.

"Why aren't there any other women here?" I ask Ben.

"This isn't their place," he replies chuckling. "They belong at home, to cook or wash or care for the children. There's no one else to do that." "What about you?"

He laughs out loud. "No, no, not here. We are men here. We rule the house. We make the decisions. We go where we wish. Do you know if I have a girlfriend my wife cannot say anything?"

"Can your wife have a boyfriend?"

"No, of course not. I would beat her and that would be okay too. But if I want..." He leans down with an ugly smile. "I can tell my wife to sleep somewhere else if I bring another home."

"That's horrid!"

He enjoys my reaction. "You mzungus have many split houses because you let women become more than the children they are, you know." I hate him then. "But you just said that you are glad of my help, and I am a woman."

"Yes, but you're a mzungu."

I see Ben again. We talk of the secondary school. "The school is not my business. I work with the village," he says. "We're going to advance." Besides the books I have managed to get, the Drama trophy and the new field hockey sticks, I cannot think of any projects for the school to do. I'm not sure how useful the extra work is anyway. The school is still unorganized, unstructured, unsystematized, uncooperative, make-shift, operated on no time, no rules, no supplies, no staff, no authoritative figure, no discipline or goals. I'm having a hard time getting used to it.

"I'd like to do something with the village," I tell Ben. "What do the villagers really need?"

"Many, many things," Ben says. He begins to list them.

The village men huddle in a large circle on the crooked slope in front of Kaplimo for a meeting. In chairs are the important members, the others are on the grass, their blankets wrapped carefully, old coats buttoned, each of them with a smooth wooden stick. Ben's stick is studded with silver-like
tacks. He looks polished but funny in his suit in the chair on the hill. They solve the problems of the village: fights between neighbors, medicine for the cow dip. They are the ones to begin projects. I hear my name.

* * * *

The candles on the table flicker. The rains are here and I don't have to ration my water any more. The rain falls so hard it beats gullies into the earth. I examine my photographs of Lelboinet: the main road—impassable now with the rain and slippery mud of April—which goes by the school and passes Kaplimo and splits. One travels to the south, the other to the western edge of the Rift Valley. Sixty miles across the mostly uninhabited valley, Sam's village lies in the dust of drought. I try to draw a map but I cannot draw what I wake up to in the mornings out my window or what the sun sets down behind in the evenings, the endless drift of hills and the plain rolling down to Mount Elgon.

The rains draw me near my fire. I wonder what a woman does in the night if she gives birth. There are no vehicles and even if there were, the thick red mud makes it impossible to pass. I wonder what old people do with broken bones and pneumonia. Lelboinet is high and green and astoundingly beautiful, but at over eight thousand feet very cold during the rains.

Jeremiah, Bashir's wiry eight-year-old brother, had a wound so festered it looked like a double knee. He hadn't cleaned it or had it stitched, but learned to limp as fast as everyone else could run. I look closely at the photograph of the nearest clinic in Chepkorio. The harrassed medical assistants try to get through a line of one hundred to two hundred people lined up outside.

* * * *

I am a mzungu. I am called to the head of the line. They give me an injection for my constant itching. I go again, to the head of the line again, into the ramshackle treatment room. A woman outside hand-washes the clinic's laundry. Inside the assistant wants to give me an injection for my cold. "Cold?" I say, "I have worms." I am disgusted to admit it. They come to give me an injection. "Don't you have something else?" I ask. The pills get rid of the worms. The people wait and wait during the three days the clinic is open. They come back the next week if they don't get in.

A clinic is what Lelboinet needs desperately. My proposal is twenty-six pages long. Primary children have drawn maps, secondary students have written essays, Grace and Wini have letters to send. Ezekiel translates other letters. I label the photographs: Chepkorio clinic, with its lines and lines of women and children in the drizzle, the chief, the shops, and school. A builder at Reuben's helps me figure out the costs and draw the plans of the four-room clinic, somewhere for women to give birth, for wounds to be treated. The Peace Corps will circulate the Partnership Proposal to any schools who want to raise money for our idea, and we will tell them by letters and pictures and crafts as much as we can of our small world on the edge of the Rift.

* * * *
I run through the spongy grass, lightning bathes the entire area of hills, up to the Kattams'. Sam is visiting and I have no milk. A large-headed girl sits on Esther's lap. Kipkoech fills my bottle full of steamy milk. I am in a hurry. Then I realize I know the child—it is Chepkoech, her head so massively swollen her eyes are sunk grotesquely in her head. Horrified by the deformed face I ask Esther what happened; has anything been done? Esther in her sweet little voice tells me, “Chepkoech had a ring itching on her forehead and then bumps on her forehead. We wait and wait at the hospital but too many people.” Esther smiles. She actually smiles, Chepkoech's purple swollen face with the sad slits looking out at me. “Don't be so upset Kelly,” says Esther, “God is the one who takes care.” I back out the door and burst into tears in the rain.

* * * *

For a couple of months the elders have been having trouble finding a plot for the clinic. Now a large field bordered by trees past the village center is the designated site. The problem was something I had left in the air (and out of the proposal), something that had been making me nervous. I go ask Reuben where the land came from.

“Mzee, Reuben, how are you?” He is looking at the huge bulk of a bull alone in a pen. He greets me always with a smile. “Mzee, we have land now! Do you know where it came from? Who gave us their farm land?” Reuben smiles. “Mzee,” I urge, “do you know?”

“Only God gives,” he says, pointing at the sky. “He blessed you.”

Sleeping Milk

When I have no class in the afternoon I walk away from the school, kick off my shoes, pass the clanking milk cans of the dairy shack, pass the maize grinder churning loudly then up the overgrown road, over the wooden posts to the littered and tattered grass of Grace's compound. Rami and Kiprop come tumbling toward me, laughing, clasping my legs and tugging on me. Grace pushes smoking twigs into the square hole of the fire on the floor, her heavy body wrapped in a dirty kanga print. Maize and cow feed rest in the corner of the swept hut. She gives me a weary smile. “Karibu.” Welcome.

From a gourd she pours purple milk. “What's that?” I ask.

“Maziwa lala, sleeping milk.”

“No, this,” I say to the dark lumps in the obviously soured milk.

“Charcoal,” Grace says, “to make it sweet.” She takes it from me, smacking her lips. I know the milk has slept in the cowry-decorated kibuyu for four days. Rami tugs on her
Come Out on the Daylight/21

mother and whispers. For her Grace asks, “How do you drink tea without burning your nose? It is so long.”

She skims cream from a tin of milk on the floor for the vegetables. I love to come here and be among her family. “I cannot have any more children,” Grace tells me. “What can I do?” She hands me a bowl of rubbery chunks. “Cow stomach,” she explains. I politely pass. I am surprised at her acceptance of the modern idea of birth control, most tribal women bearing children until they no longer can. “No, the man will not prevent. They want many children. But we want to stop now.” We talk for a long time, the dog and cat sneaking in the hut for leftovers.

Kogo is old and crinkled. The lines ingrained in her face follow the curves of her flat cheekbones and firm nose. She always greets me with a sing-song hello distinct to the language of the Kalenjin tribe. Wini trips over the children, laughing, “Come in, come in.” In the dim light she flails around, skipping over the sheep, her arms and legs flying in odd directions. Kugo comes in for tea. Kogo was married by the age of twenty to Kugo, who is equally crinkled now and very cute, his eyes sunk in deep laughing crescents, body tucked inside an unrecognizable wool coat tied in the middle.

He drives cattle all day.

In a shaky voice that sounds like reeds he answers my questions. Kogo laughs and sings in a word once in a while. Wini sips tea and tells me in Swahili what they are saying. Long ago there were few people and even fewer places where people got together. Kugo’s parents told him the time had come to go and find a wife and he thought so too. Through various people he learned of Kogo and went to her village. He spoke with her father, telling him that he wanted a wife, and was told to return with all his family and the elders of his village. Soon Kugo returned, and the elders of both villages decided among themselves the bride’s price.

“What did you think, Kogo,” I ask the old woman. She says she just listened. Wini adds, “She was old you know.” When she was told by her father to go she went with the stranger very far from her home and had five children. Had she discovered things were not right or had she been unable to bear children she would have returned home and each could have found another mate. “Were you happy, Kogo?” The old woman pats her face and smiles. She rubs the veins in her arms.

“They have been together since their skin was smooth and they were slender and full of youthful blood,” Wini explains. She walks with me through the garden, scooping up handfuls of red clay to eat. Her belly is big on her skinny frame. “A baby?” I ask touching lightly the mound. “No, no, no,” she says, pulling away. But I know it’s a baby. Grace is heavy with her unborn too. The women do not speak of the child until it is born.
They’ve never had poetry or read novels. I read their poems. “It rains small by small,” Alex writes. One of my slowest students has only one eye and I’m almost sure he’ll never catch up. I read his poem “African Man”:

All man of Africa
come out on the daylight
to sit and warm
each other,
their faces like silver
look and clear everything
in the day.

Joel writes, “Where is the sun, shining like a mosquito?” Titus writes of the moon moving as slow as a chameleon. His little brothers and sisters race from Surura, a chameleon on a stick. The miniature dragon moves precisely along, spreading each webbed thumb and finger to enfold the stick, its protruding eyes blithely staring out, its skin an array of strange blues, oranges, and greens. The chameleon moves, its only purpose not to hurry.

One Saturday we saw grasshoppers multi-colored and intricately patterned. It was as if a toy company had sent them to wind up and leap in the grass. When they flew, their wings whirred, a most soft and audible rose color.

The Honorable Biwott

Reuben Kattam comes for the first time since more than a year ago when I first arrived. It’s business and I find myself whisked away to the border of the village awaiting the minister-member of Parliament who originally came from this area. He is a small Kalenjin with small eyes and the traditional gaps in his bottom teeth, an impeccable manner and quick Bwana Kubwa (big man) attitude, zooming up and by in a white Land-Rover.

The traditional singers chant along the roadside. There are speeches, and I am shoved with about one hundred other eager people who want to talk with Honorable Biwott personally, all shoving papers into his hand, he rather irritated, and me feeling pressured by the elders to make contact and explain the clinic. After shoving I am told I can have one minute and I am yanked about, pushed away parading among chanting Kapkenda girls and finally on board the white Land-Rover with three other lucky winners. I have five hundred yards to ask him if he will provide medical personnel once the clinic is built. He looks at me. “Most assuredly,” he says in perfect British English. “Lelboinet is part of my home.” I am dumped out and race back to tell the circle of villagers that Honorable Biwott will help us.

* * * *

Again the rains come sweeping across the front of my house. I can almost hear the earth parting so the crops can breathe. And with the rains the cables come from all the schools, cables sending money to begin building the clinic. Junior highs in New York, Florida, and one American school in Bermuda.
Traditions

"What do you mean traditions should be destroyed?" I ask the students, who aren't sure why.
"They should be replaced with Christianity," one girl adds.
"But traditions are good for tourism," another adds.
"They are a shame to us, those old people and the ones who wear no clothes."
"They still spit and wear no shoes. They hinder the progress of Kenya."
"The oil on their bodies smells. A Turkana man or a Masai is naked. How can we be a dignified country with that?"
"Okay, what is good about tradition? The Ministry wants us to preserve traditional stories. There must be something good."
"It's a good thing to preserve so the ancestral spirits won't be upset." I almost make a funny face in response but several other students agree. "Yes, so the family won't be cursed."

The hut is dim and I shake Kogo's hand, the gap in her teeth showing. The children sit by the fire. I pull up a low stool so my knees come up below my chin, and I carefully tuck my dress around me. Wini, her long breast in her newborn's mouth, his hair wild against the blanket, tells me to wait for Kugo. He wishes to speak with me. The little man comes, his faithful dog bounding about. He ceremoniously goes up to where the firewood of wattle and cedar is stored, and comes down the rickety ladder, his old coat hindering his shaky steps, with a huge burnished gourd with dried sukuma leaves stopping the open mouth. When they are removed I can smell the honey. We sit on stools as he filters out the wax of the honeycombs, then pours us large tin mugfulls of candy-sweet beer. If left there for a week, Wini says, the drink becomes intensely intoxicating.

The beer is so very sweet and mild. The grandfather tells me he used to live in the valley of heat where his parents used to pray to the sun. When he was a young warrior he used to wear robes and carried bows and arrows. He took part in cattle raids but never killed anyone. He wore his hair long, smeared with red mud like the Masai. At about the age of twelve, according to Kalenjin custom to prove bravery, he removed his two lower front teeth with a knife as his father told him.

Darkness comes and the sun below the pyrethrum daisies looks like a water color, a fine rain blueing out its redness, its aliveness. The lamps—little tin cans with wicks and handles—are lit, the baby wrapped more securely. I chase cows to where they belong through the wattle trees into the lower pasture for Kugo, and run back to finish the poured beer, then back home, my stomach burning.

I go again on Tuesday. We sit in the sun, and the children play. Kugo comes and filters the honey and removes the large sausage-like tree parts which have been cut in half. They
come from another place where it is very hot. Kugo had to go at night with a smoking torch and a skin bag, without his clothes, to get the honey he uses. He tells me that on the day of wedding in his time, they had gourds and gourds of this honey beer, and meat with ugali, rice, and potatoes. Wini translates Kugo’s Kalenjin into Swahili. On the day decided as the wedding day, the young man would send his younger sister or cousin to fetch the girl, who knew of the day and the plans and after saying good-bye to her family was escorted by her younger relative. On the road when she would meet with a man’s party, she would rub fat on her forehead to indicate good-bye, and she could not look back. When she becomes pregnant the wedding ceremony is held, the dowry paid.

One of my students writes that his grandfather wore a special costume of beads on his legs and carried a sword and shield and went to the girl’s house himself. He was seen and his armor was taken by the girl. He was sent to his village to get the elders with him to bring the girl home. Each river she came to she refused to cross unless a goat was given.

I go home in the dark and fall asleep immediately without supper.

**Harambee!**

I borrow Segite’s bike during lunch and clank over to where they are clearing the land. The village has begun a fund raising. Everyone must donate money if not a cow or sheep to be auctioned off. The women have made gifts to send back to contributors in the States: kibuyus, woven baskets, beaded pouches, old treasures. They are precious things, and I long to keep them. One hundred villagers are there to begin the digging. Everyone wants their picture taken. Together old and young work, heaving the earth up with their hoes and pangas, carrying cement blocks they have made. All work together—Harambee!

* * * *

The sun, pure gold and powerful on the slopes of the green, hinged in the long-needled pines, mellowed on the cracked roads. It seems as if everything is out; mourning doves with pearl-gray feathers, white jacketed crows with heavy wings that loudly waft the air, hawks with wing tips that curve up. Sunbirds, iridescent, dart about the school garden flowers. All the highland flowers from clover to bush flower are out. The rains have passed. September is here.

* * * *

My old high school has raised nine hundred dollars for the clinic, much more money than I ever imagined. Ben and I meet in his office behind the butchery. The wood is new and I can’t smell the blood next door. We write out how the money will be spent. I will have to leave Kenya before the clinic is done.

* * * *
Dear Kelly and the people of Lelboinet,

We're so happy to hear that construction is underway and we did get two boxes of village crafts. You should've heard the sounds of delight and amazement as I revealed the contents of the boxes. We'll be having an auction of the crafts that the villagers made for us, using the proceeds for next year's Partnership Project.

Never have we gone through anything like the cultural exchange that we've had for this project. In our own small way I guess we've done our part to bring the peoples of the world closer together in peace and friendship.

I watch the largest silver moon slide up onto the horizon and into the clouds.

The moon makes the night look like day. There's no sign of civilization, no cars, no wires, no buildings, no lights.

Just a dog's bark and the rustle of night through the growing leaves.

Congoi

The people in worn clothes come slowly and at four thirty the sun comes out and they sit on benches, on the ground, on bandanas and rags. Dancers come in bright yellow Nyayo cloth and line up, all holding onto one cane of bamboo, jingling bottle caps strung on a sling, blowing cow horns decorated with cowries and shaking the long fur of tall colobus hats. They close their eyes and jerk back and forth, an occasional high and wild chortle, "yiyiyi" breaking the long chant, "Congoi Kelly, Thank you Kelly. Happiness to you, thank you Kelly, happiness to you."

People make speeches. Reuben remembers the first night I came with Sam, and he said, oh you are two and I said no just me, and the committee was disappointed and wished we both would work in Lelboinet. I told them I will be two myself.

Then I must speak. I don't know if what I say is good.

People clap during it. I know I say thank you a lot and at the last part I choke up. I love you. I will remember you. My heart is full. I will miss you. That's all, I say in Swahili. I sit down feeling sad and foolish.

All the women line up and give me kibuyus they have made and things they have woven, hats and stool covers. It's a long line. I hug some of them. When the sun has gone it is time to eat. We wash our hands and enter the school building.

The teachers are there, the chief, the Respected Mzee, Bashir's woolly head, Mama Kattam, Mama insisting she doesn't want the chicken near her. We eat eggs, tomatoes, rice, chicken soup with claws sticking out, chepatis made by Grace, and Cokes. A woman falls into an epileptic fit but she's gone before the chatter subsides or the eating stops.

Darkness comes, and outside I meet Ezekiel's father still singing. He calls me my Kalenjin name, Jelagat, Born-in-the-
Evening, and jumps up and down as the warriors used to do. He holds my head a bit drunkenly and shakes it, bobs his colobus hat in front of me crying, "Thank you. You are a happy person, Jelagat. Congoi!"

---

I line the children on a felled tree and count them. The slanted eyes giggle at me. I make sure they are perfectly straight, their bellies sticking out. I hug each one separately. They run off laughing.

I must hug everyone. Grace hugs me warmly back, her large black eyes full. Wini comes with me to the fence, and we cry in the dusky blue of the hill.

A light is beneath my door; the jiko burning. Bashir has put a note on the table, "I will come tomorrow morning at seven." My bags slump forlornly in the corner.

"You’re not leaving today, not tomorrow, not the next day," Bashir says next morning. But I have to go. I try to hug him, but he has a broken face and turns walking stiffly away. The road moves and through the water in my eyes I watch his crazy hair. I read the little note he wrote in Swahili:

*There is the moon, there is the sun, there is this time. I am happy you came but sorry you go your brother Bashir Philip*

Sixty miles directly across from where Bashir and I used to sit on the ledges is the dry fault of Sam’s village. A long walk through a forest of charcoal makers and there is the large, rundown Italian ranch Sam lives in, with its huge veranda and glass doors, a cavernous fireplace with a mantle of golden wood. Sam and I climb up on the roof.

The moon comes, pricked by the silhouettes of acacias. Drums beat in the distance. I think of the green of Lelboinet and am homesick. I lean against the chimney and stare across the flatness of Laikipia. Once I saw elephants, fifty of them mooing and crashing, then disappearing into the scrub, one trunk raised in a question mark above the trees. I remember the glinting eyes of zebra or water buffalo in the night as we flew on Sam’s little pilipiki, motorcycle.

"You seem far away," Sam says softly, moon on his face.

"I am, but not as far as I will be tomorrow." I hide in the chimney’s shadow.

"I’ll see you again in the States when I get back."

"You really think so, Sam?"

