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THOUGHT TOOLS FOR A NEW GENERATION

ESSAYS ON THOUGHT, IDEAS
AND THE
POWER OF EXPRESSION

A FESTSCHRIFT COLLECTION
IN RECOGNITION OF

DR. FRANCES BROWNING COGAN

ROBERT D. CLARK HONORS COLLEGE
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PRESENTED BY GENERAL ACCLAMATION AND CONSENT

BY

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IN
SOLEMN RECOGNITION
AND
JOYFUL CELEBRATION

OF

THIRTY YEARS
OF
DEDICATED SERVICE

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UNTITLED BACKGROUND TALE

JENNIFER MATTESON (KAAKE)

Introduction

This piece is a background I wrote for two characters in a fictional novel I'm co-writing. I wrote it to figure out how these two meet, and how they each feel about it. It also helps me define their identities, even if it doesn't make it into the book.

This happens to be the same novel I was working on while taking Professor Cogan's classes. Not that I write slowly, but I have gotten married, had 2 girls (now three and seven), and have a day job to pay the mortgage. Fortunately my co-author is in the same stage. Our first book is actually about two-thirds of the way done.

I hope you enjoy this, or at least laugh a bit.

Untitled Background

Eliz wakes up slowly to a pleasant, deep humming sound. Like the engines of a large ferry or something. She has no idea what is making the noise, but there it is, so soothing, steady, and rhythmic. She lets herself soak in the moment. No past, no future, just the pleasant present.

Slowly she becomes aware of other sounds, like her breathing, as her awareness spreads outward.

Someone else is here, breathing rather anxiously. Strangely enough she can hear his life. Faintly, like a symphony playing in an auditorium several blocks away where someone had left the back door open. Even more amazingly, she can tell from the music that the person is a he, very anxious and agitated, and that he is also very old.

An image comes to mind of an old man's face - his nose is broad and flat, his eyes are violet-tinted gray, and his hair and full beard are pure white, like a skinny Santa Claus. In the dim light his hair seems to glow. He is looking at her through a window, or maybe a small door?

No, she's crouched down in a small space and he is bending down to look at her. He is surprised and concerned. He speaks to her in a soft, melodic language that includes clicks and whistles.

She is too permeated with fear to respond. Whatever she's afraid of, she cannot think of it. Out of breath from running, she's worried that this isn't a good hiding place. While she can't understand the old man's words, she's sure he wants her to come out into the open. Definitely not.

"Stop talking to me! They'll find me if you keep talking! Just go away!" She hisses at him

and retreats as far as she can against the wall. Suddenly, the man looks away from her and starts fiddling with his shoe.

Another pair of shoes almost trips over him. Eliz can see a corner of a plaid suit coat, which fails to conceal the end of a weapon. This is it, the source of her fear. She is frozen, afraid to breathe or blink. The old man talks to him in yet another language. The newcomer is brusque and roughly shoves the old man aside as he moves away.

The old man whistles and gestures for her to come out, but she is unable to move. Heart pounding, Eliz doesn't even dare to breathe in relief. Slowly, her whole body rises a few inches off the floor and gently floats towards the opening where the old man is standing.

What the . . . ? She must have fallen asleep again. Weird, bad dream. The intensity of the fear fades quickly, although something isn't quite right.

The pleasant humming noise she was listening to before is still there, but now it sounds strained, skipping a beat now and then. Somehow she knows there is no one else here besides herself and the anxious old man. Where are they?

Blinking her eyes, Eliz jolts quickly awake. Streaks of light that seem to stretch out infinitely in front of her are blindingly confusing. It takes several long seconds for her brain to sort out that she is looking out a window, and the streaks of light actually do go on "forever."

It's like being on the set for *Star Wars* when they are traveling at light speed, except for real. These are really stars- this is a spaceship hurtling through space and it's not running smoothly. This is really happening. Her heart rate jumps up again.

It takes some effort to tear her eyes away from the window and look down at the ground. To her left there is another chair, occupied by the old man. He is not driving casually- sweat is pouring off his forehead, his body taut with tension. His gnarled hands grip the controls tightly, slightly trembling. He looks like he might get sick at any moment.

What in blazes is he doing?! Did he kidnap her? Where are they going? Going. No, wait. She shouldn't be going anywhere, she has to go back! She ran away in a panic, leaving behind a hotel bill, the ship, and Scot! Guilt washes over her at the realization she had left him all alone on a strange planet, despite the fact that she couldn't have stayed there if she wanted to. He had completely slipped her mind and now he is lost!

She leaps up from her chair and stumbles over to the old man. Bracing herself on the back of his seat, she taps him on the shoulder.

"Excuse me, but we need to stop! I have to get back and find Scot. He's all alone with no one to look out for him. We have to turn around!"

The man spares a hand to gesture behind him. He quickly grips the controls again as the ship shudders and sways. Eliz follows the gesture with her eyes and her mouth

drops open.

Behind the seats, the cabin's ceiling windows have something blocking the view of the streaking stars. It's bigger than the ship they are in, roughly spherical, and following so closely it bumps against the hull as they bob and sway. It's Zed's ship! The old man is towing it.

On the bench behind her seat there is a prone human figure lying motionless. Or almost motionless—as the ship sways, its body slides a few inches in the direction of the sway. Even though the figure is ominously encased in shadow, Eliz can recognize Scot. She lurches over to his side.

She tentatively reaches out to touch his face, which is frozen in an expression of shock. The smooth cold metal is familiar, solid, and oddly comforting, even though his body resembles a sculpture dedicated to the effects of violence. She considers switching him on, as the ship shudders and shakes again and sends her sprawling across his body. She braces herself on his arm and freezes as she catches a glimpse of a hole blasted straight through to the center of his head. It's at least 2 inches across.

Her heart sinks. This is really bad. She doesn't dare power him up now- not with that kind of damage. She'll have to wait until they are in a more stable environment, hopefully with someone who understands electronics. She turns back to the old man, who is incidentally swearing and yelling at her. The ride is getting rougher by the second.

Suddenly she pauses, glancing back and forth between the old man, the ship in tow, and Scot's body. She is struck by how self-absorbed she has been – this old man has gathered together all her stuff, and is struggling to return her -somewhere.

The point is they are no longer in immediate danger. Danger that was too immediate and close to comprehend or even think about. The old man helped her escape. She will worry about his motives later. He saved her life and here she is letting him have a heart attack trying to fly this ship.

She stumbles back over to his side. He is yelling at her, probably trying to get her to sit down.

“Shhh. Calm down before you hurt yourself. Let me take over for you.”

He spares a startled glance in her direction as something massive whizzes past them at high speed. It must be a larger, faster ship. It was out of sight before she could register its shape. Great, this ship is the slow-moving vehicle towing the RV in the right lane of the galactic freeway, about to blow a tire any minute.

She watches the man carefully as he wrestles with the controls to get back on the flight path. Not that she's flown many spaceships before, but she does have a pilot's license, effectively. Thinking about the freeway analogy, this situation reminds her of an old Honda she owned once, which would shake and shudder from about 50 to 55mph. Once you got it up past 60mph, the ride would smooth out and things were good.

She walks around the chair to the man's left, and puts a hand on his shoulder. "I'm serious. Scoot over and let me give you a rest." The controls for this ship are like two independent joysticks, and she takes over the left one first. As the ship threatens to spin completely out of control, the old man jumps out of the seat and lets her grab the other, protesting loudly.

Ok, now Eliz sees where the main problem is. The seat is too close to the controls, making them difficult to maneuver. The controls behave oppositely from each other, which takes her a few minutes to figure out. The accelerator is a button, which she must push repeatedly instead of holding it down. Whoever designed this should be fired. This is beyond the most complicated video game interface she has ever seen. She uses her annoyance to focus on adapting to it.

About fifteen minutes later, the ship is now humming through space much faster, with a much smoother ride. Zed's ship is no longer bumping against the hull, and the controls are much less jumpy. She consciously relaxes the muscles in her shoulders and settles down to drive for a while.

Fortunately, there is a monitor showing the route, along with a red blip showing the current location of the ship. She's got the blip aligned with the route and they are about halfway to wherever they are going. She spares a glance at the old man.

He had stopped shouting after the first few minutes and resorted to pleading, until it became obvious that she wasn't changing her mind. Now he is leaning back in the chair she woke up in, lightly dozing, exhausted.

Eliz focuses all her attention on flying the ship for the next twenty minutes. Once she's got the controls worked out, it's not very hard, but it does require constant attention. She figures out a pattern for pushing the accelerator button so that her thumb doesn't threaten to fall off.

Suddenly, a purple light illuminates the console, making it difficult to make out the navigational "map" that she's been following. After five minutes of trying unsuccessfully to figure out what it means, she is thoroughly frustrated. Then the light blinks for about a minute, before shutting off. About 10 seconds after that, the engines make a high-pitched whining noise, which gets slower and lower until the engines completely stop.

The sudden silence is eerie and complete. It is broken by another spaceship passing them at high velocity. It comes so close that its gravity wake pushes the dead ship out away from the main flow of traffic. Eliz does her best to aim the ship and manages to get one last burst from the engines to position them out of harm's way.

At this flurry of activity, the old man wakes up and jumps out of his chair. He goes over to a side panel and fiddles with it. He turns back to Eliz, scowling. He starts speaking to her very intensely. She still cannot understand a word he is saying, but the gist comes through clear enough. "I tried to tell you about this! Now we are stranded here and it's all your fault!"

“Do you realize that I can not understand anything you are saying?” Eliz stands up and goes to look at the panel he is fiddling with. It’s completely cryptic- there is nothing to indicate what the symbols and lights mean, other than that there is a problem.

“Look, I know you’re angry, and I know there’s something wrong with the ship, but yelling at me does no good because I can’t understand your language. I’m sorry.” She leans back against the wall and meets his gaze as calmly as she can.

The old man seems puzzled. Maybe *he* can understand *her*, for some reason. He gently reaches forward and takes her hand. Pulling her to the end of the ship opposite the driver’s seat, he indicates two floor-to-ceiling clear tanks that appear to be empty. He reaches up and touches the top of the tanks, tapping on them.

“Oh, so we’re out of fuel. Right?” Stranded on the side of the highway. That’s likely to be why he was yelling at her for flying faster.

The man sits down and puts his head in his hands. Eliz looks up through the ceiling window at Zed’s ship, faithfully floating directly above them. If only there was some way to get into it, then they could continue the journey. Scot was going to refuel it. Hopefully he got to it before. . .

She looks down at Scot’s still form and firmly shoves that train of thought aside. She puts a hand on the old man’s shoulder, and points up to the ship. “That ship has fuel. If we can get into it, we could use that one. And I know how to fly it. And read the controls.”

The old man jumps up, gaze following her pointing. He laughs and claps her on the shoulder. She can almost hear the “why didn’t I think of that?” in his exclamation. She grins at him.

“Probably because you are tired, and you don’t know how to fly it. The problem is, how do we get from here to there? I’m not excited about spacewalking.” Something about floating alone in a space suit in the vast expanse of space triggers her claustrophobia. She shudders.

Returning to the console in the wall, the old man pushes some buttons, and Zed’s ship begins to move. Slowly, it passes over the top of the ship and sinks down behind the wall opposite the console. There is a door in this wall, presumably to the outside, about where the door in Zed’s ship should be. It’s hard to tell, as there are no windows near the door.

Next, the old man crosses over to the door and opens it, revealing an airlock with windows to the outside. Eliz cannot tell how the two ships are held together- there are no obvious docking structures or clamps anywhere. She also cannot figure out how they are going to get across the 200 feet of vacuum between the two ships.

While she is examining the ships, the old man rummages around and then comes back to the door carrying a very ordinary looking soft-sided suitcase. It’s so ordinary it seems odd. He motions her to come join him in the airlock. She glances back at Scot. “How are we going to lift him? Both of us together are not strong enough, and I can’t turn him on until he is fixed.”

At this the man smiles a knowing smile and points at Scot's body. Slowly, Scot rises up off the bench and floats through the air into the airlock space. For a split second her brain pauses, and attempts to process what she is seeing. Then she remembers the "dream," where the old man was lifting her in very much the same way. Was that real?? Is this real? Her brain flashes back to images of Yoda in *Empire Strikes Back*, lifting Luke's ship out of the swamp.

She stands there, in shock, as the old man closes the interior door, and opens the airlock. Gripping the suitcase, he steps out into space and walks across to the door of Zed's ship, towing Scot's floating body, as if there was an invisible bridge encircled with a tube of air. Eliz watches him in amazement as he places Scot's hand on the ID pad and the door to the airlock of Zed's ship opens. The old man puts the suitcase inside, floats Scot into the airlock's alcove, and steps inside himself.

Eliz starts to step out and follow, but freezes before her foot contacts any bridge surface. Adrenaline surges through her body and she finds herself unable to make the leap of faith necessary to step onto the vastness of deep space. Only slightly comforted by the fact there is air for her to gulp, she retreats back away from the edge. She's unable to tear her eyes away from the bottomless universe of stars below her.

The spell is broken by the sound of the old man shouting at her. He is gesturing her to join him. She screams back at him, "How do I do this!?" She could swear he said something like "Use the force."

"But I'm not a Jedi knight! I'm going to need help to do this!"

The old man reaches a hand out to her and suddenly she feels herself floating, like Scot, out away from the airlock towards Zed's ship. While this experience violates every law of physics she can remember, it feels somehow fundamentally right.

Something clicks with her common sense in a way that it shouldn't. As she floats across the void she feels a calm she hasn't felt for a long time. This is fun, and amazing, and so weird. It's dreamlike and magical, yet so real.

And over way too quickly. She arrives in the triangular airlock wishing she could do that again. Her mind is resonating with this new awareness. Maybe she can get him to teach her that trick when they are all safely arrived wherever they are going.

The familiarity of the airlock is comforting. Yet at the same time, in the corner of her mind there is something lurking, something related to this familiar, comforting place that is so mind-numbing that her mind is desperately avoiding it. The resonating exhilaration is mixing with dread; that she will have to face this something soon. She sees a flash memory of the plaid coat with the weapon hanging and again firmly shoves that memory back down.

She closes the exterior door, turns on the light, and leans against the wall, dizzy. This is the first time she's ever entered the ship from space. How long should they wait for the air pressure

to stabilize? She uses the airlock console to check the gravity, life support, and the status of the ship's systems, just as she had practiced so many times.

A green light blinks on the console, and the door opens. Eliz leads the way into the main room of the ship, turns on the indirect cove lighting and pauses. She glances over the kitchen, the pilot's station, the table and chairs in the center of the room, and the sofa against the far wall. Everything is exactly as she saw it last. The old man puts a hand on her shoulder and points to Scot.

"This way, please." She leads them to the second door on the left. Wall sconces turn on automatically when she opens the door, throwing a soft, indirect light over the room. This very small, gray bedroom has a Scot-shaped padded table instead of the traditional bed, with several consoles and built-in cabinets lining the walls. Eliz goes over to a console on the far side and turns it on. She pulls some cable out from the cabinet below the console, and turns to the old man.

"Please put him down here, with his head at this end." The old man crowds close to Eliz to gain enough clearance to maneuver Scot onto the table. Eliz activates the magnetic locks built into the table to hold Scot in place. Now he won't be sliding back and forth when the ship adjusts direction.

The old man's beard bobs as he watches, fascinated, while Eliz opens a compartment in Scot's chest and plugs three separate cables in. Then she navigates through the console's menu structure and selects some diagnostics to run. That started, she activates the re-charger to get Scot's batteries up and running, and affectionately rubs the top of his head. "We will have to wait for these processes to finish before doing anything else with him." Eliz indicates the main room, and the old man leads the way out.

"Next we should check on the fuel." Settling herself in the pilot's seat, she turns on the main view screen and brings up the ship's computer interface. Just like she'd practiced so many times in the simulations, she layers palettes for all the main systems across the screen, so she can juggle power allocation for the journey.

She accesses the navigation and brings up some star charts. One of them shows a little red blip. She points it out to the old man. "That's where the computer thinks we are. What do you think?"

The old man speaks softly, and goes right up to the eight-foot plasma screen, touching the surface of it. The blip and the stars rearrange themselves so the blip is under his finger. He jumps back, startled, but then leans forward again and moves the blip around, watching the effect it has on the view. Then he steps back and frowns, and uses his other hand to indicate a space several inches over to the left.

Eliz types into the keyboard and the blip moves over relative to the stars. The old man nods, and they spend the next 15 minutes mapping out their destination. Once that's established, Eliz sets the computer to calculate their fuel needs, including using the ship's shields to tow the

other ship. In a few minutes, it's returned a fuel estimate of 6 units, and they currently have 4.75. Eliz experiments with shutting off different systems, and gets the requirement down to 5.5 units.

Suddenly, she realizes she needs to take a break, maybe even a shower. She's got a massive headache, and she's thirsty. Ducking in her own bedroom to choose a change of clothes, she tries to explain to the old man that she'll be out in a few minutes. Not entirely sure that he understands, she locks herself in the bathroom.

Twenty-five minutes later, she emerges feeling much better. The computer is still patiently waiting for her to figure out the fuel problem. The old man, on the other hand has been busy. From the smell of it, he found some chicken noodle soup in the pantry. She hadn't realized she was hungry until now. He's set two glasses of water on the table, and is just serving up two bowls. Eliz laughs in amazement, and fetches the spoons and some bread.

"How did you know where to find everything?" she asks, as she starts digging in.

"I study quickly," he replies. She jumps, startled to be able to understand something he said. She wonders if he just spoke English, or if he's figured out how to get her brain to understand his language. At this point either option is equally plausible.

"When did you. . . I mean, how did you. . ."

"Eat. Then talk. I find books in," he pauses, thinking hard. "That room." He points to her studio, the room in the back, near the sofa. Eliz just stares at him. His voice still has the same musical intonation of his native language, and she can hear the whistles and clicks slipping in around his "T"s and "F"s. But his words are very clear. Somehow he's doing it.

"You're right, you do learn quickly." She takes a piece of bread and dips it in the soup, wishing she had fresh herbs, and maybe some veggies to add to the soup, which is straight out of the can. Bland as it is, she eats it quickly.

In contrast, the old man sips his soup cautiously. After a few spoonfuls he stops and makes an odd face. "The food is too much." He rubs his tongue on his teeth and drinks some water.

"That's ok, you don't have to eat it all if you don't want to."

"No, what is? Too much." He tastes it again, searching for words. He tentatively takes a piece of bread and tastes it. His face lightens up. "*The* food is not too much."

Eliz decides to increase his vocabulary. She names the soup, the bread, the water, and their utensils. She gets him some extra bread, and tries to clarify the "too much" idea. She drops the topic quickly because he is starting to get frustrated and can't get the idea across. He seems to understand her much better than he can make himself be understood. She changes the subject.

"My name is Eliz." She gestures to herself. He repeats "Eee-lix."

“Good! My name is Eliz, and your name is. . . ?” She points at him questioningly.

His answer is not something she can pronounce. He repeats it several times, but the closest she can come to is “Zarox.” He laughs at her, but nods acceptance.

“Hello, Zarox.”

“Hello, Eelix.”

They both laugh. Eliz finishes the soup, and Zarox finishes the bread.

After they are done eating, Zarox seems to sober, and sighs sadly.

“What’s the matter?”

Zarox goes over to his suitcase and pulls a daypack-sized sac out of it. He rummages around and pulls something small out of the bag. Whatever it is, she can’t see it; he is clutching it in his fist tightly. He crosses over to the sofa and sits down, gesturing for her to follow. “Come. I have something you have. It cannot wait any more.”

Curious, Eliz joins him on the sofa. The feeling of dread she felt earlier resurfaces, but she side-steps it by trying to guess what he’s holding.

“It is big.”

Eliz smiles. “If you can hide it in your hand, it’s small.”

Zarox shakes his head sadly. He looks her in the eye and takes her hand. He finds the words he needs to say with determined concentration.

“No. It is *big*.”

That feeling of dread swells abruptly as he gently turns her hand over and drops the tiny thing into it. She realizes what it is a split-second before it hits her hand and she gasps in horror.

“No! No, no, no. . .”

She stares at the gold ring, hard evidence of the thing she was trying so hard not to think about. But there is no denying the solid, heavy weight of it; a larger duplicate of the one she is wearing on her left hand. But it’s *his* ring, Zed’s ring.

The last time she saw it, it was still on his hand. The night was balmy and they were cozy, cuddling, cradling each other’s hands. His hands were strong and comforting. She was trying to figure out if he had drifted off to sleep or not.

Now he is gone. Dead. The idea of it is chilling, stabbing through her. Grief comes crashing

up over her like ice-cold waves, pulling her down forcefully. She struggles to fight, but soon realizes that resistance is useless. He is gone. Dead. Never coming back.

The physical pain of it is crushing, smothering, drowning her. Fine. Good. Then she wouldn't be so utterly alone and lost. Let death come for her as well.

But she doesn't really mean that. It is against her nature to give up. The tempting, easy path has never been hers. The concept of actually dying of grief, suffocating, gives her a trapped, enclosed feeling. Claustrophobia surges up in her and she gasps, struggling up to the surface of conscious thought.

It's like treading water in the middle of the ocean during a storm. She is alone, alone, alone. The waves of emotion pound her, drench her, toss her around.

Suddenly she is aware of someone else's presence- it's that music again. Someone else is holding her, buoying her up, renewing her energy. Somehow, she makes it to the dry land of hope. Exhausted, she curls up and drifts off to sleep.

Eliz wakes up disoriented yet again. She's lying on the sofa in the ship. The lights have dimmed to give that middle-of-the-night feel. The computer's screensaver flickers unobtrusively. She has no idea how long she slept or what time it is.

Sitting up, she glances at the old man asleep in the co-pilot's chair. Part of her wants to strangle him, for forcing her to face the nightmare. Part of her wants to thank him for being there. Without him, she might be dead too. Without him, she has no idea if she would drown in grief or not.

This is just the beginning, she reminds herself. It will get worse before it gets better. She rises to refill her water glass. The old man continues to sleep peacefully. While the sadness is by no means lifted, she feels slightly detached from it, as if this was happening to someone else.

She wanders around the ship, quietly touching a chair here (he ate a tuna sandwich), a framed piece of art there (he bought that for her birthday). Everything in the ship is so new, there's a surreal hotel-like feel. All this stuff is technically hers but she's not used to it yet. She wanders into her studio.

This is more like her space. Half-finished projects are scattered around. A stack of canvases lounges in the corner, a bin of acrylic paints next to the mug of brushes on the counter. The track lighting spotlights a painting she'd done for him, a large bright landscape of vineyards in Yamhill County. He'd said it reminded him of laughter.

In the far corner is his drafting table, with engineering drawings spread out, a neat contrast to her mess. His oddly skinny traveling guitar is leaning up against the table. She picks it up and feels the surface of the wood. He had made it with the intent that she would teach him how to play it. The lessons weren't going very well, but they promised each other they would work on that together.

Quietly, she strums the strings and absently tunes the instrument while trying to keep the sadness from overwhelming her again. It really has beautiful tone. Both her sadness and the guitar share that tone, and she meshes them together in some classic blues riffs.

The studio is too cramped for the music, and she moves out to the sofa, modulating the bridge as she sits down, and really lets her emotion flow out through the music.

She'd played the blues before, of course. Diligently practicing the greats, she'd won honorable mention in high school. And she's had other losses to draw that raw emotion from.

This is different. At this moment, she feels extraordinarily connected to the music; everything else fades out of her perception. There is a power to this pain that the music is channeling. It flows out of her and swirls around the room. To her surprise she can feel where it is going.

She looks up, fully expecting to be able to see it, somehow. Instead she finds some cups, placemats, and the centerpiece from the table swirling around through the air. In her peripheral vision she becomes aware that Zarox is staring at her in shocked amazement.

Abruptly, she stops mid-note, and all the objects drop to the floor. One of the cups breaks in two.

"What the. . ." She lets her voice trail off. This has been the most bizarre day of her life. If the cups suddenly sprouted legs and wandered back into the kitchen she would not be surprised. On the other hand, one more unexplained impossibility happening in front of her might cause her to faint.

She leans back into the sofa and carefully sets the guitar down, propping it against the wall. She closes her eyes.

"Did you do that?"

The old man's reply sounds like he's waking from a trance. His voice is almost a whisper. "No, Eelix. You. You do that." Gently, he comes over and sits next to her. Eliz opens her eyes and just stares at him.

"What is the name for that?" He waves his hands in a circular gesture.

Has she gone nuts? Is any of this real? Since she can't answer these questions by herself, she decides to play along.

"Um, this is a guitar." She points to the instrument, but she's starting to feel dizzy, with the music, the power, and the pain still resonating throughout her. She leans back and closes her eyes again, which helps quite a bit. "The sounds are called music. That type of music is called The Blues.

“That thing with the stuff flying around the room, that’s called “impossible” or “can’t happen.” Something that doesn’t make any sense, with no logical explanation. A long time ago people would have called it magic.”

“Magic?”

“Yeah, magic. Like what you did to move Scot, or float me across space, or pull me out from where I was hiding. Then there’s how you knew to misdirect the man with the plaid coat, how you tracked down my ship, Scot, and Zed’s ring. How you can understand what I’m saying, or learn the basics of my language in just a few hours. You knew I was shutting the memories out, and that I needed to face them. You knew I was hungry before I did. None of it makes any sense. It’s all “impossible.” Who *are* you?”

“I am Zarox. I make magic. Magic is what I do. I find you because I feel your magic. It is strong.” Tentatively, Zarox puts a gnarled hand on her forehead.

The music she hears around him swells and gets louder. Warm, tingling calm seeps into her head from his hand. She opens her eyes and realizes she’s no longer dizzy, and feels much better.

“How do you do that?”

He thinks for a moment. “I begin. . . .tzch. . .I make the. . .huff!” He frowns. “I do not have the words to tell you. Yet. I will learn. I will know the words. Then I tell you.”

He pats her hand in a grandfatherly way. “I hear you talk, and I learn. I need to learn your words. I need to learn what happened to you. I learn the words to ask first, and the words to understand.”

Eliz looks down at his hands. “So much has happened in a short time. I don’t know if I remember it all. I don’t know where to begin.”

“Who is the man with the ring?”

Eliz sinks back into the cushions and closes her eyes again. She doesn’t want to start here. But Zarox has the other half of the story. She desperately wants to understand. Something somewhere has to make sense. Somehow.

“Zed. He was my husband.” She pauses, thinking about all the little things that made him who he was. How he sat, his favorite foods, his tastes in music. To keep the swell of emotion at bay, she decides to focus on what he did. “He invented and designed this ship, and Scot. Our world doesn’t have this technology yet, and he wanted to advance the world faster than it is ready to. He wasn’t very good at finding or retaining money, or resources, to make his ideas real.