"I know so. We have to come back to Kenya again, together, too." Yes, I must. The larger part of my heart is here. ☚
Cameras Without Lenses

A selection of photographs by Karen Ahner

The ubiquitous object we call a "camera" has an ancient history in art and science. Its name (literally, room) comes from the discovery made during the Renaissance that a hole in the wall of a darkened room would project on the opposite wall an inverted image of whatever stood before it, whether a landscape, the sun, or anything sufficiently well-lighted. This darkened room (camera obscura) was used by Gemma-Frisius in 1544 to observe a solar eclipse visible in Louvain. Scientists soon discovered that a lens instead of a small hole would give a sharper, better-defined image. And artists found that this device, with certain modifications, would give them an opportunity to represent perspective more accurately than before. The modifications involved mirrors (to turn the image right side up and to place it on the artist's drawing paper), lenses to increase or reduce the focal length, and sheets of glass on which or through which to project the image. This camera lucida was a major tool of artists during the eighteenth century. The "camera" first became portable (using curtains or a sedan chair) and then was reduced in size until it looked like a modern view camera. The discovery that silver salts darkened on exposure to light was made in the eighteenth century but the process that permitted the image resulting from the darkened crystals to survive (to become "fixed") did not take place until 1839 when Daguerre found a way to do it, first with common salt and then with sodium thiosulphate (now called "hypo"). For a long period thereafter art and photography interacted. Eventually photography specialized in representational imagery and art ventured into the reproduction of mental and surreal images.
Modern photography with its enormous sophistication (built-in exposure and distance meters, control of every dimension, electronic movement of film etc.), has, however, not displaced all earlier processes, nor remained limited to the strict representation of reality. Some photographers use 8 x 10 plates, even glass plates, some prefer box cameras and some, like Karen Ahner, work with pinhole cameras, descendants of the camera obscura, welcoming its distortions.

Karen Ahner is a product of Sandusky, Ohio. She studied at the Columbus College of Art and Design and received a Bachelor of Fine Arts from Ohio University. She began to experiment with pinhole photographs in 1983. Her work in this medium has been shown at Ohio University and the Sandusky Cultural Center. She has also done glassblowing, working with Robert Eickholt in Columbus. In Sandusky and later in Cleveland she served as a photographer’s assistant. An administrative assistant at the Case Western Reserve University Law School for almost two years, on September 18 she began a three-month tour of Europe, after which she plans to study woodworking and other arts and crafts in three dimensions.

About her photographic work she has this to say:

My pinholes are photographed with a handmade oatmeal box camera, a pie-tin pinhole aperture and a black cloth shutter. This is all bound together with masking tape. However, the most sophisticated part of my camera is the metal piece at the bottom, which is used for attachment to a tripod. I've found that the use of a tripod is mandatory with my camera—which normally requires exposures ranging from one and a half to four minutes. I use 4” x 5” black and white sheet film and 100% rag paper—coated with “Cyanotype” (a ferric ammonium citrate solution) or “Van Dyke” (a silver-based solution) emulsion. The print is exposed in sunlight—instead of under an enlarger. Running water develops the print.

The process is handmade from beginning to end. The imperfections of camera movement (caused when the cloth shutter is taped open during exposure) and image distortion (caused by the focal length between the pinhole aperture and the film plane) work in a complementary way giving a different reality to the subject matter. With this particular process, people are my favorite subjects.

At this point, I'd like to experiment with different shapes and sizes of pinhole cameras; and work with different films and emulsions (especially a dust-on pigment powder I've recently read about). Even though I may add to the process, I don't intend on ruining it all by allowing too much sophistication.
Universal Public Service

Dwight Brown

The MacNeil-Lehrer "focus segment" was on teen-age suicide. It did not promise to be easy viewing, and it wasn't. One chilling estimate: 25 percent of teen-agers will at some time attempt suicide. One bright and attractive girl told about her attempt to eat a pile of aspirin tablets. She missed her rendezvous with death. The many who make it will typically leave behind bewildered family and friends, overwhelmed with guilt and unanswerable questions.

Unwed pregnancy among teen-agers has now passed the point of being epidemic—it is catastrophic. In 1983 only 20% of Cleveland's teen-age mothers were married, and the social prognosis for both mothers and children is cruelly bleak.

There is a crisis among the young; suicide and unwed pregnancy are simply the more spectacular features.

Shift to an entirely different arena of concern—the ominous rise of military organizations as the dominant social form of the late twentieth century. Even in democratic nations like the United States, the military increasingly dominates the national budget, and military solutions appear almost as reflexes, even for civilian leaders. In a growing number of situations around the world, military organizations are being substituted for democratic political processes, and in a very large proportion of the nations of the world today, military rule is the norm.

It is not very useful simply to denounce this disquieting development. One must ask—what is it that makes the military way of life so attractive as the twentieth century winds down?

The simple truth is that in most areas of the world today, the acids of modernity have so eaten away at all of the traditional ties of loyalty and commitment among individuals and the larger social whole, the political process has been so overwhelmed by a cacophony of competing tribal and corporate interests, that the one remaining focus of cohesion—the one surviving center of resistance to rampant social disintegration—is the military. And the larger the national interests that the military upholds, the more inclusive the commitments it can command.
It is not guns that make the military powerful; it is commitment to a common goal and the willingness to adhere to a program of concerted action. It is discipline and the capacity to engage in coordinated action. A well-organized military organization seldom actually has to shoot anyone. The effectiveness of concerted action and coordinated resistance is usually enough to cause others to retreat.

An aroused community of actively involved people was the secret of the success of the recent revolution in the Philippines, and the loss of that community euphoria explains the troubles the new regime is now experiencing. For a brief moment in recent American history, Martin Luther King, Jr. led a powerful movement, which did not for a moment consider taking up arms, but which nonetheless moved mountains of accumulated political inertia and gave its supporters a new sense of direction. But it was only a moment and it passed.

What this country appears to need is not the almost random reliance on crisis and catastrophe to produce moments of national unity; not the increasingly dangerous dependence on war fevers to lure us out of our narrow self-interest: we must acknowledge the legitimate need for a stimulus to social unity, and take steps to nurture it, explicitly and insistently, in every generation.

To achieve such a goal we need a program of universal public service, in which every young person is required, sometime in the late teens, to devote, let us say, a year to public service. Although this might be military training, it might also be community service in a wide range of possible forms, from the construction and maintenance of public parks, to work in hospitals and involvement in social service abroad.

Let us tell our young people that we need their idealism and their energy in programs large enough to excite their loyalty and empower their generosity. Young people preparing for the rigors of higher education, and anticipating the decisions of citizenship and the founding of their own families need to experience their importance as emerging adults. There is no better way for our society to tell them they are important than to require a period of public service as the universal ritual of entry into the world of adult responsibility.

Most Americans do not hesitate to say to the young men in time of war, we need you, we must have your life, if necessary, in the service of a larger purpose. How much more appropriate to ask them to serve the cause of life, the cause of an enlarging national purpose—indeed, of human survival. In addition to serving their own country, the youth of this public service corps would in various ways be made ready to exercise the responsibilities of citizenship in the world at large. There would be opportunities in this national service for our young people to meet those of other nations and other cultures.

But we need to ask the pragmatic question—is there any possibility that such a program could actually be enacted? The answer turns on whether there are pressures building in our country for this kind of large-scale solution; are there problems which demand this level of response?
The emerging answer seems to be yes. There is increasing awareness among the general public of escalating problems among our teenage population. Suicide, drug and alcohol abuse, unwed pregnancy, crime, unemployment and unemployability, especially among black youth, a growing and gnawing sense of alienation among many young people are some of the symptoms.

It is no answer to such problems simply to ignore them, although individual responsibility continues to be important. The better answer is not to suppress the problem but rather to enlist the person and harness the interest, the natural enthusiasm and idealism of youth, in large projects that will allow youth to make a contribution to the nation and at the same time enlarge their own vision and capacity as emerging adults. It is fair to suppose that the young would respond favorably to such an offer. (According to a recent Gallup Youth Survey, 62 percent of teenagers say they favor a one-year national youth service program for men.) If they did not, our situation is more dangerous than we have realized.

In several ways, a program of universal public service would address pressing social problems in ways that not only treat symptoms, but actually move toward solutions.

Our black underclass constitutes a large and growing proportion of our population that has few ties to the larger society, a diminishing sense of hope, and a steadily growing rate of crime and social disintegration. Although class barriers would not be eliminated by a universal public service program, the children of the black underclass, both male and female, would benefit from such a national effort to help youngsters discover a larger world into which they could imagine themselves moving, especially if the period of universal public service included training opportunities as well as consciousness raising.

World War II took large numbers of young black men out of the ghettos and into a larger world for the first time. Out of this experience, even though the armed forces were still segregated then, a whole generation of young blacks took
hope, and the nation as a whole enjoyed a period during which racial injustice was significantly reduced. The renewal of such progress, which must always be energized by the underclass itself, could be a significant consequence of a program of universal public service.

But the benefits would not be limited to the black underclass. Let us look at the opposite end of the opportunity spectrum in the United States, and ask what the benefits would be for the children of the wealthy and the well born. For various reasons, these children are, except in periods of wartime, not regularly required to become acquainted with or work with those who have other backgrounds and expectations.

It is a long way from the inner city to the wealthy suburbs, a distance too great for any but the most adventurous privileged youngster to make. It is much safer, and much more comfortable, to remain in the cocoon that wealth and position provide. But we need to ask whether such youngsters, who in the nature of things will be likely to attain positions of leadership in society, are adequately equipped with knowledge about their fellow citizens to provide leadership in a democratic society. Though a year of universal public service might not bring them all into the homes of the poor, they would at least get to know some of the children of the poor; and if their assignment involved the rehabilitation of slums, urban or rural, many would learn face to face what it is like for others to be hungry and hopeless.

Let us look at another angle of this complex but fascinating possibility. Part of the trouble with being young in a modern urban society is that from the point of view of those who are older, the young are more or less useless. Almost all the interesting jobs are too complicated for the young to perform, and about the only thing they are really successful at is spending thousands of dollars on education. What a dramatic change it would be if we knew that every young person approaching the magical age of, say, 17 was really a public servant who would soon be building new parks, taking care of the elderly, serving in the military or in a world-wide peace brigade, taking training in the responsibilities of citizenship, and a thousand other useful and constructive activities. The young in such a social system would be important and valuable and welcome. They would be social assets instead of social problems, and they could once more be not simply symbols of some future hope, but bearers of real and immediate benefit to the larger society, as the young in primitive societies have always been valued, both for their number and their potential, as coming-of-age ceremonies clearly indicate.

But the most vital need such a program of universal public service would fulfill is the need for a social identity for a vivid sense of belonging to something larger and more enduring than the isolated self.

Periodic wars have, for a long time in human history, served as the occasions when social identity was most dramatically reinforced. It is quite credible that an important part of the support for war and warlike attitudes on the part of the general public is rooted in this more or less vague sense that
there are, in fact, good things which come out of wars. Such feelings emerged from the Falklands and the Grenada conflicts.

Because general wars are no longer a rational possibility, we must find a moral, practical, workable substitute for war, and universal public service for all youngsters is better than anything else currently being proposed, both as a response to the threat of nuclear annihilation, and as a response to a whole range of more immediate problems already mentioned.

This proposal is not new, of course. In an essay first published in 1910, William James made the case for a universal youth service corps. He said, “Such a conscription, with the state of public opinion that would have required it, and the many moral fruits it would bear, would preserve in the midst of a pacific civilization the manly virtues which the military party is so afraid of seeing disappear in peace. We should get toughness without callousness, authority with as little criminal cruelty as possible, and painful work done cheerily because the duty is temporary . . . I spoke of the ‘moral equivalent’ of war. So far, war has been the only force that can discipline a whole community, and until an equivalent discipline is organized, I believe that war must have its way. But I have no serious doubt that the ordinary prides and shames of social man, once developed to a certain intensity, are capable of organizing such a moral equivalent as I have sketched.”

A host of questions of course arise. What effect, for example, would such a plan have on colleges and universities? It would be catastrophic if these institutions suddenly found that there was no entering class next year. Obviously, one could phase in the program, to allow those able to secure college admission to complete their public service commitment, perhaps even in two “shifts,” as a condition for eventual graduation. This would ease the impact considerably. The GI Bill was one of the best ideas the United States government ever had, and it might be that one year of public service would be required while an additional year or two on a voluntary basis would build up education credits, which would eventually swell college enrollments.

But what of the expense? It would be large, of course, but we must remember that these young people would be not just sitting around, but actively employed in doing whatever the nation required of them, including building and staffing the facilities which the program would require. Against the expense of feeding, clothing, and supervising this peaceful army might be offset some other costs, such as some portion of welfare payments and court and law enforcement costs since juvenile crime might be expected to diminish.

There are partial precedents upon which we might draw for learnings and warnings—the famous Civilian Conservation Corps, largely working-class, was one, and the Peace Corps, a refuge for the educated middle class, was another. Neither involved universal service, but both provide an idea of what young people are capable of doing, and the kinds of projects that could make important and permanent contributions to the nation.

What about the young themselves, what do they think of this idea? On the basis of informal conversations with a num-

The Peace Corps provides another model for universal public service. Here Peace Corps volunteer Bernadette Pica of Chicago is shown with a Tunisian moth and infant in 1965. (Cleveland Press files, CSU)
ber of them, I can honestly say that I have yet to find anyone who is not intrigued and even excited by the idea. And parents! Some of them are close to tears when they think of what such a program could mean in the life of their incompletely motivated latent genius. This is hardly compelling evidence, but a general survey could be part of the early stages of such a program.

Inevitably, at the present embryonic stage of the idea, some details of the organization must remain vague: what kinds of endeavors would be offered to the young, how and by whom various kinds of decisions would be made [some by themselves, others by local authorities, or even the U.S. Congress]. What degree of coercion might be used? Since a compulsory draft into peacetime labor might require a constitutional amendment, the public debate that would precede the implementation of such a program would provide an unprecedented stimulus to the framing of public purposes and community agendas, all the way from the local level to the federal government. This might prove to be one of the greatest strengths of the program—the encouragement it would provide for citizen participation in issues of community concern. The PTA finds it difficult to interest parents in the abstract processes of education in an isolated place called a school, but the work of the Youth Corps would have a direct impact on the physical reality of the community and would thus be much more likely to become part of a real public dialogue.

The proposal to require universal public service on the part of all American youth is far from being utopian. In fact earlier this year two bills setting up such a national youth service corps were being readied for introduction in Congress—one by Robert Torricelli [D—New Jersey] and another by Dave McCurdy [D—Oklahoma]. They, who are not mere visionaries, believe that such a program might very well be the most practical and cost-effective way to deal with a whole range of significant national problems, and beyond this, liberate the available energy of the young of our nation and spur them to achievement. Above all, this proposal seeks to provide a level of challenge and excitement for the young which can transform them from bored dependents waiting for life to begin to a vital constructive force in this nation and in the world.

Notes


2Bureau of Vital Statistics, City of Cleveland. For a recent and thorough study of the teen pregnancy problem in Cleveland, see study completed in 1985 by Dr. Heather Kurent for the Federation for Community Planning, 1001 Huron Rd., Cleveland, OH 44115.


4William James, in The Writings of William James, James J. McDermott, ed., [New York: Random House, 1967], 669. This comes from the famous essay “The Moral Equivalent to War.” Most people seem to have forgotten that James not only stated the problem, but proposed a specific solution.
"If an artist, in coming before the public, had to choose between having a first-rate instrument with a second-rate bow, and a second-rate instrument with a first-rate bow, he would choose the latter. Of such supreme, such absolute importance is the bow," So wrote Richard Grant White in an article on the great French bow maker, Francois Tourte, in the *Atlantic Monthly* for February, 1880. "Without Tourte," White declares, "Paganini would have been impossible . . . . But without Stradivarius, Paganini was possible, for he played upon a Guarneri instrument. All the splendor of modern playing . . . is the direct consequence of the invention of the Tourte Bow." These statements may sound extravagant, but today few musicians would disagree.

Stringed instruments had been around for many centuries when the violin family came into being in Italy in the early sixteenth century, in a form so close to the ideal that since then it has required no major structural changes. The importance of the bow, however, as an equal partner in creating sound, went unrecognized for another two-and-a-half centuries. Bows remained unstandardized and went through considerable variation as performers suggested improvements to suit their own preferences.

The bow was possibly the original stringed instrument. Some sources speculate that millennia ago some hunter with a musical ear may have liked the twang of the bow string after loosing his arrow, and, holding the curved wood to his teeth while the string was still vibrating, found that the hollow of his mouth acted as a resonating chamber. Eventually it was found that an empty gourd made a better resonator. According to musicologist Sybil Marcuse, "The earliest record of a musical bow is a wallpainting in Les Trois Frères cave in southwest France, dated about 15,000 B.C., where an object believed to represent a musical bow is being played in a religious ceremony." Today similar bows are still played in primitive societies all over the world; Marcuse lists some 230 names by which they are known. As late as the 1930s the Bushmen of the Kalahari played the same bow at night with which they hunted by day. Basically, all primitive bows are sticks of bamboo or other flexible wood bent into an arc with a string of animal hair, silk, flax, or other fiber attached at each end.
Somewhere, probably in Central Asia, the idea arose of drawing the bow hair across other strings attached to a separate resonating box. A Mozarabic manuscript of the tenth century shows a large, vertically held instrument played with a strongly arched bow. From that time, use of the bow as adjunct spread throughout Europe and became an indispensable part of the increasingly sophisticated music of the court, the monastery, and the street. Numerous illustrations have come down to us showing bow and stringed instrument in instantly recognizable, but wonderfully varied configurations. One element common to virtually all pictures, however, is that the instrument is held in the left hand, the bow in the right—a point which seems to bear out Grant White’s contention as to the importance of the bow. One other characteristic is constant: until the late eighteenth century, the bow was convex—the same curve as the hunting bow. It was Francois Tourte and his contemporaries who changed the curve, by then only slightly convex, to slightly concave; but this modification had immense effect on the properties of the bow.

But while always convex, the curve of the wood in early illustrations ranges from almost semicircular (a “round” bow) to almost straight, and its length from what appears to be no more than twenty to thirty centimeters to something unmanageably long, wielded at full stretch of the arm. Sometimes the hair was attached at each end and the bow held in the middle of the stick: sometimes some of the stick extended beyond the place where the hair is attached, and served as a handle. And sometimes a twig stump jutted out close to the end of the stick, and the hair was attached to that.

This last was an early attempt, on a lightly curved bow, to keep the hair away from the stick. Another method was to wedge a finger or a small piece of wood between hair and stick; eventually this last became what is now known as the frog or nut. By the late middle ages, bow design was becoming, if not standardized, at least more uniform, with a length of fifty to eighty centimeters and with a fairly gentle curve.

Bowed instruments, however, still came in all sizes and shapes, played under the chin, against the chest, hanging downwards against the body, or on or between the knees. They had three, four, or five strings, and their function at first was probably to provide a drone background using more than one string simultaneously for a melody either sung or played on a wind instrument.

For this, the bow did not need very tense hair. Indeed, to press on the strings with the hair of a moderately convex bow, thus pulling the ends of a pliable stick inward, would cause little increase in tension. Gradually, experiments with not only decreasing curvature but with different woods for the stick resulted in a much more resilient shaft, more controllable hair tension, and a bow capable of considerable agility.

Until about the fourteenth century, before agility was an aim, the player held the bow in a fist. Gradually, as awareness of the musical possibilities of the instrument expanded, the grasp became lighter, closer to the fingertips, freeing the wrist for quicker movement; and a firm distinction developed between holding the bow overhand, for shoulder or neck-held instruments, and underhand, for downward or knee-held ones. Today the double bass is still often played underhand, more in
Europe than in the U.S. (Only the double bass bow now comes in two styles.) The revived viola da gamba family always has been, and still is, played underhand.

It is easy to think of music from the Middle Ages in terms of our own values, and dismiss it as primitive. But the more of it we hear, as old manuscripts are deciphered and early instruments and methods of performing are studied, the more we come to realize how sophisticated it is. It is similarly shortsighted to consider the instruments on which it was played as primitive—naive to imagine that a society capable of producing extraordinarily precise astronomers, mathematicians, and architects, great artists and philosophers, and superb craftsmen, could not design instruments commensurate with their desires. "One of the most powerful pieces of evidence of the musical craftsmanship of the Middle Ages," writes Gerald R. Hayes, "is that, in the oldest viols known, those of the fifteenth century, the arching of the belly, the position of the sound holes, and the placing of the bass-bar are all confidently established in as utterly perfect a balance as anything ever produced by later hands. It cannot be too strongly emphasized that there is not the slightest reason for supposing that the quality of instrument making in Europe had ever any occasion to 'improve,' once the Dark Ages were well passed."