“He was arrogant, demanding, and short tempered with all the people who called his ideas crazy, which was pretty much everyone he met. We met at a fundraising dinner, where he mis-

took me for a fellow scientist. We talked for so long, he didn't get a chance to meet with any of the other investors. So I offered to help him out."

"It was a few months before we started going out, and I helped gather enough funding to build this ship." Eliz pauses to assess Zarox's intense concentration.

"Am I going too fast?"

"No, it is fine. What is husband?"

Defining marriage. That's a loaded question. She thinks for a few minutes about the best way to explain it. "When two people love each other, and decide to spend the rest of their lives together, they make a promise to each other to love and support each other for the rest of their lives. The promise is called "getting married" and the people making the promise are "spouses." Husband is the name for a male spouse."

"For the rest of your life? When you die?"

"Um, yes, 'for the rest of your life' means until one of us dies. At least, that's the idea."

"Until. I understand. The promise is over when death happens."

"There's more than one tradition about that, but essentially, yes." Eliz bites her lip to bring her focus back to the present. She takes several deep breaths.

Zarox takes this opportunity to summarize, and steer the conversation away from death. "You and Zed get married. Zed makes this ship. Eelix and Zed go on a voyage."

"Yes. We tested the ship several times in our own solar system. No one else would believe it would work." Eliz sighs in frustration. "Not even my own brother believed us. He refused to come to our wedding. That's the marriage ceremony. We decided to see how far we could go. . ."

Many hours later, Eliz looks down at the sketchbook she had retrieved from the studio. Communication happened much faster when she started to illustrate the ideas. There were pages of family relationships, trees growing, art, music, spaceships, planets and maps. She hadn't gotten very far into the story of her honeymoon, but Zarox was speaking and understanding English even better than before.

When she had first brought out the sketchbook, Zarox had been fascinated with the paper, and kept asking her how it was made. Frustrated, she realized she didn't know, and after three years of art school had never really thought about it.

Now she's just exhausted. Her eyes are refusing to focus. Eliz gets up to make herbal tea. Zarox has nearly finished all the bread in the ship. They will need to move on soon. Somehow

Eliz feels they are going to have to discuss Zed's death first. The idea of doing that just adds to her fatigue.

A flame of anger, resentment, and rebellion against everything spreads within her. She is startled at how strong it is. Her empty teacup breaks abruptly.

She feels the old man's hand on her shoulder. "I stay here with you. Until we return to my home. Then I help you learn the magic in you. If you learn, it gives you stronger. It gives you control. If you choose it." He moves his other hand over the cup, and the pieces gather themselves together and become whole again.

She closes her eyes and takes a deep breath. "Yes, I choose it. Teach me to be strong."

THE BALLAD OF ORFEA

JENNIFER SCHROEDER

INTRODUCTION

The following is an excerpt from my thesis, *The Ballad of Orfea: A Classic Myth Retold as a Children's Book*. Although the inspiration for my story was drawn primarily from two sources, Ovid's account of Orpheus in his *Metamorphosis*, and a medieval poem titled, *Sir Orfeo*, I was influenced by several others. As the Honors chair member of my thesis committee, Professor Cogan was of significant assistance. Even as far back as my freshman year, she helped lay the groundwork for my thesis. We spent many hours discussing themes from my favorite literary classics as well as debating the retellings of some Disney works. Usually our discussions revolved around gender issues, specifically how women were portrayed in works like *Mists of Avalon*, *Silence*, and even Disney's *Mulan*.

When it came time to write my thesis, although I wove together a story based on older sources with universal themes, mine would differ in two striking ways. I would organize the story into sonnet form, creating an entirely new version and most importantly, I would have a female hero. No longer would the female character be responsible for "paradise lost" as with Eve, Helen of Troy, and Guinevere, among others. Since I decided to set my story in 15th century mythological Britain, I used similar names to that of *Sir Orfeo*. Orfeo became the more effeminate sounding Orfea, and likewise Heurodis became the more masculine Heurodin. I also specifically named the castle Arcadia and the land Edenshire, to create the illusion that it is a paradise and would also be lost, though not by the fault of the female.

I chose to write my tale in sonnet form (iambic pentameter) because it was a form gaining popularity in Britain in the late 15th century. I also felt that the iambic rhythm and rhyme scheme provides for greater fluidity and a song-like quality when read aloud. I first began writing sonnets during my freshman year at the honors college, and it was due primarily to the encouragement of Professor Cogan. For one of her Honors Literature classes there was an assignment option to write a sonnet, which I chose. Much to my chagrin, although she enjoyed the topic and thought it overall well-written, she had to coach me on perfecting the iambic rhythm. Thus, when it came time to write the Ballad during my junior year, I not only had greater facility with the form, but also had an advisor who could read my drafts and assist me.

Though my story has many themes, I consider a few of them to be primary. The first being the integrity of one's word. By this, of course, I am talking about what it means to be honest and how to use the power of one's words for truth and goodness, never for gossip, lies or insults. Along similar lines, the story also encourages compromise and mediating as ways to overcome problems, rather than using violence. Another main theme would be death as a part of life, which is something one cannot escape or defeat. However, I also strove to prove that art in any form lives on, if remembered, long after its initial creation and thus becomes immortal.

While I attempted to maintain historical accuracy with my setting,, my humble ambition was to create a children’s story that retold one of my favorite myths poetically. I achieved this by recognizing similar themes in countless sources and drawing on them for both artistic and literary allusions. I then shaped them into my own organized story in sonnet form, creating a truly original work, with all the universality of past themes.

In Edenshire the king and queen did reign
For many years as though in paradise
The castle called Arcadia remained
A just stronghold, on free from every vice.

However one day in the month of June,
Throughout the land foreboding rumors spread:
Rhiannon, dragon-sorceress of doom,
Was luring folk to the land of the dead.

Some said she was a witch who ruled fair,
The magic Otherwolrd where dreamers dwell.
Who dared to pass by her enchanted lair,
And so to Edenshire must bid farewell.

In fear the subjects asked their king and friend,
To meet Rhiannon and to seek her end.

Heurodin listened gravely to the lore,
Declared at once: “I’ll bravely seek this foe
To learn what evil she may have in store.”
Orfea shook her head and whispered “No!”

“Milord,” sighed she, “I fear if you should leave,
And journey forth to seek the realm unknown.
You’ll find not there except eternal sleep,
While I’ll be left your cold and empty throne.”

That night the king slept little, well he knew
Orfea had the wisdom to foretell.
Yet in the morn he had to see it through,
And bade Orfea a tearful farewell.

“Go if you must,” spoke she, “but know this too,
That should you fall, I vow to come for you.”

Then King Heurodin leapt astride his mare
And journeyed 'till a fortnight's days had past
He found the ympe-tree in darkening air
And knew he'd come to the entrance at last.

The Otherworld, as it was named of old,
Had air so thick with magic that the trees
Appeared to breath, and shimmered like white gold,
While fairies danced upon the evening breeze.

Yet in the eerie glow of the moon's beam,
The beings of the realm made not a sound.
But seemed as though asleep and in a dream,
And left no footprint where they trod the ground.

Thus through the Otherworld the king had come,
To find the dragon queen called Rhiannon.

The rumors told she lived in mountains bleak.
Thus did Heurodin choose the darkest course,
And when at last he reached the highest peak,
Beheld the cave's black moth and loosed his horse.

The cave was dark but lit by a faint glow,
By squinting he could see the awesome sight:
A cavern that was filled with gold, although
Rhiannon stood before it in full height.

"Who dares disturb my slumber," she hissed low
The king drew forth his sword and proudly spoke,
"I came to find if you be friend of foe."
"I'm foe," she spat, "to you trespassing folk."

Although his shield blocked every flame that poured,
He fainted from the heat and knew no more.

Meanwhile, safe in her castle slept the Queen,
But in her slumber she found little rest.
This night she had a strong foreboding dream,
That left her with an ache inside her chest.

For in her dream she saw what she had dread:
In darkened cavern lay a broken sword,
And King Heurodin, as though he were dead,
Or deep in slumber, while a dragon roared.

Orfea from this fright'ning dream did wake.
And though she wished the vision was untrue,
The image from her mind she could not shake,
Therefore she pondered fast what she must do.

Just as the moon was taking its last bow,
Orfea then remembered what she vowed.

Downstairs within the castle's keep she raced
And at the bottom of a spiral stair,
She stopped at last then turned about to face,
A room with things of beauty old and rare.

Then softly did she set her light aside
And quickly knelt before an ympe-tree chest.
She gazed upon old carvings with her eyes
Then whispered word of magic with great zest.

And when at last the spell had left her lips,
The chest began to shake upon the floor.
Then when it stopped, she kissed her fingertips,
And raise the lid that kept the great armor.

The queen found armor thinking it was wise,
To save her Kind Heurodin in disguise.

The queen prepared to depart on her quest.
She knew the harp of gold she could not lack.
She donned the armor taken from the chest,
And strapped her harp securely to her back.

Orfea then at midday bid farewell
And left a steward ruling in her stead.
She galloped on Epona through the dell,
From Edenshire to the land of the dead.

Orfea's steed was swift as it was strong.
It hurtled over fences, stone and mounds.
And when they came to rivers wide and long,
Epona splashed across with graceful bounds.

And when the sun rose on the fourteenth day,
They saw the ympe-tree basking in its ray.

Not even with the slightest glance behind,
Orfea lead her horse into the gloom.
And come what may she knew she had to find,
The place where King Heurodin met his doom.

Orfea journeyed on despite her fear.
The fairy creatures hushed and watched in awe.
For music still held power in their sphere,
Thus could she roam free by Rhiannon's law.

And as the sun was setting in the west,
At last Orfea reached the darkened cave.
"In here," said she, "will be my final test,
To keep my vow and King Heurodin save."

Then with the words she stepped into the dark,
Disguised in armor with her golden harp.

Once in the cave a dim light could be seen.
But when Orfea found the source she froze.
For right before her slept the dragon queen,
With glowing flames flickering from her nose.

Try as she might she could not tear her gaze.
Rhiannon truly was a fearsome sight.
Her scales spiraled round her like a maze,
Her teeth both sharp and numerous, were bright.

Her body rested on a heap of wealth,
Her tail wound around her like a snake,
Her wings were strong for flying, fast with stealth,
Her dreamy smile seemed false; was she awake?

At last Orfea forced her gaze around,
And was the king lay crumpled on the ground.

She cried aloud, forgetting all her fear
And rushed across the cavern for his sake.
To her dismay in slumber he appeared,
So deep she feared he never would awake.

Instinctively she strummed her harp of gold,
And from its strings a melody arose.
A thrilling tune, both passionate and bold,
And she sang words to fit the tune she chose.

“Hear this song and know I’ve kept my vow.
Dear king waken from your somber dream.
The spell that bound you to this land ends now,
And thus you must return to your dear queen.”

And as the melody drew to an end,
The King Heurodin’s eyes slowly opened.

Rhiannon who it seemed had been asleep,
While the charming music filled the air.
In truth had spied with eyes a bit a peep,
Awaiting the right time to spring her snare.

Orfea helped the king to stand upright.
“Oh noble lord,” said he, “I owe my life
To you.” Orfea stepped into the light,
And said, “No lord am I, I am your wife!”

“My queen how came you to this dreary cave?”
Said she, “I gave my word to come to you.
And if I could not keep the vow I made,
Then death would claim me for being untrue.”

Thus did Rhiannon quickly cross the rift,
And snarled “you may yet receive that gift.”

“**W**ho dares defy the law that I uphold?”
The wrathful dragon glared down at her feet.
“You cannot be allowed to be so bold,
As to assume that death you can defeat.”

“Rhiannon,” said the queen, “I know this much,
I never once presumed to conquer death.
But there ARE things that death can never touch,
Provided there are those to give them breath.

“My golden harp with its enchanting song,
Is what awoke my husband from his dream.

For though I know that I may soon be gone,
My music will live on though time unseen.”

“I see,” Rhiannon said, “Your words are true,
Yet I will not release the two of you.”

“**W**ithin this realm,” continue Rhiannon,
“There dwell the fairy folk of magic bright.
And spirits of glimmer and terror run,
Throughout the trees enchanted with their light.

“But also in this realm there lie the souls
Of mortals who reside in earth no more,
And now remain forever in the folds,
To wonder in the Otherworld’s deep core.

“And any who enter this land by force,
Will meet with their just end of endless sleep.
While those that stray by a natural course,
Find happiness and gifts that they might keep.

“Thus by my law, oh queen, can you roam free,
Alas your husband must remain with me.”

Orfea stood a moment without fears,
Then once again resumed her golden harp.
“Rhiannon listen to my tale with tears,
And then re-think if your words be to sharp.”

Orfea sang her heart, and her sweet voice
Resounded through the cave; she sang of how
Abandoning her husband was no choice,
Undying love had made her speak her vow.

The queen then sang that should the king remain,
T’would be as though she had broken her oath.
And thus her efforts all would be in vain,
Therefore Rhiannon should confine them both.

And when at last the song had reached its peak,
The tears Rhiannon shed rolled down her cheek.

“**O**rfea you have well fulfilled your vow.
Your honesty and music touched my heart.

Yet still can only you go freely now,
For death can have no hold on love or art.

“Thus shall you go a take with you a gift.
Choose from my gold or jewels if you please.
Yes, find what you desire but make it swift,
And then this cave I’ll let you safely leave.”

“Rhiannon I am honored by your offer.
So help me keep my word and keep yours too.
Return to me so I’ll no longer suffer,
My husband’s soul and then all words are true.”

Rhiannon nodded once and it was done:
The king was free, and Orfea had won.

They quickly bid the dragon queen farewell.
And then Orfea called her faithful steed.
The rode Epona through the magic dell,
Not glancing back, but riding on with speed.

They journeyed to their castle in delight
And at long last they saw their splendid towers.
The steward met them in the waning light,
And so they feasted in the moonlit hours.

The king and queen lived long and ruled fair,
Rhiannon no more roused the kingdom’s fears.
For they knew no how well she ruled her lair,
Thus peace returned and reigned uncounted years.

And now though time has passed the tale lives on,
Its song remembered, though the singer’s gone.

THE SUCCESSFUL PROJECT MANAGER: IS ANALYTICAL THINKING ENOUGH?

KIMBERLY PUTTMAN, MA, PMP

Project managers, those people who are responsible for successfully delivering a product within constraints such as scope, schedule and budget, are continuously challenged to succeed in a complex and dynamic project reality. The basic techniques of project management are, at their core, analytical methodologies that seek to break problems up into parts and then solve each “part”, assuming that successfully solving each “part” results in the achievement of the desired end goal. If project management were that straightforward, though, we ought to observe corresponding project success. Instead, “an estimated 68 percent of corporate IT projects are neither on time, nor on budget, and they don’t deliver the originally stated business goals.” Clearly, analytical techniques, by themselves, do not ensure project success. Instead, project managers that apply both interpersonal skills and creativity may improve their chances for project success but perhaps more importantly, evolve the project management approach itself - particularly as projects become more complex and as project environments rapidly change.

The techniques utilized by project managers, and indeed the field of project management itself, emphasize scientific, rational principles. As such, project managers – employing analytical thinking - problem solve in a linear fashion as follows: “1) Observe pattern or possible relationship of factors; 2) State hypothesis; 3) Find facts; 4) Analyze facts; and 5) Test results against hypothesis.” Moreover, analytical thinking “dissects a whole into its component parts...to discover the characteristics of those parts and their relationship to each other and to the whole. Finally, analytical thinking is often predictive. Gathering data related to causes is useful in this model, because it allows you to predict and control outcomes of actions.

Original development of project management in aeronautics, defense and construction was concerned with answering questions of how to deliver a workable product. Project management tools and techniques developed in this period focused on breaking elements down into component parts, completing and measuring those parts, and estimating success based on extrapolating from current data. A work breakdown structure, for example, breaks the deliverables of a project down to smaller and smaller components, so that each can be assigned. Similarly, a project plan divides all the (presumably known) work into task with durations and deadlines for each one. Updating the work breakdown structure, or updating the tasks on the project plan indicates the current status of the project schedule, and may predict the eventual success (or failure) of the project.

An apprentice project manager must employ these techniques, based in analytical thinking, as basic skills for project management. In defining project scope alone, the project manager must ask the major stakeholders what they want, listen carefully to their answers, arrange the data in a reasonable framework, and reflect the information back to the stakeholders to confirm that she understands what they want. This process is remarkably similar to the scientific method stated above. An additional task for a project manager is to create and track a budget. The project manager uses the tracking of actual costs in relationship to planned costs to predict whether

the project will be delivered on budget, as well as on time. This is a highly linear model, using both data collection and data analysis to predict the future outcomes.

Professional development for project management is based on learning analytical skills. However, "...the "softer" and more intuitive approaches to human activities are still under represented in the PMBOK® Guide, which still focuses almost exclusively on linear, rational, analytic approaches to the world omitting alternatives that promote more flexible, relational, improvisational perspectives." Analytical thinking alone does not ensure project success. Apprentice project managers can create precise schedules, but if they fail to motivate their team to complete project tasks, the end product may not be achieved. As project managers evolve, they must develop the interpersonal skills of leadership, motivating others, negotiation, and other soft skills in addition to their honed analytical skills.

Project management, as a discipline, is beginning to recognize the importance of these interpersonal skills. For example, "in the 1990s, a large number of research projects focused on the human resource aspects including team building, leadership development, and motivation." Further, the latest edition of *PMI Network* leads with a story on emotional intelligence, noting that emotional intelligence is a key differentiator between acceptable and exceptional project management. The leader with high emotional intelligence is more likely to inspire and motivate the team to get results. Finally, a third author makes a direct link between people skills and project success. He writes: "technology, tools, and techniques are not the reasons projects fail; they fail because of people. Our focus as project management professionals is typically on the tools and techniques used to select projects, estimate costs and resource requirements, (and) prepare plans and schedules.... Leadership and people skills, however, are also essential to project success." By examining the organizational structures under which a project manager functions, we can see why interpersonal skills can be so critical to project success.

Project managers are often leaders in an organization without organizational authority to achieve project goals. In traditional organizations, project managers may be responsible to define, execute and complete a project, but both the project manager and project teams report to a functional group manager. Alternatively, the project manager is the human resources manager of the team, with the ability to hire and fire, as well as the responsibility to track project work. Whether it is because the project manager has no direct authority to provide positive or negative consequences, or because the project manager is the leader of the project, with the authority to make decisions, skills in dealing with people become critical for success.

Interpersonal skills comprise both internal and external elements. Internally, the project manager is a team builder, recognizing the strengths and weaknesses of each team member, and motivating each person to contribute uniquely to the work of the team. Externally, the project manager is skilled in mediating agreements, listening to the often competing needs of project stakeholders, articulating a cohesive vision that key stakeholders can agree to, and maintaining the commitment of the stakeholders while navigating the execution of a project, a challenge that requires exceptional leadership abilities. Without mastery of both the internal and external components of leadership, a project manager cannot succeed in complex projects.

Project management began with a focus on analytical thinking and rationality, and expanded to include a focus on emotional intelligence as a valuable component in project management success. Even with this expansion, though, "...the validity of project management as a profession still comes into question as failures to plan accurately and control within 'acceptable' limits are commonplace." Why are project failure rates still so high? One answer to this question challenges some basic assumptions of project management theory. As previously noted, traditional project management assumes a known and stable project reality. Fundamental to the definition of the project is that it has a definite beginning and end. In order to create a work breakdown structure, you must assume that significant project work can be completely defined. Further, rudimentary project management theory focuses on managing a project independently, as if the world outside of the project is subject to relatively little change. However, practitioners of project management deal every day with complexity and instability. A change in the market can make a product obsolete before it is even prototyped. The illness of a key project member can not only shift schedules, but also change the dynamics of the team. To challenge these basic assumptions of linearity and rationality in project management theory, several researchers are looking at alternative ways of modeling project, organization and system behavior. These models, in turn, suggest that project managers must master yet another set of skills.

It is beyond the scope of this paper to delve into the entire body of work related to chaos, complexity, and systems theory. However, in a highly simplified application of chaos theory, the argument is that human systems are unpredictable because there are so many influences on the system. Not only may small changes have unforeseen consequences, but influences that are thought to be causal may have unpredictable results. Based on the application of chaos theory, and other theories of complex systems, Thomas develops the idea of the project manager being the bridge between a relatively stable part of a system – the known project work – and the unstable part – the unpredicted or unpredictable factors. She calls this "surfing on the edge of chaos." Similarly, Deguire reviews organizational literature, decision-making theory, and games modeling to emphasize that mechanistic modeling is ineffective in predicting outcomes in an unstable system. She writes, "...the mathematics of Chaos and Complexity document that, events can be discrete and that, despite having full information about past events, the next occurrence may follow a pattern different from previous occurrences."

The theories of Thomas and Deguire challenge the more traditional assumptions of successful project management related to analytical thinking - as does the lived experience of project managers tasked with the achieving success with complex projects. However, this challenge does not require that we entirely discard situationally effective project management knowledge and techniques. Rather, to improve the effectiveness of project managers, we can call upon project managers to be creative thinkers. Thomas writes, "Master project managers need to develop the emotional and spiritual skills and capabilities to create buy-in and provide orientation even in complex, unknown and uncertain environments." This is a vehement call to action, but one must look beyond the boundaries of traditional project management to explore alternatives to analytical thinking. Even a cursory examination of research on creative thinking provides several alternatives.

From the world of art and architecture - a traditional stronghold of creative thinking - comes the concept of “design thinking.” As a working definition, Pollard calls design “intentional creation”. In this definition, design is not limited to buildings and interior spaces, but applicable to organizations, products and relationships between people.

The Stanford University Institute of Design showcases design thinking on their new design school website. Although they stop short of defining the concept precisely, they emphasize a multidisciplinary approach, which takes into account the knowledge of designers, economists, artists, engineers, and doctors, among others, to solve design problems. Adding to this concept of collaboration, Pollard and Saffer clarify design thinking’s focus on customer needs. In design thinking, a project is not an engineering problem to be solved by equations, graphs, and charts. Rather, a project provides an alternative that solves a particular customer’s multifaceted need – a need that may be only incompletely understood at the inception of the project. Pollard and Saffer emphasize that design thinking incorporates many models of problem solving, including prototyping and brainstorming, to create multiple options for solutions. Finally, Design thinking values emotion, intuition, and creativity. In the words of Saffer, “In analytical thinking, emotion is seen as an impediment to logic and making the right choices. In design, decisions without an emotional component are lifeless and do not connect with people.”

This model of problem solving seems ideally suited to address the shifting certainties that occur in complex projects. It inherently includes adaptation and learning in the iterations of the process. At the same time, this approach may be difficult to apply in traditional project management situations. Without having a clear work path or targeted end result, it is challenging to predict when any particular project may be complete. Applying design thinking wholesale to many projects may also be risky – the multidisciplinary, creative team may or may not be able to achieve results.

In one company though, design thinking differentiates the company from their competitors. The company not only asks about the expected feature set of a new product, or its bottom line profitability, it asks about the users’ experience of the product. Employees want to know what the users need to see in the product to make it appealing as well as useful. By integrating utility and emotional satisfaction, their company has moved from floundering to profitable in a very short time. When we look at this company’s experience in project management terms, they still use basic principles – they manage projects by reviewing schedule, scope, personnel and financial resources. The project managers, though, are teamed with designers, whose job is to innovate, not just to deliver the project on time. The synergy between the two sets of skills creates an environment where innovation can both occur and be profitable.

A second approach to creative thinking comes from Nadler and Hibino, with their concept of Breakthrough Thinking. In their model, Nadler and Hibino define “the research approach” (analytical thinking) as thinking which seeks to divide the problem in component parts, solving each of the components, and assuming that adding all the component parts then solves the whole problem. Their criticism of this style of thinking is that in a rapidly changing environment, new situations are unique. Solutions that may have worked in the past may not be effective in the future, because the complex system may have changed dramatically. They argue that innovation must be driven by a different set of assumptions. Since they assert that every situation is unique, collecting data about the problem is of only limited usefulness. More useful, they

believe, is a clearer understanding of the ultimate purpose of the endeavor. It is, then, more important to focus on the ultimate goal, and possibilities for solutions, rather than focusing on “the problem”.

To put this more concretely, the authors give the example of a company that kept losing client files. In a research approach, the process for solving this problem would be to discover all of the circumstances under which files would be lost, and create a solution for each of these individual instances. Theoretically then, if a file were to be lost, there would be clear methods of finding it again. Using the authors’ proposed Breakthrough Thinking approach, by redefining the purpose as effective file tracking, the goal becomes designing a system where files can’t be lost. By looking at fundamental issues of system design, “the problem” may be solved in a more effective way. To further summarize the qualities of a breakthrough thinker, the authors write: “Intuitively effective thinkers...are purpose-oriented to find the right problem, cope well with soft data, seek needed information from a variety of sources, involve many other people, tolerate ambiguity, and deal with a future-focused vision of solutions-after-next.”

In a third approach to creative thinking, Plsek proposes an approach known as Directed Creativity. He defines Directed Creativity as “the purposeful production of creative ideas in a topic area, followed up by deliberate effort to implement some of those ideas.” This approach includes both using imagination to identify new approaches, as well as the application of these new ideas. In his model, “directed creativity involves using specific techniques to perceive things freshly, break free of the current patterns stored in memory, make novel associations among concepts stored in memory, and use judgment to develop rather than reject new ideas.” Again, Plsek emphasizes that identifying patterns may not be helpful in creative problem solving, if the patterns limit thinking rather than facilitating it.

In an example of applying Directed Creativity in the workplace, Plsek tells the story of a quality improvement team that was trying to enhance the process of medication administration in a hospital. Initially, the team had used a rational, analytical approach to improvement, which involved finding all the reasons why medications were administered improperly, considering the causes of those errors, collecting data on those errors rates, implementing changes, and checking to see if those changes worked. Using this model helped them to solve many errors. However, they could not solve the problem of late medication delivery. The team tried posting medication log sheets. The staff was both too busy to look at the charts for medication reminders, and too busy to look at the log sheets, so the method did not work.

Approached in a purely logical way, this was an intransigent problem. In this example, the team turned to Directed Creativity to solve the problem. They understood that the problem was how to remind people of the time. Their reminders based on the sense of sight failed. However, when they approached the problem in a more creative way, they looked for alternatives that could use other the other senses of touch and sound. In this particular case, the solution ended up being adding small stick-on alarm clocks to patient charts that would ring at the right time. By redefining the problem, and imagining alternatives, the team was able to come up with an innovative and effective solution.

Finally, from the management of software development projects comes the concept of Agile software development, the last application of creative thinking introduced in this paper. Instead of starting with a defined and clear set of requirements, Agile Development assumes that the software feature set, and the understanding of what those features really do, will change over the life of the project. Instead of defining and planning up front, and then executing to the plan, Agile methodologies start with a prioritized feature set, develop the first feature in a two to four week time frame, and then move on to the next feature. Daily team meetings focus on communicating current work, and current roadblocks, so that the project manager can work to resolve the roadblocks. The product is considered complete when enough of the high priority features are available for use.

This methodology focuses on a customer based, iterative cycle that does not assume that all the work is known up front, or even that all the work will proceed linearly. At least one proponent of that view believes that using this methodology in project execution, along with more traditional project management methodology's strength in initiation and close out will improve the success of many software projects.

It may be easy to label all four of these creative thinking approaches – Design Thinking, Breakthrough Thinking, Directed Creativity, and Agile Development - as the latest management fads or creative thinking fashions. All approaches emphasize teams working together to find creative solutions, but simply working in a team does not ensure innovation. They emphasize understanding what a customer wants, whether it is prototyping a design or piece of code for review, or finding the fundamental purpose of the exercise. However, understanding the root cause is also a hallmark of analytical thinking. Each of these creative thinking methodologies proposes a form of iteration to get to a better solution of the problem. However, this again, is similar to what we see in traditional analytical thinking, as we propose a hypothesis, test it, see the limitations of the hypothesis, and propose another one. What, then, do these methodologies offer to the master project manager?

Exceptional project managers can use these approaches to guard against complacency. Fundamentally, these methodologies reinforce the idea that not everything in a complex project can be known. Beginning project managers may rely too much on detailed schedules or precise budgets alone to ensure project success. Good project managers add exceptional interpersonal skills these linear project management skills. However, by becoming aware that innovative projects, in particular, are subject to fundamentally unmanageable complexity, master project managers understand that creativity and flexibility are essential to the success of complex projects.

Even more than creating awareness, the methods based in creative thinking offer alternatives to linearity. When the solution must be radically different, or the environment is changing more rapidly than is manageable, methodologies that foster creativity become more valuable. However, this is not a call to discard analytical thinking. A significant portion of projects and products can only be completed if standard project management tools and techniques are applied well. Rather, master project managers must add intuition, integrity and emotional resilience to their strong analytical skills. By using analytical skills, the ability to support and motivate people, and the courage to think creatively and foster creativity in their teams, master project managers enhance the skills they need to thrive and continually achieve project success.

PARADIGM SHIFTS IN INTERNATIONAL POPULATION AND REPRODUCTIVE POLICIES: THE INTERNATIONAL CONFERENCE ON POPULATION AND DEVELOPMENT AND CHANGING REPRODUCTIVE POLICY IN INDIA

COLLEEN REGALBUTO

Introduction

Prior to the 1994 International Conference on Population and Development (ICPD), reproductive health policies – particularly those in the developing world – operated under the assumption that reduced population growth was the key to improved development outcomes. However, the ICPD and its Program of Action represented a paradigm shift in how the world viewed reproductive health and population policy, with a new focus on the health and well being of the individual a goal of reproductive policies. Part I of this paper will answer the following questions related to this paradigm shift: 1) What factors led to the outcome of the ICPD? 2) In what way did women’s non-governmental organizations (NGOs) and the actions of individual countries contribute to this shift? 3) What gains have been made in the eleven years since the conference?

Examining the population/reproductive policies of an individual country is one way to have a better understanding of reproductive health policies and the factors affecting them. India, a country with a long history of reproductive health policies, is a particularly interesting case, especially since (as the second-largest country in the world) its population policies have a significant effect on the world’s population as a whole. Part II of this paper will examine changing reproductive health policy at the national level using India as a case study. It will address the following questions: 1) How has India’s population policy changed in the past ten years? 2) What factors influenced these changes? 3) What effect have the outcomes of the ICPD had on these policies? 3) What progress has India made in moving towards a client-centered approach to reproductive policies? 4) What are the challenges it continues to face?

Part I: Reproductive and Population Policies and the ICPD

Reduced Population as a Means to Development

In the 1950’s and 1960’s industrialized nations viewed access to contraception and family planning services in developing nations as means to reduce rates of population growth. Inspired by theories such as those espoused in Ehrlich’s *The Population Bomb*, which argued that increasing human populations would lead to wide-spread famine and environmental destruction, policymakers and researchers argued that pressure on natural resources from increased world populations was the major cause of poverty around the world.

Western policymakers were “dominated by fears that population growth in the Third World would literally eat into the fruits of economic progress, leading to deepening poverty on a global scale.” Therefore, most population control strategies were primarily concerned with the “effects of population growth on economic development, environmental degradation, food supplies and other macro-level phenomena” than they were with the health concerns of individual women and men. As a result, individuals’ concerns “remained peripheral to the policy debate, both at the national and international levels” and the goals of family planning policies were not increased choice and improved health outcomes for individuals and families, but rather targeted population reductions.

To slow population growth, the US and other industrialized nations financed a massive dissemination of contraceptive technology to developing nations. Furthermore, in 1967 the United Nations established the United Nations Trust Fund for Population Activities (UNFPA), whose primary purpose was to “to assist developing countries with high population growth rates and low national incomes [in solving] their population problems.” The UNFPA was financed voluntarily by governments and private donors.

World Population Conferences of the 1950’s and 60’s (Rome, 1954 and Belgrade, 1965) generally operated under the assumption that reduced population was key to improving social and economic development in developing nations. However, the 1974 World Population Conference in Bucharest demonstrated a shift in thinking. Its World Population Plan of Action set out specific targets for world population “stabilization” and highlighted population growth as the main obstacle to social and economic development; however, this plan generated a great deal of debate. A number of developing nations argued that industrialized nations had used population issues as a way to distract attention from the underlying economic inequalities of the international economic order. They pointed out that in industrialized nations, economic and social progress had led to lower birth rates (as opposed to the other way around), and that improved social and economic progress would lead to lower population outcomes in the Third World as well. An outcome of these concerns was that at the Bucharest conference population policy was no longer seen as a means to development (explicit population targets were dropped from the World Population Plan of Action) but rather as “an *integral part* of socio-economic development policies” (my emphasis). However, it was not until twenty years later, at the International Conference on Population and Development (ICPD) held in Cairo, Egypt, that the effects of population policies on individuals were truly taken into consideration.

The Effects of Women’s Movements on Population and Reproductive Policies

The emergence of the global gender equality regime has owed much to “the leadership of a global women’s movement and its associated NGOs.” In the case of United Nations conferences such as the ICPD, global women’s networks have been able to influence global agendas through policy advocacy and strategic partnering.

From the 1960’s to the mid-1970’s, the mainstream women’s movement in the West did not formally organize against international population policies, despite the fact that some such policies were damaging to women’s health. The main reason for this was because most Western feminists assumed that the goals of the women’s movement and the global campaign to

slow population growth were compatible and that having fewer children would improve the health, opportunities and overall well being of women in developing nations.

Five forces galvanized Western feminists to begin organizing against population control policies in the 1970's to mid-1980's. One was the realization that contraceptives deemed unsafe in developed nations (such as Dalkon Shield intra-uterine devices and Depo-Provera injectable progestin) were being dumped in developing nations. Another was mounting evidence of human rights abuses in population control policies (including forced sterilization and abortion). Another was the proliferation of United Nations-sponsored events, including the UN Development Decade and the UN Decade for Women, which boosted women's activism worldwide. A final catalyst was a series of meetings (International Women and Health Meetings) that activists themselves organized as alternative forums to UN women's conferences. Such meetings facilitated "linkages between women's health groups at the regional and local levels [and] educated women about the workings of the UN process." However, in spite of these accomplishments, the early years of the International Women's Health Movement (IWHM) were unable to substantially change international population control policies.

The 1980's saw changes in population policy that had a dramatic effect on the IWHM. At the 1984 UN International Population Conference in Mexico City, the Reagan administration rejected the existence of a global population crisis and argued that population growth was natural and could be slowed by free-market economies. The Reagan administration's "Mexico City Policy" also terminated USAID support for any foreign organizations (but not governments) that were involved in voluntary abortion activities, even if such activities were undertaken with non-U.S. funds, demonstrating the Reagan administration's receptiveness to the lobbying of US anti-abortion groups.

The Mexico City Policy completely eliminated US funds for the two largest international family planning organizations, the International Planned Parenthood Federation and the UN Population Fund, and dramatically changed the international population policy environment in four key ways. First, it moved the distribution of power in the population field away from the United States and across governments and multilateral institutions, creating more points of access for outside interest groups. Second, it challenged orthodox views on population, opening the door for other critiques of mainstream population policies, and created "an incentive to invoke alternative justifications for family planning assistance," including the justification of improving women's health. Another result of the Mexico City Policy was that feminist groups muffled their criticism of population control policies, "fearing that such criticisms would play into the hands of those who sought to eliminate international family planning programs altogether." A final outcome of the policy was increased cooperation between the IWHM and population planners, both of whom had an interest in maintaining women's access to contraception. Although population planners generally supported women's access to contraception as a means to reduce world populations and the IWHM supported women's access to contraception as a means to empowerment, both groups found a "common enemy in the Reagan administration" and felt compelled collaborate as a means to improve population policies worldwide.

An example of such cooperation took place during the late 1980's. During this time the New York-based International Women's Health Coalition (IWHC), in conjunction with several

other international women's NGOs entered into dialogues with members of the population establishment (including the Special Programme of Research, Development and Research Training in Human Reproduction of the World Health Organization, the Population Council and the Rockefeller Foundation). A challenge facing the participants of these dialogue meetings was that the views of women's health activists tended to differ greatly from those of scientists. Whereas women's health advocates believed that the goals of family planning programs should be the improved health and well being of women and their families, scientists believed that the goal of family planning programs was overall reduced population growth. Another source of conflict was disagreements regarding appropriate contraceptive methods for reduced population growth. While the scientists primarily advocated for provider-controlled contraceptives (such as IUDs and injectables), women's health advocates supported methods that gave women the freedom to regulate their own fertility (such as diaphragms). However, despite sources of contention and disagreements, the dialogue meetings culminated in the "quality of care" framework, a framework unique in that it reflected the perspectives of users of international family planning policies – women and men in developing countries. Several major family planning organizations, including the UN Population Fund and the International Planned Parenthood Federation, eventually integrated the framework into their programming activities. Therefore, dialogue meetings contributed to a "shared understanding on how to change international family planning" and gave participants new knowledge and frameworks to draw upon in preparation for the 1994 International Conference on Population and Development (ICPD) to be held in Cairo, Egypt.

Women's Movements' Preparation for the ICPD

When it became clear that the Preparatory Committee for the ICPD had failed to mention women's rights in its draft Platform of Action, women's health advocates representing women's networks throughout the world met in London in 1992 to discuss how women's voices might best be heard during preparations for the ICPD and at the conference itself. The group drafted a declaration entitled *Women's Voices '94: The Women's Declaration on Population Policies*. The declaration noted that population policies were generally driven by demographic goals (as opposed to quality of life goals) and argued that "population size and growth have often been blamed inappropriately as the exclusive or primary causes of problems such as global environmental degradation and poverty." The declaration argued that poverty and inequity were in fact the root causes of such problems and noted that although women "have been expected to carry most of the responsibility and risks of birth control" they had been largely excluded from the decision-making process. The declaration called for a "fundamental revision in the design, structure and implementation of population policies to foster the empowerment and well-being of all women" and specified seven ethical principles that population policies should honor: 1) That women must be subjects, not objects of population policies; 2) that population policies must be based on the principle of respect for the sexual integrity of women; 3) That women have the right to decide whether, how and when to have children; 4) That men have responsibility for their own sexual behavior; 5) That relationships between genders must be governed by principles of equity, non-coercion, and mutual respect; 6) That the fundamental sexual and reproductive rights of women cannot be subordinated against a woman's will to other interests; and 7) That women must be included as policy makers and programs implementers in all aspects of decision-making.

Population groups endorsed the declaration, as did some radical feminist groups, who “felt that only by presenting a united front would feminists have their views taken into account by all policymakers.” Overall, the commitment of women’s groups to providing a united front at Cairo “helped keep disagreements within the confines of the movement, at least until the conference was over.” In 1993 in Rio de Janeiro, Brazil, women’s groups held the Reproductive Health and Justice Conference, whose goal was to develop strategies for participation at Cairo. During this conference, participants drafted a twenty-one point statement that was even broader than the *Women’s Voices* declaration. The statement helped create a sense of cohesion and solidarity within the movement, which was “particularly valuable for feminist lobbying efforts at the final prep-com for Cairo in April of 1994.” The main goal of women’s organizations throughout the Cairo process was to “lobby government delegations and persuade them to include language in the Draft Plan of Action that reflected feminist concerns.” By and large they were able to achieve their goal – the Cairo conference came to symbolize “a women-centered approach to population policy,” in which prominence was given to the empowerment of women and the demographic rationale of population policy was downplayed.

The 1994 International Conference on Population and Development (ICPD)

Kardam has noted that, “one of the major objectives of the international women’s movement is to promote the establishment of global norms and rules for gender equality so that states can be held accountable.” For women’s NGOs, the ICPD was an opportunity to establish such norms. From the fifth to the thirteenth of September, eleven thousand people attended the Cairo ICPD conference, making it the largest intergovernmental conference on population ever held. Attendees came from governments, UN specialized agencies, intergovernmental organizations, non-governmental organizations and the media. More than 180 states took part in negotiations to finalize a Program of Action in the area of population and development for the next 20 years.

The 115-page Program of Action endorsed a new population policy which emphasized “the numerous linkages between population and development and focus[ed] on meeting the needs of individual women and men rather than on achieving demographic targets.” Vital to this new approach was empowering women and providing them with more choices through increased access to education and health services. The Program of Action advocated making family planning universally available by 2015 and included goals for girls’ education and for the reduction of infant, child and maternal mortality levels. Its 15 principles address such issues as “gender equality and equity and the empowerment of women, the integration of population into sustainable development policies, poverty eradication, and access to reproductive health care and family planning.”

Several factors allowed for inclusion of feminist concerns in the agenda. One was the fact that the US government – an outright opponent of population policies and reproductive rights at the Mexico City Conference – became a supporter of them at the ICPD. This was thanks to intense lobbying efforts both internationally and domestically by women’s groups, and to the change from a Republican president (Reagan) to a Democratic one (Clinton), who reversed Reagan’s Mexico City Policy immediately upon taking office in January of 1993. Furthermore, the UN General Assembly had decided to invite the full participation of NGOs in the forum, which provided women’s groups with the opportunity to “press for the incorporation of their ideas into the proceedings of the conference.” Another cause was the fact that most coun-

tries attending the conference supported its goals. The one most opposed, the Vatican, had hoped to form alliances with Muslim countries but soon found that most moderate Muslim states supported the conference, thanks in part to Egypt's mobilization of their support. Ultimately, the only Muslim states choosing not to attend were Iraq, Lebanon, Saudi Arabia and Sudan. Furthermore, many Catholic countries such as the Philippines, Mexico and Peru supported international family planning and needed the financial assistance of developed nations for its implementation. Finding itself increasingly isolated, the Vatican eventually voted with the consensus, adopting the entire Platform of Action for the first time in the history of UN population conferences, although it issued numerous reservations on the chapter on reproductive rights and reproductive health.

The Program of Action was only adopted after intense negotiations. Thirteen countries (Afghanistan, Brunei Darussalam, El Salvador, Honduras, Jordan, Kuwait, Libyan Arab Jamahiriya, Nicaragua, Paraguay, the Philippines, Syrian Arab Republic, the United Arab Emirates and Yemen) made statements expressing reservations or comments on specific chapters, paragraphs or phrases in the Program which they requested to be recorded in the final report of the ICPD and ten states (Argentina, Djibouti, the Dominican Republic, Ecuador, Egypt, Guatemala, Iran, Malta, Peru and the Vatican) submitted written statements for inclusion in the report.

At Cairo, countries were reluctant to commit themselves to the Program of Action until the chapter on principles (with its overarching first paragraph) was in place. In this paragraph, countries asserted their sovereign rights to implement the Program of Action's recommendations in ways that would be consistent with "national laws and development priorities, with full respect for the various religious and ethical values and cultural backgrounds of its [a country's] people." States felt that this language protected them by allowing them to implement the Program of Action's recommendations in ways they saw fit, and the inclusion of this language enabled them "to move the debate forward by joining the consensus even on parts of the language with which they were not in full agreement." The documents that emerge from UN conferences (including the ICPD's Program of Action), are not binding on the countries that approve them, although they do become part of the historical record of the United Nations, where "they are included as recommendations that have been universally endorsed." If reaffirmed enough by countries and/or other international bodies, such recommendations can slowly take on the qualities of an international norm that countries are pressured to uphold.

The Program of Action – Eleven Years Later

In the eleven years since the ICPD conference was held, many gains have been made. A goal of the Program of Action was that by 2015 "all countries should strive to make accessible through the primary health-care system, reproductive health to all individuals of appropriate ages as soon as possible." Access to contraceptives has improved significantly, yet in the developing world and former Soviet states one in six couples still have an unmet need for contraception. Women in their late teens and early twenties account for one-third of this need. Worldwide, female sterilization is the most common form of contraceptive, followed by the intrauterine device (IUD), birth-control pills and traditional methods, such as the rhythm method. Although the Program of Action argues that "governments should promote equal participation of women and men in all areas of family and household responsibilities, including, among others,

responsible parenthood [and] sexual and reproductive behavior,” contraceptive methods which require male participation (such as vasectomies and condoms) are the least favored methods, with just 5 percent of couples using them. Although many supporters of the Program of Action had hoped that post- Cairo reproductive policies would address male and female reproductive needs, it is clear that in most areas of the world, contraception continues to be viewed as a “female issue.”

The Program of Action states that “countries should strive to effect significant reductions in maternal mortality by the year 2015.” Adequate care during pregnancy, delivery and following birth is the most effective way to prevent maternal mortality rates. Since 1994, half of all countries (with data) have reported at least a one percent annual increase in the percentage of births with a skilled attendant present. However, in the least developed nations, less than one-third of births are attended by skilled personnel, and one-quarter of mothers in the developing world received no antenatal care whatsoever from skilled personnel during their most recent pregnancy. Sadly, each year more than 525,000 women (mostly in developing nations) still die from complications of pregnancy or delivery.

Since 1994, 12 countries have relaxed legal restrictions on abortion. However, in many countries women continue to face difficulties in obtaining safe and legal abortion services. Unsafe abortion remains a major problem – nearly 700,000 women die each year from unsafe abortions and unsafe abortions cause many more to suffer chronic damage to their health.

Another goal of the Program of Action was a substantial reduction in adolescent pregnancy rates worldwide. This goal is particularly relevant since half of the world’s 6.4 billion people are under the age of 25, and more than one billion are between ages 10 and 19. Delayed parenthood is one way to reduce poverty rates, since young women in particular are more likely to remain in school and improve their economic and social standing the longer they delay motherhood. However, little progress in this arena has occurred in the past 10 years – average fertility levels among both married and unmarried adolescents have remained constant since 1994, with a few notable exceptions. In areas where reduced adolescent parenthood is a political priority (such as Ghana, where the government has adopted a national Adolescent Reproductive Health Policy), teen pregnancies have declined dramatically.

Preventing and reducing the spread of sexually transmitted diseases (including HIV and AIDS) was another goal of the Program of Action. However, rates of HIV/AIDS infection have been on the rise since 1994. Over 95 percent of HIV/AIDS-related deaths and new infections occur in the developing world, where women are particularly vulnerable to HIV, thanks to social, economic and legal factors that put them at a disadvantage relative to men.

Although some gains have been made in the past ten years, the world clearly still has a long way to go in reaching the Program of Action’s objectives by 2015. In 1994 the ICPD Program of Action projected that if the international donor community would commit US \$5.8 billion by 2001 and US \$6 billion by 2004 to sexual and reproductive health care programs in the developing world a third of the need for such programs would be met, with countries themselves providing the rest. However, donor funding for such programs came to only \$2.5 billion in 2001. Further progress will not only require increased funding, but will also depend on policy

environments (locally, nationally and internationally) that support the goals of the ICPD. The next section will examine national population policy environments more in-depth, using India as a case study.

Part II: Case Study: India

India's Target System, 1940's - 1996

With a population of one billion (17 percent of the world's population), India is the world's second most populous country (after China) and adds approximately 16 million people to its population every year. Many analysts have predicted that India will overtake China as the country with the largest population in 2050. From the 1940's to the 1990's, Indian population policies operated under the fear that India's rapid population growth was a threat to its economic development and its ability to feed its population. Thus, India's family planning program (called the Family Welfare Program) was narrowly focused on control of population growth and was characterized by contraceptive targets that each state was required to meet each year. Targets were usually for sterilizations and insertions of intrauterine devices (IUDs) and were usually the responsibility of female health workers. The primary job of such health workers was to persuade set numbers of men and women (usually women) to adopt temporary or permanent contraceptive methods. Health workers were required to meet annual, monthly, weekly, and in some cases, daily targets for different methods. Evaluators would judge the success of family planning programs, and managers would judge the quality of health workers, by the extent to which targets had been achieved.

During 1975-1977, when Prime Minister Indira Gandhi imposed the Emergency Rule (in which she declared a State of Emergency and ruled by decree), Indian population control policies became especially aggressive. From 1975 to 1976, more than eight million Indians were sterilized, most of them poor men who were forced to receive vasectomies. Although these population control policies led to questions of human rights abuses, the UNFPA and the World Bank continued to donate to India's population control effort. However, resistance to the sterilization program was widespread and partially responsible for Gandhi's downfall in 1977. One factor in particular contributed to the unpopularity of the sterilization program – it targeted mostly men. Because Indian male status is derived from the control of women and of offspring, “forced vasectomies were seen as a direct assault on male authority” and “the program came to concentrate on the politically more acceptable strategy of female sterilization.” From the late 1970's to the mid-1990's, female sterilizations accounted for 80 percent of all sterilizations in India.

Murthy, et al have argued that India's sterilization and IUD target system was a reflection of “Indian officials' dim view of low-level [health] workers and women.” Government officials did not believe that rural women and female health workers could be trusted to make appropriate reproductive choices, and so, to encourage workers to meet targets and to pressure women to accept sterilization, the government promoted a system of rewards and punishments which reflected its priorities. Sterilization was the desired method of birth control: women received 160 rupees for being sterilized, and health workers were paid 50 rupees for each sterilization they initiated. However, when women chose non-permanent contraceptive methods (such

as IUDs, oral contraceptives or condoms), neither they nor their health worker received any money. Health workers were under a great deal of pressure to achieve targets: supervisors would often “insult, berate and humiliate workers who failed to meet their targets and would threaten to – and sometimes would – withhold their pay, deny them raises, fine them, demote them, or transfer them to undesirable work areas.”

In some states, various local governmental departments (such as health, education and district revenue) were all given responsibility for meeting sterilization targets. Therefore, workers in different departments competed fiercely for sterilization targets, primarily to receive the 50 rupee award. Revenue departments had an advantage over workers in other departments, as they were able to procure sterilization cases by offering women consumer goods (such as pressure cookers, table fans, saris and water containers) in addition to the usual 160 rupee payment. One worker describes the methods used by department workers to secure sterilization cases:

A revenue official of a subdistrict would go all the way to area Y to distribute pamphlets advertising that five kilos of rice would be given to women who got sterilized in area X. Then the official of area Y had to stop women from going to area X to be sterilized, so immediately he would print another pamphlet announcing that sterilization clients would get free transportation from their home to the sterilization facility in area Y . . .

Clearly, most workers felt it was worth their efforts to promote sterilization rather than to meet women’s health needs. Workers would visit only those homes where there was a possible sterilization target, not necessarily those where a woman was at risk for pregnancy complications or where a woman needed to have a delivery attended. According to one health worker, under the target system, “I was not able to give any health education to my women. There was no scope for any component other than sterilization.” Not surprisingly, this system fostered a great deal of distrust between women and health workers, particularly since “workers desperate to procure sterilization cases sometimes deliberately mislead women in order to convince them to undergo the procedure.”

Throughout the target era, hundreds of thousands of women were sterilized at government-sponsored, temporary “sterilization camps.” Government campaigns offering cash rewards for sterilization often created a demand for sterilization that the camps could not meet. The pressure to sterilize large numbers of women not only led to long waiting periods and unmanageable crowds, but also lowered the quality of care offered. One doctor described such conditions in a particularly busy camp:

In one of the camps nearly 400 clients were registered. We were operating continuously in a congested theater. There was no breathing space or room for movement. We could not complete all the cases until we worked until midnight.

India’s target-oriented family planning policies did lead to a fall in total fertility – its fertility rate fell from over six and a half children per woman in the 1960’s to around three and a half in the early 1990’s. However, some analysts have argued that sterilization policies alone did not contribute to this decline – economic developments and “modernization” in India may have also influenced India’s drop in population growth. Whatever the case may be, India’s tar-

get system eventually fell out of favor and in April of 1996 the Indian government announced a new national population policy that eliminated numerical targets completely. Additionally, in 1997 it launched the Reproductive and Child Health Program, a client-centered approach to reproductive health care.

New Reproductive Health Policies in India, 1996 and 1997

Five factors played a role in contributing to this change in policy from “target-oriented” to “target-free.” The first was research conducted by Indian academics which “documented weaknesses in the design and implementation of the contraceptive acceptor targets.” Such research found that fertility was not declining as much as would be expected given the reported increases in contraceptive use and sterilizations. The reason for this was that health workers and supervisors had been chronically over-reporting achieved targets. This finding is not particularly surprising given the pressure on health workers to meet targets. Another stream of research found that “meeting women’s reproductive and maternal/child health needs and offering them more choice in family planning methods had solid demographic payoffs.” There was also increasing evidence that fertility could be reduced in India without targets – the 1992-93 National Family Health Survey found that 20 percent of women of reproductive age had an unmet need for contraception. By fulfilling this unmet need, Indian researchers surmised, India’s population could be reduced without targets.

Because sterilization is the most effective contraceptive method, Indian officials had assumed that it would have the biggest effect on birth rates. New research, however, found that this was not the case. Those women choosing to be sterilized were generally older and already averaged four children. Therefore, the data suggested that fertility could be lowered substantially not by sterilization, but by increasing younger women’s use of temporary contraceptive methods.