But as desires have changed, so have instruments and their partners, the bows. With the advent in the sixteenth century of the modern violin family, the bow became a thin, light stick with a fixed wooden frog. The hair, a narrow ribbon, was attached to the frog and joined to the tip of the bow in a point. Its length varied according to use, from about 35 centimeters for a dance bow, to as much as twice that length. Horsehair had always been the fiber of choice for bows. Nothing else, before or since, has been as satisfactory, as responsive. It is merely custom which decrees that it shall be white (sometimes it is black for bass bows). Traditionally, Siberian horses have provided the strongest tail hair. By the sixteenth century, rosin (derived from resin, the sticky stuff that drips down conifer trunks) had turned up in connection with bows. Until very recently, lore had it that there were tiny scales on the horsehair that caught the rosin dust, producing a tacky surface which drew sound from the string. With the advent of the electron microscope, it was discovered that horsehair does not have scales—it looks more like an uneven tree trunk without branches. The finest rosin particles cling electrostatically to the hair, and are constantly redistributed as each hair twists, presenting its flattest side to the string. Rosin rapidly grasps and releases the string, causing vibration at a frequency determined by the mass, length, and tension of the string. Without rosin, the two smooth surfaces would slide against one another without producing any sound.

The bow changed only slightly during the Renaissance and baroque eras. Efforts to find a strong, lightweight wood that had the desired flexibility—quick response and equally quick return to normal—caused most satisfactory bow sticks to be made of snakewood or occasionally brazilwood*. Octagonal fluting through all or part of the shaft length increased lightness without sacrificing strength.

*a source of red dye, one of the earliest imports from Brazil.
The hornshaped frog had been immovable, the only way to change hair tension being with finger pressure. Now, the idea came for a frog that could be clipped into notches in the stick, and this in turn was superseded by a frog that could be moved with a screw in the shaft. A rare bow that has come down to us, stamped 1694, has this kind of movable frog, the same basic mechanism that is used today.

Craftsmen made efforts, also, to keep the bow hair away from the tip of the stick; two graceful, practical heads resulted—known, because of their shapes, as the "pike's head" and the "swan's bill."

The quick response and the fast recovery wanted of this bow were far from the properties required of bows in the Middle Ages. No longer did musicians want a bowed drone instrument. This was the heyday of the bass viol, the instrument of the courts and aristocracy. The violin, always popular as a street instrument for dancing, took a leap forward in church music after the 1630 plague which decimated Venice and killed off all the cornett06 players who performed at St. Mark's Cathedral. The violin was more agile, more suited to the music (like that of Claudio Monteverdi), being written and performed then in Italy, the country that for much of the sixteenth and seventeenth centuries was in the forefront of musical innovation.

Late in the sixteenth century, an influential aristocratic group known as the Florentine Camerata encouraged a new style of playing and singing concentrating emotions into an elaborately ornamented musical line accompanied by one or more other instruments. A bow that could deal with this intricate music was essential. The production of a relaxed, clean tone and the clear articulation of the ornaments depended as much on this still convex, light, agile, low-tension bow as on the instrument itself. It is the bow used by Vivaldi and Bach.

The best of these baroque bows "were models of elegance and musical efficiency.‖ During the seventeenth century, the Amati, Stradivari, Guarneri families were making magnificent instruments in Italy; fine instruments were also coming from the workshops of Jacob Stainer in Austria, and later of Barak Norman in England. It is thought, on the basis of absolutely no concrete evidence, that bows of like quality were made in the workshops of the great luthiers (stringed-instrument makers). But bows were not signed, and, unlike a cracked violin, a cracked bow cannot be repaired. Very few bows remain that are older than 250 years, and their history is informed guesswork.

The revolution in bow making began around 1750, the year Bach died, and continued for some thirty-five years. By the end of that time the bow was, in essence, our modern bow, though small refinements were made and experiments tried during the next century. The eighteenth century was to bow making in France what the sixteenth and seventeenth had been to violin making in Italy.

It began with the instrumentalists. During the earlier part of the eighteenth century, at the request of violinists, bow makers had been gradually lengthening the violin bow. From a variety of lengths around 1720, of which the longest seems to have been some sixty cm. long, the violin bow had, by 1776, been extended to some seventy cm., the same that it is
now. Giuseppe Tartini (1692-1770), an Italian composer, violinist, theorist and teacher (his Treatise on Ornaments in Music is still used), was one of those who made tireless efforts to design a bow that would be more amenable to the music he wanted to play. As early as 1730, he is said to have started experimenting with straightening and further lightening the bow, adding grooves for a better grip and shortening the head.

But it was not until another violin virtuoso, Wilhelm Cramer (1745-1799), began asking bow makers to use some of his ideas, that the so called “transitional” bow was developed—and while Cramer’s name had been given to it, it is likely that similar changes were being thought of by others simultaneously.*

The straightening of the bow shaft, and eventually its change to a concave curve, is concurrent with the sharper angling of the head to a “battle-axe” shape. Whether the battle-axe design was developed to keep the hair further away from the stick because it was now too close, or whether the battle-axe head came first, is uncertain. The transitional bow was characterized by a delicate, cutaway frog; the hair was a little wider than before (about one cm. altogether); and the stick was now made fairly often of pernambuco (the finest of the brazilwoods) as well as snakewood, ironwood, campeche, jacaranda, and bluewoods. Though the frog was found to be too delicate, and only a few examples have survived, this was still a very light, agile bow. For its purpose it was perfect.

Today’s musician, playing music of that era, has to fight a modern bow if he or she wishes to achieve the appropriate style, speed, and ornamentation. Indeed, one of the reasons so much of this music has been played too slowly in this century, or not played at all, is that modern performers (and this includes players of other instruments also) have found it impossible at the right speed, and dull at the wrong speed and without the appropriate style. But use a transitional bow (and a suitable violin) and you, too, can play like Cramer if you practice hard enough. Grant White notwithstanding, Paganini (1782-1840) preferred a Cramer-type bow all his performing life.

According to one musician who uses both a baroque and a Tourte, or modern bow, the baroque bow is premised on inertia; and the Tourte bow on momentum. That is, when a player stops moving a baroque bow, the bow rests instantly; with a Tourte bow, it keeps moving. This means that between strokes with a baroque bow there is an infinitesimal pause, creating the distinct articulation so characteristic of “early” music. With the Tourte bow, a much smoother interchange is possible, enabling the legato sound of the romantics and their successors—and making the articulation much more difficult.

Pernambuco, the wood of choice in Tourte bows, is denser and less flexible than the snakewood of the baroque bow. Combined with the concave form and greater hair tension, these qualities produce a bow that can bounce on the string for playing spiccato—a style possible to a lesser degree with the transitional bow, but hardly feasible with a baroque bow.

It is only in the latter half of the eighteenth century that bow makers begin to be known to us, perhaps because the violinist-teacher-theorists wrote down their ideas, but also because bow making was beginning to be recognized for what it had always been, a highly specialized craft in itself. Tourte,
père, and his older son, both of Paris, are two of the earliest whose names and work are known, but it is François (1747-1835), younger son of Tourte, père, who is generally credited with having achieved the “perfect” bow in 1785. John Dodd (c. 1752-1839) of London, however, may well have arrived at the same conclusions around the same time, spurred on, perhaps, by Cramer and the music of J.C. Bach, both of whom lived and worked in London for long periods.

According to musicologist David D. Boyden, François Tourte was not really the “inventor” of the modern bow. Rather he succeeded in producing a type that combined the best features of his predecessors in so satisfactory a manner that it set a standard for beauty and workmanship that still endures. In this sense, the modern bow was less an invention or a revolution than the result of an evolution that had been going on for some years, and that had come about from musical demands.8 The composer and violinist Louis Spohr (1784-1859) wrote the following tribute:

The best and most esteemed (bows) are those made by Tourte of Paris . . . Their superiority consists—first, in the trifling weight with sufficient elasticity of the stick; secondly, in a beautiful and uniform bending, by which the nearest approach to the hair is exactly in the middle between the head and the nut; and thirdly, in the extremely accurate and neat workmanship.9

Tourte started out as apprentice to a clockmaker, working as such for about eight years before following the footsteps of his father and brother as Paris bow makers. His clockmaking stood him in good stead, particularly in the beautiful precision of his work. Because he rarely identified his work, however, some of the ideas attributed to him may have come from his brother or father.10 Tourte’s bow head became a little higher and heavier than the battle-axe one, and was shaped more like a hatchet. At the same time, the concavity of the stick gave its upper third more strength and resilience, so that it could be lightened by tapering.

The unvarying, precise, graceful taper of each Tourte stick is one of his greatest achievements. Calibrated solely by eye, carrying the weight of head and frog, and balancing the bow at precisely the right spot, the tapered stick had the flexibility and strength of a greyhound. Years later another distinguished bow maker, J.-B. Vuillaume of Paris, worked out the geometrical formula which Tourte used instinctively to taper his sticks and made a diagram of it11; it has been used by bow makers ever since.

The materials used in bow making also became standardized with Tourte. The materials are beautiful, to be sure, but they also have other not so obvious properties which render them indispensable. All Tourte’s extant bows have shafts made of pernambuco wood (Echinata CaesaZpina), named for Brazil’s easternmost state, where it grows. Earlier bows had been made of pernambuco, but since Tourte, all good modern bows have been made of this hard, strong, flexible, and beautiful wood. Ebony from Africa, for the frog (by now oblong, with one curved end), has the quality of being able to absorb moisture and release it without distorting its shape—a quality
essential for the strong (and sweaty) hand-grip needed for this more powerful bow. Tortoiseshell, used more for its looks, tends to get slippery.

The replaceable ivory face for the hatchet head protects it from direct damage. The brittle ivory will split before passing on the shock of a blow which might otherwise break off or crack the head—and ruin the bow. Ivory in such small slivers is relatively easy to obtain, though there is now sometimes a problem getting it through customs because some ivory comes from protected animal species, and unless they are sure, U.S. Customs officials will impound it. Plastic "totally defeats the purpose," says one contemporary maker, because it does not have the necessary brittleness, nor does non-elephant ivory; and bone is difficult to work with. All have been tried.

Abalone shell, more often mother-of-pearl, both plentiful, are used to decorate the frogs. Silver and sometimes gold are the choice for metalwork. A tortoiseshell frog is sometimes used in combination with gold for a specially beautiful bow, but tortoiseshell is being cut in thinner gauges than a century ago and does not last as long. Leather, whalebone and silver or gold wire wrap the bow stick near the frog for a firm grip. Long, strong white horsehair from Siberia or Mongolia completes the list of materials that Tourte established as necessary for a fine bow. Tampering with the parts in any one bow—such as changing the wrappings—can completely change its properties. The weight of every centimeter of silver wire, every sliver of ivory, has its place in the overall balance.12

Tourte was by no means the only bow maker working in France. A community of luthiers and attendant bow makers already existed in Mirecourt, a small community outside Paris, when the crucial importance of the bow began to dawn on players. Like instrument building, bow making also tended to run in families, with older sons apprenticed from an early age and working in a master's atelier for substantial periods of time before branching out on their own. (Daughters were merely allowed to prepare the horsehair and count out the requisite number for each bow—about 120-150 hairs for a violin bow, today.)

Dominique Peccatte (1810-1874), Francois Nicolas Voirin (1833-1885), Alfred Lamy (1850-1919), Louis Thomassin (1855-c.1900), and Eugene Sartory (1871-1946) are a few, but among the greatest, of the Mirecourt-Paris bow makers. Most had talented bow making fathers, brothers, nephews, sons of the same name. Jean-Baptiste Vuillaume (1798-1875) was more a violin maker and dealer, and is thought to have made no bows himself, but he employed only the best bow makers in his atelier, and experimented with a hollow steel bow and a self-hairing one, neither of which lasted.

A contemporary English advertisement for "Patent Brazil-wood Violin Bows" from Vuillaume's workshop reads: "Ornamented with mother-of-pearl, gold and silver lapped, and otherwise elegantly furnished, with moveable hair, 30 shillings; without moveable hair, 10 shillings and sixpence."13 Peccatte, who began as a barber and became perhaps the greatest bow maker after Tourte, was trained in Vuillaume's studio. Voirin worked for Vuillaume and taught Lamy. Peccatte's nephew Charles trained under Voirin and Vuillaume. Thomassin.
worked with Lamy in Voirin's workshop. Sartory worked for Lamy and Peccatte, and the celebrated violinist Eugene Ysaye (1858-1931) was his patron. This kind of association and free interchange of ideas is still characteristic of bow makers practicing today.

In England, three generations of Dodds and five of the Tubbs family made bows, of whom the John Dodd mentioned earlier [1752-1839] and James Tubbs [1831-1921], called the "modern English Tourte," are the outstanding members. Tubbs made magnificent bows, but they were distinctively his, and not mistakeable for a Tourte.

The name, however, which is synonymous with top quality English bows is that of W.E. Hill and Sons, London. Joseph Hill (1715-1784), a violin maker, established the firm around 1740, and his grandson, William Ebsworth Hill, gave it the name it has borne ever since. While the family made violins, they employed fine bow makers, and the list of their employees is a Who's Who of the best craftsmen in that field in England, starting with James Tubbs and Samuel Allen [1858-?].

There was a "German Tourte," Ludwig Bausch [1805-1871]; and even a "Russian Tourte," Nikolaus Kittel [f. 1839-1890], though, like Vuillaume, this transplanted German may not have made more than a very few of the bows which came from his workshop in St. Petersburg. Bausch worked for Kittel for a time, and Heinrich Knopf [1839-1875] is thought also to have made bows for him. Kittel was unknown in this country until violinist Henri Vieuxtemps [1820-1881] arrived to teach and play in St. Petersburg, and later introduced Kittel bows to the United States between 1857 and 1870. But it was not until 1920 that their real importance was recognized here, with the arrival of many Russian musicians fleeing the Revolution.

Markneukirchen, now in East Germany, was the German equivalent of Mirecourt, though it never had quite the prestige, or could command the prices, of the French town's bow makers. The Pfortschner family has worked there as both instrument and bow makers since the mid-seventeenth century, though the outstanding bow maker among them was Hermann Richard Pfortschner (1856-1921), who studied first with his father, then as the last of Vuillaume's pupils in Paris. The Nurnberger family settled as bow makers a century later in Markneukirchen and it is with Franz Albert [1826-1895] that the town became known as the center of the bow making industry. His son and student, another Franz Albert Nurnberger [1854-1931], is considered a superb bow maker and consummate artist at his craft.

The Glaesel family is another long-established Markneukirchen family, though they have specialized in instruments rather than bows. According to Kurt Glaesel, now a commercial instrument maker and repairer in Cleveland, Ohio, bow making was wiped out in Markneukirchen by the present regime. "If you were the son of a craftsman, and well off, you were reduced to being a laborer," he says. "The last member of the Nurnberger family was arrested, and died in jail for hoarding precious metals"—the silver and gold for his bows. A Pfortschner is still making bows under the East German government, the only bow maker left with the accumulated knowledge of generations.
French bow making almost died out as well, largely because of the havoc of the Second World War. Thanks, however, to concern voiced by instrument makers, a bow making school at the lycée (high school) level, perhaps the first ever, was begun at Mirecourt in 1969 under Bernard Ouchard (1925-1979), himself the bow making son of a bow making father. Nineteen teenagers attended the school, which lasted ten years until Ouchard’s death. By then, it was thought enough had been taught to enough young bow makers to assure the future.

Current opinion is that Benoit Rolland, working in Brittany, Christophe Schaeffer, in Avignon, and Stephane Thoma­chot and Jean Grunberger, in Paris, all in their thirties, are well on their way to joining the French tradition of superb bow makers, as is their contemporary, the American Charles Espey, also in Paris. Glaesel, however, considers that, as of now, there “is nothing really significant coming out of France, be it violins or bows,” but admits that he is somewhat prejudiced in favor of German bows.

Meanwhile, bow making has attracted fine craftsmen in this country. Emile A. Ouchard (1900-1969), father of Bernard and one of the best remaining pre-World War II bow makers, emigrated to New York in 1946 and continued his craft there. William Salchow of New York (born in 1926) is considered the dean of U.S. bow makers today. Salchow, with the help of a Fulbright Scholarship, served his apprenticeship in Mirecourt, under Georges Barjonnet (1903-) in the workshop of Roger Gerome (1918-). Salchow disagrees with Glaesel’s assessment of the young French bow makers. “There’s a real rena­issance going on there,” he says. Now, Salchow conducts a four­week summer course in bow making at the University of New Hampshire. Bowmakers are a fraternity, he says. “I’ll talk to anyone who makes bows, show them anything I can, let them spend time seeing my shop.”

In 1978 the Violin Society of America instituted competi­tions for workmanship in bow making; in 1982, it added another category, awarding medals also for playability. The most recent competition, in 1986, drew aspiring craftsmen from The People’s Republic of China, Japan, England, West Germany, Canada, Bulgaria, Mexico, and France, though by far the majority came from this country. “Chinese bows, in general, are terrible,” says Glaesel, citing the comments of a visiting Beijing University professor, that the university requires music students to make their own violins and bows.

Few of today’s bow makers, whether in France or the United States, come to the craft any more with an inherited tradition. For most, it has meant, if not quite reinventing the wheel, at least persevering in the face of considerable odds—no schools, no tools, few books, and few teachers. To become a bow maker today requires time, ingenuity, intuition, strong hands and a good eye, a sense of aesthetics and mathematical precision, and, above all, patience.

Geza Balint of Cleveland came to bow making by as way­ward a path as any. He began to think of bows when he was thirty-four and already an established cabinetmaker, his interest piqued by advertisements—“Build your own violin, materi­
als supplied"—and by violin and bow dealer Jerry Forestieri of Cleveland for whom he had done cabinet work, and who told him of the crying need for skilled bow makers and repairers.

Forestieri gave Balint practical help—books to read and minor bow repairs to work on. In 1977, Balint set himself up full time as a bow maker and repairman, seven years after he first became interested.

He says the bows he had made up to that point, although not crude, "were elementary in terms of work and function. But there might have been a flicker of promise too." Yarden Faden, a Cleveland Orchestra violist since 1966 and one of the first professionals to own and commission bows from Balint, remembers them. "He didn’t use good wood at first," says Faden, "so the bows didn’t do much soundwise. But they were staggeringly beautiful."

Gradually, as he persevered, learning the hard way, Balint "saw the light," he says. "And after the dawn came, I began to understand what it is we are after—what a maker wants to achieve in the arch, the resistance of the stick, apart from specific measurements. I felt more at ease, and I could pursue the things that I thought people wanted in bows. Now, I have a clear understanding of what a bow is supposed to do."

He spent hours in conversations with musicians on the properties of bows. In particular, Faden and the late David Perlman, principal bass of the Cleveland Orchestra until 1981, tried "to explain, not in musicians’ language but in words I could understand and relate to, what it is they are after, what they want from a bow," says Balint. Faden and Perlman would bring him other bows to examine, and discuss what they felt each one lacked or what they liked.

"My task was to convert what they were saying into actual physical workings, and I had to give it a great deal of thought in the beginning, until I finally perfected it." In a good bow, he says, the musicians should feel that the bow hair wraps itself to the string. That Balint has never played an instrument has not hampered him, he thinks. Salchow is not so sure. "I wasn’t very good at the cello," he says, "but I’ve had a lot of success with my cello bows."