A second factor was the role that women’s health advocates and women’s NGOs played in helping shape India’s population policy. Well before the Cairo conference, Indian women’s groups had lobbied the government to move towards a client-centered approach to reproductive policy. Indian women’s NGOs formed partnerships with like-minded groups both inside and outside of India and developed “ideas for analysis, advocacy strategies and program alternatives.” Of course, those women who spoke out most against India’s target system tended to be educated professionals. Poor women, those most likely to be harmed by the system, were not only “disenfranchised and without the means or opportunity to protest,” but also tended to already have low expectations of the quality of family planning and health care offered by the Family Welfare Program.

A third factor was the support of officials at the Ministry of Health and Family Welfare, most of whom “recognized the problems caused by the target-oriented approach . . . and played a decisive role in the shift to a target-free policy.” The 1994 Secretary of Family Welfare, V.K. Shunglu, acknowledged that the target system needed to be changed and approved experiments which allowed the Indian Population Council to collect data on alternative target-free population policies. Secretary Pant, who succeeded Shunglu in 1995, was also very supportive of changing the target-oriented system, in part because he was eager to close a loan with the World

Bank, an organization which was encouraging India to do away with the target system. Many officials at the local level also supported the policy change, since the target-oriented approach was a headache to administer, thanks to its “false reports, coercive practices, low quality of care, and unhappy clients.”

As mentioned above, a fourth factor influencing India’s change in policy was pressure from the World Bank, which had a long history of influencing Indian population policies and programs. In a sense, the World Bank became an enforcer ICPD’s Program of Action – Bank officials were becoming wary of underwriting a family planning program based on targets and used the ICPD’s Program of Action to argue that it was necessary for India to re-think its reproductive policies. In November of 1994, just one month after the ICPD, a joint Government of India and World Bank mission recommended a new target-free population policy.

A fifth and final factor that contributed to India’s target-free approach was the impact of the new global norms that had come out of the ICPD. In India, ICPD pre-conference workshops and reports gave critics of the target-system an opportunity to lobby for a new policy and to prove to delegates that “promoting a more comprehensive reproductive health orientation [was] on the agenda internationally as well as domestically.” Furthermore, when the Program of Action was adopted, India could not ignore its call for population policies to be concerned with the protection and promotion of human rights.

Implementing a Client-Centered Population Policy

When India removed method-specific targets from its Family Welfare Program “their sudden and abrupt removal . . . shook the system.” Because targets had driven the program for many decades, and because all policy and program efforts had been focused on the achievement of targets, their sudden withdrawal without putting in place any alternative monitoring system caused a great deal of confusion at the field level. A result of such confusion was that many policy makers and health care professionals criticized the new policy’s target-free, client-centered approach. Many feared that family planning efforts would be “diluted if broader reproductive health services [were] provided” and others feared that the target-free approach would increase birth rates. Some supervisors complained of loss of control over health workers in the absence of the targets they had previously used to judge worker performance. Some state health officials, fearing that health workers would not work unless they were pressured to do so, informed national policymakers that workers would interpret “target-free” as “work-free.”

Clearly, successful implementation of the new changes to India’s reproductive policies required not only communicating to 250,000 family welfare staff an ideological shift in India’s Family Welfare Program, but also generating their (and their supervisors’) buy-in and acceptance of the new policy. It also required broadening (and improving) the existing packages of services the Family Welfare Program offered to include such services as the prevention and management of unwanted pregnancy, the prevention of reproductive tract and sexually transmitted infections, nutritional services and reproductive health services for adolescents. Many of these services had already been included in the Family Welfare Program but had not been implemented due to lack of resources and lack of trained staff. Therefore, adding such services to the package offered by the Family Welfare Program required new levels of investment, espe-

cially regarding the training of staff and the improvement of infrastructures. Furthermore, because the impact of family planning programs had been measured in terms of increased contraceptive use and lowered fertility rates, India's new policy required a new monitoring and evaluation framework that assessed the quality of health services from the perspective of the client. This new framework included activity reports by health workers, their assessment of service quality as well as clients' reports of access, quality and attitudes of service providers. The new framework also included independently conducted household and facility surveys, which give clients a means to express their views.

The government's new agenda rested on two major policies: 1) that family planning services would be offered in the context of broad reproductive and child health services; and 2) that program planning would be undertaken at the local level based on assessments of women's needs for services. Because the government attempted to decentralize the process, it gave states the responsibility to determine how to implement the new program. In most cases, workers conducted community needs assessments and then created plans to meet the needs that their needs assessments had identified. Workers would consult with supervisors while developing such plans and supervisors would use the plans to evaluate workers' job performance. This way of evaluating health worker's job performance clearly symbolized a radical departure from the centrally defined targets common under the previous system.

The new agenda had several goals. Although one was increased contraceptive use, others focused on meeting women's needs and improving quality of care. Although many Indian policy-makers argued that the new approach was target-free, this was not entirely true. Under the new approach targets still existed, but these were targets related to numerous reproductive and child health services as well as targets for specific contraceptive methods. Under the new system, workers (not government bureaucrats) set targets themselves and viewed them as performance goals they would strive to meet "not because they felt pressure to do so but because they were committed to the goal of meeting women's health care needs."

An assessment of the new policies found that since there was no longer any pressure to meet contraceptive targets, almost all states began to report an improvement in prenatal care and safe delivery services. The elimination of the target system also improved the job performance and satisfaction of health workers. Under the new system the acceptance of reversible contraceptive methods by younger couples increased. However, the demographic results of the new approach were mixed. In some states it did not reduce contraceptive use, and in others it resulted in a 10-50 percent decline in contraceptive prevalence, but also led to improvements in maternal and child health care. However, because health workers tended to inflate contraceptive prevalence data under the previous system, it is possible that there was actually "little or no decline in actual prevalence."

India's National Population Policy, 2000

In 2000, four years after adopting a target-free, client-centered policy of reproductive health, India decided it needed an even more comprehensive policy, which it called the National Population Policy. This policy "affirms the commitment of government towards voluntary and informed choice and consent of citizens while availing of reproductive health care services, and

[affirms the] continuation of the target-free approach in administering family planning services.” The National Population Policy addresses issues of child survival, maternal health and contraception and aims to increase “outreach and coverage of a *comprehensive* [my emphasis] package of reproductive and child health services by government, industry and the voluntary non-government sector.” Among its many goals for 2010 are to “address India’s unmet needs for basic reproductive and child health services, supplies and infrastructure” and to “achieve universal access to information/counseling, and services for fertility regulation and contraception with a wide basket of choices.” The National Population Policy 2000 also supports the empowerment of women as a means to slow population growth and includes in its goals for 2010 delayed marriage and childbearing for women (women who have their first child after age 19 are eligible to receive 500 rupees) and increased school attendance for both girls and boys.

A barrier to controlling the population in India is the general preference for sons – a popular Indian saying blesses a woman by stating, “May you be the mother of 100 sons.” Even educated women feel it is important to have at least one son and will go through multiple pregnancies to have one. As one male Indian shopkeeper explains, “everyone wants a small family – two children. But if you have a daughter, you have to keep going.” The dowry tradition is one major factor in couples’ preference for male children, as families must start saving soon after a girl baby is born in order to provide her with an adequate dowry. If a woman’s dowry is deemed inadequate, she risks harassment and violence from her husband and/or in-laws. In order to combat preference for male babies, to reduce female infanticide, and to reduce the possibility that India will have a surplus of males (5 million female fetuses are aborted annually in India) the policy offers families 500 rupees for the birth of a girl. However, some critics have argued that such cash incentive policies are unworkable in India, given that birth registration in India suffers from incompleteness.

The Work of NGOs

Since India’s independence, the government has been the major actor in promoting population, health and development programs. However, the 1990’s to the present have been a time of increased partnership between the government and the private, non-governmental sector. As previously noted, the government’s move to a target-free, client-centered approach in the 1990’s encouraged decentralized approaches to population policy and stressed the importance of “community involvement, both in defining and articulating needs as well as in planning.” It is commonly believed that a localized approach is more successful than a top-down approach, since if people are involved in the planning and implementation of reproductive policies, they feel ownership for such programs, which will in turn be reflected in “better utilization of services and improved health outcomes.” Several Indian NGOs have been particularly effective in bringing the needs of marginalized populations into the public domain and in pioneering innovative ways of providing services responses to the needs of such populations.

One such Indian NGO is the Family Planning Association of India (FPAI). The FPAI was created in the 1940’s to educate Indians on issues of reproduction and sexuality and currently offers one of the largest and most comprehensive client-centered family planning programs in India. The FPAI’s client-centered approach is firmly in line with the recommendations from the ICPD, as FPAI programs work to improve women’s status in Indian society as part of

its reproductive health initiatives. The FPAI integrates skills training courses such as literacy, typing and sewing into its reproductive health programs and also supports gender awareness programs in which girls are encouraged to marry later and have smaller families.

Another Indian NGO that has successes with promoting a client-centered approach is the Population Foundation of India (PFI). The PFI argues that reproductive policies should operate from a rights-based, gender-sensitive approach and states that, “social development, including population stabilization in India should not and cannot remain the sole concern of the government.”

The PFI manages reproductive and child health programs in states throughout the country whose goals are to create awareness of different types of contraceptive methods, to generate demand for these contraceptives and to simultaneously help to provide high-quality services to meet these demands. The PFI also has a number of programs which fight against sex determination and the selective termination of female fetuses. A mainstay of PFI programs is the promotion of partnerships between health providers, community groups and government at the grass-roots level.

India's Population Policy Today

Today, Indian women bear an average of just under three children, a steep drop from the 6.6 of 50 years ago. However, many Indian policy-makers argue that under three children per woman is still too many, since India is home to 17 percent of the world's population competing for resources on only 2.5 percent of its land. Although India embraced the conclusions of the ICPD and has implemented a variety of client-centered reproductive policies, “the national mood increasingly favors a tougher approach.” States have been experimenting with a number of methods to slow population growth – some have considered denying educational benefits to third children, and others are turning to incentives such as pay raises and access to land or housing for government employees who choose sterilization after one or two children. Eight states currently have laws requiring members of village councils (and in some states, civil servants) to have only two children. More than 4,000 elected local council members (men and women) have lost their village council positions in states with such laws. Vijaykumari Markande, a lower-caste female local council member and mother of two daughters, noted that her mother-in-law's nagging, along with taunts from neighbors, compelled her to get pregnant for a third time, in the hopes that it would be a son. When she gave birth to her third daughter, she was dismissed from her post as a council member. She noted that although she was a good council member, she lost her job because she was “an obedient daughter-in-law at home.” Saroj Pachauri, regional director of the Population Council's Southeast Asia Program and a critic of “two-child” policies, argues that such policies are unacceptable in a democracy, and that “all the progress India made since Cairo will be wasted if the states continue on the path of coercion and disincentives.” Other critics have noted that those ousted from local government as a result of the two-child policy are often members of groups (such as women and members of lower-castes) who have gained access to power for the first time, thanks to quotas. However, M.K. Raut, an overseer of local councils, supports two-child policies, since “council heads should be role models for the village community” and that “with a billion-plus people, family size is no longer a personal matter.” India's Supreme Court seems to agree with Raut – in 2003 it upheld a two-

child limit for village council members in the state of Haryana, arguing that population control was such a matter of urgency that states should not place “undue stress on fundamental rights and liberty.”

Two-child policies have not been introduced at the state and local levels only. Recently, a bill was introduced in parliament that would limit candidates running for parliament or state legislatures to two children. However, Prime Minister Manmohan Singh has expressed his opposition to such policies. According to Prime Minister Singh, “coercion of any kind to achieve population stabilization [is] unacceptable in a free society” and “such policies have marginal impact and sometimes even cause resentment and non-acceptance.” Other critics have pointed out that the Indian states that have most successfully limited population growth have not done so by implementing two-child policies, but by increasing education and work opportunities for women, improving health care and offering women and men a wide range of contraceptive choices.

Conclusion

A number of factors can influence the adoption of a new international norm. In the case of the ICPD, advocacy work on the part of a variety of NGOs, (particularly women’s NGOs) and the efforts of many countries led to the commitment of nations worldwide to a client-centered approach to reproductive policy. Many gains have been made in the eleven years since the adoption of the Program of Action – contraceptive use has increased worldwide and many countries have adopted reproductive policies that address women’s empowerment and include a holistic approach to reproductive health care. However, there is still much progress to be made. HIV/AIDS infections are increasing in many developing nations, too many women in the developing world continue to die each year in childbirth, and reproductive health and contraception still continue to be seen only as women’s issues (and not men’s) around the globe.

In India, the decision to do away with the target system and embrace a client-centered population policy has generally had positive effects for women and men throughout the country. The ICPD’s Program of Action was one major factor that influenced India’s decision to adopt a new approach: the Indian government felt compelled to use principles embodied in the Program of Action in its development of a new policy, and the World Bank acted as a de facto enforcer of the Program of Action through its unwillingness to fund a policy based on targets. However, the ICPD was not the only factor that influenced India’s decision to form a client-centered policy. The work of Indian and international NGOs, Indian research which showed that targets were not necessary for reduced population growth and support from Indian officials also contributed to India’s policy change. Both the 1997 Reproductive and Child Health Program and the 2000 National Population Policy support women’s empowerment as a means to slow population growth, and focus on client satisfaction and improved health outcomes over contraceptive targets set by the national government. Although such policies have contributed to a slow in India’s population growth, many Indian policy-makers still fear that India’s population continues to increase much too rapidly. Such policy-makers tend to support tougher policies to slowing India’s population growth as exemplified by the increasingly popular “two-child” laws.

In conclusion, population policies which focus on targets alone and do not respect the rights of individual women and men to make choices related to their own fertility are not only less effective at improving development outcomes but, from a human rights standpoint, are morally repugnant. Giving women and men a wide variety of contraceptive choices, improving the socio-economic condition of women throughout the world and creating policies which address the empowerment of individuals are the best and the most moral ways to simultaneously slow population growth and to improve the lives of women, men and children throughout the world.

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« La Question de l'engagement des Femmes à travers le discours et les didascalies dans *La Paix* de Marie Lenéru »

CHRISTINE RUDOSKY

Introduction

This paper, entitled “Women’s Wartime Engagement within Discourse and Didascalie,” discusses the French play, *The Peace*, by Marie Lenéru. Completed in 1917, three years before the end of WWI, the play is semi-autobiographical, based on the life and diary of Marie Lenéru, a woman who felt responsible for her country, but who was marginalized beyond her sex since she was deaf as well. *The Peace*, in its written form was not only an act of self-representation within the war conflict, but a “call to arms” in attempt to persuade those who could not fight on the battlefield, especially women, of their intellectual combative power within pacifism.

The play is set in France in a chateau in Brest, Lenéru’s native town. It begins with the appearance of Mabel, a woman who comes to visit after serving as a nurse in the war in order to bring news that a congressional meeting would be held in Paris later that month, that would perhaps end the war on peaceful terms. Mabel serves as Lenéru’s ideal woman; an intellectual, politically engaged woman active in forming a public consciousness about war resolution. Mabel, single, and without children, has renounced the “feminine” life thus far, in order to travel and spread her ideas and hope for pacifism to other women. The plot herein, is a sequence of discussions between the various women and men who live in Brest, and who pose arguments for and against pacifism.

Within my analysis of the play I discuss how Lenéru’s dramaturgy borders on a “theatre of ideas,” where characters serve as symbols for a larger philosophical discussion. At times, Lenéru’s writing transforms into a novelistic style within descriptions for stage settings, and character’s expressions, therefore reinforcing Lenéru’s message that the human psyche expresses convictions that may hold a combative power. Overall, the play, gives Lenéru a platform to spread her own personal message and perspective on the war.

The play was seen as controversial and was banned until after the war, and death of Marie Lenéru, when it was finally enacted at the grand theater, La Comédie Française, in Paris in 1923.

Note from the author:

I remember one afternoon, during office hours, Professor Cogan spoke to me about her love for French literature and read to me poems in French that she herself, had written. Such close mentorship is lacking in France, but my rich intellectual experience at the University of Oregon Honors College has led me to pursue a maîtrise at Paris IV- La Sorbonne, where I researched the works of Marie Lenéru and wrote this paper for a course in wartime literature in 2005.

INTRODUCTION:

« Une chose est nécessaire [...] mais celle dont l'humanité est peut-être incapable : *ne pas oublier...* » déclare Mabel, le personnage principal dans la pièce *La Paix*, écrite par Marie Lenéru en 1917.

Cette pièce et son auteur (1875-1918) se sont presque effacés de l'histoire littéraire après sa mort en 1918. La pièce a été écrite avant la fin de la Grande Guerre comme une déclaration du pacifisme, mais elle ne sera pas représentée avant 1921, au théâtre de l'Odéon, trois ans donc après la fin des hostilités. Mais les représentations ne recevront guère de critiques positives. Les déclarations « pacifistes » ont été reçues alors comme des déclarations contre la Patrie et la France. En outre, la pièce *La Paix* ne sera pas considérée comme du « grand théâtre », même si Lenéru avait eu du succès antérieurement. C'est sans doute la raison pour laquelle Marie Lenéru, femme intellectuelle, écrivain et dramaturge, sera « oubliée » pendant une soixantaine d'années. Mais, même si vraisemblablement celle-ci ne cherchait pas la postérité à travers son écriture, son but étant néanmoins de faire comprendre aux gens comment peut s'établir un état de paix, afin d'éviter une deuxième guerre mondiale.

Pour Marie Lenéru, la guerre était une horreur. Pourtant, elle ne l'a jamais vue. Elle naît et vit à Brest, dans le grand ouest de la France, à côté de la mer, issue d'une grande famille de marins. Son père a été décoré de la légion d'honneur à 25 ans pour sa belle conduite pendant le siège de Paris. Il mourut en 1878, quand Marie avait deux ans. D'ailleurs, son grand-père maternel fut amiral et son oncle commandant. C'est sans doute la raison pour laquelle elle prendra la Guerre comme responsabilité personnelle plus tard dans sa vie. Par ailleurs, ce sentiment de responsabilité fut augmenté par le fait qu'à la suite d'une rougeole, elle devint sourde à l'âge de onze ans : étant invalide, elle ne pouvait communiquer qu'à travers l'écriture. Elle fut alors isolée dans un monde silencieux avec l'encre pour seule voix. Son écriture a pour elle un véritable statut de parole. Ce n'est donc qu'à travers la littérature qu'elle a pu se tenir au courant des événements de la guerre. Elle lisait beaucoup et ainsi elle avait des réflexions nombreuses sur la guerre qu'elle notait dans son journal. En effet, Marie Lenéru a trouvé son moyen d'engagement comme Femme à travers la littérature.

Pendant ces années de guerre, le rôle des femmes a été profondément remis en question. Quel pouvait être le rôle d'une femme si elle ne pouvait pas aller au front comme un homme ? La France guerrière avait besoin des femmes « fortes » dans l'esprit et le corps, des femmes « soldats ». Pour Marie, qui vivait à l'exact opposé du lieu du conflit, et qui de par sa surdit  tait incapable d'un investissement physique, la question de l'engagement   tait tr  s importante. Comment pouvait-t-elle aider son peuple, son pays en d  pit de son statut de femme et qui plus est de femme sourde ?    cette   poque,   tre intellectuel   tait un moyen de s'engager dans les id  es qui concernaient le r  le d'une femme. L'écriture de Marie incorpore les id  es f  ministes, mais elle-m  me n'  tait pas militante. Selon Aurel,   crivain et f  ministe de son   poque: « Les femmes sont "de lettres" ou sont peu ». Cette vision de la femme intellectuelle appar  t dans son ouvrage *La Paix* quand Mabel, le personnage principal, demande « Qu'est-ce qu'elle pense pendant qu'elle tricote ? ».

C'est sans doute à la suite de ses lectures que Marie Lenéru entra dans l'écriture. Au début, elle commence à écrire un roman, mais elle avait du mal à séparer sa vie de son œuvre et cette difficile scission l'a bloquée. Enfin, elle est devenue dramaturge car elle pensait que le théâtre « C'est l'essentiel du roman, sans remplissage et sans à côtes, sans coloriage ... C'est la manière la plus forte d'exposer [les] idées [...] sous une forme directe et vivante, sculpturale ». En effet, Marie ne cherchait que la représentation des idées dans son écriture. Elle n'avait aucun intérêt dans un écriture « pittoresque » ou naturaliste. Elle était très influencée par François de Curel, qui était un célèbre de ce qu'on appelait « Le théâtre des idées », et les « pièces à thèse » afin de rétablir un théâtre classique. C'est en 1915, un an après que la guerre a commencé, qu'elle conçoit alors d'écrire *La Paix* comme moyen de présenter son avis sur la guerre.

C'est donc sous l'angle de la « littérature engagée » qu'elle invite à lire *La Paix* (ce qu'indique d'emblée le titre). Avant que Marie ne commence de l'écrire, elle a noté dans son journal le 27 Décembre, 1915, qu'elle voulait écrire une pièce pour son peuple et son pays : « Ô Morts pour ma patrie, à qui je veux dédier mon plus grand effort, mon plus grand travail, une pièce dont je ne sais rien encore, si ce n'est qu'elle s'appellera *La Paix* ». Elle a écrit dans son journal que « Ce n'est pas en artiste que je veux exploiter la catastrophe, je veux faire représenter sur la scène du premier théâtre français, la plus forte machine littéraire qui ait jamais fonctionné pour la paix ». Cependant, Marie nous invite à lire un texte beaucoup plus engagé qu'une pièce dont le but politique sera une éducation populaire. Bien que ce soit une pièce liée à la politique de la guerre, il existe tout un autre côté, un vouloir fortement personnel : « Puisque j'ai eu ce creve-cœur de ne pouvoir faire mon métier de femme auprès de vos agonies, je ferai qu'à l'avenir, on ne vous massacre plus « mon fils et mon soldat » ». Enfin, cette déclaration nous montre que cette pièce sera un sacrifice. Marie l'a prise très sérieusement comme sa propre passion.

D'un point de vue personnel, les mots de Marie s'apparentent la parole de Mabel, le personnage principal de la pièce qui milite pour le pacifisme. Mabel parle contre la guerre à Paris dans les conférences, les campagnes de presse. Elle parle d'une proposition pour une ligue composée d'hommes de tous les partis, qui vont sortir une sorte de « cahier de la paix ». C'est alors que le texte de Marie Lenéru devient un outil pour s'engager dans la guerre, et ses personnages pour traduire sa parole. Mais comment a-t-elle fait ? L'objectif de cette étude sera d'analyser la manière dont Marie Lenéru soulève la question de l'engagement féminin dans sa pièce, *La Paix*.

L'engagement des Femmes: Lutter pour la Paix:

Six mois sont passés depuis la fin de la guerre et l'on se trouve à Brest en 1918, dans un salon du château de Mme Gestel qui a perdu ses deux fils et son mari au front. L'enjeu de la pièce réside dans les conflits au sein de son cercle d'amis, qui lui rendent visite successivement au château, notamment les personnages féminins. En effet, presque toutes les femmes (Perrine, Marguerite, Mabel) sont en deuil, et chacune entretient une perspective différente. D'un côté, chez Marguerite et Perrine, il existe la douleur, la tristesse et l'angoisse. D'un autre côté, chez Simone, il existe un idéal pour la patrie qui lui fait supporter la guerre. Entrant ce groupe de femmes vient Mabel, qui dénonce la guerre et milite pour la paix éternelle, à travers le pacifisme. Mabel oppose le discours passif des autres femmes et l'on parvient à voir l'affrontement des idées dans les conversations, entre les personnages, dans le face à face. C'est à travers ces discussions que l'on apprend comment les femmes s'engagent, quelles que soient leurs situa-

tions mais toujours avec en filigrane l'avis et les perspectives de Mabel, la pacifiste.

La conversation dans la scène IV entre Marguerite et Mabel montre bien l'engagement des femmes à travers le pacifisme. Mabel reçoit un courrier de Grahame Moore, au sujet d'une ébauche de traité discuté par le congrès de Paris. Ce courrier soulève dans le discours de Mabel son avis sur l'engagement des femmes pour la paix. Marguerite lui reproche d'être trop idéaliste, ce à quoi Mabel réplique « Pourtant si les femmes sur la terre savent à quoi s'en tenir... ». Mabel ne finit pas la phrase comme une question prête à être posée. Marguerite se méfie du pacifisme, mais lui demande explicitement la conduite à tenir : « Mais, ma pauvre enfant, que voudriez-vous me voir faire ? ». Cette phrase engendre toute une série de questions et de réponses entre les deux femmes montrant le conflit de l'engagement existant chez les femmes ou comment faire « la paix ». Ce à quoi Mabel répond « donner tout [...] dépenser toutes vos forces... ne vivre que pour cela.. n'avoir un corps, n'avoir une âme que pour cela... ». Surtout, Mabel dénonce les femmes qui ne s'engagent pas. Elle essaie de les convaincre que la paix est un choix véritable. Elle pense que c'est à travers le pacifisme que l'on va établir un état de paix en Europe.

Perrine Botterel, la femme de chambre, vient voir Marguerite. Dans leur discussion, Perrine exprime une pensée engagée. Premièrement Perrine déclare ne pas vouloir d'enfants : « des enfants ! je n'en veux pas ! ». Cette déclaration montre qu'elle s'engage à travers ce refus catégorique. Elle continue : « J'ai fait le sacrifice de mon bonheur en ce monde. Et pour que Dieu ne permette pas, tant que je serai en vie, qu'on tue encore une fois les enfants des autres... J'ai fait un vœu de n'en avoir jamais à moi ». Elle pense son corps comme outil pour lutter contre la guerre. Dès lors Mabel entre en scène, Marguerite relate cette nouveauté puis reproche à Perrine de ne pas être « une bonne Française ». Ce à quoi Mabel répond avec encouragement. Elle dit : « Ah ! C'est déjà bien assez d'avoir eu l'idée de faire quelque chose ». Cette phrase montre l'importance de la pensée de l'individu comme début de la lutte contre la guerre.

Simone Deslile, la fille de Paul Deslile, écrivain de l'Académie française, représente l'autre partie, en faveur de la guerre. Comme son père, elle trouve que la guerre peut être une chose « divine » et que les hommes sont nés pour être des soldats. Ce discours contient la croyance que la guerre est enracinée au sein de toute humanité. Quand Simone arrive chez Mme Gestel, elle commente : « la guerre est une belle chose ». Ensuite elle dit que « Oh ! je ne veux pas dire ... Oh ! n'allez pas croire... La guerre est terrible, abominable mais que vaudraient les hommes sans les sacrifices ? Un pacifisme sordide ? ». Il est évident que la manière dont elle pense à la guerre n'est qu'illusions. Comme elle est jeune et éloignée géographiquement, Simone ne garde que l'idéal du Héros, valorisé par la poésie de son père à travers une écriture patriotique. Quand elle sort de la scène, Mabel s'adresse à l'absente : « A quoi pensent donc les femmes pendant qu'elles tricotent ? ». À la fois, Mabel critique Simone et les femmes qui ne se questionnent guère sur les conflits hors de la maison. Mabel sous-entend bien que Simone ne pense à rien pendant qu'elle tricote. Le jugement sous-jacent indique que Simone aurait mieux à faire, des choses plus constructives et plus intellectuelles.

La rhétorique de Mabel ne s'apparente pas aux autres. En effet, c'est la parole et l'avis de Mabel, le personnage principal, qui domine. À chaque fois qu'une idée ou un commentaire à propos de l'engagement d'une femme est évoqué, c'est Mabel et son jugement qui entrent sur la

scène. Elle essaie de persuader les autres que la guerre est « plus une utopie que le pacifisme ». À travers les discussions, on voit que les personnages sont des symboles représentant les arguments pour ou contre la guerre. Rappelons-nous que Marie Lenéru dit que le théâtre « C'est l'essentiel du roman, sans remplissage et sans à côtés, sans coloriage ... c'est la manière la plus forte d'exposer [les] idées [...] sous une forme directe et vivante, sculpturale ». En effet, on a l'impression que les personnages sont les sculptures vivantes de leurs idées, tels des pions sur un jeu d'échec défendant leur couleur, leurs idées, pour que finalement l'auteur puisse justifier l'engagement intellectuel nécessaire des femmes.

II. L'engagement des Femmes: La guerre des Idées :

Pour Marie Lenéru, et donc pour Mabel, la paix est un choix. Le choix de diriger comment on pense, et comment on agit. Quand Simone lui dit qu'elle ne pense pas que la paix soit possible, Mabel rétorque : « Eh bien, il faut commencer par vous convaincre de tout le contraire... parce qu'il suffit d'une conviction pour amener tout ce qu'on veut, le blanc ou le noir, le pour ou le contre, la paix ou la guerre. Il n'y a de réalité au monde que dans nos convictions. ». Pour Lady Mabel, l'intellect est indispensable car ce sont les idées qui nous poussent à faire les choses. Ce à quoi Simone répond que c'est « trop fort », Mabel enchaîne « Il suffit de dire qu'une chose est fatale, pour la rendre probablement fatale, en effet. La femme qui déclare : « il est fatal que je succombe » n'est pas précisément armée pour la lutte ». Mabel appuie sur le fait qu'on choisit ce qu'on croit et ainsi ce qu'on fait. Elle continue, « essayez du système, apprenez à dire, sans même y croire, puisque vous y tenez : « La paix n'est pas une utopie. ». Ainsi, cette déclaration nous apprend davantage qu'on peut changer d'avis, même si on n'y croit pas au départ. C'est un choix délibéré de l'individu, la responsabilité de soi-même à prendre position.

Cette idée est relevée tantôt dans le discours de Jean dans l'Acte I, scène V, quand il demande à sa mère s'il peut rejoindre l'armée. La parole de Jean semble familière ainsi qu'on l'apparente à la parole de Mabel qui est passée, deux scènes plus tôt. En effet, il existe un parallèle entre le discours de Mabel, et le discours de Jean. Rappelons nous que dans Acte I, scène IV, on voit Mabel qui voulait persuader Marguerite qu'une paix permanente soit possible et que Marguerite, qui semblait être « une force perdue », pourrait changer sa vie. Le mode d'expression utilisé dans cette discussion était formé de monologues longs et passionnés. Plus tard, on voit la même parole sortir de Jean, qui essaie de convaincre sa mère pour lui permettre d'être soldat.

Dans leurs discours, chacun veut se sacrifier à la manière d'un martyr : « Permettez-moi de ne pas dormir, d'être la avec ceux qui travaillent et qui forgent » dit Jean, qui se passionne. De même, Mabel, le pacifiste, a déclaré qu'elle « ne veut plus ne vivre que pour en parler ». Pour se persuader, ils invoquent l'idée que leurs projets sont plus importants que la vie individuelle. En outre, Mabel déclare qu'il faut: « Donner tout...dépenser toutes vos forces... ne vivre que pour cela... n'avoir un corps, n'avoir une âme que pour cela ». Les deux racontent leur situation dans l'urgence, comme si on n'avait pas une minute à perdre, comme si on était au moment où l'Histoire s'écrit. Cette pensée anéantit la pensée individuelle au présent en faveur d'une compréhension collective future. Jean dit « Il ne suffit pas d'être les plus forts aujourd'hui, il faut le rester à jamais. Ce n'est pas sa vie, sans une heure tragique qu'il suffit

d'apporter au pays... c'est l'effort, la pensée, l'obsession quotidienne... ». En effet, il invoque la notion de progrès : « La victoire d'hier n'est rien sans la victoire de demain... ». De même, Mabel utilise la notion du futur, mais à travers les souvenirs, et la dimension du passé. Elle dit : « J'ai juré de me souvenir et toute heure de ma vie ne sera qu'une lutte contre l'oubli ». En somme, sa volonté de transmettre un message au destinataire semble être une sorte de lutte guerrière. Le parallèle entre la parole de Jean et celle de Mabel est si forte que Marguerite elle-même s'en rend compte, puisqu'elle déclare « Morts en vain ! Mabel aussi me dit cela... ». Cette exclamation insiste sur le fait que tous les deux utilisent les mêmes justifications et que Jean et Mabel se reflètent à l'image d'un soldat ; Jean est un soldat de la guerre, et Mabel est un soldat de la paix.

Au fond de la scène, Mabel est témoin de cette discussion et devient également consciente de ce phénomène de rapprochement des discours. Quand Jean annonce que Lady Mabel « sent bien la vérité de mes paroles, de ma prière » la scène finit avec la réplique de Lady Mabel qui lui dit ironiquement « vous avez raison ». Jean utilise ainsi paradoxalement la même justification que Mabel quand il répond qu'il a « acquis la conviction » de vouloir être soldat. S'il n'existe pas de différence entre le discours de Jean et de Mabel, et s'il y a seulement une différence de but politique, d'idée brute, la parole chez Marie Lenéru n'est-elle pas dévalorisée ? N'est-il pas curieux de trouver ce paradoxe au théâtre, un genre où il n'existe que la parole ? Or, peu de différences entre la parole nous montre que Marie Lenéru pense que ce n'est pas une source vitale chez une personne. C'est l'idée qui compte le plus.

Le fait qu'ils utilisent la même rhétorique pour justifier deux buts différents nous présente un paradoxe, mais en même temps, relève d'un aspect de la philosophie de Mabel qui énonce qu'« il n'y a de réalité au monde que dans nos convictions ». Chaque discours et chaque idée donc semble porter *la même valeur*. Ainsi, il n'existe pas une morale sauf pour chaque individu lui-même. Au niveau du théâtre, le message de cette pièce tient au fait qu'il faille faire un choix, et qu'il faut réfléchir soi-même sur la morale. Cette sorte de pensée est toute proche d'un neo-existentialisme où Marie Lenéru nous éloigne d'une morale universelle. La littérature de Marie Lenéru semble donc favoriser l'intellect et le monde intérieur des gens.

L'importance de la pensée, de la vie intérieure est relevée dans les didascalies de la pièce. Les didascalies montrent les idées, les émotions, l'intellect et les réactions psychiques qui ne peuvent pas être énoncés dans une parole. Généralement elles renforcent les émotions telles que : « émue », « gênée », « avec autorité » ou « mollement ». Ce sont des émotions simples qui précèdent la parole des personnages. Mais, Marie Lenéru va plus loin que les comportements usuels. À la fin de l'acte I, scène V, l'affirmation de Mabel, qui dit que Jean « [a] raison » s'accompagne d'une didascalie qui nous montre une Mabel « (se relevant, farouche) ». Il existe donc, un autre moyen de sentir que Mabel n'est pas d'accord avec Jean, et qu'il y a des pensées au-delà de la signification des mots énoncés. La didascalie nous montre comment Mabel se comporte et, ainsi, ce détail nous montre qu'il y a au-dessous de la surface de parole, une réflexion interne qui se bat avec ce qui se passe au monde externe. Dans la dramaturgie de Marie Lenéru cet effet se trouve plus souvent attaché auprès à la parole des femmes que de celle des hommes.

Ainsi, il semble que Marie érige la femme comme caractère engagé dans deux conflits majeurs : celui de la guerre, et celui de se faire entendre du monde discursif. Or, pour Marie Lenéru, écrire en temps de guerre, c'est représenter la bataille de s'engager dans le dialogue de la guerre. Lenéru donne vie à des personnages féminins qui parlent bien mais n'arrivent guère à dire tout qu'elles pensent. Pour Marguerite qui est bouleversée par la nostalgie dans l'acte I, scène II sa bataille intérieure pour rester tranquille à l'extérieur semble être terriblement difficile. Quand Perrine lui demande si elle reste à la maison longtemps, Marguerite répond : « mais oui, bien sûr, un peu d'abord, après, après ... » et l'on voit que la didascalie nous montre qu' « (elle parle, elle parle, avec surtout la volonté d'éviter tout ce qui ne doit pas être dit) ». Cette didascalie nous donne les détails de son comportement de manière à ce que l'on comprenne la nature de sa parole. D'ailleurs, les didascalies vont au-delà des comportements. Quand Perrine voit Mme Gestel, il y a une didascalie bien précise qui montre que pour « (un moment, Perrine ose regarder la main droite de Mme Gestel très bien gantée de noir, et qui ressemble à ces mains au geste un peu précieux qu'on voit dans les vitrines et les expositions de gants.) ». Cette didascalie est très curieuse car elle va au-delà de l'action simple de « regarder » pour décrire une vision de l'action qui n'est compréhensible qu'à travers une lecture de sa pièce.

En 1930, Suzanne Lavaud a appelé la dramaturgie de Marie Lenéru un véritable « théâtre de la dame » qui aujourd'hui peut nous paraître comme une sorte d'« écriture féminine » de sorte que les didascalies essaient de représenter une langue spécifique aux femmes. Cette notion d'une écriture différente était même déjà vue à cette époque par Aurel, qui a dit que « le style de Marie Lenéru est trait d'union, il est interprète comme je le voudrais, entre la femme et l'homme ». Il semble que Marie soulève une trace de la guerre entre le monde intérieur, qui est un monde privé, silencieux, mais actif, et le monde extérieur, celui de la parole, publique. Dans la littérature de Lenéru et à travers son style dramaturgique ce sont bien les femmes qui détiennent le pouvoir de théoriser leur engagement et donc d'offrir une réflexion sur la guerre et son pendant, la paix, alors que les hommes la font, la vivent physiquement. À ce titre, le devoir de mémoire propre au maintien de la paix ne peut se concevoir que comme activité féminine.

III. L'engagement des Femmes: Gardienne de la mémoire :

C'est dans la pensée et les idées qu'on peut concevoir la Paix. On rappelle le message qu'il faut « ne pas oublier » les horreurs de la guerre et l'on entend Mabel qui nous affirme : « J'ai juré de me souvenir et toute heure de ma vie ne sera qu'une lutte contre l'oubli. Dussé-je vivre cent ans, je veux garder jusqu'à la fin le raidissement, l'horreur, la protestation convulsive, avec lesquelles je me suis relevée au lendemain de l'indivisible veillée... ». La lutte du pacifisme, pour Mabel, et pour les femmes sera le choix de garder les souvenirs de la guerre pour qu'ils ne puissent pas être effacés. Mais quelle est l'efficacité de cette lutte ?

À la fin de la pièce, rien ne change. Le congrès se sépare et il n'a aucune mesure votée pour l'établissement de la paix. Il reste ainsi les individus et leurs idées. L'efficacité de cette lutte féminine est mise en question pour l'avenir quand Mabel dit : « Le jour ou chaque femme au monde sera bien résolue, en ce qui la concerne, à dévouer toute son âme à la paix, ou elle sera convaincue auprès la mort sur le champ de bataille, il n'y a rien de plus beau qu'une vie

d'action et de lutte pour la paix, ou elle sera résolue à élever ses fils... ». Mais, aucune femme ne se transforme. Marguerite reste passive et trop nostalgique et elle ne pense pas que la paix soit possible. De même, Simone n'arrive pas à croire dans le choix de l'individu. Les deux femmes résistent à se transformer. Par contre, le personnage qui se transforme et qui se déclare pacifiste est Jean, le jeune soldat.

Selon les idées portées par Mabel, la manière dont elle se décide à devenir pacifiste est plutôt *féminine* que masculine, car ce n'est pas l'expérience sur les champs de bataille qui le convainquent d'être pacifiste mais bien un choix réfléchi. C'est après avoir entendu la cause de la mort de son frère qu'il décide d'être « soldat de la paix ». Il semble qu'il y a donc une sorte de puissance émotive qui est liée aux souvenirs. En outre, les didascalies dépeignent les comportements de Jean comme ceux des femmes. On voit la différence entre la réaction de Jean au début, quand il raconte le passage de son père mort, et sa réaction plus tard quand il entend la nouvelle du décès de son frère. Dans l'acte I, scène I, Jean relate à Simone son expérience : « Dans un boyau nous nous sommes rangés, on emportait une civière. Une main gantée dépassait, machinalement j'ai relevé la bâche [...] Il n'avait pas encore les yeux fermés ; la face était intacte, bien que la tête [...] Mais cette heure-là, j'ai senti pourquoi nous nous succédons sur la terre, j'ai senti la poigne de la France ». Jean raconte cette expérience avec contrôle sauf un moment où sa voix descend un peu par le jeu d'une didascalie « (revoyant le spectacle, la voix plus rude) ». Même s'il a vu le cadavre passer devant ses yeux sa réaction finale était patriotique. C'est quand Jean entend la cause de mort de son frère que sa réaction est différente. C'est Delisle qui ne lui transmet que le crâne de son frère qui « [a été] emporté par une mitrailleuse... Vingt-neuf heures le cerveau à nu [...] il hurlait ». dans cette situation, on voit avec la didascalie que Jean est vraiment perturbé : « (Jean défaillant, reste dans son attitude, la poitrine étreinte de ses poings. Delisle en face de lui la tête basse est bouleversé. Haletant.) ». Dans la didascalie qui décrit le comportement de Jean, on voit que la vision de la guerre revient cette fois-ci avec fracas. C'est après cette expérience, à l'image et l'idée d'une autre, que Jean se transformera.

Au niveau du théâtre, Cette pièce a été écrite comme une éducation populaire pour la paix. Ainsi, le message qui doit ressortir pour établir la paix est reflété dans le fait que les spectateurs apprennent et doivent retenir les images de la guerre créée par Marie Lenéru elle-même. C'est dans cet élan, semble-t-il, que Marie Lenéru soulève la question de la guerre comme spectacle ? En voyant qu'elle-même était loin de la guerre, et qu'elle n'a jamais été proche de la guerre, c'est évident qu'elle ne ressentait toute la guerre qu'à travers les images qu'on s'imagine à travers la littérature. Ce qui est intéressant, dans les deux cas, c'est que ce n'est pas la guerre que l'on voit, et dont on se souvient : c'est une pièce, une image de la guerre, qui transmet l'idée que la guerre est douloureuse et horrible. Ainsi, après la fin de la pièce, il faut se souvenir du spectacle pour que l'on puisse répandre le message pacifiste. À la fin de la pièce, Mabel demande « (dans un cri) » : « [...] où sont-ils ceux qui se passionnent ? (d'un geste désespéré, éloignant Peltier, pour toujours.) Ceux qui ne veulent plus ne vivre que pour cela ? ». A ce moment, il existe une relative transgression de la scène : même si Mabel s'adresse à Peltier, il existe un moment propice où l'on se trouve destinataire immédiat du message principal et pédagogique de la pièce entière. Le fait que Mabel s'éloigne de Peltier, en face du vide de la salle et des spectateurs nous montre que la dernière phrase de la pièce est une question en suspens, non pas pour les personnages, mais bien pour les spectateurs eux-mêmes. C'est le moment qu'a

voulu l'auteur où les spectateurs doivent se questionner sur leur réflexion par rapport à la guerre.

CONCLUSION :

En somme la pièce *La Paix* est une oeuvre engagée qui nous amène à réfléchir sur le pouvoir des idées. Marie Lenéru s'est engagée dans la guerre à travers son écriture et évidemment sa position d'être femme a joué un rôle très fort dans la conception de la pièce. En effet, nous avons vu que cette vision des idées était une manière spécifiquement féminine de s'engager.

Dans la première partie de cette étude, nous avons vu que Marie Lenéru nous invite à rencontrer des femmes et des hommes qui présentent sur scène des perspectives différentes en faveur ou non de la guerre. Les personnages caractérisent et donnent vie à leurs idées pour nous apprendre que la guerre est premièrement un conflit d'idées. Cette oeuvre va néanmoins plus loin qu'une pièce faite uniquement pour l'éducation populaire. Dans la deuxième partie de cette étude, nous avons débouché dans une guerre à l'intérieur des personnages à travers une étude du discours et des didascalies. L'on a vu que la parole de Jean s'apparente à la parole de Mabel. Une même parole peut servir des buts différents. C'est dans ce parallèle que réside une partie de la philosophie de Marie Lenéru : nos convictions sont la base des guerres et donc de la paix. Enfin, dans la troisième partie nous avons vu que c'est la pensée intérieure qui nous amène à comprendre la manière dont on peut lutter pour la paix. La paix est dépendante de l'aptitude à se souvenir. C'est le grand enseignement de la pièce de Marie Lenéru : il faut se souvenir des horreurs de la guerre pour préserver la Paix.

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WHEN GOD GIVES BIRTH: A SERMON

REV. CYNTHIA COCHRAN-CARNEY

*Based on Isaiah 42:14-16, 66:7-13 and John 16:19-22
Sermon preached May 12, 2002 at New Life Presbyterian Church, Tobyhanna, Pennsylvania*

In July 1994, there was good news and bad news. First the good news came. As my husband Jeffrey and I listened to the radiologist describe what he saw on the ultrasound, we saw pictures of this amazing being inside of me. Its skull and body and limbs were all growing well. It was moving around in the comfort of warm water. Then the shocking news came. There was a second baby. Twins. How could this be? As the doctor described what he saw, we soon realized something was wrong. The second baby was very sick and could not survive outside the womb. If the sick baby's heart stopped, the healthy baby was in jeopardy.

We lived with this reality for then next four and one half months of my first pregnancy. We lived with this paradox of life and death inside me, this tension, this contradiction. Each day I become more aware of the paradoxes all around me. As I continue to reflect on my experience, I see even more paradoxes in my faith and ministry.

We all live in the midst of tensions – life and death, hope and despair, joy and grief. We can feel both at the same time.

During my paradoxical pregnancy, I prayed to God to give me strength and patience every day. I don't think I have ever counted on my faith and my relationship with God more every day than during those months. The process of giving birth to new life is long, painful, and full of anticipation and hope. We have many biblical images of God as our Creator. God created the universe and the earth and you and me and children and the Poconos and the deer. The creating God of the Bible is often described as a woman giving birth. The primary image of God in the Bible is as Father. There are over 100 images of God in the Bible. Today, I invite you to think about the ways God is like a mother.

Isaiah 42 offers an image of God experiencing labor pains. The prophet was writing to the people of Israel who felt caught in a paradox of their own. They were God's chosen people, God's covenant people. And yet now they were in exile in Babylon. Jerusalem and Judah, their homelands, had been defeated and captured by the Babylonians and now they were in a strange land. How could they be both God's chosen people and yet feel abandoned by God? The prophet reminded them that although God allowed them to go into exile because they had not acted with justice and compassion, there would be a time God would redeem the people and bring them home.

The prophet writes the words of Yahweh: "I cry out like a woman in labor, I gasp and pant." (42:14) God's anguish at human failure to embody justice is captured in the image of a

woman in the throes of labor, unable to catch her breath in the pain.

Yet the result of God giving birth will be joy. The prophet uses images of hope and transformation – darkness into light, rough places into level ground. So the prophet reflects the paradox of motherhood – the pain of giving birth, of knowing your offspring will experience pain and yet the joy of bringing new life into the world and the joy your children will experience.

There are other places in the Bible where God is depicted as a pregnant woman or a woman giving birth. In Deuteronomy, we read, “You were unmindful of the Rock that bore you; you forgot the God who gave you birth.” (Deuteronomy. 32:18) The Hebrew word ra-chum is usually translated “compassion” or “steadfast love.” It is closely related to the Hebrew word for “womb” racham. So God’s compassion is “womb-like love.” In Psalm 103 we read, “The Lord is merciful and gracious, slow to anger and abounding in steadfast love, in womb-like love.” (Psalm 103:8)

Our second reading from Isaiah focuses on God’s comfort. Ancient Israel saw itself as a people liberated and comforted by God. The first and foundational liberation was from Egypt, the house of bondage; the second liberation from the Babylonia exile. God was celebrated by the believing community as the One who comforted people in their suffering and who brought people out of bondage.

This second passage from Isaiah comes from a time when the people were in deep despair, when they did not feel God’s presence or comfort. This passage comes from what is often referred to as Third Isaiah. It was probably written during the period after 538 BC, the year in which Cyrus allowed some of the people of Israel to leave Babylon and return to Jerusalem. The returnees, who had expected a glorious restoration as envisioned by the earlier prophets, found themselves frustrated by many hardships, like famine.

In Isaiah 66, there is an oracle that celebrates the future restoration of Jerusalem. This chapter is full of graphic images of the restored community as an infant being carried by its mother, Jerusalem:

Rejoice with Jerusalem and be glad for her
That you may nurse and be satisfied
From her consoling breast. (Verses 10-11)

The image of mother Jerusalem carried through verse 12 switches to God in verse 13:

As a mother comforts her child
So I will comfort you
You shall be comforted in Jerusalem. (Verse 13)

God as comforting mother takes the place of mother Jerusalem. And the human community has moved from infant to child, a change that advances the relationship from the mother-infant stage to one of greater maturity. “Comfort” is the key word repeated three times

in these lines. How does God comfort as a mother?

In her book Reimagining God, Johanna Bos explores the diverse biblical images for God. In her analysis of Isaiah 66, she shares this story:

“I remember my own mother as not particularly comforting. I remember sharply, however, one thing my mother did that I identified with comfort. On my long bicycle trip back from high school, it was often dark in the wintry afternoons in the Netherlands. The ride home always seemed long when doing it alone. It could be boring and dreary. When it became dark, I was sometimes afraid; it was cold too, the weather being often extremely inclement. There was little traffic on the long poplar-lined road that took me home; some late cyclists, no cars.

“Then far off, I would see a bike’s headlamp; and I would wonder who else was on the road, hoping it was my mother, who sometimes rode out to meet me part way. On coming closer, she would call out, “Is it you?” It was then, at those moments, nothing so comforting as my mother’s presence, a presence that spelled home for me.

“So I imagine God’s motherly comfort intended for the community Ancient Israel; so it is intended for the human community that is covenanted to the God of Israel today. God’s motherly comfort is essentially a presence, a presence that is our home.” (1)

In the New Testament, Jesus uses images of birth, of being born of water and spirit in John 3:5-6 in his conversation with Nicodemus about being born again. Predicting his death, Jesus describes how his suffering on the cross initiated the birth pangs of bringing forth the Kingdom of God. He used the birth image in John 16 to comfort his disciples concerning the difficulties they would confront.

When a woman is in labor, she has pain because her hour has come. But when her child is born, she no longer remembers the anguish because of the joy of having brought a human being into the world. So you have pain now; but I will see you again and your hearts will rejoice, and no one will take your joy from you. (John 16:21-22)

In His crucifixion, he showed the hour of giving birth to sorrow and joy, death and resurrection.

Throughout my pregnancy, the babies inside of me lived in the paradox of life and death. Jackson and Jacob were interdependent. Jackson needed Jacob to keep on living, to maintain his heartbeat, so Jackson could continue to life and grow. I went to the doctors each week to check that both babies’ hearts were still beating. As difficult as this was for Jeffrey and me on a day to day basis, these were times when I thought about the truth contained inside of me. **We are all interdependent.** God created us to live as if our life depended on the lives of our sisters and brothers. That is the essence of the great commandment - love our neighbor as ourselves. Our own life is valuable to God and we are called to live in ways that show God’s love to each person and all people. I am not whole and free until all people are whole and free.

Jacob and Jackson reminded me that **life is both fragile and yet has great tenacity and strength**. The doctors were not sure how long Jacob would continue to have a heartbeat, so we had to do weekly checks. They were not sure if he would be born alive. He was. In many ways he was in worse physical condition than they expected. And yet he did live until delivery and for eighty minutes afterwards. In many ways he gave his brother life. Life is fragile and yet enduring. Jackson is 8 years old now and full of life.

As Christians, God calls us to live the contradictions. Jesus often spoke of the life of faith as a paradox. Jesus said, “Those who find their lives will lose it, and those who lose their lives for my sake will find it.” (Matthew 10:39) We are called to contradict the messages of the world with God’s truth, the good news of God’s saving grace. That love is more powerful than hate, that death does not have the last word, that success is measured by our compassion and character, not money and status. God gives birth to hope in the world and in our lives. How will we give birth to hope in our families, our community and our world?

I am aware of the biblical image of God as a mother and how it deepens my sense of God at work in me, in the church and in the world. I will close with one of my favorite stories. It illustrates the ways God gives birth to hope in our lives. It is a story by Margaret Guenther, who is an Episcopal priest.

“Very early in my ministry I had a vision during the Eucharist: I am committed to the celebration of the liturgy “by the book,” in other the words, as carefully and lovingly as possible but with no place for the unexpected or the unexplained – except of course for the inexplicable mystery which is the sacrament.

“But this time I suddenly found myself tempted to ad lib during the words of institution. As I prepared to say the words, “Take, eat,” I heard a maternal voice from somewhere deep in my subconscious. It was not a youthful voice, nor did it sound like the voice of a thin woman. The voice – warm, inviting, and infinitely giving – said: “Have some more darlings! There’s plenty! Have seconds!” For just a moment I wanted to repeat her words in her tone as I elevated the bread and then the cup. I wanted the Eucharist to be a great family feast – much too much to ever be consumed, the table laden with everybody’s favorite foods and with no thought at all of calories.

“I didn’t succumb to the temptation. I remained proper and by the book, but I knew that I had been graced with a glimpse of what it’s all about, really. And I knew that my ministry needed to reflect that vision of overwhelming abundance and prodigal generosity.” (2)

God is like a mother who comforts and challenges us to be those who give birth to hope and abundant love in the world. Amen.