"I’m never sure," says Balint, "if a stick will become a bow, till I have bent it." Contrary to the usual woodworking methods, bow sticks are bent with dry heat, in order not to release the pigment. Balint heats the pared-down shaft in six-to seven-inch sections, using a heat gun. Turning the wood as he heats it, he makes sure the heat is evenly distributed through to the core of the wood, to about 400 degrees Fahrenheit. Then grasping the wood on either side of the heated section, he bends it, holding it while it cools, surprisingly quickly. The softened fibers accept the bending, and he releases it, measuring the curve frequently against a template. When it is bent to his satisfaction, he continues with the next short section, until the whole shaft is shaped. Like most bow makers, he has designed and built his own specialized tools.

The bending, and the tapered reduction of the shaft itself, are what separate the bow maker from the technician. The shaft and head, when finished will weigh a mere thirty-eight grams for a violin bow, and range between 5.3 mm. and 8.3 m. in thickness, from head to frog. A violin bow will weigh only sixty grams, and those for the large members of the vio-
lin family proportionately more.) Round or octagonal, the shaft must be tapered with mathematical accuracy—by eye. It must be flexible to a certain degree, and resistant to a certain degree. It must be perfectly balanced when the frog and remaining pieces are attached, and it must hold up under tremendous demands from the player, which is why the strength, density and weight of each material used is so important, let alone its other particular, necessary properties.

A musician may have several bows, each possessing different properties with which to achieve different qualities of sound from the instrument. "It's less expensive to own several bows than to own several instruments," says Faden, "and the result is still variety."

Faden illustrated the different playing qualities of his bows. Using the same viola, and the same measures of music, he demonstrated his Balints and several nineteenth century bows. "Some need rehairing," he said, "and that also creates difference in the sound." Faden's oldest bows generally draw a lighter sound than his twentieth century ones, but the sound ranged from bright and clear to dark and dense. One bow was capable of the most delicate nuances, another produced a rich, buttery sound, a third gave a shallow, almost facile effect, a fourth seemed to shine, a fifth had a hidden, resiny feel to its sound.

Faden chooses the bow he will use according to how he feels, what the weather is like, what the music is like, and in what circumstances he will be playing. Sometimes he will take two on stage. But other musicians may have one bow that feels like an extension of themselves, and will use no other.

Prices of today's professional bows run upwards from $1,500 for a plain new silver and ebony-mounted violin bow, to $2,100 and more for a gold/tortoiseshell one. One is not necessarily a better bow than the other, Balint explains, but "if you are going to make such a beautifully appointed bow, you will naturally choose your best wood." The Kreutzer Tourte-like violins, famous bows are named for their provenance—was sold in 1984 by one dealer to another, through Sotheby Parke Bernet in New York, for $50,000. At the time, this was a record price, but "name" French bows priced between $15,000 and $25,000 are not uncommon. No matter if a German, English or Russian bow is of equal quality, it cannot command the same price.

An informal poll of fourteen string players from the Cleveland Orchestra makes it clear that bows made by the younger generation have not yet reached the perfection of their predecessors. Only a few musicians had bows made since World War II. The three who had Salchows were enthusiastic. Several were very happy with bows made by Balint, who, living in the same city, is able to work closely with each musician to create exactly the bow response each wants. None owned a bow by one of the brilliant young French or American makers, but two had bows by Richard Grunke of East Germany, whose work was described as uneven. And one had a bow by W.A. Pfretschner: "It draws a beautiful sound, but it's a bit weak; okay for Mozart, not for Brahms," said violinist Eugene Altschuler.
There are still not many bow makers. There is a great demand for the high-quality product, yet no bow maker is ever going to be wealthy. What keeps a bow maker, a gifted craftsman, making essentially the same object—albeit an almost animate object, no heavier than a carrot—over and over again? Clearly, no two bows are the same to any bow maker. "Like babies," says Balint, "they look alike, but they are all different inside."

Thanks to: Dina Schoonmaker, curator of the Herbert K. Goodkind Collection, Oberlin College; Jerry Forestieri, Cleveland; Kurt Glaesel, Cleveland; Geza Balint, Cleveland; William Salchow, New York; Marjorie Ann Ciarlillo, Cleveland; William S. Kiraly, Cleveland.

Notes


2. "There have been minor changes, to accommodate changing tastes in sound and in the size of performance chambers, but these are another story."


6. "Forerunner of the trumpet—a curved wooden horn, tightly covered with leather, with a velvety sound.


10. "Even in the nineteenth century, bow makers often did not sign their work. Francois Tourte pasted a tiny label inside the slot of a very few bows. Some bows were branded with the name of the shop; but to identify a bow as belonging to a particular maker has to be the work of experts, and even then the paternity is often unclear.


12. "The Chinese have a stringed instrument, the erhu, which in its different sizes corresponds to the western violin family. East and West, independently, developed their own bow of choice—and it is interesting to note that the professional-quality erhu bow is made of tung-wood, ebony, ivory, horsehair, and silver, slightly convex for delicate playing, slightly concave for a more vigorous style. From Marjorie Ann Ciarlillo of The China Music Project.


14. Oberlin College is to begin teaching courses in instrument and bow making, restoration and repair, and in conjunction with the town, encouraging fine craftsmen to settle in the area. Oberlin's first instrument restoration course took place in the summer of 1987.

15. "Factory-made fiberglass bows, nickel-silver mounted, are viable for student use, though Glaesel feels that real horsehair is essential even on these, if the student is to draw sound from an instrument. A good one runs $50. The next 'half-way decent brazilwood bow' is at least $100.

Additional Sources


Many Are Called...

The Gamut's Latest Pick of Poets

Earlier this year many literary heads around the country shook sadly when the *Los Angeles Times Book Review*, one of the most influential publications of its kind, announced that it would no longer publish reviews of poetry books. Its editors, as *Washington Post* columnist Jonathan Yardley commented, were only reflecting a fact of life. Nowadays the newspaper-reading public seldom read any poems, much less contemporary ones. Cleveland's *Plain Dealer* has for years routinely banished from its book reviews almost all mention of poetry.

Yet more poetry—in fact, more excellent poetry—is being written and published in the United States today than ever before anywhere. We are in the midst of a poetry explosion. The latest *Directory of Poetry Publishers* lists over 1,500 magazines and book publishers that regularly publish poems—an increase, its editors estimate, by a factor of ten in the past twenty years. Over the same period, the number of creative writing courses available in colleges has more than quadrupled. Publishers are deluged with book-length manuscripts of poems. The Poets' League of Greater Cleveland has a mailing list of over 800. Clearly a lot of people are writing poetry, or at least trying to.

The *Los Angeles Times Book Review* is correct in noting that poetry is not a best seller with the general public. The big commercial publishing houses such as Doubleday, Harper and Row, and Macmillan put out occasional books by a few of the best-known poets, but even these are mostly token gestures toward respectability; little or nothing is spent to promote the books, and it is unusual if more than a few hundred copies are sold. Most of the poetry written today is published by small presses existing hand-to-mouth on subsidies, grant funds, and the donated time of one or two dedicated editors; these small presses issue books in printings of under a thousand or "little magazines" with tiny circulations.
But the poems keep coming out by the ream, whether or not there is a public to read them. It has become clear that nowadays poets themselves are about the only people who buy and read poetry.

In almost every society throughout history, poetry has been a part of everyday life; poets have been revered as prophets and loved as sources of comfort, inspiration, and entertainment. In Russia today Yevtushenko can draw as large and enthusiastic a crowd as a rock band in America. In China, poetic skill was for centuries a key requirement for civil servants. Yet in mainstream America today poetry is reduced to a status somewhat below that of the crossword puzzle—the passion of a few enthusiasts.

Various explanations have been suggested for the decline of poetry's popular appeal. Certainly uninspired high-school teaching has forever destroyed a love of literature in millions of young people. Television has permanently paralyzed the imaginative faculties of millions more. Poets themselves—in fact, some of the best poets of the twentieth century, like T. S. Eliot, Ezra Pound, and Wallace Stevens—have probably contributed to the problem by writing such “difficult” poems. In this regard literature is in much the same situation as contemporary music and painting: good art always requires our active attention, and often the best art requires hard work to be understood. Apparently our society has become so intellectually passive that it is not willing to pay that price.

Still, we all seem to have a need for something like poetry in our lives; in our society this need is being satisfied at least partially by song lyrics and greeting-card verse. But it also seems to be finding increased expression in the writing of poetry (as opposed to buying it to read). How many people do we know, in fact, who do not keep a little notebook hidden away somewhere with their deepest feelings recorded, if not in rhyme, at least in lines of unequal length?

Maybe it is not so strange to find the reading of poetry being replaced by the writing of poetry, since good poetry always requires active participation, to the point of making the reader almost a second poet. Unfortunately, perhaps, a good writer of poems also has to be a good reader of poems: poetry, like all expression, can never exist in a void, but only lives as a part of a whole language-world, the most immediate and important part of which, for any poem, is the body of other poems currently in the air. Novelty is the very soul of poetry—not novelty for its own sake, but novelty to move us out of our stock thoughts and responses, to make us see things in a fresh way. But only the poet who knows what is commonplace can know what is fresh. That is why amateur poets, those who don't read much, fall into the worst of poetic sins, the cliché.
The Gamut, like most other publications that print poetry, gets a large number of submissions each week, some by writers who obviously do not read other poems, but others of high quality, by poets who know their business. The following selection represents a small fraction of the poems we have received since the beginning of the year. Though some may seem harder to understand than others (we've arranged them roughly in order of increasing difficulty), they all share the quality of providing a sharp experience, insight, or feeling through careful, fresh use of language.

Daniel Liebert's two poems on the passage of time are not hard to follow on the surface, but, like all good poems, they repay careful attention with an appreciation of the poet's economy and deft choice of diction and detail. Marjorie Power combines two key images—the paperweight snowstorm and Noah's ark—to portray a poet (or other imaginative person) who in spite of being isolated is able to take control of her life and deal positively with it: like Noah, she implies, the poet preserves and fosters life in the midst of life's deluge of disasters. In "A Lone Life" Laura Winton portrays another isolated person, this one less able to cope with her situation; though the speaker in the poem bravely asserts that she is happy, the unfolding details, and especially the skewed syntax that slides between direct and indirect discourse, betray her real pain and disorientation with sharp irony. James Cushing's "Old Man River," one of a series inspired by song titles, uses the river as a central image for the passage of time, with its losses and regrets. Finally, John M. Bennett describes something that's under his shirt—it's a cat, but "anima" (which sounds like "animal") also means "soul," and, in Jungian psychology, the feminine aspect of the mind; in language that borders on the comic, the poet evokes the disturbing forces that sometimes half emerge from our unconscious to delight and torment us.

—L.T.
Daniel Liebert

SNAPSHOT AT TWENTY

Somehow that cocky strut headed nowhere
made it here; now I am his future
looking back, the one who'll do his dying.
He seems to smirk at my life now,
at the petty acts from small motives,
the deferences, panics of conscience—
his stoned grin distances me politely,
a young man humoring an old.

LAST SUMMER

Airing my summer clothes,
I find things in the pockets
-carried forward, by accident,
from a lonelier time:
ticket stubs and a black skullcap,
a two-bit comb makes it through
-as does a brittle stick of gum—
these survived by not mattering
when what mattered bore the brunt
of my consideration.

Daniel Liebert has traveled worldwide and now
lives in rural Missouri
where he makes his
living by selling antiques.
His poetry has appeared
in numerous little magazines. "I am at present
working to eliminate the
'voice of persuasion' from
my poetry, the propaganda-
dizing voice of the
preacher, politician, or
ad-man that permeates
our environment."
Marjorie Power

WOMAN IN SNOWLIGHT

The morning sits
like a glass paperweight

shaken
to make the white flakes inside whirl.

In her room, which is really an ark,
a woman sets sail for the high seas

of the sky,
which, when she lifts anchor,

clears,
leaving her to drift in the snowlight.

In one hand she picks up her world
and shakes it. She prays

to the maker of the snow,
"Send me where you will: I know

my turn has come to gather the animals."

Marjorie Power, born on Halloween in Connecticut, now lives in Olympia, Washington. Her poems have been published in numerous little magazines, and in her book, Living With It (Wampeter Press, 1983). "I plan my life around my twin needs to do nothing and to write poetry... for me writing is a religious, specifically Christian, calling."
Laura Winton

A LONE LIFE

"I didn't even cry"
into the phone she said
in bear claw slippers
and last night's new perm
for no one.

"It's really been over"
she said for years
over burnt toast and stale
Cheerios at breakfast
with no one.

"And I like going places
alone I've been"
doing it for
years she said
to no one.

"I've learned to like living"
alone she with the t.v. said
and with the dogs who bark
and the children who play and she
without no one.

"How've you been"
at the door he said
and she turned around
and locked it keeping
out no one.

Laura Winton, born and
raised in central Illinois,
has had several poems in
little magazines, and also
writes plays and fiction.
"I like experimental
writing styles and admire
the Dadas, existentialists,
and absurdists. We no
longer believe that the
visual arts should be
strictly representational;
I believe we should
encourage a similar
attitude with literary
arts."
James Cushing

OLD MAN RIVER

Love's night is noon. The helpless smoke of words
Reveals a river. On the other side of every wall
Chant crickets, and on a day morning asks for nothing,
Dawn develops by itself, hands in its pockets.
As if the ocean's surface were shaven by a blade
And the water left without its surface tension,
The river lies stripped: a raw and broken victim.

I have a garden of my own, and through it runs a stream.
This afternoon I hear it working. Love's year is
Afternoon, and the errors of the spring
Pay for each correction winter deals us
With the looseness of damp leaves over a dirt path
Through vegetables drawn up from the webbing
Of flowers out of season. Now all 32 years of my life
Fall back from memory the way the reader's soul
Falls out of his eyes, deep into his text. Bell-rings
Drip into hiddenness here on the ground.
The river knows us as well as our parents ever did,
Pouring over the rocks and roots all night.

James Cushing, who has studied with Mark Jar- 
man and John Ashbery, among others, lives and 
teaches in San Luis Obispo, California. His 
current work comes from a fascination with the 
"standard" songs played and improvised on by 
jazz musicians. His poetry has appeared in 
Bloomsbury Review and Atticus and he has 
hosted radio shows fea-
turing jazz and poetry.
John M. Bennett

ANIMA

Puncturing my belt there’s a
cat under my shirt. Like my
voice muffled and slick like my
hopes slid away. Something
hot like a lump. Lacerating my
smooth digestion and never limpid though
limp sometimes. It purrs when I
stroke and makes me cough and my
clothes don’t fit. I should
jerk it out but my hand’s in love. And
doubled from the gash in my chest

John Bennett, born in
Chicago, attended Wash­
ington University and
earned a Ph.D. at
U.C.L.A. Actively
involved in poetry ther­
apy and mail art, he
believes that poetry is a
means of self understand­
ing, self-expression, and
significant communica­
tion with others. His
work has been published
by his own press, Luna
Bisonte Prods, and else­
where. A selection of
Bennett’s poetry and
graphics, with a critical
introduction, appeared in
The Gamut No. 16
(Fall 1985).
According to Arthur

Margot Livesey

It was happy hour at Birdy's. Heavy rain had forced the football teams to abandon their practice at the Varsity Arena across the street and they were milling around the bar. Judith pushed her way through the crowd, holding fast to her small tray full of Molsons and Labatts. It was only six-thirty and she had already been stiffed several times. Charlyce, the other waitress, who was wearing a bright red mini skirt, claimed to be raking it in. Judith was watching her, trying hard to feel superior, when suddenly Charles appeared. "Have you got a minute?" he said. "Arthur's here."

Judith had met Charles during the summer at a course on feminist film theory, where he had stood out by virtue of his sex and his height. She liked him because he was soft spoken and he stooped and then it emerged that he too wrote poetry. They had started going out for a beer after class. When they weren’t talking about films or writing, they talked about Charles's best friend. Arthur was a writer, he was a genius, he was crazy, he was gay. Judith liked Charles more than anyone she had met for a long time, and the enthusiasm with which he spoke of Arthur made her feel a little jealous.

At the table Arthur stood up and shook her hand. He looked exactly as Judith had imagined: small and slender, with very short blonde hair and round glasses. His black sweater was mottled with holes. When she came back with their jug of beer, he and Charles were arguing about a Marxist sociology professor who had just been denied tenure at the University of Toronto. Judith said he was a terrible teacher, in spite of being a Marxist. Charles disagreed. But she had no time to stay and defend her opinion: a man in a checked shirt was waving at her, gesturing at his empty glass. Judith always felt a little awkward waitressing in front of friends and she was not entirely disappointed when she came back, fifteen minutes later, to find them gone. Only at the end of the night, when she was cashing up, did she realize that they had forgotten to pay her for the beer.

Next morning it was still raining and, while waiting for her bus, Judith took refuge in the secondhand bookshop. As soon as she pushed open the door she saw Charles’s tall figure browsing among the paperback fiction. "I'm glad you finally got to meet Arthur," he said. "He really liked you."
Judith was surprised because the meeting had been so brief, but she felt a sudden reciprocal twinge of interest. "I liked him too," she said.

"That reminds me, I've got something to show you." Charles slipped his arms and head inside his yellow poncho, like a tortoise withdrawing into its shell, and after a minute emerged with his backpack from which he produced a small magazine. "They've published one of Arthur's stories: 'While you were out.'"

"That's great," said Judith, examining the limp pages. On the cover was a picture of Munch's screaming figure, with a volcano gushing bright red lava behind it. The magazine was called _ERUPT_. "I'd love to read it. Do you think they have a copy here?"

"No, it's only available in selected washrooms throughout the city. You can have this one. I've got lots at home."

"Oh, is yours one of the washrooms?" Judith said and was pleased when Charles laughed. She was about to ask who was involved in the magazine but through the steamy front window she saw her bus. Putting _ERUPT_ inside her jacket, she hurried out.

She read "While you were out" with interest. It was about two boys. Arnold, the older, was always telling David what amazing things had happened in his absence. One day, by accident, David discovered that Arnold was lying. At first he was furious but then he began to miss the excitement, and by the end he was urging Arnold to tell him a tall tale.

Judith thought the story surprisingly good, and a few days later, when she ran into Arthur at the library cafeteria, she told him how much she had enjoyed it.

"You read it," he said, sounding surprised. "How thrilling. I was just going to get some coffee. Would you like some?"

She nodded and sat down at an empty table while Arthur went off in the direction of the counter. A moment later he was back; he had left his wallet at home. Judith handed over a five, and presently he returned with coffee and two large cookies.

In the flat white light of the cafeteria his face was very pale and his blue eyes shone; she could see that the blonde-ness of his hair was far from natural. "Listen," he said, "I wanted to ask you if you thought I could get a job at Birdy's."

"The manager prefers to hire women; he thinks they're less trouble," Judith said. She sipped her coffee.

"Well, you can tell him that I'm the nearest thing to a woman that he'll find and no trouble at all," Arthur said emphatically.

Judith promised to make enquiries but she could not help feeling relieved when the manager told her he had all the staff he needed. Next morning she telephoned Arthur. "I could ask around," she said. "I have a friend at the Rivoli."

"That's okay," said Arthur. "I don't really need a job. I just wanted to see what it would be like to work at Birdy's and serve the entire football team."
He clearly bore no grudge against Judith for her failure. He and Charles became such regular customers that Charlyce took to calling them Judith's beaux. They would arrive around midnight and wait for Judith to finish work. Then the three of them would walk to the all night restaurant at Spadina where there was nearly always an empty booth.

Charles was taking art history this term. One night, as they waited for their orders, he described how Rauschenberg made his own paper and incorporated whatever flaws there were into the picture.

Arthur told Judith that Rauschenberg was one of his heroes because he had erased a De Kooning, signed the blank piece of paper, and sold the result. Now he was thrilled by this new information. "Brilliant," he exclaimed. "That's exactly what I want to do in my stories. Art has to include the accidental, or it dies."

"I can see how that might work for painting," Judith said, "but wouldn't it be disastrous to start including accidents in your stories?"