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HOW DOES ART “SPEAK”, AND WHAT DOES IT “SAY”?: CONCEPTUAL METAPHOR THEORY AS A TOOL FOR UNDER- STANDING THE ARTISTIC PROCESS

KAREN SULLIVAN

I. Introduction.

It would be difficult to talk about art without using metaphors like “self-expression”, “describing a subject”, or “making a statement”. Phrases like these let us understand art metaphorically in terms of linguistic communication, because we normally *express*, *describe* and *state* our ideas using language. We usually understand these metaphoric phrases automatically and without conscious effort. However, in the past few decades, the growing field of conceptual metaphor theory (cf. Lakoff and Johnson 1980) has made it possible to systematically examine the structure of these and other metaphors, along with their uses in cognition and communication.

Metaphors relating visual art to language are particularly useful in uncovering the mechanisms and motivations behind the artistic process. These metaphoric structures are as diverse as the variety of genres of art – and in fact, particular metaphors often occur in particular artistic genres. The form of “language” used in metaphors for art is sometimes spoken language and sometimes written language; the communication involved can be one-sided or two-sided; and the communication may be conceptualized as anything from poetry to an argument.

In the following pages I will compare the structure of these metaphors for art, based on the metaphoric language used by artists to describe their own artwork and artistic process. This analysis will shed light on the meaning and motivation of art, the variations in meaning and motivation across artistic genres, and the utility of conceptual metaphor theory in analyzing artistic meaning and motivation.

II. Terms and conventions used in this paper.

According to conceptual metaphor theory, linguistic metaphors reflect underlying cognitive structures called *conceptual metaphors* (Lakoff and Johnson 1980). Conceptual metaphors are active not just in language, but also in reasoning (cf. Gibbs 1990), in visual media like film (cf. Forceville 2002), in gesture (McNeill 1992, Cienki 1998) and even in dreams (Lakoff 1997). Every metaphoric word or phrase reflects a complex, prelinguistic conceptual structure which allows us to understand a difficult or abstract concept (like art) in terms of one we are more comfortable with (such as conversation). The abstract concept is called the *target domain* and the more basic concept is the *source domain*. Structural correspondences between the two domains are metaphoric *mappings*. These mappings are made from the (more basic) source domain to the (more abstract) target domain. The mappings allow reasoning about the source domain to be applied to the target domain, enabling us to think and talk about abstract concepts.

The source domain, target domain, and mappings are conventionally represented in the following format:

SOURCE DOMAIN	TARGET DOMAIN
source element 1 ?	target element 1
source element 2 ?	target element 2
...	...

The right-hand column lists the source domain elements, the left-hand column lists the target domain elements, and the arrows represent mappings between pairs of corresponding structural elements (such as participants, objects, or activities). In text, the names of conceptual metaphors are usually given in capital letters, following the pattern TARGET DOMAIN IS SOURCE DOMAIN.

III. Telling a story.

The most traditional metaphors for art involve spoken or written communication from the artist to a human audience. According to the spoken language metaphor ART IS MONOLOGUE, a speaker delivering a speech to an audience (elements listed under MONOLOGUE in the diagram below) maps to an artist creating art for viewers (elements listed under ART):

ART IS MONOLOGUE

MONOLOGUE	ART
speaker ?	artist
audience ?	viewers
speech ?	art (usually painting)

For example, the artist Gustave Courbet writes in 1855 that he delights in “the ability to be able to express the manners, ideas, and aspect of my time...” (Blunden et al. 1970:21). The rich source domain of speech permits many additional mappings, such as:

language ?	technique OR symbolism
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For instance, Paul Cezanne speaks of “the language of forms and colors” (Blunden et al. 1970:188), and modern artist Courtney Jordan speaks of “a language of shape, line and color”. Some modern artists – including Courtney Jordan – also claim to have created a personal “language” of symbols or subjects, in her case “bridges, buildings and skyscrapers (comprising my own painting language)” (Zevitas 2003:8-61). This metaphor creates the inference that different media and techniques, like different languages, may be “interpreted” or “translated”: for example, an on-site sketch may later be translated into a finished painting (Sanders 2002:14-15).

When an artist has command of a range of techniques or sets of symbols, the “language” mapping would give the inference that the artist is “multilingual”. However, this usage does not

regularly occur. Instead, a new mapping comes into play:

vocabulary ? range of techniques/symbols

For example, modern artist Donna Baspaly writes that “working with mixed media (is) expanding my creative vocabulary” (Baspaly 2001:37-40). This mapping implies that each medium or technique is a word, not a language. These mappings do not, however, produce drastically different inferences. Multilingual speakers and speakers with large vocabularies both have enhanced linguistic resources, which map to enhanced repertoires of creative techniques available to a visual artist.

More far-reaching inferences arise from the mapping of manner of speech onto artistic emphasis:

speech style ? artistic style

Almost every reference to art discusses artistic “voice”, which may be “confident” or “hesitant”, “loud” or barely a “whisper”. An artist without a discernable voice may be criticized as producing only “frantic, incoherent gesture” (Esterow 2002:32). Artists can “imply”, “hint at”, or “scream”; their works may be “reticent” or “wordy”. For example, Edouard Manet champions Impressionist painting using the metaphor, “The man who is concise makes you think; the man who is wordy is a bore” (Blunden et al. 1970:147). This quote suggests the mapping:

words ? brushstrokes

The resulting inference is that an economy of brushstrokes, as in Impressionism, equates to conciseness in speech. Other Impressionists utilized this inference, describing their sought-after style as “frank” and “honest”, the conveyance of “information” from nature in the simplest possible “terms” (Blunden et al. 1970:19).

However, other artists and art analysts extracted different inferences from this metaphor. Critics of the Impressionists described their paintings as devoid of “eloquence”, “expression” and “poetry” and even lacking the “truth” that a greater degree of specificity could bring (Blunden et al. 1970:104,111,151). This schism between artistic schools exemplifies the potential that a single metaphor has to generate different inferences, when people with different agendas do the mapping.

Along with the manner and style of speech, the supposed intent of a speech act may be mapped:

speech intent ? artistic intent

Thus an artwork may be a “protest”, a “message”, a “description”, a “statement”, or an “argument”. The “argument” metaphor seems particularly prolific. Artists speak of a “convincing” seascape, a “believable” still life, or a “persuasive” portrait. Artwork may, as

mentioned, be “truthful”; it can also be “lying” if it is unfaithful to its subject or tricks the eye with manipulative techniques.

Art that is created with the intent of communicating a sequence of events is often conceptualized using a special case of the metaphor ART IS MONOLOGUE, namely ART IS STORYTELLING. In most cultures art has been used to document events or mythology accompanying, or in the place of, spoken or written language. In the Western tradition artists may refer to paintings as “allegorical” or as exhibiting “narrative”. “My drawings tell stories,” says modern representational artist Mitchell Marco. “Each picture focuses on a character...” (Zevitas 2003:78-81).

Whatever the artist’s manner of speech or speech intent, the audience does not usually actively participate in the spoken communication that is art. This attribute of some artistic genres encourages the use of the metaphor ART IS WRITING, discussed in the following section.

IV. Writing on the wall.

Many of the examples of ART IS MONOLOGUE and ART IS STORYTELLING quoted above are ambiguous as to whether the communication between artist and audience is verbal or written. In a way, ART IS WRITING involves more complete mappings than any verbal language metaphor for art. An integral part of most verbal communication is conversational give-and-take, and in order to exclude audience response from the mapped features of the verbal communication metaphors, the metaphor’s source domain must be a nonstandard form of talk such as monologue or storytelling. Written communication escapes this dilemma. Texts, in many contexts, do not permit an in-kind response from the readers.

ART IS WRITING

WRITING		ART
author	?	artist
readers	?	viewers
writing	?	art

While the metaphor ART IS WRITING provides many of the same mappings and inferences as those discussed in the previous section, several are specific to the written nature of the artistic communication. For example, returning to the Impressionists’ metaphors, Degas is praised as painting “a prose...articulating a new...observation” (Blunden et al.:1970:151). “Prose” evokes a specific style of writing via the ART IS WRITING metaphor. This metaphor makes possible reference to many different kinds of writing, permitting modern artist Calvin Seibert to call his work “a diary, a visual text...” (Zevitas 2003:126-129). A surreal piece, such as Nic Hess’s masking tape art, can be imagined as a “fairy tale” (Esterow 2002:96).

For some artists, different genres of writing are mapped to genres of art. For example, “still lifes...offer a degree of creative freedom unlike any other genre – a dichotomy which (still life artist Daniel) Greene likens to the difference between fiction and nonfiction writing”(Sullivan 2001:30-35). Frank Webb, a judge in an art contest, demonstrates a similar mapping. Looking

for something “going beyond realism”, he wants “to see a painting that’s more in the manner of the poetic than the journalistic” (Carpenter 2002:8).

Conventions specific to written communication may also be mapped. A simplified drawing of a subject may be termed an “abbreviation”; a simplified style is “shorthand”. An attention-getting point of interest, such as a butterfly hovering over a still life, may be a “punctuation mark” (Carpenter 2002:30, Esterow 2001:34). An inference of the ART IS WRITING metaphor is that artworks are expected to be “read” and are created for this purpose. Artist Jack Hines describes his artistic goal as producing paintings which are “every bit as legible and clearly read as an atlas” (Chapman 2001:44-49).

An actual or potential “reader” is an essential part of art, according to the metaphor ART IS WRITING. However, as with the monologue and storytelling models of art, the audience has only a receptive role – a situation not typical of most communication. Let us now turn to a metaphor that does permit the mapping of audience participation.

V. Talking back to art.

In most communicative situations, at least two participants interact and respond to each other. The models for art discussed above map a speaker/author, a hearer/reader, and the artist’s speech/writing. The hearer/reader’s response in the source domain of communication apparently cannot map to any element in the artistic target domain. This makes a more complete mapping from the domain of speech difficult.

ART IS CONVERSATION I

CONVERSATION		ART
speaker 1	?	artist
speaker 2	?	audience
speaker 1’s speech?		art
speaker 2’s speech ?		?

Some artists map “speaker 2’s speech” onto the audience’s internal response to the artwork. This is not a complete mapping, because the artist cannot respond in turn to the “speech” except by anticipating it. One artist suggests that “lost and found” edges – boundaries which are soft or blurred – “allow the image and viewer to dialogue” more than crisp edges, because the viewer will have to search for the edges and will be more of a participant in understanding the painting (Newfield 2001:61-63). Many techniques evolve with the intent of maintaining a viewer’s interest in the painting; however, an artist’s anticipatory response to viewer’s potential reactions still falls short of permitting a more complete conversational mapping.

Some modern art deliberately seeks to expand the audience’s role, to more perfectly fit the communicative model. Performance art exemplifies this attempt. The performance artist’s ability to respond to the audience’s reactions is usually integral to the art form. Other forms of art include video cameras or mirrors which reflect the audience and their reactions, or music which changes according to the audience’s movements. Some art depends entirely on the viewers and

their actions for its significance. For example, the recent exhibition in Norway of a series of blenders containing live goldfish – which museum visitors could either blend or refrain from blending – relied on audience actions to make its statement about human nature (of the thousands of visitors, only a few blended fish each day). Likewise, the “artificial cloud” created by two New York architects, in which visitors’ raincoats change color in response to the presence (and programmed information about the wearers’ likes/dislikes) of other visitors, eschews the “passive” quality of traditional “paper art”, according to the artists, and more completely represents a “conversation” than traditional painting (Deere 2001:109).

VI. Eavesdropping on art.

While some modern artists seek to expand the audience’s role, other artists make use of language metaphors which marginalize the audience, as in ART IS CONVERSATION II below.

ART IS CONVERSATION II

CONVERSATION	ART
speaker 1 ?	artist
speaker 2 ?	artwork
speaker 1's speech?	art process (painting, sculpting, etc.)
speaker 2's speech ?	results of art process

Many artists now speak of “communicating with the canvas” rather than with a human audience. Modern artist Masako Kamiya, for example, uses this metaphor most explicitly when she says, “I engage in a dialogue with paint. My statement is each dot I make with the brush, then I respond intuitively to each unexpected play of dots...This process is an interchange with the painting activity” (Zevitas 2003:62-65). The audience has no role in this conversation. The only possible mapping for the audience is as an eavesdropper on the artist-artwork conversation.

A common manifestation of these mappings is found in the metaphor ART IS THERAPY. Psychiatric therapy is a specialized form of conversation, in which speaker 2 helps speaker 1 resolve emotional problems. ART IS THERAPY has the same mappings as ART IS CONVERSATION II above, but with the added inference that the artist benefits emotionally from the exchange, and perhaps the inference that the artist’s emotional state is the motivating factor behind the conversation/art creation.

While conversation with a canvas can be psychiatry, it significantly *cannot* be some of the forms of communication possible for artist-to-audience communicative metaphors, such as a protest, message, description, or argument. No artist “convinces” a canvas the way they may convince an audience, nor can a canvas receive or interpret a “message” or “protest”. An inference of ART IS CONVERSATION II is that the canvas, as conversational participant, is not capable of all the responses of a human being.

The communicative form “description” is omitted for a different reason than these other forms of communication. A conversation with an artwork is only possible if the artwork responds in unexpected ways (note Masako Kamiya’s statement, above). Without response, we

would have only a monologue – and artist/canvas monologue does not seem to exist in metaphor. This requirement entails that a haphazard element must be introduced into the art creation process for ART IS CONVERSATION II to apply. As a result, ART IS CONVERSATION II very rarely describes representational works, and it is never used in reference to realist paintings. Information-based forms of communication like “description” require a distinct, recognizable subject – a requirement which is incompatible with this metaphor. This incompatibility strengthens the conclusion which was suggested by our discussion of the Impressionists and their critics, that different language metaphors in art are tightly bound to different schools of art creation.

There exists a third conversational metaphor, which maps neither artist nor audience. This metaphor maps conversational participants onto multiple artworks:

ART IS CONVERSATION III

CONVERSATION		ART
speaker 1	?	artwork/art element 1
speaker 2	?	artwork/art element 2

This metaphor may be used by artists working several canvases simultaneously. “I like the way one picture starts a dialogue with the next,” says artist Neo Rauch (Galloway 2001:110-111). The metaphor may also be used more in the sense of ART IS CONVERSATION II, when different elements of an artwork “speak” to each other through unplanned interactions. Abstract artist Anne Neely reports that her goal in art is to explore “how color, paint and form meet and respond to one another” (Zevitas 2003:98-101). Unsurprisingly, like ART IS CONVERSATION II, this metaphor is used mainly by abstract artists who depend on random interactions to produce their work.

VII. Conclusion.

Forms of linguistic communication provide a rich source domain for art creation metaphors. Human uses of speech and writing are so varied that they provide metaphors with mappings and inferences appropriate for every kind of artistic endeavor. However, different mappings from language source domains apply best to different kinds of art creation. Artists concerned with having a certain effect on their audience “speak to the viewer” or provide a “message” for the viewer to “read”. Within the general scope of ART IS WRITING/SPEECH (to the audience), artists may draw different inferences: an Impressionist might value “conciseness,” whereas a Romanticist might value “lyricism” or “poetry” and a photorealist might value “truthful description”.

Some artists try to include the audience in their “conversation”. Artists throughout history have attempted this by incorporating complexities in their art which the viewer explores slowly. In more recent years, artists have moved beyond this illusion of responsiveness and have developed works which literally react to the audience.

However, other artists have moved in the opposite direction. These artists fail to map the audience into their artistic process, focusing instead on “conversation” with (or amongst) their materials, techniques and canvases. The audience is mute witness to a conversation in which it plays no part. No doubt some audiences enjoy playing the “eavesdropper” on this artistic process. However, when artists decline to consider audience comprehension in their metaphors and artistic process, it decreases the likelihood that an audience will understand the art.

As the art world becomes more diverse, a comprehension of the different metaphors for art becomes increasingly essential to the appreciation of the vast array of artistic processes and artworks. The tools of conceptual metaphor theory are uniquely suited to documenting what genres of art are “saying”, what kind of audiences they are “addressing”, and why they are “speaking” at all.

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HABITAT CONSERVATION, NONPROFITS AND THE TAX CODE: A NEW WAY TO THINK ABOUT PRESERVATION

MARA FIELDS

The conservation of land for environmental purposes is a hot topic in our modern lives, showing up in our newspapers, our legislation, our education. Currently less than 5% of intact, non-tropical swamp and deciduous needleleaf forests are protected world-wide and tropical mixed broadleaf and dry forests are as equally unprotected. One hundred fifty years ago, nearly 10 million Chinook salmon came to the mouth of the Columbia River to begin the largest salmon migration on earth. Today, less than 3% of the native run survives due human encroachment, including habitat destruction. Development runs rampant in our country, with 3,193,200 acres of private land lost to growth in last seven years. The Atlanta area has lost nearly 25% of its tree cover since 1973, with 50 acres of trees a day falling to development's bulldozers. Unfortunately Atlanta is not alone in the move toward sprawl.

Of course not all habitats are doomed to become strip-malls and housing developments. Several mechanisms currently exist to protect wild spaces from the encroachment of pavement: from Teddy Roosevelt to Bill Clinton, presidents have set aside lands as nation monuments; congress developed the National Wildlife Refuge System, consisting of more than 500 wildlife refuges which are home to 700 bird species, 220 mammal species, 250 reptiles and amphibian species, and 200 species of fish. But for preservation to make a significant impact for ecosystems we must have more than National Parks and Preserves which conserve only a tiny fraction of the world's habitats. The next generation must begin to think differently not just about how we develop our communities, but how we develop the laws which can either encourage or discourage preservation. Our country's thinking must change to embrace ecosystem preservation at the very heart of our laws. As mundane as it may initially seem, nurturing new ways of thinking about our country's tax codes may protect more ecosystems from destruction than our heads of state can do with an executive order.

In a time when education is poorly funded, nature reserves can act as outdoor classrooms across the country—ideally including small but essential urban open-spaces for those children who are locked in the inner-cities. In a time when extinction rates for species is 1000 times the natural rate, nature preserves and refuges can harbor and protect these animals and plants for the enjoyment and use of future generations—to preserve the precious balance in which our world rests.

This paper will examine and evaluate the current support for charitable land conservation and the potential obstacles nonprofits encounter when trying to preserve land. Examining the positive and negative elements of current tax codes regarding nonprofits can help lead to a better understanding of how nonprofits can best preserve open spaces and natural habitats, and hence improve the quality of life for all living on our planet.

Part one of this paper will give a background on the types of organizations in existence, the lands they have acquired and the potential effects of exempt land-holdings on communities. Part two will analyze the Federal tax code which govern both tax-exemption status for nonprofit corporations and land donations and will give suggestions for improvement. The analysis will look at benefits to the nonprofits themselves, but also what encouragements are given to individuals who donate lands. Part three will compare state tax laws to determine which seem to be the most practical and encouraging for non-profits wishing to preserve land. The paper will conclude with a road-map for non-profits who wish to conserve land, as well as suggestions for where we might go with future legislation.

PART I. OVER-VIEW

A. Why Nonprofits? The role of Nonprofits involved in land conservation.

Nonprofits play a recognized role in an array of areas of our society. From churches, to homeless shelters, to humane societies, nonprofits often supply goods and services that are lacking in the governmental or private sector. The important role these organizations fulfill is not new; the European tradition of philanthropy began in the Americas with early colonialism. These fledgling philanthropic organizations focused on alleviating the suffering in the world, feeding and clothing the poor, caring for orphans and eventually establishing hospitals, churches and schools.

The role of nonprofit organizations have expanded since the founding of our country. Now one can find groups that are organized around sports, hobbies, the arts, the environment and a multitude of other issues. Yet many still serve society in ways that traditionally the government has been responsible for—including conservation organizations. These groups are increasingly involved with government agencies to help manage fragmented habitats and waterways, provide resources for much needed environmental goals, and “weav[e] together economic activities and the maintenance of ecologically processes in site-specific ways.” Organizations owning and protecting parks, preserves, and conservation easements has grown in national significance through the proliferation of land trusts, as well as purchasing of lands outright. The range of activities and types of lands held by conservation organizations is as varied as the groups themselves.

Perhaps the largest and best known of such land conservation organization is The Nature Conservancy, who have over one million members and have helped to preserve 11 million acres in the US and 60 million worldwide. Overall, the Nature Conservancy manages 1,340 reserves around the globe, the largest system of preserves in the world. In Oregon alone, the organization holds over 2500 acres of land in preserves—the smallest being 26 acres near Portland, the largest at 1222 acres on the John Day river. The first area was purchased in 1963 and is located just south of West Linn near Portland. The Oregon Camassia Nature Area is not just held as an open space, or for habitat, it also serves as an outdoor classroom for West Linn High School’s ecology students and as a recreation area in the spring and summer when volunteers lead hikes and teach visitors about the habitats and wildlife of the area. Ecologists from the Conservancy monitor wildlife and water quality to study ways to minimize impacts on the hydrology of the preserve from near-by urban activity.

Another important Nature Conservancy reserve in Oregon is the Sandy River Gorge Preserve, established in 1970 when a private land owner donated 156 acres to the Conservancy to hold and manage as a preserve. Since that time it has grown to 391 acres and provides vital habitat to threatened steelhead, Chinook, and Coho salmon. The preserves in Oregon are found on the coast, east of the cascades, as far south as Medford and as far north as Portland—with several preserves bordering the two largest metro areas in the state.

The World Wildlife Fund (WWF) is a close second in size and scope to The Nature Conservancy, with 1.2 million members and \$110 million raised for land conservation around the globe. WWF not only raises money from fund-raisers, donations, and membership fees, the organization also receives funds from the U.S. Agency for International Development. 89% of the groups moneys are spent on conservation—which often includes not only physical land preservation, but education programs. One such program in Madagascar taught local women to build and use fuel efficient stoves. The result is less cutting of forests and an income for these women who can build and sell the stoves.

Though WWF and The Nature Conservancy are perhaps the best known conservation organizations, they are not the only influential groups in land conservation. The United States is awash with smaller, local organizations concerned with the protection of the environment through land preservation. New trusts are being created at a rate of nearly 75 per year, and there are currently over 1100 nationwide. All together, these organizations have lead to around 3 million acres of protected lands.

Land trusts such as the Land Conservancy of San Luis Obispo County, or the Palos Verdes Peninsula Land Conservancy are examples of such organizations. The Palos Verdes Peninsula Conservancy was formed to preserve undeveloped land into perpetuity. The group ensures the habitats of the Palos Verdes Peninsula in California are kept as open spaces and have been successful in maintaining 260 acres of Peninsula as open space. Trusts like the above are local grassroots organizations working to preserve open spaces, special habitat and natural resources in and around their own communities. Usually they protect the land by acquiring fee title or through conservation easements, taking on the responsibility to manage the land into perpetuity.

B. What happens when preserves are established? The potential effects of land conservation on local environs.

Clearly when a tax exempt organization purchases or obtains lands within a community, there will be some impacts on those who live nearby. Most impacts will be positive, but there are some potential negative effects of tax exempt land-holdings on local governments. One of the biggest conflicts comes from a community's fear that a preserve will be a drain on the local tax-base. If large quantities of land are held in trust and are tax exempt, the local government will not be receiving the moneys they would if the land was used for profit or as residences. With local governments struggling to maintain their schools and infrastructure, tax-exempt land-holders may become targets for much-needed revenues. Towns find reasons for question-

ing the group's tax-exempt status and then assess the property as nonexempt—a devastating result for small conservation organizations. Lawsuits follow.

But not all situations result in conflict. Some nonprofits are financially capable of foregoing tax exemption status on their properties, or are willing to pay reduced taxes, or to pay a service fee to the local government which would cover services provided to the property. Another option is for users to pay a fee, a portion of which would go to local governments in lieu of taxes. Both the nonprofit and the local government benefit when they work together toward solutions such as the above, for these alternative forms of financing can make the difference between communal acceptance of a preserve, and a battle fought over scarce resources.

Yet, local governments may not really be losing as much money as they think since the cost of residential development to a city can be enormous. Often additional waste disposal, education, police, fire protection, road maintenance and other services are needed which end up costing more to provide than new revenues from the new development can cover. In addition, conservation land can actually increase the worth of adjacent land, attract tourism recreation and commerce to the area.

Other benefits of land conservation of course include things like better watershed health, flood control and better air quality. On an individual level, there is a benefit to donating a conservation easement or land to a nonprofit because of the federal tax deductions available. And as mentioned before, preserves can also be used as outdoor classrooms by local schools.

Open spaces, habitat corridors, wetlands, estuaries—all are vital to not only the natural environment, but to our own health. The government makes a small dent in the problem of habitat destruction (through the designation of National Parks and Wilderness areas), but their efforts are not enough—nonprofit participation is essential. Because nonprofits play such a significant role in preserving important habitats, tax laws and policies should be geared as much as possible toward helping nonprofits attain and maintain conservation lands. As nonprofits fill-in where the government has failed we as a nation must ensure our tax laws protect and encourage both charitable real estate donations, and the holding of lands as non-development oriented, non-resource producing habitats.

The preservation of natural places can be inhibited or encouraged through laws regulating donators of land, or the conservation organization itself. The next section looks at two applicable tax laws under the Federal Code that affect nonprofits, analyzing their strengths and weaknesses in order to develop possible solutions to the difficulties surrounding land preservation.

PART II. CAN THE GOVERNMENT DO MORE TO ENCOURAGE HABITAT PRESERVATION? THE FEDERAL TAX CODE'S EFFECT ON NONPROFIT CONSERVATION ORGANIZATIONS.

The federal government has provided tax exemptions for charitable organizations from colonial times to the present, with a current code that exempts certain organizations from income, estate and gift tax. One rationale behind exemptions such as the current statute, 26

U.S.C. §501, is that nonprofits supply goods and services that the government itself has a duty to supply. Because nonprofits are lifting the government's burdens—by supplying educational, scientific, religious or charitable services—they are rewarded with a tax exemption. To tax these sectors would be almost like the government taxing itself. Conservation organizations have not seemed to encounter difficulty in receiving exemption status under §501(c)(3), either as scientific, educational or charitable corporations (as is seen by the voluminous number of conservation organizations across the country). But there is another area of the Federal Tax code that affects nonprofit organizations who preserve habitat—the section that controls charitable contributions, 26 U.S.C. §170.

At first blush §170 seems to be quite nonprofit (and conservation) friendly, and over all, it is. The code encourages private land or property owners to donate to corporations that are organized and operated exclusively for religious, charitable, scientific and other purposes. A donor can deduct up to 30% of their adjusted gross income based on the donated land's "fair market value". To decide what that market value is, one looks at the land's potential "highest and best use", then determines a price the property would normally bring if bought and sold between a willing buyer and seller. But the definition of "use" makes an enormous impact on fair market value, and therefore on the amount of money a donor can deduct from their tax liability. For example, land that is found capable of being subdivided into multi-family plots will probably be worth more than land zoned purely as "agricultural" land. Because the value of property can vary so much depending on the defined use, the question as to the "best" use of a piece of land is often disputed. In weighing the question, a court will consider the physical, economic and legal possibility of using the land in the suggested manner.

Once it is established that a property can physically, economically and legally be put to the most valuable use, a commissioner or court will rule for the highest, assessed value. By allowing a donor to receive a deduction based on "highest and best use", the Federal government significantly encourages land donations. The code could of course be improved by increasing the 30% deduction ceiling to a higher percentage, or by explicitly addressing land conservation in the statute and including additional donation incentives. These incentives could improve the quality and quantity of land donated by giving an increasing percentage of deductions based on size, location and quality of habitat being preserved. Yet the biggest problem with §170 is not the amount of deduction allowed, or the lack of explicit language regarding environmental conservation—it's the physical limitation the code imposes.

Currently, a donor may only receive a deduction under § 170 if the donee organization was created in the United States. U.S. citizens are unlikely to chose areas abroad to protect, despite pressing need, because there is no relief under §170(c). The irony of this section of the tax code is that contributions in general may be *used* outside of the United States for charitable or educational purposes, just not directly donated to a foreign organization. Requiring a "middle man" does nothing but reduce effective implementation of preservation projects, and create the potential for resentment and frustration by local communities who feel they are losing sovereign power to American interests.

When discussing organizations that support projects like feeding local orphans, or improving education, perhaps a limit in deductions makes more sense because the need is so local-

ized. But when we look at nonprofits' accumulation of preserved habitats, the equation is not the same. Section 170(c)'s limitation discourages protection of ecosystems not found in our own country, but whether we live in the States or in Australia, an increase in carbon dioxide will continue to heat our atmosphere, the pollutants poured into the sky in Russia will still be filtered by the trees in Alaska, the waters of Oregon will continue to support the salmon and steelhead eaten by Canadians. The benefits of preserving open-spaces and a variety of habitats knows no political boundaries. By prohibiting deductions for donations made to foreign nonprofits, habitats with the most diverse animal and plant populations might be lost. For example, Madagascar's lush, tropical rainforests contain reptilian species, lemur and frogs, and 10,000 varieties of plants containing medicinal properties, that haven't been found in other habitats of the world. But because of massive cutting, only 10% of the country remains forested. By encouraging United State's citizens with a tax code that allowed for deductions to foreign organizations, we could improve preservation of these precious, global ecosystems.

Another criticism of §170 is its limited applicability in Debt for Nature Swaps. Debt swaps are a means of both reducing a developing country's crushing foreign debt, while ensuring some type of environmental protection within the country's borders. The swaps involve either a government, or in this case a nonprofit or bank, buying the debt of a developing country at a greatly reduced value, then releasing the debt in exchange for some promise by the debtor country to conserve lands, enforce existing environmental laws, or any other agreement the parties may come to that would encourage environmental protection.

The problem with the Federal code comes when the holder of the debt donates the instrument to a nonprofit. The donor is entitled to a charitable deduction, but, like land donations, the deduction is limited to the fair market value of the debt. This structure is problematic because the debt's fair market value is generally a fraction of its face value. The fair market value is generally low due to the perception that developing debtor nations will be unable to fully satisfy their debt obligations. The result is donors are less likely to purchase and donate debt if they are given a deduction based on the reduced value, rather than the debt's face value.

The IRS did attempt to ameliorate the problem in Revenue Ruling 87-124 where the agency allowed a donor to deduct not only the fair market value, but also for loss between the face value and current market value. Yet the agency was not willing to support a legislative change in the code to reflect their ruling, leaving donors uncertain as to the amount they might be able to deduct for a debt for nature swap. Legal uncertainty has made donor-banks unwilling to claim the double deduction under the Revenue Ruling. Reduced deductions will lead to less donations of this sort in general—a bank who can receive greater tax relief for donations of debt is presumably more willing to donate these instruments than those who merely claim a loss. In order to alleviate fear and uncertainty, the legislature should amend §170 to codify what the IRS has said under Revenue Ruling 87-124.

If banks begin to donate more willingly, then nonprofits will be able to arrange for more environmental protection in the debtor country. Without banks donating their debt instruments directly, the only alternative left is for the nonprofit to buy the instrument on the open market—a result that clearly decreases the amount of conservation agreements created considering the

limited resources of many nonprofits and the enormous amount of debt held by developing countries.

Despite the criticism over charitable contributions of debt and the territorial limit on donations, the federal tax code has relatively few disincentives for organizations to conserve land. The largest battles nonprofit conservation groups face is at a state level. The following section will examine property tax exemption laws from various states, highlighting the elements that seem to encourage land conservation by nonprofits and pointing out potential areas of contention between local governments and the conservancy groups that are found within their boarders.

PART III. WHAT ROLE DO STATE'S PLAY? A LOOK AT PRESERVATION AND NONPROFITS IN THREE STATES.

Nonprofit organizations function differently in various states. Some state laws greatly encourage land-donations and preservation, such as New York which incorporates exemptions for charitable work within its constitution. The language forbids the legislature from altering or repealing exemptions for real property used exclusively for religious, educational or charitable purposes owned by a nonprofit. Other states have no constitutional provisions and weak statutory schemes. How states structure their codes and constitutions can effect land conservation within their boarders either positively or negatively. By analyzing the differences we might come to a better understanding how laws must change in order to encourage nonprofits to preserve land in their own communities.

The variances in state law and their effects are discussed further in the following section by focusing on three states: New York, California and Oregon. These states represent a broad range of legal systems and policies regarding nonprofit land holdings. California illustrates how constitutional provisions can be incorporated to preserve land. New York exemplifies how a state's strong statutory and common law history can encourage nonprofit conservation. Oregon which has neither constitutional provisions nor common law history, typifies states which have room to grow, developing new policies and codes to promote habitat preservation.

A. New York

Overall, New York is land-conservation friendly. A nonprofit organization can qualify for a tax exemption for its real property under section 421 (subd. 1, par (a)) of the Real Property Tax Law. A group must show that it is organized for either religious, charitable or educational purposes, that the property itself is used exclusively for those purposes and that no profit goes to any of the officers, members or employees. The New York courts have wrestled with these elements in several cases concerning land conservancies. One of the most debated aspects under this statute is whether an organization is using the land "exclusively" for charitable purposes. Many cities in New York tried to levee taxes on a range of nonprofit-owned lands claiming that preserved land was not being used exclusively for a "charitable" purpose.

In Mohonk Trust v. Board of Assessors of town of Gardiner the town of Gardiner assessed taxes on 1,801 acres of land which was owned and operated by the Mohonk trust as a

wilderness area. The town claimed, first, that a trust is not an exempt organization, and second, that the land isn't being used *exclusively* for exempt purposes. The court refused to follow these arguments, reading the statute more broadly: "an interpretation so literal and narrow that it defeats the exemption's settled purpose is to be avoided. Accordingly, 'exclusive' as used in the context of these...statutes, has been held to connote 'principal' or 'primary'". The primary purpose of the organization (the preservation of wilderness for the benefit of the public, and secondarily educational and scientific purposes) was found to fit neatly into the New York statute. The court merely states, "we see no reason why these categories should not encompass lands used for environmental and conservation purposes which are necessary to the public good and which are open to and enjoyed by the public." They go on to point out that the Legislature could have removed environmental and conservation purposes from the meaning of charitable, educational or mental or moral improvement if they had wanted to exclude trusts such as Mohonk from property tax exemption—but the legislature has not.

This notion that lands held for conservation purposes constituting "charitable use" continued to be supported by the New York court. In 1977, the City of Rye levied tax assessments on the North Manursing Wildlife Sanctuary—a property that is used "solely as a sanctuary for water fowl, songbirds, ducks, raccoons, and possum". The city contended that the conserved land was set aside merely for the enjoyment of those who lived there, not for any charitable use. But the appellate court held that the land was exempt under 421 of the Real Property Tax Law because it was organized primarily as a wildlife sanctuary and *for the good of the public*.

Cities have tried to get around exempting land trusts in other ways—acknowledging the notion that conserved lands and nature reserves are "charitable" under the statute, but claiming that the nonprofit organization is not using the land exclusively for that "charitable" purpose. In 1990 the Adirondack Land Trust bought 168 acres of undeveloped land with the purpose of "conserving, maintaining and enhancing the physical and aesthetic environment, natural resources and economy of the Adirondack area." The town of Putnam levied taxes on the land claiming it cannot be used in any meaningful way by the public because of the lack of land access and the organization's failure to create docks or to establish hiking trails. The court follows past cases and determines that the property is indeed exempt under New York's real property law. While acknowledging that an organization can not act to exclude the public yet allow access only to its members, the court points out the practical need to restrict access in a sanctuary-type park. The court recognizes that "restricted access to and use of a wildlife sanctuary is essential lest the sanctuary fail of its purpose."

In a more recent case, the town of Fishkill tried to levee taxes on land held by the Scenic Hudson Land Trust. The city claimed that because the land was managed by the New York State Office of Parks, Recreation and Historic Preservation, it was not being "*used*" by the Trust for exempt purposes. But the court held for the Trust, finding that the management arrangement is not a "lease" in the conventional sense (which would destroy exemption), and even if it was, a lease held by another exempt body is still exempt. The property was not being used to generate revenue and continued to be in general supervision of the Trust—the agreement with the state of New York does not destroy exemption.

The above cases illustrate New York's powerful support of land conservation within their state. Both judicially and legislatively, the State has confirmed that nonprofits conserving land for environmental purposes are allowed exemptions on that property. This strong support for conservation organizations can also be found in California, but with a different legal structure, as will be discussed in the following section.

B. California

California encourages land preservation even more explicitly than New York. The state has built into its tax code an exemption for "property used exclusively for the preservation of native plants or animals, or biotic communities, or geological or geographical formations of scientific or educational interest, or open-space lands used solely for recreation and the enjoyment of scenic beauty." The code is supported by the California Constitution which states that legislature can exempt property from taxation if it is used exclusively for charitable purposes and owned or held in trust by nonprofit corporations or other entities organized and operating for those purposes.

It would seem that no court interpretations nor additional legislation would be necessary to aid nonprofits in the preservation of natural spaces. But in 1981 the constitutionality of this provision was challenged by the county of Los Angeles. The county levied taxes on land held by Santa Catalina Island Conservancy claiming that land held for environmental or conservation purposes could not fall under the category of "charitable" as defined in the State Constitution. The court found that "charitable" purpose includes the preservation of land for environmental purposes. In coming to this conclusion the court cited a line of California cases that determine the meaning of charitable, looked to other state jurisdictions (including New York) that have found conservation to be a "charitable" purpose and finally, turned to Federal cases that support nature conservation as charitable purpose.

The courts decision followed the legislatures purpose in creating §214.02. The Assembly Committee on Revenue and Taxation concluded that local governments were reluctant to preserve open spaces because of their reliance on property tax revenues, hence, land was becoming a depleted resource, and was subject to irreparable damage. The committee reached the following conclusion, "The property tax exemption provided under the existing welfare exemption should be broadened to include environmentally oriented nonprofit organizations that are preserving ecologically valuable areas."

The same case covered the issue of an organizations "exclusive use" for charitable purposes. The county argued (similarly to the New York towns) that the Santa Catalina Conservancy was not using the land exclusively for a charitable purpose, so therefore was subject to taxation. But like the New York courts, the California Appellate court read "exclusive use" more liberally than the county. The court recognizes that the Conservancy has profit-making motor tours and hunting programs, but affirms precedent in the state that focuses not on the revenues derived, but the purpose for which the action is conducted. If a property has a facility that is incidental to and reasonably necessary for the accomplishment of the charitable purpose then it falls within the exemption. The court writes "[o]nce the threshold determination is made that the purpose for which the activity is undertaken is proper, the generation of revenue is ir-

relevant where the receipts are not income from property held by the charitable organization solely for investment or commercial purposes.” In conclusion the court states that the Conservancy’s activities on the sanctuary land are not intentional profit-making actions, and determines the organization to be exempted from property taxes.

California’s use of their Constitution and code has encourage land conservation in their State. The final state-analysis focuses on Oregon, a state (unlike California) with no constitutional support for nature preservation and (unlike New York) relatively little case law supporting land conservation.

C. Oregon

Oregon’s history and policy on nonprofit land conservation is less developed than California or New York. Oregon’s constitution has no specific wording that grants exemption specifically for organizations devoted to preserving nature. The Oregon code is more like the New York statute—property tax exemption given to “property of art museums or literary, benevolent, charitable and scientific institutions.” But unlike New York, Oregon is not replete with case law establishing the credibility of conservation organizations as charitable organizations eligible for property tax exemption.

A recent case put a damper on possible conservation in Oregon when it affirmed a Department of Revenue decision not to exempt a small land conservancy from property taxes. The court in this case found that evidence was insufficient to prove Bruin Conservancy property was operated as a charity. The court decided the use of the property did not qualify for exemption despite the organization’s attempt to garner local participation, to encourage schools and the public to use the land. Because the organization’s director had fenced the area and posted no trespassing signs—due to vandalism and arson on the land—the court determined that the land was not relieving the government of any burden, or providing any public benefit.

Perhaps the circumstances of the case and the personality of the director makes this case unusual and unique, but the court’s ruling is still significant. By finding that the land must be regularly used, open to the public for free access and have bathrooms and potable water, the court takes a view that is not pro-conservation. The land is not found to be tax exempt in part because of the lack of development and public access, yet these are the very things that land conservation seeks to avoid. This ruling is very different than the New York decision in Adirondack that found the organizations land to be exempt from taxation despite the limited public access. The New York court recognized that not only was it acceptable to have limited public access, but that in fact it was necessary to the preservation of endangered species that inhabited the island.

The Oregon code may not address land conservation as directly as other states, but it is not completely devoid of preservation goals. Oregon legislature passed a law in the early seventies which recognized nonprofits’ role in conserving open spaces. ORS §307.115 provides that property of nonprofit corporations that are held for public parks or recreation purposes will be tax exempt as long as the corporation is organized for the principle purpose of maintaining the land as a park. Unfortunately, the wording of the statute does not guarantee preservation of

truly wild spaces or undisturbed habitat for threatened species. Nor does legislative history reveal conversations that suggest this law was passed to preserve habitats and wild spaces for mere conservation, rather than for the direct benefit of humans. Giving exemptions for the establishment of a public park open for recreational purposes does not encourage wildlife preserves or conservation of lands untouched by human activity.

Even creating parks can sometimes be difficult under Oregon's code—getting an exemption is not necessarily easy. A nonprofit group must be approved by the county assessor who weighs the benefits of granting exemption, against the potential loss in revenue which might result from the application. Because the loss of tax revenues to a small community can be devastating, significant local opposition to conservation can arise and possibly lead an assessor to deny exemption. Fortunately, the Oregon legislature seemed to have anticipated this result and built in some relief by including an important exception in the code—an assessor cannot deny the application based *solely* on potential loss in revenue *if* the land will conserve, enhance or protect natural environments or air, water or streams.

Clearly the Oregon legislature has recognized the value of natural spaces provide to communities, their importance to health and welfare. As nonprofits continue to buy land for parks and preserves and continue to seek exemptions, Oregon's case law will grow. Statutes may pass, constitutional changes may come, so that eventually land conservation in Oregon may become a greater priority.

PART IV. WHERE DO WE GO FROM HERE? THE FUTURE PATH FOR NONPROFIT CONSERVATION-CORPORATIONS

Americans need to assess our environment both locally and globally and with an eye to the future. The massive loss of natural habitats around the globe will only continue if we do not both improve our existing tools for conservation and ultimately change our mentality about growth, development and consumption.

The comparisons made in this paper highlight areas where improvement is necessary, and where strengths currently exists. New York's common law, which encourages and helps nonprofits in their conservation goals, should be a model for other state judges. Local communities around the country will attempt to wrest monies from nonprofits dedicated to land preservation, but judges can follow New York's lead, finding in favor of conservation organizations, in favor of the environment.

California's constitutional provisions should be a guide for all states of the union, and perhaps for the Federal government itself. Constitutions are the highest law in our country and generally are more difficult to amend than statutes. States should draw on this power, including express recognition of habitat preservation in their constitutions. By doing so, we as a country would ensure a greater degree of protection for not only those organizations who wish to engage in conservation, but for the environment.

Federal and state legislatures must continue to support nonprofits and even to go further to encourage land conservation by implementing tax codes which expressly include pro-

environmental actions as eligible for exemption. Perhaps legislatures could implement a sliding scale for deductions that would take into account ecological importance of specific habitats. For example, maintaining the last vestiges of open space within an inner-city might be more important to overall human and animal health than preserving hundreds of acres in a rural area. The code might be changed to grant a donor greater deductions for the city land in order to encourage preservation over development.

All players on this team of local, national and international governments and organizations must make some changes if we as a global community hope to stop the rapid destruction that now grips our earth. Nonprofits need to educate their local communities about the costs of development, to foster acceptance of leaving land as open space. Local governments must find different ways to fund infrastructure, to move away from a reliance on property tax—perhaps federal agencies, such as U.S. Agency for International Development, should be used locally as well as internationally to make up for lost revenues to local communities. At the same time, nonprofits need to look for creative, successful systems for helping to support the communities in which a preserve exists. Schools could make use of refuges for science classes, nonprofits could charge entrance fees that would go back to local governments, or specifically preserve areas that protect the communities' water source. Both groups must come to the realization that one must support the other if our communities are to have clean air, water and diverse, healthy ecosystems.

In the end, it will take more than conservation alone to slow and stop the rapid destruction of the world's habitats. People, especially in developed countries, will need to make an internal shift from mass consumption to sustainable use and simplicity. City planners will need to see preservation as a necessity for improving urban quality of life, rather than the much touted "growth". But until these difficult human changes are accomplished, land conservation remains as a primary way of halting habitat destruction, and the tax code remains a central player in the process.

NO ENDA WITHOUT TRANS-INCLUSION

RON SCHLITTLER

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PFLAG proudly joins 11 LGBT groups in opposing workplace protection and hate crime bills not protecting gender identity.

THIS IS A year of turning momentous corners for the GLBT civil rights movement, and we all understand it has been a long time coming. Today we are poised to turn another important corner, and I am proud to say that PFLAG is playing a leading role.

With recent reports of yet another horrific murder of someone for being gay, and in this case 18-year-old Scotty Joe Weaver in Alabama was also known to occasionally wear a dress, it is time we insist upon clear language in civil rights and legal protections legislation that expressly covers sexual orientation and gender non-conformity.

Unlike so many of our struggles, this is a corner we can turn for ourselves if we would simply decide to do it.

Four years after the membership of Parents Families & Friends of Lesbians & Gays voted to formally include our transgender friends and loved ones in our mission statement, our board voted in September 2002 to adopt a simple but profound policy: "PFLAG can only support legislation that provides express inclusion of all who are included in our mission statement."

At the time we knew of only one other national organization that had taken a similar bright-line position requiring express transgender inclusion language in civil rights and legal protections legislation if they were to endorse it: the National Organization for Women.

Since then we have learned that 24 additional national LGBT or LGBT-supportive organizations have emphatically made clear they want to support a federal Employment Non-Discrimination Act that has specific inclusion of transgender people.

Of those organizations, 11 are today on record that they will only support an ENDA that includes such language.

This is a remarkable shift in just two years. We at PFLAG say that it is about time. And we vigorously call upon others to follow.

WITH ALL DUE respect to those who have worked so hard over the years on iterations of ENDA and the federal hate crimes bill, much has progressed in our collective understanding of both how and why the workplace discrimination and hate-motivated abuse faced by our GLB friends and family members are so closely intertwined with the discrimination and abuse confronting people who are transgender or gender non-conforming.

In our safe schools work, PFLAG-ers point out that so much of what we understand as anti-gay hostility is rooted in cultural expectations for gender expression. This poisonous mindset takes root long before children even have a notion of the true meaning of sexuality.

Yet the price inflicted by peers and adults alike for failure to conform to proscribed gender characteristics has long been endemic and is widely accepted as perfectly OK.

Such rigid gender expectations, enforcements and reinforcements profoundly harm all young people with unrealistic and potentially damaging demands and punishments.

We underscore this corrosive impact an anti-LGBT climate has on everyone. This anti-LGBT

status quo in schools mirrors the larger society where it must be condemned as equally unacceptable.

SINCE PFLAG's TRANSGENDER-inclusive policy position was adopted, we have not looked back. Our organization has firmly resisted calls for political expedience that increasingly ring hollow.

We have been gratified to see several local and state policy efforts succeed, such as the fully LGB & T inclusive hate crimes bills in Pennsylvania, New Mexico and Missouri. Workplace and hate crimes bill in Congress have languished for years now despite the shortcomings of categories covered.

At the same time, we have witnessed authentic "revolutions of awareness" playing out around the country, exemplified by both private sector and public policy successes.

The list of Fortune 500 companies that now offer protections based on sexual orientation, according to the Human Rights Campaign, numbers an impressive 389. Forty-one of those include transgender coverage.

Until policy makers are asked to consider why particular language is in a bill, what it means, the motivation to become educated is limited.

We call upon the rest of our LGBT advocacy and allied organizations, at every level, to help our movement turn this corner. It is at our peril if we don't.

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Synthetic Mathematical Thought

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Abstract

With the incredible library of mathematical thought now available through electronic communication, perhaps it is time to let those electronic machines assist the human mind in mathematical discovery by accentuating what computers do best: The rapid, accurate, and precise manipulation of incremental pieces of information in coded form. How may electronic computing be used to synthetically organize, classify, advance, extend, confirm, and refute mathematical thought? Synthetic mathematical thought is one answer.

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1 Introduction

In the thousands of years of human mathematical thought, the primary means of communications and development has been the written word. Symbols from many contexts and languages have evolved to represent the most abstract thoughts of mankind. Some of these symbols have become synonymous with the mathematical concepts they represent, such as “=” for equality, “+” for addition, and “ \cap ” for intersection.

As human mathematical thought expanded through the centuries, through the efforts of many cultures, and with the cumulative benefit of hard-earned perspective, so did the sophistication and extent of the symbols used to manipulate, combine, extend, confirm, and refute conclusions based on those symbols, and the concept they encapsulate.

With the incredible library of mathematical thought now available through electronic communication, perhaps it is time to let those electronic machines assist the human mind in mathematical discovery by accentuating what computers do best: The rapid, accurate, and precise manipulation of incremental pieces of information in coded form. Indeed, what is mathematical symbolism except pieces of information that form, when combined meaningfully, expressions that lead, through logical linkages, to more advanced conclusions, that also lead to even more sophisticated mathematical thought.

Therefore, besides presenting mathematical documentation in convenient form for human viewing, printing, and contemplation, how may electronic computing be used to synthetically organize, classify, advance, extend, confirm, and refute mathematical thought?

2 First Reduction

Take, for example, the definition of a continuous function at a point. In words, we might say ...

Definition 1 *If f is a real-valued function of a single real variable, $D(f)$ is the domain of f , U is an open set in $D(f)$, and $x_0 \in U$, then f is said to be continuous at x_0 if for every $\epsilon > 0$ there exists $\delta(\epsilon) > 0$ (perhaps depending on ϵ) such that $|x - x_0| < \delta$ means $|f(x) - f(x_0)| < \epsilon$.*

The structure of this so-called “epsilon-delta” expression is a definition, yet it contains elements of analysis (continuity), topology (open sets), arithmetic (subtraction), algebra (absolute value), and set theory (domains). Even if it had been written in a different human language, using the syntax and vocabulary of, say, German, to wit:

Definition 2 Wenn f wäre ein real funktion der einzigen real variable, $D(f)$ wäre der Bereich der funktion f , U wäre ein offen set in $D(f)$, und $z_0 \in U$, dann sagt man daß f continuous auf z_0 wäre wenn auf alle $\epsilon > 0$ es gibt $\delta(\epsilon) > 0$ (vielleicht abhängig von ϵ) wie $|x - x_0| < \delta$ bedeutet $|f(x) - f(x_0)| < \epsilon$.

... the concept of “continuity at a point” is simply a combination of mathematical terms in a particular manner whose purpose is to form a conclusion from assumptions and conventions, even when that conclusion is merely another definition. It is for this reason that Definitions 1 and 2 will simply be referred to (sticking to American English) as “the definition.”

Suppose we restate the definition as follows:

$$\begin{array}{l} \text{Given} \left\{ \begin{array}{l} (a) \quad f \text{ is a real-valued function} \\ (b) \quad x \text{ is a real variable} \\ (c) \quad D(f) \text{ is the domain of } f \\ (d) \quad U \subseteq D(f) \text{ is an open set} \\ (e) \quad x \in U \\ (f) \quad x_0 \in U \\ (g) \quad \epsilon > 0 \text{ is a real number} \\ (h) \quad \delta > 0 \text{ is a real number} \end{array} \right. \quad (1) \\ \text{If} \left\{ \begin{array}{l} (a) \quad \text{there exists } \delta(\epsilon) \\ (b) \quad \text{such that } |x - x_0| < \delta(\epsilon) \text{ means } |f(x) - f(x_0)| < \epsilon \end{array} \right. \\ \text{Then } \{f \text{ is continuous at } x_0 \end{array}$$

This is a translation of the definition into a mixture of mathematical symbolism and language terms. For an electronic device to apply logical rules to statements like (1), more symbolism is needed to remove the dependences on the human language particulars from the objects of mathematical thought. Let us use the first reduction found in Table 1.

Note how \sqcup is written as \sqcup when it is the only such term in an expression.

In general, $[\dots]$ are used as logical grouping marks, and the expression $\left\{ \begin{array}{l} \overset{1}{\sqcup}, \overset{2}{\sqcup}, \overset{3}{\sqcup} \end{array} \right\} \overset{4}{\sqcup} \overset{5}{\sqcup}$ is shorthand for $\overset{1}{\sqcup} \overset{4}{\sqcup} \overset{5}{\sqcup} \wedge \overset{2}{\sqcup} \overset{4}{\sqcup} \overset{5}{\sqcup} \wedge \overset{3}{\sqcup} \overset{4}{\sqcup} \overset{5}{\sqcup}$, where $\overset{5}{\sqcup}$ may be null (in the case of unary operators).

The last entry in the Elementary Symbol Table is the fundamental logical linkage method in mathematics, namely,

Given assumptions, *if* a condition holds, *then* so does a statement.