"No, it's the opposite that's disastrous. A story should include everything—headlines, phone calls, songs, weather forecasts, interruptions, recipes, mistakes—just like life. Isn't that right, Charles?"

"I'm not sure," said Charles noncommittally. He was sitting wedged in the corner beside Arthur, turning his head from side to side like a tennis umpire, as he followed their discussion.

"That's crazy," said Judith. "What's the point of art if it's just like life? The first thing the artist has to learn is what to leave out. Besides if one includes everything how could one ever finish?"

"Finishing things is bourgeois," said Arthur. "You know what Picasso said: I have a horror of the fully achieved. The fully achieved is dead."

He remained adamant on this point until, reluctantly, Judith decided that it was time to take a taxi home. "Would either of you like a ride," she offered, hoping that Charles might say yes, but both he and Arthur declined. However, as she got up to leave, he did reach out and squeeze her hand; she felt they were united in appreciating Arthur.

Judith lived alone on the top floor of a house on Concord Avenue. The owner, Mr. Buzzati, a large Italian man who was always sucking and fingering his moustache, lived downstairs. During the summer, when he spent every evening sitting on the porch, he and Judith had had long conversations about his garden, but as the weather grew colder, they seldom met. Just before Halloween, however, he caught her in the hall. He ran his tongue along the fringe of his moustache and told her that his recently widowed mother was arriving from Calabria. She was going to stay in Canada and could most easily be housed in Judith's apartment.

"Sorry, sorry," he said. "It's my mother. What can I do?"

He patted Judith awkwardly on the shoulder.
She was dismayed. The rent had been remarkably cheap and it was a bad time of year to move. She called friends and acquaintances and went to the university housing service every day. Whenever she came home Mr. Buzzati seemed to be lying in wait.

"Any luck?" he would ask anxiously and she would shake her head.

A week before Mrs. Buzzati was due to arrive she had resigned herself to moving her possessions into her aunt’s house in Scarborough.

"It might be weeks before I find anywhere," she told Charlyce, "and no one else I know has a spare room." They were sitting at the bar, discussing the situation for the umpteenth time. Business at Birdy's was unusually slow.

"Well, it's better than renting a place you can't stand," said Charlyce.

A pair of hands covered Judith's eyes. "Guess who?" said Charles.

"Why don't you two sit down?" said Charlyce. "I'll watch your station, not that there's much to watch."

Charles ordered a jug of beer and Judith told him about her disastrous house-hunting. She had been so busy that she had scarcely seen him and Arthur during the last few weeks.

"Why don't you move in with Arthur?" Charles suggested.

"With Arthur?"

"Yes. I mean why not? You're friends, he's been looking for a roommate for ages, and you'd be doing him a favour; he can't afford to live alone. It wouldn't have to be permanent."

Dimly Judith remembered that Arthur had mentioned he was looking for a roommate. By the time she finished her beer she realised that this was what she was going to do; she felt at once much happier. "Hey, Charlyce," she called, "can we have another round?"

The following afternoon she met Arthur at The Hole in The Wall. They ordered blueberry waffles and Arthur began to hold forth about Genet. "I just read The Maids," he said. "It made me realise that I'm much too respectable to be a good writer." He seemed to take for granted that she was moving in. He did, however, show some interest in the financial arrangements; when she was paying their bill, he asked if she could give him a month's rent as deposit. Judith started to get out her cheque book but he laid his hand on her arm and said, "Could you pay me cash? It would be a lot easier."

Judith went home and told Mr. Buzzati the good news.

"Thank you, thank you. You're a good girl," he said and, to her amazement, gave her a whiskery hug.

Ten minutes later she heard him lumbering up the stairs. He appeared in her kitchen with two bottles of homemade wine. A good luck present, he said, grinning with embarrassment, holding a bottle in each out-stretched hand.

There was plenty of room in Arthur's apartment for Judith's books and papers, but there was only one bedroom. The previous roommate had apparently slept on the sofa in the living room, although the springs shot through in several places and it smelled strongly of smoke and old socks. Arthur himself slept on an air mattress which he had stolen from his parents' cottage; it had a small leak and had to be inflated
According to Arthur

daily. After Judith had spent a week of wretched nights on the sofa, he suggested that she might care to share his bed. Knowing that he was only interested in men, she recognized the chivalry of his offer, but declined. Instead she cleared out one corner of the living room and bought a futon.

Besides the sofa and the air mattress there was a desk made out of a closet door which Arthur had taken off its hinges and balanced on eight blue milk crates stolen one night from the back of the Canadian Cafe. There was also a grey card table with two folding chairs and in the bedroom, near the mattress, a standard lamp, which illuminated the words "Hetero go Homo" painted on the wall in large red letters. At first Judith had been slightly horrified by Arthur's habit of jotting notes and messages on whatever piece of wall was convenient, but, surprisingly quickly, she found herself doing the same. He had lived here for two and a half years but, like a Chekhov heroine dreaming of Moscow, talked constantly of moving.

In preparation for Christmas an extra bartender had been hired at Birdy's. His name was Ian. Judith liked him at once: on his second day at work, he accused Charlyce of being a capitalist. One evening, when they both finished early, she invited him over.

"Christ," said Ian, when she opened the door and led him into the apartment. "This is wild."

"It's Arthur's graffiti collection," said Judith, with vicarious pride. She could tell that Ian was impressed.

Half an hour later they were sitting on the sofa, deep in conversation about the merits of various bands, when the door of the apartment opened and Arthur entered, singing. Judith had been sure he wouldn't be home for hours. Reluctantly she performed introductions.

"My name is Eugene, you know what I mean," sang Arthur. "Would you like a beer?"

"No, thanks," said Ian. "Beer makes me think of work."

"I can imagine. Have you seen my collection of graffiti? Why don't you read some of the best ones?" Arthur went over to the wall by the window: "'Don't drop acid. Take it pass/fail.' 'A sneeze is an eighth of an orgasm.' 'Materialism is caused by a dietary deficiency.'"


"No, no, don't go," said Arthur. "I didn't mean to interrupt. You just sit tight and I'll go blow up the air mattress for you. In two shakes of a tiger's tail you'll have all the privacy you want."

Arthur left the room, and Ian jumped up and headed for the door. Judith followed. As she walked him down the stairs she tried to explain Arthur. "It's his idea of a joke," she said miserably.

"It's fine," Ian kept saying, but when she suggested they should go somewhere for coffee, he thought he'd better be getting home.

Furious, she trudged back up the stairs. Arthur was in the kitchen scraping the burnt bits off a bagel. "Would you like some?" he asked, holding out a charred half.
"Arthur, how could you?" Judith burst out. "I scarcely know Ian. He'll probably never speak to me again."
"I didn't know it was conversation you were after."
He grinned but Judith was too upset to be amused. She stood in the doorway, bracing her hands against the frame, trying to resist the impulse to shake Arthur. "You know what I mean," she said. "You were terrible. Ian isn't just some guy I picked up somewhere. We work together every day, and now, thanks to you, he thinks all I want to do is go to bed with him."
For a few seconds Arthur looked genuinely contrite. "I was only trying to help," he mumbled. He opened a beer and handed it to her. "Did you see his face when I came in?"
He went over to the sofa and imitated Ian, screwing his eye-brows together and pushing out his chin.
After watching him for a moment, Judith let go of the doorway and moved into the living room. "You should have seen him when you went to blow up the mattress," she said. She sat down beside Arthur, pulled her hair back, and made an even more grotesque face than he had done. She began to giggle and Arthur burst out laughing.
Occasionally when Judith came home she found the bedroom door closed. At first she had worried about intruding on Arthur, but she was soon convinced that he enjoyed having an audience. Lying on her futon, she could not help listening.
"Anyone will come round if you just keep saying 'I love you,'" he explained, and in his own case this seemed to be true. Almost invariably the men he brought home sounded reluctant but Arthur would bully, whine, supplicate, flirt, and protest his affection until at last they gave in.
Sometimes if she was still awake after they had come and gone, Judith would go into the bedroom to talk to Arthur. She would find him marooned on the mattress.
"Be careful of my glasses," he would say. "I don't know where I put them." His eyesight was so bad that he claimed he couldn't tell someone's sex if they were out of arm's reach.
Then he would launch into a discourse on the aesthetics of sex. The perfect encounter, he said, involved all five senses, but not the intellect. Conversation was simply a distraction. Judith thought this ridiculous; sitting on the floor, she would argue with Arthur until she felt herself drifting towards sleep.
It was during one of these late night conversations that she suddenly found herself confessing to a crush on Charles.
"Oh, how thrilling," Arthur said. Suddenly alert, he sat up. "We could all live happily ever after. You and he can have this room, and I'll bring you breakfast in bed every morning."
He offered to sound him out, but Judith, terrified he would spoil her friendship with Charles, absolutely forbade it.
"He won't even know he's been asked," Arthur assured her.
"If you ever breathe a word to him, I'll never speak to you again."
"Okay, okay." He held up his hand in a gesture of surrender. "I was only trying to help. I'll be silent as a sphinx."
Two days later he came home and announced that he had spoken to Charles.
"Oh, Arthur," said Judith in despair. "What did he say?"
"He said that he really likes you but he has complicated feelings about Danielle, and he thinks he ought to sort those out before he gets involved with anyone else."

"But what did you tell him about me?"

"Nothing," said Arthur. "I swear. I presented it entirely as my own idea. I said, 'Why don't you have an affair with Judith?' Then after he'd explained about Danielle, I asked if it might help to have an affair with me, as a sort of transition. I thought I might as well get everything over with at once. He refused."

"Arthur, did you really say that?"

"Well, not exactly," admitted Arthur. "But I hinted I was available at the drop of a hat."

"But Charles is straight."

"That's why it would be the perfect transition."

As Christmas approached Birdy's grew increasingly hectic, and Judith was working every night. She and Ian were once again on easy terms, and in some mysterious way he and Arthur also seemed to have become friends. There was, however, no sign of Charles, and Judith, convinced that Arthur had been fatally indiscreet, agonised over whether to buy him a present. Finally she decided on a book of poems. For days she carried it around thinking that she would run into him; then Arthur told her he had gone home to Ottawa, and with a sense of anti-climax, she wrote "To Charles, Happy Christmas from Judith" on the fly leaf and put the book in the mail.

There were no such problems of diplomacy with Arthur, who made it clear that any and all gifts would be welcome. They arranged to exchange presents on the morning of Christmas Eve before Judith caught the train home to Sarnia, where her parents still lived.

"Ooh," said Arthur, when he opened the packages. She had bought him a bright pink sweat shirt and a Tom Waits album. He kissed her and immediately went into the bathroom and tried on the shirt, standing on tiptoe to admire himself in the mirror. "It's perfect. I'll wear it for Christmas dinner, then my mother won't be able to complain about the holes in my clothes."

Judith wanted to protest that a pink shirt was not likely to mollify Arthur's parents, who lived in a large house in Rosedale, but she knew it would be useless.

"Why don't you put on Tom Waits?" Arthur said, and disappeared into the bedroom. Five minutes later he reemerged with a large brown paper bag. He handed it to Judith and watched anxiously as she reached her hand inside. He had bought her half a dozen secondhand books, a pen in the shape of a flamingo, and an enormous red sweater with a picture on the back of a man and a woman ice-skating.

"I got it at the Christian Science rummage sale," he said. "I hope you like it. They let me have it for a dollar fifty."

The sweater had a hole under one arm and was almost down to Judith's knees, but Arthur told her it looked great.

By the time they had finished admiring each other's gifts it was time for Judith to leave. Arthur insisted on coming with her to the station. As they hurried down St. George under the icy sky, he talked enthusiastically about the rummage sale; he had done all his Christmas shopping there. He had bought his
father a shirt and his mother some gardening books. "It almost made me feel I could be a Christian Scientist," he said. "They had so much nice stuff."

The subway car was full of last-minute shoppers, clutching enormous packages, and at the sight of them Arthur’s cheerfulness seemed to vanish. "I wish you weren’t going," he said. "I’ll miss you."

In Sarnia Judith had time to take stock of her financial situation. Although she was working four nights a week, she still had not saved enough money to pay for the two courses she’d been planning to take in the spring. Now she decided to postpone them until the summer when tuition was cheaper.

The manager at Birdy’s was delighted by her decision and offered her all the shifts she wanted. Arthur too commended her. A university education was a handicap for writers, he believed. Only Charles demurred. Judith had run into him at the library and he had suggested lunch at the Tel Aviv. "It’s too bad," he said. "I was looking forward to taking creative writing with you."

Judith explained her reasoning. "Maybe we could exchange work," she said. "That’s a great idea. You and Arthur and I, we could meet once a week."

While they ate their felafels, he talked about the book Judith had given him for Christmas. "I especially liked the poems about jazz, he said. So did Danielle. We’re both trying to write poems for our favourite musicians."

"I didn’t know she wrote."

"She just started. I think she could be good if she works at it."

As he began to describe his and Danielle’s poems, Judith took a large bite of pita. She thought that she ought to be upset, but instead she was merely bored: Charles no longer seemed irresistibly brilliant. When the waitress brought the bill, she reached for her wallet at once. She was anxious to get back to the library.

"I’ll buy," said Charles.

"No, why? Let’s split it."

"Come on. It’s my Christmas present to you. Anyway think of all the times you’ve paid for Arthur."

"Lots," she admitted.

"You shouldn’t let him scrounge off you," Charles said sternly as they stood waiting for his change. "He’s incorrigible."

Judith remembered Charles’s admonition vividly a few days later. She had woken up early and decided, as a treat, to make breakfast for herself and Arthur. Two days before, on her day off, she had bought several bags of groceries, but when she opened the fridge there was only the usual bric-a-brac of half-empty jars.

She took a long shower. Then she went into the bedroom and sat down cross-legged beside the mattress where Arthur still lay asleep.

"Arthur," she said loudly. "Wake up."

He sat up, rubbed his eyes, and put on his glasses in self-defence. "What’s wrong?"
"What happened to the food I bought?" Judith demanded. "I spent thirty dollars at Loblaws. I've only eaten one meal here and the fridge is empty. Why the hell don't you buy some groceries for a change?"

Arthur tugged at the yellow T-shirt he always wore in bed. "Judith, I'm sorry. I asked Charles over and we had a grand bouffe. I was going to the store today to buy lots of things. Really I was. Listen, I'll get dressed and we'll go to the Canadian Cafe."

In the Cafe, with Judith's help, he compiled a gigantic shopping list, and when the check came, he handed the waitress a ten dollar bill with a flourish. Judith could not help being appeased by his efforts but not enough to forget her anxiety about all the ways, large and small, in which she was supporting Arthur. As they were walking home she said, "Why don't you get a job? Then you wouldn't be so broke."

"I need all my time to write," he said seriously. "Anyway, I don't do so badly. Maybe I can sell a story soon—and Charles owes me some money. Once I get that I'll be fine."

"Where did you get the money to lend to Charles?" she asked sceptically. Nothing in what she knew of Arthur's past suggested that he had ever been more affluent than he was now.

Arthur shrugged. He had told her various vague and contradictory stories about how he supported himself, and Judith assumed that his parents gave him money. Whatever the source, his income was extremely meagre. He scooped some snow off a parked car, squeezed it into a snowball, and threw it at Judith. She ducked and then threw one back. While he was busy making another snowball, she hid behind a tree.

In the early spring Arthur did at last get something that resembled a job; he began to sell glass animals on Yonge Street. He took the card table from the living room, covered it with a piece of black velvet, and set himself up outside his favourite gay bar. Sitting on a folding stool, reading Pynchon or Burroughs, he waited until someone came along who wanted to look at the animals.

"Do people really buy those things?" asked Judith.

"Of course they do," said Arthur indignantly. "You've no idea how many closet Lauras there are in Sudbury just dying for a glass menagerie of their own."

Although she went often to keep him company, Judith never actually witnessed a sale. According to Arthur she had always just missed seeing someone spend a huge amount of money. He now owed her over two hundred dollars, and at her insistence they had started to keep track of his debts. Arthur had written the list on the wall above the sofa, and after some initial resistance, he made new entries with relish, remembering even the change borrowed for phone calls and subway rides, but the thought of repayment never seemed to cross his mind.

One day when Charles was walking her to work, Judith asked him if he thought Arthur was really making money.

"I think so," said Charles. "He certainly works long hours."

"Have you ever seen him sell anything?"
"Well, no," Charles admitted. "But I've heard people say they'll be back to buy something later."
"I think it's absurd," said Judith. "If only he'd get a normal job, he could make twice the money in half the time."
"Arthur and normal jobs don't go together. I've never known him to stick to one longer than a week." While they waited for the lights to change at Bay Street, Charles began to describe some of the jobs Arthur had had.
"He owes me more than two hundred dollars," Judith said, almost as if she were boasting.
Charles gave her an odd look. "And that's just the tip of the iceberg. Arthur owes everyone money. If you're worried, I'll try to talk to him, but I don't expect it'll do much good."
"No, no. I'm sure he'll pay me back eventually." She was a little taken aback to find that Charles too was Arthur's creditor; she had assumed her position was unique: a mark of special friendship.

The last Friday in April, Judith came home from the library and found herself unable to get into the apartment. She was so busy trying every imaginable way to insert her key in the lock that she did not immediately see the notice pinned to the door. The small pink form told her that the landlord had repossessed the apartment; Arthur should contact the Appleton and Vine collection agency. How could anyone make such a stupid mistake, Judith wondered, as she went to look for a taxi.

She found Arthur in his usual spot, sitting next to his table, his face red with cold. "Judith," he exclaimed, "I was afraid you weren't coming. I wanted to show you my New Wave animals. I just got them today. Look, there are scorpions, snakes, alligators, tarantulas, octopuses. Aren't they great?" He held out a snake for her inspection.
"Arthur," said Judith, "I couldn't get into our apartment. They've changed the lock, or something."
He stood up. "Let's get some coffee," he said. He asked Suzie, who sold earrings a few yards down the street, to look after the animals. At the donut shop across the road, he bought them each a coffee and a chocolate glazed donut and led the way to a table by the window from which he could see if Suzie needed him.
"Can you phone the landlord now?" said Judith. "I need to change my clothes for work. I could take a taxi over to get the keys." She rummaged in her pockets and placed a quarter for the phone on the table.
Arthur let it lie there. "But Judith," he said sadly, "you must have known I didn't pay the rent."
"I don't understand. Of course we paid rent. I gave you two hundred dollars a month." Even as her mouth formed the words, Judith's brain was already racing, faster than sound, towards new knowledge.
"I needed the money." He pulled a napkin out of the holder on the table and blew his nose.
"You mean you just kept it." Suddenly the mystery of Arthur's income was solved.
"Yes."
She reached across the table and shook him back and forth, back and forth, so that the table rocked between them and the bowl of sugar cubes fell to the floor. "How could you be so stupid?" she demanded. "How could you?"

Arthur, when she released him, looked smaller than ever. A couple of feathers drifted onto the table; his parka, which he had bought for five dollars at the Salvation Army, had a hole in it. "I thought I’d earn some money," he said, "pay off a few months and everything would be fine."

"Where were you going to earn the money?" Judith demanded bitterly; she was not prepared to enter into Arthur's subterfuges for a moment longer. He said nothing. "Anyway," she went on, "you should have told me. I had no idea I could be evicted at any moment."

"I thought you knew," Arthur muttered, offering what he clearly saw as the ultimate excuse.

"Christ, do you think I’d have put up with the situation for a moment if I’d known? And if you thought I knew, why did you always lie to me? Every month you’d tell me that the landlord got furious if the rent was late."

He hunched his shoulders awkwardly. His neck, emerging from the bulky jacket, looked pitifully thin and gawky. "I didn’t think it was lying; I thought it was just a kind of joke."

"But how could I have known?" Judith persisted. She was determined that he should not get away with one more lie.


Judith felt dizzy, as if she had received a sharp blow, or stood up too quickly. She drank some coffee and stared at Arthur. With a few words he had changed the last six months of her life as easily and completely as if he had, in a crucial bet, stretched out his hand and turned the coin from heads to tails. Now she understood why Charles had seemed uneasy when she talked to him about Arthur’s finances.

"Judith," Arthur was saying, "please don’t be angry. I know what I did was bad, but it wasn’t so bad. I mean you did have a place to live, and at the same time you supported me. You were my patron.

"My father will give us money; he won’t be able to stand the idea of my sullying the family name by going to court. And now the weather’s nice I’ll start to make money, and I’ll be able to pay you back. I’ve made almost a hundred dollars in the last two weeks, you can have it all."

She saw on the restaurant clock that it was almost five; she was due at Birdy’s at six. The manager would grumble at her jeans, but he would forgive her, and Ian was on the bar; if she asked nicely he would let her sleep at his place. Tomorrow she would go to the campus legal aid center and ask them to phone the landlord and explain that she had stored some things with Arthur. Then she would move them to her aunt’s.

"What will you do tonight?" she asked.

"I don’t know. Maybe we could spend the night at the bus station. I’ve never done that; I bet we’d meet some interesting people."

Judith never intended to see Arthur again, but she decided for the moment to ignore his use of the plural. "What about Charles?" she suggested.
"Are you kidding? I told him I was nervous about the landlord and he lent me enough to pay a month's rent. He'll be furious." Arthur gave her a sheepish grin. He bent down and picked up some sugar cubes. "Of course, if you want to stay with him, I'm sure that would be fine," he added from beneath the table.

Judith watched his head bobbing up and down, as if he were already ducking to avoid the angry blows he knew were coming his way. Somehow the fact that he'd also deceived Charles made her feel a little better about the whole situation. They had not simply been conspiring against her.

"Suzie's going to want to leave," he said. "I'd better go. Listen, I'll come to Birdy's later. We'll make a plan: everything will be all right." He stood up and gave Judith an awkward kiss on the cheek. "You're my best friend," he said. "I love you."

She went to the bathroom and put on some make-up in order to appease the manager. As she headed up Yonge Street, she turned her head to watch Arthur; he was standing beside his table, carefully packing up the animals, one by one, into his small suitcase.

It was just after nine, and Judith was arguing with a customer, going through his bill for the third time, when she looked up and saw Arthur. He must have come in while she was busy. He was perched on a stool, already involved in an animated conversation with Ian. On the floor beside him were the folded card table and the suitcase. At last she persuaded the man that he had indeed drunk five blues, and was free to come over to the bar.

"Judith," Arthur said, "I bought you a drink and a present." He handed her a glass of wine and a Shoppers Drug bag. Inside were toothpaste, a toothbrush, roll-on deodorant, shampoo, a comb, a bar of soap, a jar of Noxzema and a washcloth. Arthur was watching her. "It's an overnight kit," he explained, "until we can get our things. Listen, I was just telling Ian what happened and he says we can crash with him for a couple of days."
Topology
Mathematics' Wonderful New Flexible Tool

Keith M. Kendig

"The most incomprehensible thing about the world is that it is comprehensible."—Albert Einstein

1. Tools Awaiting a Use
For thousands of years, mathematics has been a box of tools for understanding the physical world. Some of the tools work beautifully, as if made exactly for the phenomena to which they are applied—for example, the calculations used in classical physics and astronomy. But there are other areas of mathematics—sometimes quite elaborate and beautiful—that don’t seem to fit anything at all. The study of these apparently useless tools is part of what is called pure mathematics. But, considering how often mathematics and the physical world do fit together, one may wonder whether “pure” mathematics may not often point to aspects of the real world that we simply have not yet discovered. In fact, history provides a number of instances where this has turned out to be the case.

Matrix theory, for example, which first appeared in an 1858 paper by the British mathematician-lawyer Arthur Cayley, for years seemed fated to occupy a comfortable niche in pure mathematics. But in 1925 Werner Heisenberg, a student at the University of Gottingen, while experimenting with arrangements of numbers in matrix-like tables, stumbled onto the first version of quantum mechanics. And without the understanding of the microworld that quantum mechanics has given us, there would probably be no television, no lasers, no micro-chip computers, no knowledge of DNA, and no science of molecular biology today.

When it was published in 1888, the “tensor” theory of Italian mathematician Curbastro Gregorio Ricci was considered “pretty,” but it created barely a ripple in the mathematical community. A quarter-century later, tensor theory became decisive in helping young Albert Einstein develop his General Theory of Relativity. Einstein also made important use of a new kind of non-Euclidian geometry devised in 1854 by the German mathematician Bernhard Riemann, admired for years as a gem of pure mathematics.

If unused pure mathematics is a measure of what remains to be learned about the real world, then mankind is in for discoveries of the first magnitude through the branch of mathematics known as topology (the study of certain kinds of properties of geometric figures—from Greek topoi, place), until
recently considered to be largely without practical application. Whereas matrix theory, tensor theory, and Riemannian geometry were each pursued by only a few workers before real-world uses for them were found, topology is an entire branch of pure mathematics, occupying the attention of hundreds of mathematicians and containing many subareas.

More specifically, topology studies those properties of objects that are not changed by bending, twisting, stretching, or shrinking (think, for example, how a rubber band in a sense remains the same object no matter how it is stretched or twisted). Idealized doughnuts, spheres, pretzels, knots, and colored maps are among the things investigated by topologists. Already we have hints of the kinds of discoveries topology may provide, ranging from questions of molecular biology to theories of the structure of the universe. Knot theory, a branch of topology, has been used to predict the stages of enzyme reactions in the separation and reattachment processes of DNA replication. And physicists, speculating on the nature of pure space, suspect that "empty space," far from being empty, is really a seething cauldron of activity. Particles seem to jump in and out of existence at random; it's as if we're seeing a few hats being tossed out the windows of a house with a wild party going on inside. Does empty space come in "quanta" as matter and energy do? Is the same true for time? Some thinkers on the forefront of such questions are talking topology. It may well be, they're saying, that space is more like a gigantic sponge, with countless "wormholes" and "bridges"—just the kinds of concepts topology is made of.

2. Not to Stretch a Point

One way to approach topology is through the notion of equality. The earliest mathematical sense of "equals" meant pretty much just that—literally and interchangeably the same, as in two plus two equals four. But as early as the time of Euclid, equality had already broadened somewhat into the notion of congruence: not only can a figure be pushed around and rotated, it can be flipped, becoming a mirror image; the new translated and/or rotated and/or flipped figure is called congruent to the original. Additional extensions of "equals" gradually found their way into the mathematics mainstream, and generally these new notions were even less strict and more encompassing. By the nineteenth century there was a notion of affine equivalence: in addition to pushing, rotating and flipping figures, one could evenly stretch them in any direction (see Figure 2.1). Any triangle could be transformed into any other triangle this way, and circles could transform into ellipses. Yet there was a limit on just how general this was—for example, lines would always end up as lines.

But topologists made space still more rubber-like, further generalizing the even stretching of affine equivalence so that one could go anywhere in the plane or space and simply start stretching or compressing it. It was as if they turned the figures of Euclidean geometry into rubber bands; a rubber band
stretched around three pegs to make a triangle, for instance, could be restretched to form a circle, or an oval, a square, a rectangle, a pentagon, or a kidney shape. A solid rubber ball could be pulled out to the shape of an egg, massaged to become a solid cube, or, like clay, fashioned into a bust of Tolstoy. A topologist is said to be someone who doesn’t know a coffee cup from a doughnut (the two objects are topologically identical—each is a torus [Figure 2.2]).

Where does it all end? Is there any property that survives the assault of such generalizing processes? Length, angle, and area are unaffected by Euclid’s translation, rotation, and flipping, and even affine transformations preserve the notion of line. But what about this new “topological equivalence”? There are, indeed, properties which even such radical transformations do not change, and topology is the study of those properties.

The shapes in Figure 2.3 are all topologically equivalent. The “rubber band” of Figure 2.3(a) is successively stretched, bent, twisted and compressed to form the remaining examples. Even breaking or cutting the rubber band is permitted, but any specific cut (with fresh ends A and B) must be glued back together, A to B. Thus, for instance, Figure (e) comes from (a) by cutting the rubber band, putting a loose knot in it and then reattaching the cut ends. The same rule applies to (g), which illustrates the topology of one kind of DNA strand. (Knot theory, incidentally, though considered part of topology, defines “equivalence” more strictly, not permitting this kind of cutting and regluing.)

Fig. 2.3. Topologically equivalent shapes.

Other things you can and cannot do in topology:

1. Parts of a diagram can become smaller and smaller, but never collapse to a point.
2. Any point must remain a point—it can never stretch out to form anything bigger, like a line segment or curve. (“Never stretch a point.”)
3. Separate points can get very close together, but never actually touch. Thus in Figure 2.4 at the right, (a) is equivalent to (b) but not to (c).

Fig. 2.4.
Figure 2.5 shows a group of shapes no two of which are topologically the same. In this figure, (a)–(i) are one-dimensional shapes; (j) is two-dimensional [a square surface]; and (k) and (l) may be two- or three-dimensional, depending on whether they are imagined as hollow (like a balloon and an inner tube) or solid (like a cannon ball and a doughnut).

Each item in Figure 2.6 is topologically the same as the corresponding one in 2.5!
3. Some Topological Vocabulary

We have seen that figures in topology have their own properties unaffected by topological transformations such as stretching, bending, etc. These properties, which form the distinctive vocabulary of our subject, include dimension, connectedness, boundary points, closedness, compactness, and singularity or nonsingularity. Here are some definitions from this vocabulary:

- **DIMENSION.** Topological transformations preserve the dimension of any figure. Here, roughly, is what this means:

  A figure has **dimension one** if it is "made out of string." (The string is idealized, having no thickness, only length.) Lines, line segments, numerals, letters, and roads on a road-map are examples.

  An object has **dimension two** if it is "made out of paper." (The paper is also idealized; we assume it has no thickness.) A hollow sphere, an empty tin can, and an inflated inner tube are examples. In fact, the surface of any everyday object is two-dimensional.

  Things in **dimension three** are "made out of clay." They are everyday solid things like a lump of coal, a cannonball, a solid rubber tire, or a pretzel.

  What is an object of **dimension four**? From a mathematical standpoint, the fourth dimension makes perfectly good sense; the trouble is, our everyday intuition is trapped in three dimensions. What are we humble three-dimensional beings to do? Our situation is analogous to that of a "Flatlander," an imaginary being living in a two-dimensional world (i.e., a plane), when he tries to define or conceptualize dimension three.* How could we help him "see" a solid sphere, for instance? We could take successive planar slices, or cross sections, of the sphere, as in Figure 3.1. The slices start out as a point, grow into larger and larger disks, reaching a largest one. Then the disks begin to shrink, finally ending in a point. This process can be thought of as happening in time, so the Flatlander can "see" a solid sphere by imagining a moving picture of a disk growing and then shrinking. The intuitive leap he should try to make is to conceive of these slices as fitting together to form one whole—the three-dimensional ball.

  For us to "see" a **four-dimensional** object, we can let time play the role of the fourth dimension, and look at a sort of holograph "movie" of three-dimensional slices through time. For a "four-dimensional solid sphere," for instance, the movie would start out with a point which grows into ever-larger solid three-dimensional spheres, like a B-B growing into a cannonball, then gradually shrinking back down to a point. The intuitive leap we need to make is to realize that all these 3-D snapshots fit into one whole—a four-dimensional solid sphere.

  These notions of dimension have been generalized to dimension 0 and -1 as well as 5, 6, ... , infinity, and in one of the most exciting new areas of mathematics, fractals, one even encounters **fractional** dimensions (Figure 3.2).

• CONNECTEDNESS. An object is connected if it hangs together in one piece. All the examples in Figures 2.5 and 2.6 are connected except (g); none of the four examples in Figure 3.3 is.

• BOUNDARY POINTS and CLOSEDNESS. Topologists have learned that the boundary of an object has special importance. If \( S \) is an object (or subset) in some surrounding space, any point that touches both the object and the surrounding space is called a boundary point of \( S \). (Any particular boundary point may or may not actually belong to \( S \).) Figure 3.4 gives a specific example. In a line, let \( S \) be the interval consisting of 0, 1, and all the numbers in between (we'll denote the interval by \( I \)). The dotted parts to the right and left of \( I \) constitute the surrounding space. The points 0 and 1 are each boundary points of the object \( I \) (and they're actually in \( I \)). One could instead focus attention on, say, the dotted portion to the left, and call that our "object." Then 0, and all the points to the right of 0 would be the "surrounding space" in the line, and our new object has just one boundary point, namely 0. This boundary point is not in this object.

![Fig. 3.4. Line segment I is a closed figure.](image)

If an object contains all its boundary points, then we say it is closed. (Thus in our example, \( I \) is closed, but the left portion is not. The right portion isn't closed, either.) No topological transformation can ever change a point's status of belonging to the boundary or not; nor can it change any boundary point's "affiliation" to the object—that is, whether it belongs to the object or to the surrounding space.

Another example: The boundary points of a cannonball are the points we can see—the surface. It is the whole surface which is "in contact with" both the cannonball and the space surrounding it. If we define \( C \) to be a cannonball including all of its skin or surface, then \( C \) is closed. If we remove even just one point from \( C \)'s surface and call this new object \( D \), then \( D \) isn't closed.

• COMPACTNESS. Some mathematical objects are of finite size, in the sense that they could be enclosed in some sufficiently large box. The interval \( I \) in Figure 3.4 and the cannonball are this way. The dotted portion to the left of \( I \) is not—it keeps going left forever, and no box can contain all of it. The same is true of the right dotted portion, and also of the space surrounding the cannonball. If an object of finite size is closed, then we say it is compact. Compactness is a central concept in topology; no topological transformation is ever wild enough to change a compact object into a noncompact one, or vice-versa.
• SINGULARITIES and MANIFOLDS. Figure 3.5 has a junction point where the three little line segments come together, and twisting, bending, stretching and the like will not change the junction nature of this point. However, the corners of a square are not junction points—they can be smoothed out. Junction points are different from other points, just as street intersections are different from the rest of a street. These special points are called singular (meaning "odd," or "unusual"); the remaining points are of course nonsingular. If every point of an object is nonsingular, we say it is a topological manifold. In Figure 3.6, the heavily-drawn points are all singular; none of the figures there are manifolds. In Figure 2.3, there are no singular points; each object is a manifold. In Figures 2.5 and 2.6, (a) through (i) each has at least one singular point.

We can now use some of our sophisticated topological terminology to describe shapes we’ve encountered. In Figure 2.5(a)-(f), for example, each item is a compact, connected, one-dimensional nonmanifold. Topology got its start through the analysis of one such figure; the story takes place in the ancient city of Königsberg (renamed Kaliningrad in 1945).

4. Strolling Through Königsberg

The city of Königsberg on the Baltic Sea, founded in 1255 and home of the philosopher Immanuel Kant as well as a long succession of Prussian nobility, consisted of four parts—the two banks of the Pregel River and two islands—interconnected by seven bridges (Figure 4.1).

For many generations its people enjoyed strolling through their topological city, and for years there was a good-natured competition: who could take a “complete walk,” crossing each bridge exactly once? Around 1734, the eminent Swiss mathematician Leonhard Euler, who happened to be teaching in Prussia, heard about the problem, and he soon settled it in a paper which is now famous. The paper, delivered before the
Prussian Academy, concluded that the Königsberg bridge challenge cannot be met—there is no route, starting and ending at the same point, which will permit crossing each of the seven bridges just once.

Euler reasoned that, after all, the sizes of the land masses have little to do with the problem, so he idealized them, replacing each one by a point. Each bridge became a line segment. In Euler's mathematical hand, the bridges were redrawn as in Figure 4.2.

Euler then introduced a new notion, which today we call "valence," namely the number of paths coming away from any point. Euler's figure has a vertex whose valence is five—the lines 1 through 5 emanate from it. The other three vertices of the diagram each has a valence of three. Euler reasoned that there is an "Euler circuit" (a round trip travelling over each path exactly once) only if the valence of every vertex is even. Starting at any point in the Euler circuit, one will "arrive, depart, arrive, depart, . . .," there being exactly \(n\) words in the sequence within quotes. If \(n\) is odd, the final word—the end of the circuit—will be "arrive." But that couldn't be where one started, since the first word was "arrive"! Since in Figure 4.2 there is at least one odd valence, the Königsberg problem has no solution.

Euler's mathematical picture of Königsberg is called a model: it is an idealization that discards everything not strictly essential to the problem at hand. His model is one-dimensional, and such one-dimensional topological networks have proved useful in an impressive array of real-world situations. Here are some examples:

**Circuits and Schematics.** Electrical circuits have a strong topological flavor. In the mid-nineteenth century, the German physicist Gustav Kirchhoff introduced a "thinking aid" to help him in experimenting with electrical circuits: a schematic diagram. It is essentially a one-dimensional topological diagram in
which the roads, or paths, have names. Those names or labels are the elements of the electrical circuit—resistors, capacitors, voltage sources, and the like. Today the schematic that comes with our new TV or other electrical appliance is only a more sophisticated version of what Kirchoff used (Figure 4.3).

Actually, Kirchoff was on to more than even he realized. Other parts of the physical world seem to be stamped out of the same mathematical template as electrical circuits. The analogy is so good, and so complete, that many mechanical experiments can be translated directly into electrical ones and run (with greater safety) in that form. Those mechanical systems have topological structure to the same extent as electrical networks.

**Topology and Computers.** A computer is an enormously complicated circuit whose topology can be dramatically and continuously altered. These alterations can be made because the circuit is switchable. A very simple example of a switchable circuit is shown in Figure 4.4: we can change the topology of this network by opening or closing the switches S1 and S2. If S1 and S2 are open, the network is not connected. If either or both are shut, the network is connected and electricity can flow through. In a computer, these "electronic switches" exist at the transistor level, within the microchips. The sequence of instructions that make up a computer program actually amounts to setting large numbers of such switches. (This used to be done by hand, before the development of "high-level" programming languages that humans can easily use, and which are translated, or "compiled," by the computer to a form it can understand and use.) These switch settings create a topological network through which pulse-trains of high and low voltages flow. These trains are the "data." At the end of this very long and high-speed topological trip, "answer trains" are finally retranslated into something we can easily understand—for instance, characters on a monitor.

**Efficiency.** One-dimensional topology can help increase efficiency in allocating limited resources like time, money, labor, equipment, or talent. For example, in building a house, the foundation must be built before the walls go up. But two crews can work simultaneously, or in parallel, putting up the roof and installing the windows. Likewise, electrical and plumbing crews can do much of their work in parallel. The Critical Path Method (CPM) organizes the tasks in the most efficient method using a topological network.

Other networks for efficiency may use similar approaches—for example, scheduling speakers at a conference, with the popular speakers in series (so everyone can hear them), and speakers on specialized topics in parallel. Labelled networks also help design computer programs. Flow charts give us an overall picture of the program's logic so that one can then fill in this skeleton with specific steps when writing the program.

**Chromatic Networks.** One of the best-known problems in topology is the Four-Color Theorem. Much of what we know today about network topology has arisen from efforts to solve this problem, which originated in 1852 when twenty-one-year-old Francis Guthrie wrote to his brother Frederick that any map could apparently be colored using no more than four
different colors in such a way that countries sharing a border
always were in different colors. Frederick, still at University
College, London, asked the famed mathematician Augustus
DeMorgan about it. Over the years, countless mathematicians
worked on this simple-sounding problem, but it resisted all
efforts until 1976, when Kenneth Appel and Wolfgang Haken
of the University of Illinois used a computer to analyze hun-
dreds of possible special cases. This proof today stands as one
of the longest in all mathematics—the original two-part paper,
together with microfiched checklists, totals 598 pages.

This result can be cast in the terms of one-dimensional
topology, like the Königsberg problem. Each country is repre-
sented by a point; if any two countries share a border they are
connected with a path. The points are then labelled with col-
ors, and we have a chromatic network. The Four-Color Theo-
rem says that for any such network no more than four color
labels are needed to insure that every pair of points directly
connected by a path shall have distinct colors.

This number, four, is called the chromatic number of the
earth (that is, of a sphere); it is also the chromatic number of a
disk or an ordinary sheet of paper. This number is a topologi-
cal invariant—twisting, stretching, and deforming the sphere
or disk will not alter it. The chromatic number of a torus (a
doughnut shape) happens to be seven. That means one could
devise a map on a torus sufficiently complicated that it would
require seven different colors; but it would never require more
than seven, no matter how complex the map. The chromatic
number for a doughnut with two holes is eight.

There is a general result that tells us the chromatic num-
ber of a doughnut with \( n \) holes in it. First, find the number

\[
1/2 \left[ 7 + \sqrt{1 + 48n} \right]
\]

(For example, if \( n = 3 \), it is \( 1/2 \left[ 7 + \sqrt{145} \right] \), or about 9.52.)
Now round it down, and the result is the chromatic number.
(So for \( n = 3 \), the chromatic number is 9.) One can even color
maps on one-sided surfaces, like the Klein bottle (see below),
and any map on it is again equivalent to a one-dimensional
network. (The chromatic number of the Klein bottle turns out
to be six.)

5. Making Fancy Spaces
From Simple Ones

The examples in the last section were all one-dimensional. The
topological model for each of these can be made out of very
simple building blocks, namely "rubber line" segments glued
together (the Königsberg bridge model, for instance, is made
from seven line-segments). The figures in two-dimensional
 topology—surfaces—can also be made from simple building
blocks.

"Building blocks" are extremely important in most mathe-
matics, as in many areas of science. Mathematical building
blocks are analogous to a mason's bricks, a chemist's atoms, or
a nuclear physicist's electrons and other subatomic particles.
The ideal is to find a complete set of ultimate pieces, and then
show how they fit together to build all the objects under study.
In topology, dimension serves as a good guide to building blocks. Here are three major classes:

**Dimension 0:** Single points;

**Dimension 1:** Line segments;

**Dimension 2:** Disks (i.e., filled-in circles).

The one-dimensional figures of the last section are built by gluing together the ends of line segments; if a disk is a two-dimensional analogue of a line segment, what are the ends? Answer: the boundary—that is, the circular rim of the disk (or the perimeter of a square—they're the same in topology). These boundary points are just like the mason's mortar joints; it is along boundary points that we sew, stitch, or glue. Figure 5.1 shows an example: the non-rim portions of two rubber disks have been stretched out to make hemispheres, and these hemispheres are glued together along the equator to make a sphere. This is done so skillfully that the final product has no seam—one can't even tell where the original hemispheres met.

The example in Figure 5.2 is different: more than two edges come together (essentially a more complicated sewing job), and there's a whole "singular line" where they join. It's very obvious where the sewing took place; it is not a manifold. It turns out that a great variety of surfaces may be obtained by the simpler two-edges-at-a-time sewing. These are the ones we will now look at.

The explanation will run more smoothly if we straighten out the rim portions to be glued, so we begin by reshaping our disk into a square piece of rubber (Figure 5.3).

Now we sew or glue the left and right edges, lettered A, together (Figure 5.4). The "A" edges are to be glued (we consider that they actually become identical), so as to keep the arrows pointing in the same direction. We can realize this construction by actually curling the edges together and scotch-taping. We then get a tube, or cylinder, as in Figure 5.5. So from the building block, we've manufactured a topological "hose." [Note that the top and bottom edges of the original square have become the circles at the top and bottom of the tube.] But we may do more: we can pull the ends of the hose around so they face each other, and then fasten the ends together (Figure 5.6), obtaining a torus—quite different from the cylinder. On the original square, this would be denoted with arrows as in Figure 5.7. Notice that one could just as well glue the B-sides first, and then the A; either way, one gets a torus.
We can paste together the four edges in a variety of other ways. For example, in Figure 5.8 the arrows point in opposite directions, so we sew the top and bottom edges together in such a way that the arrows' directions agree. To do this we may stretch the square horizontally into a long, narrow strip, (Figure 5.9(a)) then give it a 180-degree turn, then scotch-tape the ends together (Figure 5.9(b)). This is called a Möbius strip, after the German mathematician Augustus Ferdinand Möbius (1790-1868) who discovered it when he was nearly seventy. It has a remarkable property, typical of the mind-expanding phenomena that topology leads us to—the Möbius strip has only one side. An ant, for instance, can travel down the center of the strip, never touching the edge, and end up directly below where it started. The untwisted analogue is two-sided, and the ant is either on one side or the other. It cannot get to the other side without crossing over the edge.

One can try stitching the edges together as in Figure 5.10, which forms a kind of triangular purse. Since in topology everything is made out of rubber, one can pump it up with air to make a balloon, or sphere.

The German mathematician Felix Klein (1849-1925) pasted the edges together as in Figure 5.11 and obtained what we today call a Klein bottle. This strange bottle holds no liquid because it has only one side, like the Möbius strip. This manifold's natural habitat is four-dimensional space or higher; if we try to draw it in ordinary space, we will introduce "accidental" self-intersections. Notwithstanding, it does have a few two- and three-dimensional portraits (e.g., Figure 5.12).
The French mathematician Jean-Victor Poncelet (1788-1867) glued the edges together another way (Figure 5.13) and obtained what we call a "projective plane." This plane is yet another example of a one-sided manifold. In fact, if you take two identical Möbius strips and carefully sew each point of one strip's boundary to the corresponding point of the other's boundary, you get Poncelet's plane. This plane opened up a whole new chapter in geometry.

At the outset we reshaped our disk into a square for expository reasons. But there's nothing really topologically special about using a square. One could, for example, use 3, 5, 6, 7, ... sides and glue them together. With eight sides, however, one gets a whole new set of interesting objects. As just one example, one can try Figure 5.14. After the edges have been sewn together, it looks like Figure 5.15—a doughnut with two holes. By reshaping the disk to a polygon with 12, 16, 20, 24, ... sides, one can make doughnuts with 3, 4, 5, 6, ... holes. The number of holes is called the genus of the surface—another important topological invariant. There are one-sided versions of all these surfaces. In general, the one-sided analogues necessitate an additional twist, and our mere three-dimensional space is not sufficient to allow an overall accurate look at them.

From these examples, one can see that there must be a bewildering array of nice surfaces without any singularities at all. (In contrast, there's just one connected, compact one-dimensional manifold—the circle.) Figure 5.16 shows an example of what our innocuous building blocks can yield—it's called the "Alexander horned sphere," after J.W. Alexander, who discovered it in 1924. Exotic though this surface is, it is in fact topologically identical to one of the simplest of all—the sphere.
All these examples tell us one thing: we need help out of a complicated jungle. Is there some order, some overall descriptive scheme for all these surfaces? There is; it is a general classification of connected, compact, two-dimensional mani-

folds, and it is one of the most central results of topology. It is represented in Figure 5.17.

The Classification Theorem: Any two-dimensional, compact, connected topological manifold is completely determined by only two pieces of information: (1) its genus—that is, the number of holes in it, and (2) whether or not it is orientable. This means that no matter how such a surface is obtained or constructed, and no matter how complicated it may appear, it is topologically the same as one of the two pictures in Figure 5.17. Picture (a) is sphere with $g$-doughnuts attached: $g$ is the genus of the surface (no doughnuts at all correspond to $g = 0$). This surface is orientable: an ant outside could never get inside. Picture (b) is like the first, except there is a hole cut out, and the opposite or antipodal points of the hole are considered to be sewn together. This doesn't change the genus, but it does make the surface non-orientable—that is, one-sided.

Here are some examples: Poncelet's projective plane would appear in picture (b) with no doughnuts. The Klein bottle would appear in picture (b) with one doughnut. Alexander's horned sphere would appear in picture (a) with no doughnuts. A polygon with twenty-eight sides, with opposite edges sewn together in analogy with Figure 5.14 would appear in picture (a) with seven doughnuts. Reversing an odd number of pairs of arrows on the polygon and then sewing would give picture (b) with seven doughnuts. Reversing an even number of pairs corresponds to picture (a) with seven doughnuts.

6. Three- and Four-

Dimensional Topology

Einstein's General Theory of Relativity tells us that "matter bends space." Now what does it actually mean for space to "bend"? The idea is intrinsically hard to grasp; our situation is somewhat like that of the Flatlander, the imaginary being mentioned earlier who lives in a world of two dimensions. He can understand points, lines, circles, and squares—all strictly planar concepts. But it would be hard for him to grasp what a knot is; he would probably have a hard time seeing how the string reaches out into the third dimension and loops there to form the knot. His best picture of a knot would really be only a shadow, and that shadow always has to cross itself (Figure 6.1). That's the situation we were in, in attempting to sketch the Klein bottle. It lives in four dimensions or higher, where it doesn't self-intersect. Our portrait is about the best we can do in three dimensions.
Fortunately for us humble three-dimensioners, the human brain itself does not seem to limit our perceptions to three dimensions. A few mathematicians have trained themselves to think fluently in four dimensions, and their insights have been revealing. For both them and us, working by analogy is important.

The filled-in square we used to make a variety of two-dimensional objects has a natural three-dimensional analogue: a solid cube. We can use it to manufacture many 3-D objects, including some that live in four dimensions or higher.

Recall how we identified the opposite sides of a square to make the hose in Figure 5.5. The hose is ideal—that is, it has no thickness. We then fastened its two ends together to make a torus. We can try the same trick with the solid cube. By analogy with gluing together opposite edges of a square, we glue together opposite faces of a cube. Let's start with the right and left faces (Figure 6.2): Pull the faces out to form a solid bar, then bend them around to form a “washed” (Figure 6.3):

continue until the faces just touch. At this point, we have a kind of squarish, solid torus. To help the visualization process, let's elongate this squarish torus until we get Figure 6.4—a straight piece of hose with thick walls. Next, we bend that around and join the two ends. Now we have a garden hose closed into the shape of a torus; it has thick walls. A bit of reflection will reveal that the two remaining faces of the original cube are now (i) the outside surface of the hose (that is, what the sun sees) and (ii) the inside surface (what the water inside would see).

We are now exactly at the stage a Flatlander is when he looks at a washer in his plane (Figure 6.5). He wants to make a torus, and his instructions are to take the two heavily-drawn circles (the larger, outside circle and the smaller, inside circle), pull them up into the third dimension and sew them together. Although he can't actually carry out this last step because he's stuck in Flatland, he nonetheless does have a succinct recipe for its construction, and he can still draw valid logical conclusions about the torus. For instance, he can logically see (as we can physically see) how the sewing makes the edges (the two heavily-drawn circles) disappear. They were there before sewing, but not after—no seams are left in this absolutely perfect gluing job. Instead, we have a topological object completely different from the original washer—a smooth, seamless torus.
Now, for us. To make a "three dimensional torus" our instructions are, analogously, to glue together the remaining two faces of our original solid cube. That is, we are to pull the inside and outside surfaces of our garden hose up into the fourth dimension, and glue these two surfaces (the "sunny" and the "dark") together. We can't visualize this any better than the Flatlander could visualize pulling his two circles up into the third dimension and gluing them together. But, as with him, the recipe is definite, and we can draw many logical and consistent conclusions about the object we have defined. We can represent this 3-D torus in pure "recipe" form as a solid cube with opposite faces lettered to indicate that they are to be glued together (Figure 6.6). This is analogous to Figure 5.7.

Note that this gluing process removes all boundaries, in just the same way that in going from the original square to the torus, the edges disappear. I want to emphasize the dramatic significance of this: every ordinary three-dimensional object has a surface—a boundary—the part we actually see. We've just constructed a three-dimensional object of a totally different sort, one without any boundary! At the same time, we've opened up a whole new kind of question: if our universe has no boundary, then is it flat as Euclid would have us believe, or is the curving and bending that the General Theory of Relativity guarantees pervasive and strong enough to make something like a 3-D torus? or a 3-D sphere? Indeed, the faces of the solid cube can be glued together in many different ways. It is not at all obvious today what kind of universe we're in. Astronomical measurements designed to shed light on the question have had a history of unreliability. It has been said that much of successful scientific research consists in asking the right questions; topology has asked some very good ones.
Presidential Accountability
Constitutional and Moral Implications of the Iran-Contra Affair, Robert Bork's Nomination, and the President's Stand on Religion in the Schools

Alan S. Rosenbaum

The public's participation in its own governance either by custom or statute is the hallmark of a democratic society. Non-democratic societies characteristically conduct affairs of state secretly, and their leaders officially answer to no authority but themselves for policy formulation and execution. American democracy abhors the secrecy in government which is the inevitable consequence of lack of accountability. The framers of the U.S. Constitution provided for a basic legal system of governmental accountability, which they believed embodied the principle of the rule of law.

The Senate's Iran-Contra hearings revealed the contempt that a number of appointed officials in the Reagan administration felt for American democratic principles, especially governmental accountability. These disclosures remind us that presidential utterances about respect for the Constitution must be matched by appropriate actions.

An increase in executive accountability strengthens our democratic system without diminishing the effectiveness of the president's exercise of constitutional powers.

In its grant of executive powers, Article II of the Constitution reflects the framers' intent to establish an independent chief executive or president but also to limit the rightful exercise of presidential power. For instance, the president is vested with an executive power as Commander-in-Chief of the Armed Forces, thereby insuring civilian control of the military, a rarity in most societies; but only the U.S. Congress as established in Article I has been authorized to raise revenues, raise and support armies, and to declare war. This is one common illustration of the intricate political system of checks and balances which the Constitution has articulated among the president, the Congress and the federal judiciary. The president has many important powers, immunities, prerogatives, and a range of discretion which have evolved over the years: he may recommend legislation, formulate and administer foreign policy; receive ambassadors and recognize governments; veto congressional enactments; appoint a cabinet; and he is expected to provide "moral leadership" to the nation at large. But his is not uncontrolled and unchecked power, because the president must fulfill certain legal obligations, perform various duties, and be accountable to Congress, the Supreme Court and ulti-
mately to the electorate. In fact, the primary reason we have a constitution is to establish a government sufficiently powerful to provide us with the advantages we desire "but not so powerful that it routinely hurts us." Efforts to achieve this balance in practice are not always successful.

These constitutional limitations on executive power have not always prevented abuses. Changing world situations and increasingly sophisticated techno-scientific and media capabilities have often made it difficult if not impossible to mark precisely the line a president may have overstepped in exercising powers. Nevertheless, some presidents have in recent years been called to account for apparent violations of constitutional constraints: e.g., the current congressional investigation of the administration's web of covert and probably illegal dealings, the so-called Iran-Contra affair; or Nixon's having been compelled to resign his office rather than face impeachment proceedings for his alleged role in the Watergate scandal; President Johnson removing himself from the race for a second term owing largely to his unpopularity with the American electorate over his widening of the war in Viet Nam. Here accountability was exercised indirectly but surely by the voting public in the polls.

Some may argue that these events imply failure of controls over presidential powers; but accountability must be seen not only in terms of how effective the system of checks and balances is in preventing such occurrences but in making presidents answer for their actions.

In ancient Greece, "accountability" meant "subject to an audit or rectification . . . as it applied to officers of state who had to render accounts and face a scrutiny at the end of their term of office." In more modern times "accountability" refers in its narrowest sense to being answerable or "responsible under some rule to a determinate authority for a determinate sphere of action." The "authority" to which a president is accountable may be the Constitution itself, which a president is sworn to uphold, or the other coequal branches of government; or, in a wider and more ambiguous sense, the American people.

The "rules" for presidential accountability derive mainly from the Constitution or from laws. A failure to fulfill legal obligations may result in a president's being called to account by the appropriate bodies, and perhaps penalized. But not everything a president does or is required or compelled to do is clearly mandated by a rule. Instead, discretionary choices about principles may affect presidential exercises of power; more generally, these principles may possess a moral authority, obligating a president to do or forbear.

To illustrate, a president may decide to order American troops into combat when intelligence sources suggest that important American interests may become endangered. If a quick and secret military response is his only realistic option, no conceivable rule can prescribe exactly how, when, or where troops ought to be sent. For this recourse, a president's justified exercise of power as commander-in-chief depends on so-called "higher" principles of state (such as national security) which he invokes and in terms of which he will ultimately be held accountable. Although Congress alone is empowered by the Constitution to declare war, whether a president's sending
troops without congressional authorization or notification is a justified departure from the rule is neither self-evident nor certain. It requires argument about rules, principles, and discretion. In Thomas Jefferson’s notable words:

To lose our country by a scrupulous adherence to written law, would be to lose the law itself, with life, liberty, property, and all those who are enjoying them with us; thus absurdly sacrificing the end to the means . . . . The line of discrimination between cases may be difficult; but the good officer is bound to draw it at his own peril, and throw himself on the justice of his country and the rectitude of his motives.

Remedies for a president’s unjustified departure from important rules or for rights-violations involving “treason, bribery, or other high crimes and misdemeanors” are the province of Congress, the Supreme Court, and ultimately the people. In addition, extensive media coverage of questionable presidential adventures may provoke public outcry and even congressional enactments to call the president to account for his judgment and action. The journalistic media offer the argument that the First Amendment is another crucial check on presidential power.

At the 1787 convention in Philadelphia, an enduring compromise was worked out by the delegates, which has become America’s unique contribution to political philosophy, namely the idea of shared sovereignty—between the federal government and the individual states—as well as a separation of powers and functions within the federal government itself. The guiding idea was to establish a mode of governance least likely to usurp the natural rights of citizens to determine their own affairs. A balance was struck between centralized and decentralized political authority.

Our constitution has been seen as a “blueprint for democracy,” but its principles are understood differently under different theories of democracy. Although our ideology may not have any settled significance for all persons, there is a set of core values which we associate with our conception of individualism. Both our Declaration of Independence and our Constitution, and specifically presidential accountability may be seen as expressions of this conception.

Individualism is the belief that people are self-willed, free, morally autonomous, rational, independent, and equal, and that they naturally possess certain indefeasible rights. The cutting edge of this moral concept is that no individual or group is ever to be regarded as innately privileged above any other. Even the most unpopular persons are entitled to official consideration because they possess an individual human personality. In our constitutional democracy, all institutional authorities receive their entitlement from being rooted in the moral dimension of personhood.

The intrinsic worthiness of persons is in this sense expressed typically in the language of universal human rights. We use the language of rights in our everyday lives to protest unwanted intrusions upon ourselves. But we may also speak of obligations which correspond to rights: the obligations that others, particularly governments, have, not to interfere with the exercise of individual rights, and to protect us in the enjoyment of our rights.
Various philosophers (notably John Locke and Immanuel Kant) have contributed enormously to the way these ideas have been exercised. For instance, the women's movement in recent years has urged us to recall that both men and women degrade themselves when they allow themselves to be used, or to use others, solely for purposes of other persons. A Kantian respect for persons demands at the very least that they give consent to the actions that they perform. Indeed, it is claimed that the ultimate purpose of all institutions of society resides in the advantages to the individuals concerned as judged by the individuals themselves. It is a cardinal principle of democracy also that government is to be judged on independent moral grounds which are accessible in principle to all persons through their capacity to reason. This conceptual framework implies that, for example, it would be unjust for a government to imprison someone solely because that person criticized it.

What is the "rule of law"? Historically, the fusion between politics, law, and morality is the American idea of constitutionalism. The phrase "rule of law" means the subordination of political governance to the "law of the land" which defines the establishment, purpose, and proper function of government. A contrasting system might involve a constitution that binds the citizens but not the government, allowing, for example, a political ruler above the law.

The idea of a constitutional "rule of law" arose partly from the struggles against arbitrary political rule but also in response to changes in property relations. Thus the "rule of law" seeks to guide government's relationships to citizens, and regulate the network of relationships among citizens. The "rule of law" institutionalizes respect for the acknowledged moral and legal rights of persons.

It is reasonable to expect that presidents will seek to advantage themselves and their office in the usual course of political activity. But when a president attempts to use his office's authority to promote contempt for the other branches of government, he is encouraging unconstitutional practices and hence is violating the principle of presidential accountability. For example, Attorney General Edwin Meese and an assistant attorney general, William Bradford Reynolds, have recently attacked the Supreme Court by arguing that some of its members are a detriment to individual liberty when they reach decisions not covered by the framers' "original intent." Actually the variety of intentions among the framers and of changes at different stages in the preparation of the Constitution invalidates any concept of "original intent."

Another instance: the president's sustained advocacy of officially sponsored prayers in public schools, and his unbridled enthusiasm for a strong anti-abortion policy (but his eloquent silence with regard to anti-abortionists' violence) in the face of a series of contrary court decisions, raise questions about presidential respect for the "rule of law." It may be supposed that Reagan's nomination of Robert Bork to the Supreme Court was intended to seat a justice with a moral, political, and judicial philosophy similar to his own. Indeed, Bork's qualifications are understood to include, first and foremost, being of the "right" political persuasion. Unfortunately, the Bork nomination and the protest against it by civil rights...
and other groups only serve to support the criticism that appointments to the Supreme Court which are predominantly political breed contempt for the constitutional independence of the judiciary.

The most serious departure from the spirit and perhaps the letter of the law is the executive branch’s conduct in the Iran-Contra affair. Although no testimony in the Senate’s hearings has directly implicated the president in the covert operations, or in lying about what he had done, there is sufficient ground to make further inquiries. In any case, he is ultimately responsible and accountable for the actions of his administration.

The Iran-Contra affair involved the covert appropriation and sale of weapons to Iran apparently in exchange for American hostages, and the use of profits from the transaction for funding a rebel group (the Contras) against the government of Nicaragua. In these activities a number of laws may have been broken, including the Boland Amendment; the Arms Export Control Act; the conspiracy section of the United States Code (Sec. 371 of Title 18); perjury and obstruction of justice statutes; and perhaps Article I, Section 9 of the Constitution (regarding the misappropriation of funds). The affair involved some members of the National Security Council, over whom Congressional oversight has not been traditionally exercised, and other administration officials, military officers, and foreign nationals.

It will have to be determined by Congress or the courts whether the president placed himself above the law and in doing so failed in his constitutional responsibility. Clearly, he has projected an image of himself as an executive with his own agenda, willing to pursue his objectives by any possible means, and, if necessary, by circumventing the letter or intent of various laws. As we witness the erosion of trust in government under this administration, a persuasive argument may be offered that in replacing American principles and values by his own, President Reagan has failed to demonstrate “moral leadership.”

What matters in a democracy is not merely the attainment of specific policy objectives, but also how they are conceived and implemented. Claims of national security made by the chief executive for unauthorized or secret operations do not justify unlimited presidential power. Covert actions are sometimes a necessity in today’s perilous world. But the risk to a democracy in resorting to this type of action is considerable: a relatively few officials, acting on their own, can embroil the whole country in a war. Certainly a national emergency or other tangible threat to national security may justify covert actions such as rapid deployment of troops to contain an enemy. Neither the ransoming of private citizens seized as hostages nor support for the Contras can be reasonably classified under “national security.” The most likely way these events threatened national security was by allowing a shadow government to conduct American foreign policy outside the constitutional system of accountability.

In recent years, Congress has increased presidential accountability by requiring that a president must report to congressional intelligence committee leaders in a timely way any planned covert actions or any already under way.
In practice we have learned that respect for individual freedom and moral equality is not always easy to achieve. For example, affirmative action programs may result in a fair promotion strategy for members of a systematically excluded group while unjustly burdening individuals in the traditionally advantaged group. By a recent Supreme Court decision, women may be promoted over better qualified men if such promotions get women into higher paying jobs in which they are under-represented.

To be a rights-possessing creature means not only that one is entitled to exercise various freedoms oneself, but also that others are obligated not to interfere with the exercise of these freedoms. Interference is a grievous moral—and it may be a legal—wrong. And the burden of justification falls upon the violator of rights. Such was Jefferson's claim in writing the Declaration of Independence. Moral individualism finds expression in our Constitution, not only in the system of checks and balances among the three branches of government but also in our Bill of Rights, which is essentially a list of citizens' entitlements.

Our Constitution has been said to foster official respect for the individual differences of opinion, expression, belief, and action which are implicit in human nature. It is a moral and political requirement of our pluralistic society that government and citizens alike must tolerate these personal differences. The democratic principle of toleration signifies at the very least that no single idea, belief, person, or group has a privileged monopoly of truth. The privilege of infallibility as regards the "truth" rests with no authority, agency, or person, including the president.

The religion clauses in the First Amendment, i.e., that "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof," came about because of the widespread preference for personal religious freedom coupled with the fear in some states like Massachusetts [a Puritan theocracy] that "the federal government would establish a national religion different from the one already established in their state."6 On the issue of "God and the classroom," still being fought in politics and in the courts today, the Supreme Court has attempted to strike a reasonable balance between the inherently conflicting clauses (establishment of religion versus a free exercise of religion). In a landmark case, Engel v. Vitale,7 the Supreme Court banned all inspirational Bible readings and officially-authorized prayers from public schools. It held that these represent government sponsorship of religious views, which amounts to the "official establishment of religion" prohibited by the First Amendment.

A current political challenge to the authority of the Constitution and the Supreme Court is evidenced in many so-called "Bible-belt" schools where teachers and school boards permit or even require classroom prayers. If no one with legal standing objects to the practice and brings suit, the Supreme Court is powerless to decide upon its constitutionality.8 In short, judicial review is a limited remedy against some violations of rights. When a president uses his office to blur the distinction between church and state by advocating public school prayers, far from exercising "moral leadership," he may be promoting
intolerance as well as unconstitutional abridgement of freedom of expression. The Constitution allows both believers and atheists to put forward their views.

The liberal principle of toleration of all opinion has recently been attacked. In the words of R.B. Perry, "to be a liberal does not mean believing in nothing; it means believing in liberalism." Some recent fundamentalist, ultra-conservative and extremist attacks against the "liberalism" of our constitutional democracy are both foolish and dangerous: foolish, because of narrow, short-sighted partisanship; and dangerous, because these attacks undermine the personal freedoms our democratic system champions. By restricting the meaning of religious, moral, and political righteousness to a particular religious authority, they subvert the meaning of righteousness. Well-organized groups like the Moral Majority admit to using the political process for their own religious ends. Accordingly, if one disagrees with their religious convictions one is charged with being somehow un-American. And yet the Constitution is explicit on this subject: Article VI, Clause 3 states "no religious test shall ever be required as a qualification to any office or public trust under the United States."

For our government to respect anything less than a principled democratic pluralism will likely result in the tyranny of the majority and of public opinion, as J.S. Mill warned in his classic essay On Liberty (1859). Justice Oliver Wendell Holmes (in U.S. v. Schwimmer) stated the principle this way: "If there is any principle of the Constitution that more imperatively calls for attachment than any other it is the principle of free thought—not free thought for those who agree with us but freedom for the thought that we hate." A president who either directly or through his cabinet officers chooses to publicize his preferred moral and religious agenda in opposition to Supreme Court decisions (e.g., by identifying the "public interest" with his own agenda) may foster defiance of Supreme Court decisions. He also appears to legitimize the attitude of self-righteous intolerance against those with whom one disagrees. This returns us to the question of accountability, about how and whether a president can or should be held accountable in some appropriate forum for the effects of his use of public office, under the guise of moral leadership, for furthering his private ends.

We may remember that our government during World War II sponsored numerous educational projects designed to enlighten the American people about the virtues of constitutional democracy in the face of the threat of Nazi and fascist ideologies. Today we still recognize that a broad liberal education in the values and principles of constitutional democracy is essential to the secure development of democratic social institutions in opposition to all the forms of authoritarianism.

Notes


Article I, Sec. 8.11 of The Constitution of the United States of America.


Article II, Sec. 4 of The Constitution of the United States of America.


370 U.S. 421, 82 Supreme Court 1261, 8L Ed. 2nd 601 (1962).


279 U.S. 644 (1929).
Comparing "City" Magazines

Bruce A. Beatie

My wife works in Boston, I work in Cleveland, and we both have a friend whose apartment in New York we occasionally borrow. So I "live" simultaneously in two major cities, and know a third quite well. While that situation has its unfortunate aspects, it does give me a perspective on these cities unavailable to the non-commuting native. And since I find all three cities fascinating, I've gotten in the habit of reading their "city" magazines—Cleveland Magazine, New York, and Boston.

After several years of doing this, however, it began to seem to me that there were differences among these magazines that had little to do with the nature of the cities that furnished their subject matter. To be specific: I began to feel that some of them were consistently giving me more for my money than others. Since my curiosity can sometimes be satisfied only with statistics, I began to spend some of my travel time with a ruler, taking notes. I accumulated data on six magazines:

- **Cleveland Magazine**, September 1986, $1.95, 140 pages
- **Northern Ohio Live**, October 1986, $2.00, 108 pages
- **Ohio**, October 1986, $1.50, 100 pages
- **New York**, November 10, 1986, $1.95, 176 pages
- **Boston**, September 1986, $2.25, 286 pages
- **New England Monthly**, November 1986, $1.95, 112 pages

All, including Cleveland Magazine, are magazines of local or regional interest, similar in cost and including guides to places and events; all are monthly publications except for New York, a weekly.

In trying to classify the contents of these magazines, I found that some categories had fuzzy edges. I included under the heading "essays," in general, feature stories by single authors, but the pieces so identified in my notes range from 36 to 239 column inches [average: 98]. "One-page texts" was intended to include coherent "essays" of 30 column inches or less, but sometimes a section of a magazine consisting mostly of such texts would have, as Boston did, one or more texts as long as 90 inches. "Miscellaneous paragraphs" turned out to be a fairly unambiguous category: an example would be the "Fall Fashion" section of Cleveland Magazine, where disconnected short paragraphs describe illustrations of female clothing. Most of what's included under "visuals" consists of photographs. "Titles etc." includes tables of contents, titles and subtitles, lists of various sorts, and lots of empty space.

Here is a summary of what the six magazines contained, in percent of column inches devoted to each contents-category:

Bruce Beatie is a professor of German and comparative literature at Cleveland State University, a freelance writer, and a frequent contributor to The Gamut.
The most obvious conclusion from the statistics is that advertising reduces cost to the customer. Boston, which has more column inches of pure advertising than Cleveland Magazine has in the whole magazine, costs less than half as much per page as Northern Ohio Live, which has the least commercial advertising. It is surprising, however, that New York, whose percentage of space devoted to paid advertising is also relatively low, can manage to cost so little.

The statistical categories posed a serious problem only for one magazine, Ohio, which contained an inserted “Advertising Section” from the Ohio Forestry Association and Hocking Technical Institute on the 1986 Paul Bunyan Show in Nelsonville. In the statistics above, the whole section is included in “Other ads.” In fact, however, only 195 of the 480 column inches in this section were regular business advertising. Including its prose with that of the rest of the magazine would raise the total to 812 column inches, and lower its cost per page of prose to 5.5 cents. That issue of Ohio also contained articles on the Ravenna arsenal, the Osage orange, Cincinnati’s football coach, the town of Abbotsville, cemeteries in Ohio, the month of October, and the sycamore tree (part of the advertising insert): its only “negative” article chronicled the fall of a Toledo brokerage firm.

Northern Ohio Live, which is marked by its high percentage of “guide” content as the most specialized of the six, contained articles on Margaret Bourke-White’s Cleveland photographs, on a Hudson artist, the plans to renovate Cleveland’s waterfront, and the achievement of such plans in Akron’s Canal Square; only some of the restaurant reviews had negative overtones. While the most expensive of the magazines in terms of its overall cost per page, its cost per page of readable prose is remarkably low for its specialized nature.

Cleveland Magazine, on the other hand, while relatively low in cost per page, is the most expensive per page of readable prose. And much of its prose is negative. The issue I took notes on had only two long articles: an attack on Ohio Chief Justice Frank Celebrezze, and a report on a racial incident on
Cleveland’s West Side that, as the contents page announced, had "made Cleveland a national disgrace." Included in "Letters" was an essay-length response by John T. Corrigan to a severely critical July 1986 story on his tenure as prosecutor. Other "features" were on Fall arts and Fall fashions.

New England Monthly was as varied in its contents as Ohio. Its longest article recounted a conflict of interest over a Boston television station. There were humorous tales of the trials of restaurant reviewing and of a man whose brother-in-law was the LaRouche candidate for Tip O’Neill’s seat, a report on Joe Kennedy’s successful campaign for that seat and on the problems of finding talented conductors for regional orchestras, and a pair of tongue-in-cheek articles contrasting the virtues of Vermont and New Hampshire. Its only “muckraking” article discussed lobbyists’ subversion of New England senators on the tax reform bill.

By contrast, New York had only two major articles. One was a fairly objective account of the backgrounds of Jennifer Levin, murdered in Central Park, and of her fiancé-killer Robert Chambers; the other discussed the problems facing the new school board president, Robert Wagner, Jr. A long article on "Island Travel" (counted in my statistics as an "essay") was more like an illustrated guide or even an advertising insert. But New York’s “departments” contained superb “one-page” reviews by people like Peter G. Davis and John Simon.

The magazine closest to Cleveland Magazine in the negative or muckraking tenor of its major articles was Boston. Its longest articles criticized the project to renovate Boston’s convention center, the Hynes Auditorium, and the absence of blacks from Boston’s major law firms. Somewhat less negatively, it reported on Harvard President Derek Bok and what may happen when he retires, and on a local murder case. At the same time, however, it reported very positively on “the gentleman G-man,” William Weld, U.S. Attorney in Boston who was off to a new job in Washington. And as with New York, Boston’s "departments" were excellent, five of them long and substantial enough to be counted as "essays."

The quality and variety which I find in the editorial contents of New York and Boston could, you might argue, derive rather from the cultural richness of the cities they serve, and/or from the greater size of their populations, which provide much larger advertising markets, rather than from editorial policy. But the regional magazines Ohio and New England Magazine should, if that were the case, show a similar poverty which, in my judgment, they do not. The fact that Northern Ohio Live, so much more specialized in character than any of the others, manages to provide, each month, an interesting set of articles underlines the point. In other words, Cleveland the city is a much more interesting place than its “city” magazine suggests.

What of my original question about "getting my money’s worth?" The differences between the six magazines are, I discovered, even greater than I expected. What can the consumer do? Producers of foodstuffs are required to list nutrient content on packages. Perhaps magazines should be required to list, on their title pages, the issue’s “cost per page of readable prose.”

Editor’s note: The Fall, 1986 issue of The Gamut, a non-commercial regional magazine, contained 96 pages, consisting of about 84.5 pages of prose, 4.5 pages of “titles etc.,” 6 pages of visuals related to the articles and stories (not counting marginal illustrations), and a 1-page advertisement. This brings The Gamut, at its $12-a-year subscription price, to a competitive 4.7 cents per page of prose. And we’ll match the quality of our prose against anybody’s.
Confessions of a Franglais-phile

Jesse Bier

What she said was, "We're next-to-neck."

I was shuffling the cards for another round in our 500 rummy game, where she had just melded three "jakes" there at the last in a very close game. I stopped shuffling, transfixed in the old familiar way.

I said, "The English expression is . . . Wait a minute, never mind what it really is, let me plumb your mind. We've got a practically drawn game—"

"It's almost a—tie," she said.
"Which is: next-to-neck."
"That's it," she said, maybe piteously.

The trouble was, I understood her. I have understood my French wife for thirty-five years now, in and out of simple Franglais. I understood her just last week when she said—the context doesn't count, it rarely matters in itself, it doesn't excuse, it can't adequately prepare, in fact it disappears completely—"I holy hope so." Don't be fooled by the alliteration; that doesn't explain the eruptive aptness, the precision involved. Think about it. What does a person mean anyway in conventional English when he only hopes so? Does he mean that he won't also be wishing at the same time, anticipating, conjuring, expecting, contemplating, looking forward to, desiring, craving? Come to think of it, I myself have never only hoped. But if you holy hope, then you are sincerely, ardently, devoutly involved in whole-hearted, all-encompassing, compacted hoping. See what I mean? God help you.

Let me not dawdle over certain simple mistakes of our early years together, though they were always picturesque, like her diligent shopping on the occasion of my birthday one year for handcuffs for me, instead of the smaller and more reasonable, not to say more fashionable, cufflinks. I also remember the time she had "flint" in her throat and searched for some "horsehound candies," because she knew better, in the States as well as in Britain, than to ask for "whore-hound" in polite or even commercial company. Selling a pound of "string beams" was always enlightening to grocers, but what in the world bakers made of requests for "ragged muffins" I never found out. Actually, she was more fetching as an amateur naturalist than shopper, wanting to know the name of "the wife of a pork" or expressing a certain fondness for "bobby cats."
But she really came into her own in what I call her middle stage, when she would now and then find herself engaged in some "wild shoo chase." It was hard for me to help her out, considering the fact that, on my own, I had never been quite sure of what a bonafide "wild goose chase" really was. Was it a hunt for a feral goose who was running amuck somewhere, or simply a hue and cry for some reason after an ordinary garden goose? I never knew. But it struck me then, as it still does, that a shoo chase is even more problematic. It certainly involves dealing with the unknown, and there's a sputtering danger in it. It couldn't be anything but wild—the very shoo itself or, for that matter, the chase—but definitely both of them at the same time . . . or, in super-charged franglais, "time-o-sameously." Then there are the oomlums.

"Stay away from the quais at Cherbourg," she'd counsel, "with all those oomlums."

All right, you take "hoodlums," and you hear hommes at the end of it and you cancel out "hood" or any other prefix because you're scared about the whole idea of my ambling around those wharves looking for a ship or ferry—which happens to be leaving from Dieppe—and running into Jean Gabin's old gangster crowd: a sort of shapeless harborside group of looming, ominous thugs, i.e., "oomlums." They could easily beat me into "smoothereens," steal my American Express card, and leave me in an absolutely "flaggety" condition in some cul-de-sac.

There are slips of language that are expressions of Another Mind. They show somebody not in error but in the throes of transcendent redefinition, which is where my wife has settled in her latter stage. I am not talking about a raw and "blistery" day, which I would describe as merely verging on new sense. I mean something like the genuine subtlety of "steer your tea well," which is a criticism about how well you contain the tea in your cup and no mere reminder to mix the sugar. Similarly, if somebody appears "smoked in" during conversation, that is a vivid commentary on his obscure vocabulary or mental fog; it's the long-overdue antonym of "clear-headed" in English. But for an example of meta-language itself, how does "twice as less" come across?

It was just before our card game, after she put aside a genoise cake, confessing that she had put twice as less butter-cream in it than the recipe ordered. "Twice as less": never mind all the timorous negativity in half-as-much. She went forthrightly into the task and decided simply and emphatically, because she knew better—which she does—to use twice as less. And I appreciated the nuance. I saw it at once. Unless all by myself I'm falling under a spell, I understood her perfectly.

You too? I holy hope so.
Herb and Surgeon Donna Waite

HERBERT ASCHERMAN JR.

Portrait Photographer
1846 Coventry Village, Suite 4
Cleveland Heights, Ohio 44118  
(216) 321-0055

Official portrait photographer for The Gamut.
Coming

- Vincent Dowling on the Abbey Theatre
- Computers that simulate thought
- Earthquakes in the Midwest
- Cleveland Public Library's John G. White collection
- Fraud in science
- Restoration of historic churches in Cleveland
- Macchiavelli's ethical principles

Look for these and more in forthcoming issues.