Now (1) may be expressed as ...

$$\begin{array}{l} \Downarrow [f \sqcup \wedge \delta \sqcup \wedge \{\epsilon, \delta\} \in \mathbb{R} \wedge \{\epsilon, \delta\} > 0 \wedge U \subseteq D(f) \wedge \{x, x_0\} \in U] \\ ? [[\epsilon \Downarrow \delta \exists \# [|x - x_0| < \delta]] \implies [|f(x) - f(x_0)| < \epsilon]] \rightarrow [f \rightarrow x_0] \end{array} \quad (2)$$

Symbol	Operator	Meaning
$\sqcup \Vdash$	unary	\sqcup is a real-valued function
$\sqcup \mathbb{R}$	unary	\sqcup is a real number
$\overset{1}{\sqcup} \downarrow \overset{2}{\sqcup}$	functional binary	the function $\overset{1}{\sqcup}$ evaluated at $\overset{2}{\sqcup}$
$\overset{1}{\sqcup} \subseteq \overset{2}{\sqcup}$	set binary	$\overset{1}{\sqcup}$ is a subset (with possible equality) of set $\overset{2}{\sqcup}$
$D(\sqcup)$	unary	the domain of the function \sqcup
$\overset{1}{\sqcup} \in \overset{2}{\sqcup}$	set binary	$\overset{1}{\sqcup}$ is an element of set $\overset{2}{\sqcup}$
$\overset{1}{\sqcup} > \overset{2}{\sqcup}$	well ordering	$\overset{1}{\sqcup}$ is greater than $\overset{2}{\sqcup}$
$\overset{1}{\sqcup} < \overset{2}{\sqcup}$	well ordering	$\overset{1}{\sqcup}$ is less than $\overset{2}{\sqcup}$
$ \sqcup $	measure	the absolute value of \sqcup
$\overset{1}{\sqcup} \implies \overset{2}{\sqcup}$	logical binary	$\overset{1}{\sqcup}$ logically implies $\overset{2}{\sqcup}$
$\overset{1}{\sqcup} \rightsquigarrow \overset{2}{\sqcup}$	analysis binary	the function $\overset{1}{\sqcup}$ is continuous at $\overset{2}{\sqcup}$
$\overset{1}{\sqcup} \wedge \overset{2}{\sqcup}$	logical binary	$\overset{1}{\sqcup}$ AND $\overset{2}{\sqcup}$
$\sqcup \exists$	unary	there exists \sqcup
$\downarrow \sqcup$	unary	given \sqcup
$? \sqcup$	unary	if \sqcup
$\overset{1}{\sqcup} \# \overset{2}{\sqcup}$	logical binary	$\overset{1}{\sqcup}$ such that $\overset{2}{\sqcup}$
$\downarrow \overset{1}{\sqcup} \exists \overset{2}{\sqcup} \# \overset{3}{\sqcup}$	logical tertiary	given $\overset{1}{\sqcup}$ there exists $\overset{2}{\sqcup}$ such that $\overset{3}{\sqcup}$
$\downarrow \overset{1}{\sqcup} ? \overset{2}{\sqcup} \rightarrow \overset{3}{\sqcup}$	logical tertiary	given $\overset{1}{\sqcup}$ if $\overset{2}{\sqcup}$ then $\overset{3}{\sqcup}$

Table 1: Elementary Symbol Table

Indeed, in exactly the same manner as was just demonstrated, every mathematical thought may be expressed as

$$\left\langle \begin{array}{l} \text{mathematical} \\ \text{expression} \end{array} \right\rangle := \left[\downarrow \langle \text{given} \rangle ? \langle \text{if} \rangle \rightarrow \langle \text{conclusion} \rangle \right] \left| \left[\langle \text{pre} \rangle \implies \langle \text{post} \rangle \right] \right.$$

where $\langle \text{given} \rangle$, $\langle \text{if} \rangle$, $\langle \text{conclusion} \rangle$, $\langle \text{exists} \rangle$, $\langle \text{pre} \rangle$, and $\langle \text{post} \rangle$ may themselves be $\left\langle \begin{array}{l} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$. The symbols listed in (2) may be found in a font of arbitrary size, or several standard 256-glyph character fonts, to accommodate the huge and ever-growing library of mathematical thought.

More generally, (2) is still in human readable form strictly for the convenience of those who wish to read a coded form of the definition. While some expressions are simply symbols listed side-by-side, such as $f \rightsquigarrow$, some expressions are hybrids of set binary operations and regular symbols, such as $|x - x_0| < \delta$.

and

$$(\dots)_8 \Downarrow \Uparrow (\dots)_{15}^? \Uparrow (\dots)_{16} \rightarrow$$

Expressing (3) without the human-readable aides, we have

$$f \Downarrow \Uparrow \delta \Downarrow \Uparrow 0 > \Uparrow x \mathbb{R} \Uparrow \epsilon \mathbb{R} \Uparrow U \Uparrow f D \subseteq \Uparrow x \Uparrow U \in \Uparrow x_0 \Uparrow U \in \wedge \wedge \wedge \wedge \wedge \wedge \wedge \Downarrow \Uparrow \epsilon \Downarrow \Uparrow \delta \exists \Uparrow x \Uparrow x_0 \Uparrow - \Downarrow \Uparrow \delta < \# \Uparrow f \Uparrow x \Downarrow \Uparrow f \Uparrow x_0 \Downarrow - \Downarrow \Uparrow \epsilon < \implies ? \Uparrow f \Uparrow x_0 \rightsquigarrow \rightsquigarrow \tag{4}$$

Note the reverse notation of this syntax. For example, the expression $U \subseteq D(f)$ becomes $U \Uparrow f D \subseteq$ in stack notation, which may be read as “enter U ; push onto the stack; enter f ; apply operator D , which takes the first element off the stack to form $D(f)$; apply operator \subseteq , which takes the first two elements off the stack and produces $U \subseteq D(f)$.”

As another example, the expression $|x - x_0| < \delta$ becomes $x \Uparrow x_0 \Uparrow - \Downarrow \Uparrow \delta <$ in stack notation, which may be read as “enter x ; push it onto the stack; enter x_0 ; push it onto the stack; apply operator $-$, which takes the first two elements off the stack and produces $x - x_0$; apply operator \Downarrow , which takes the first element off the stack and produces $|x - x_0|$; push the previous expression onto the stack; enter δ ; apply operator $<$, which takes the first two elements off the stack and produces $|x - x_0| < \delta$.”

Ultimately, (4) need not be represented by the glyphs in a font containing the symbols; after all, such visual representations are strictly for human convenience. Such shapes are only of benefit to humans trying to understand the logical flow of the mathematical thought. As far as electronic computing is concerned, what is needed is the position in the font of the corresponding glyph, and the operator classification for each symbol, such as “set binary” or “well ordering.”

Based on the arrangement given in Tables 1-2, we may re-write (4) as a string of 4-digit hexadecimal numbers (consistent with ASCII encodings), where, for example, “0078” would represent hexadecimal value “78, or decimal 120, in Font 00, which represents the Western European lowercase letter “x,” and “0122” would represent hexadecimal value “22, or decimal 34, in Font 01, which could represent the stack operation “push.”

```
006601FA012203CA01FA0122003001390122007801FB0122015501FB01220055
0122006600440111012200780122005501100122017801220055011001440144
01440144014401440144013C012201550201012203CA02CC0122007801220178
012201880189012203CA01380023012200660122007801230122006601220178
0123018801890122015501380202003F012200660122017802030204 \tag{5}
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For purposes of explaining the concepts introduced in this document, symbolic expression such as (2) shall be used. Ultimately, only expression such as (5) would be used within a digital logic context.

Once a $\left\langle \begin{array}{c} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$ has been coded into such a scheme, what use is it? How may a machine with binary logic help search through the myriad maze of such expressions to make sense of it all?

Mathematical progress and achievement has always been based on building new material based on past work, usually someone else's past work. Many grand achievements and breakthroughs in mathematics as well as in the sciences have been inspired by simply reading the past ideas of authors long gone, whose work has planted the seeds of new, greater ideas in the next generation of mathematicians and scientists. Is this not exactly what electronic computing would do with statements like (5)? Would electronic computing not be an excellent tool to quickly, precisely, and accurately search through potentially an unlimited number of mathematical expression coded in (5), searching for patterns, compatible \langle given \rangle material, and linked \langle if \rangle statements, to perhaps alert a mathematician to a complicated, intricate, yet perfectly logically valid conclusion that may be valuable in its own right, but which may never have been found by human inspection due to its obscure pedigree? We could leave such potentially invaluable results to those who dedicate their lives, and perhaps sanity, to the study of the written mathematical word, and to leave all innovation to chance. However, perhaps such value-added progress might not be best left to the geniuses.

As is clear from the form of (5), there is a need for a Registry of Mathematical Expressions (RME) within any implementing system. This will ensure that multiple $\left\langle \begin{array}{c} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$ defining the same statement do not overwhelm the system with redundant manifestations.

3 Second Reduction

Once a library of officially sanctioned $\left\langle \begin{array}{c} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$ has been established, the question arises as to its utility in synthetically advancing mathematical thought. In particular, how are $\left\langle \begin{array}{c} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$ combined to make a new expression?

Condition 3 Two $\left\langle \begin{array}{c} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$ may be combined if one $\left\langle \begin{array}{c} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$'s \langle given \rangle and \langle if \rangle statements, taken together, are a subset of another $\left\langle \begin{array}{c} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$'s \langle given \rangle and \langle if \rangle statements.

This is the second reduction. For example, if (unary) $\sqcup \triangleright$ represents “ \sqcup is an even integer,” (unary) $\sqcup \ntriangleright$ represents “ \sqcup is an odd integer,” and (unary) $\sqcup \mathbb{I}$ represents “ \sqcup is an integer,” then using the notation in (2) ...

$$[\Downarrow (x \triangleright) \implies (x + 1) \ntriangleright]$$

and

$$[\Downarrow (x \triangleright) \exists (k\mathbb{I}) \# (x = 2 * k)] \tag{6}$$

may be combined to form

$$[\Downarrow (x \triangleright) \exists (k\mathbb{I}) \# ((x+1) \not\triangleright) \wedge (x = 2 * k)]$$

or

$$[\Downarrow (x \triangleright) \exists (k\mathbb{I}) \# ((x = 2 * k) \wedge (2 * k + 1) \not\triangleright)] \quad (7)$$

since $(x \triangleright)$ is common to both \langle given \rangle statements (and there are no \langle if \rangle statements). In fact, (6) may be taken as the definition of $\sqcup \triangleright$, which would be expressed as

$$[\Downarrow (x \triangleright) \iff \exists (k\mathbb{I}) \# (x = 2 * k)]$$

where (logical binary) $\sqcup^1 \iff \sqcup^2$ represents “ \sqcup^1 is defined by \sqcup^2 .”

As another example, if $\sqcup \nearrow$ represents “ \sqcup is an increasing real function,” then

$$[\Downarrow ((\{x, y\} \in \mathbb{R}) \wedge (x < y)) ? (f \nearrow) \rightarrow (f(x) < f(y))] \quad (8)$$

and

$$[\Downarrow (\{x, y\} \in \mathbb{R}) ? (x < y) \rightarrow (-x > -y)] \quad (9)$$

and

$$[\Downarrow (\{x, y\} \in \mathbb{R}) ? (x > y) \rightarrow (y < x)] \quad (10)$$

may be combined to form

$$[\Downarrow ((\{x, y\} \in \mathbb{R}) \wedge (x < y)) ? (f \nearrow) \rightarrow (f(-y) < f(-x))] \quad (11)$$

since all combined \langle given \rangle and \langle if \rangle statements are subsets of $(\{x, y\} \in \mathbb{R}) \wedge (x < y) \wedge (f \nearrow)$. In particular, the sequence of combinations goes as follows:

$$(x < y) \rightarrow (-x > -y)$$

from (9), then

$$(x < y) \rightarrow (-y < -x)$$

from (10), then

$$(x < y) \wedge (f \nearrow) \rightarrow (f(-y) < f(-x))$$

from (8). The \langle given \rangle expression $\{x, y\} \in \mathbb{R}$ is common to all steps.

Statements (9) and (10) are called *subset* expressions of the *superset* expression in (8). This nomenclature is used when one expression’s combined \langle given \rangle and \langle if \rangle statements form a proper subset of another combination of \langle given \rangle and \langle if \rangle statements.

4 Interactions

The key ingredient for combining several $\left\langle \begin{array}{c} \text{mathematical} \\ \text{expression} \end{array} \right\rangle$ is the recognition of similar elements in the subset expressions, and their application in the superset expression. These similar elements are called *sparks of interaction*, for they “ignite” actions to form the combined expression.

For example, in forming the combined statement (7), the subset expression $[\Downarrow (x \triangleright) \Longrightarrow (x + 1) \not\Leftarrow]$ (so chosen because the conclusion contains fewer elements than the other subset expression) contains the variable x as an (even) integer, which overlaps with the integer use in the superset expression, namely $[\Downarrow (x \triangleright) \exists (k\mathbb{I}) \not\Leftarrow (x = 2 * k)]$. When combined, the $x = 2 * k$ part substitutes into the $(x + 1) \not\Leftarrow$ part to form the complete combined expression².

In the second example, the spark of interaction is $<$, a binary operator. Once the spark is seen in the subset expression

$$[\Downarrow (\{x, y\} \in \mathbb{R})? (x < y) \rightarrow (-x > -y)]$$

it may be used in the superset expression

$$[\Downarrow ((\{x, y\} \in \mathbb{R}) \wedge (x < y))? (f \nearrow) \rightarrow (f(x) < f(y))]$$

to complete the combined expression.

In the respect demonstrated by these examples, combining mathematical expressions, in general, produces longer, more complicated expressions that could, conceivably, become arbitrarily long. While much human mathematical thought is devoted to intricate and massive calculations and manipulations, there will always be a need to simplify an expression to eliminate redundancy, limit complexity, and otherwise prevent this process from becoming unmanageable.

One way to contain complexity is to utilize *equivalences* after combining mathematical expressions. An equivalence, symbolized $\stackrel{1}{\sqsubset} \iff \stackrel{2}{\sqsubset}$, means $\stackrel{2}{\sqsubset}$ may be substituted for $\stackrel{1}{\sqsubset}$, or the other way around, without loss of logical validity. For example,

$$\begin{aligned} [x + 1 &\iff x^+] \\ [f \searrow &\iff (-f) \nearrow] \\ [\int_1^x \frac{1}{t} dt &\iff \ln x] \\ [\frac{d}{dt} \sin t &\iff \cos t] \end{aligned}$$

²This example definitively demonstrates the necessity of the RME. A synthetic mathematical thought system would require unnecessary complexity if expressions such as

$$[\Downarrow (x \triangleright) \Longrightarrow (x + 1) \not\Leftarrow]$$

and

$$[\Downarrow (y \triangleright) \Longrightarrow (y + 1) \not\Leftarrow]$$

were allowed in the RME. Both expressions say the same thing; however, recognizing that the choice of x or y is irrelevant adds unnecessary complexity to any interaction searching system. The RME would admit only one such expression.

are all equivalences. The usual preference is to substitute the right side expression for the left side expression whenever applicable, since the right side is “reduced” in some sense. In the case of $[f \searrow \iff (-f) \nearrow]$, just as in the case of $[(x+1) \not\Rightarrow (x \triangleright)]$, these dichotomous equivalences allow the use of only one defining symbol, such as \nearrow and \triangleright , rather than additionally accounting for their logical duals.

Applying equivalences

$$[f \searrow \iff (-f) \nearrow] \text{ and } [(-y < -x) \iff (x < y)]$$

to

$$[\Downarrow ((\{x, y\} \in \mathbb{R}) \wedge (x < y))? (f \searrow) \Rightarrow (f(-y) < f(-x))]$$

gives

$$[\Downarrow ((\{x, y\} \in \mathbb{R}) \wedge (x < y))? (-f \nearrow) \Rightarrow (-f(-y) < -f(-x))]$$

and another application of $[(-y < -x) \iff (x < y)]$ gives

$$[\Downarrow ((\{x, y\} \in \mathbb{R}) \wedge (x < y))? (-f \nearrow) \Rightarrow (f(-x) < f(-y))]$$

or

$$[\Downarrow ((\{x, y\} \in \mathbb{R}) \wedge (x < y))? (f \searrow) \Rightarrow (f(-x) < f(-y))]$$

if the original $\langle \text{if} \rangle$ expression is retained.

5 Proofs

A *proof* is a sequence of combination and/or equivalences that lead from one mathematical expression to another. For example, suppose we have the following equivalences:

- (A) $[x \triangleright \iff x^+ \not\triangleright]$
- (B) $[x \triangleright \iff \neg x \not\triangleright]$
- (C) $[x \not\triangleright \iff \neg x \triangleright]$
- (D) $[x \vee y \iff \neg(\neg x \wedge \neg y)]$

where $\neg \sqcup$ is a unary operator called “negation,” and $\sqcup^1 \vee \sqcup^2$ is a logical binary operator called “or.” Then starting with the expression

$$[\Downarrow x\mathbb{I} \implies x \triangleright \vee x \not\triangleright]$$

read “given an integer x , then x is either even or odd,” applying (D) gives

$$[\Downarrow x\mathbb{I} \implies \neg(\neg x \triangleright \wedge \neg x \not\triangleright)]$$

and applying (C) gives

$$[\Downarrow x\mathbb{I} \implies \neg(x \not\triangleright \wedge \neg x \not\triangleright)]$$

and applying (B) gives

$$[\Downarrow x\mathbb{I} \Longrightarrow \neg(x \not\triangleright \wedge x \triangleright)]$$

and applying (A) gives

$$[\Downarrow x\mathbb{I} \Longrightarrow \neg(x \not\triangleright \wedge x^+ \not\triangleright)]$$

and applying (D) gives

$$[\Downarrow x\mathbb{I} \Longrightarrow (\neg x \not\triangleright \vee \neg x^+ \not\triangleright)]$$

and applying (B) gives

$$[\Downarrow x\mathbb{I} \Longrightarrow (x \triangleright \vee \neg x^+ \not\triangleright)]$$

and, finally, applying (B) again gives

$$[\Downarrow x\mathbb{I} \Longrightarrow (x \triangleright \vee x^+ \triangleright)]$$

read “given an integer x , then x is even or its successor is even.”

Hence, equivalences, (A)-(D), taken together with $[\Downarrow x\mathbb{I} \Longrightarrow x \triangleright \vee x \not\triangleright]$, proves $[\Downarrow x\mathbb{I} \Longrightarrow (x \triangleright \vee x^+ \triangleright)]$. Since

$$[\Downarrow x\mathbb{I} \Longrightarrow x \triangleright \vee x \not\triangleright]$$

is a tautology, then

$$[\Downarrow x\mathbb{I} \Longrightarrow (x \triangleright \vee x^+ \triangleright)]$$

is also always valid.

The proof itself may be symbolized by the sequence of combination and/or equivalences applied to complete the logical associations. Therefore, in the previous example, the proof could be symbolized as

$$\overrightarrow{\leftarrow} \overleftarrow{\leftarrow} \overrightarrow{\leftarrow} \overleftarrow{\leftarrow} \overleftarrow{\leftarrow} \\ \text{D C B A D B B}$$

where the direction of the arrow above the equivalence indicates the direction of the substitution in the equivalence. However, this terminology is not necessarily completely transparent, for it may not be clear from such symbolism which part was operated on, e.g., by equivalence $\overleftarrow{\text{B}}$. However, for the purposes of tracking the logical path through the mathematical statements to arrive at the “proven” result, such nomenclature is sufficient.

Note also how such a proof is not unique. If an equivalence (E) were added, such as

$$(E) \quad [x \iff \neg(\neg x)]$$

and used to reduce “double negations” during reductions, then a different letter sequence would produce as equally valid proof of the same result. In this respect, while all such valid sequences produce valid proofs, the one(s) involving the least number of combinations and/or equivalences would be considered the “best proof,” or the “proof of least resistance.”

6 Third Reduction

For the convenience of processing many significantly different equivalences together with potentially extensively linked combinations, three basic logical operations are needed, to wit: $\sqcup^1 \wedge \sqcup^2$ the binary logical AND operator, $\neg \sqcup$ the unary logical negation, and the $\sqcup \uparrow$ unary stack push operator. All other logical operations may be expressed by these three, in various combinations.

For example, the seven logical operations found in the previous tables may be expressed as equivalences using only \wedge , \neg , and \uparrow (see Table 3). Tables 4 and 5 list the logical and stack flows, respectively, of the entities in Table 3.

Written Name	Symbolic Abbreviation
x OR y	$x \vee y$
x XOR y	$x \oplus y$
x NAND y	$x \searrow y$
x NOR y	$x \checkmark y$
x ANDN y	$x \bar{\wedge} y$
x ORN y	$x \checkmark y$
x NXOR y	$x \otimes y$
x MUX y	$x \otimes y$

Table 3: Symbolic Abbreviations

Written Name	Logical Flow
x OR y	$\neg(\neg x \wedge \neg y)$
x XOR y	$\neg(\neg x \wedge \neg y) \wedge \neg(x \wedge y)$
x NAND y	$\neg(x \wedge y)$
x NOR y	$\neg x \wedge \neg y$
x ANDN y	$x \wedge \neg y$
x ORN y	$\neg(\neg x \wedge y)$
x NXOR y	$\neg(\neg(\neg x \wedge \neg y) \wedge \neg(x \wedge y))$
x MUX y	$\neg(\neg(x \wedge y) \wedge \neg(\neg x \wedge \neg y))$

Table 4: Logical Flows

Once mathematical expressions have been combined, there will be a need to reduce or simplify the resulting \langle conclusion \rangle into something more manageable than simply an ever-growing list of conclusions. Like equivalences, where one expression replaces another, *reductions* are statements to the effect that one expression is a simplification of another expression. It will usually be the case that a more simplified form of an expression is more desirable than the complex form, even though exceptions may arise.

Written Name	Stack Flow
x OR y	$x \neg \uparrow y \neg \wedge \neg$
x XOR y	$x \neg \uparrow y \neg \wedge \neg \uparrow x \uparrow y \wedge \neg \wedge$
x NAND y	$x \uparrow y \wedge \neg$
x NOR y	$x \neg \uparrow y \neg \wedge$
x ANDN y	$x \uparrow y \wedge \neg x \uparrow y \neg \wedge$
x ORN y	$x \neg \uparrow y \wedge \neg$
x NXOR y	$x \neg \uparrow y \neg \wedge \neg \uparrow x \uparrow y \wedge \neg \wedge \neg$
x MUX y	$x \uparrow y \wedge \neg \uparrow x \neg \uparrow y \neg \wedge \neg \wedge \neg$

Table 5: Stack Flows

For definition purposes, a (third) reduction is a “one-way” equivalence, where the right side may only be substituted for the left side. For example,

$$\left[\int_a^b x \, dx \xrightarrow{R} \frac{1}{2} (b^2 - a^2) \right]$$

and

$$\left[\frac{d}{dx} e^x \xrightarrow{R} e^x \right]$$

and

$$\sin \theta \cos \phi + \sin \phi \cos \theta \xrightarrow{R} \sin(\theta + \phi)$$

are all reductions, symbolized by $\sqcup \xrightarrow{R} \sqcup$, just as in equivalences, except that the “R” denotes the one-way nature of a reduction.

Here, $\frac{d}{dx} \sqcup$ is a unary operator that acts on \sqcup as a one-dimensional derivative with respect to a given variable x , in which case all other variables in the operand are considered constant with respect to that one variable. Additionally, e^{\sqcup} is a unary operator of exponentiation with base e (the natural logarithm base).

Viewed as a stack operation, the quaternary operator \int takes the previous four operands off the stack and arranges them as

$$\int_{\sqcup^1}^{\sqcup^2} \sqcup^3 d \sqcup^4$$

which means \sqcup^4 must be the variable of integration. Similar definitions would apply to iterated integrals of higher dimensions. Note how this notation covers so-called Riemann integrals, such as

$$\int_0^2 x^2 \, d(x^2) = \frac{1}{2} (2^2 - 0^2) = 2$$

which is the same as

$$\int_{-\sqrt{2}}^{\sqrt{2}} |y| \, dy = 2 \int_0^{\sqrt{2}} y \, dy = \frac{2}{2} \left((\sqrt{2})^2 - 0^2 \right) = 2$$

Since $\int_a^b x \, dx = \int_a^b y \, dy = \int_a^b z \, dz = \dots$, the only matching terms of interest in $\left[\int_a^b x \, dx \xleftrightarrow{R} \frac{1}{2} (b^2 - a^2) \right]$ would be the form of $\overset{3}{\sqcup}$ with respect to $\overset{4}{\sqcup}$, and the substitution nature of $\overset{1}{\sqcup}$ and $\overset{2}{\sqcup}$ on both sides of \xleftrightarrow{R} . In particular, a third reduction for $\left[\int_a^b x \, dx \right]$ would be rendered as

$$\left[a \uparrow b \uparrow x \uparrow x \int \xleftrightarrow{R} b \uparrow b * a \uparrow a * -2 \div \right]$$

And $\left[\int_a^b \sin \theta \cos \theta \, d\theta \xleftrightarrow{R} \frac{1}{2} (\sin^2 b - \sin^2 a) \right]$ (since $\cos \theta \, d\theta = d(\sin \theta)$) would be rendered as

$$\left[a \uparrow b \uparrow \theta \sin \uparrow \theta \cos * \uparrow \theta \int \xleftrightarrow{R} b \sin \uparrow b \sin * a \sin \uparrow a \sin * -2 \div \right]$$

Finally, $\left[\frac{d}{dx} \int_a^x f(y) \, dy \xleftrightarrow{R} f(x) \right]$ would be rendered as

$$\left[a \uparrow x \uparrow y f \uparrow y \int \frac{d}{dx} \xleftrightarrow{R} x f \right]$$

assuming f had been defined previously as a function, and that all integrals exist, i.e., the limits they represent exist.

7 Reduction Policies

The general policy in synthetic mathematical thought, that applies to all mathematical expressions that result from a combination of other mathematical expression, is not to proceed to another combination until all equivalences and reductions, and any other simplifying routines, have been applied. If a mathematical expression becomes excessively long for practical use even when all simplifications have been applied, then a more extensive and comprehensive set of equivalences and reductions are needed.

The nature of simplification need not be limited to algebras-like expressions. Logical equivalences, policy walls, length criterion, and the like may prevent an expression from becoming too unwieldy. Experience, experimentation, and practice, practice, practice, will act as the best guide.

Implementation rules are beyond the scope of this document, and are best left to actual implementors of synthetic mathematical thought; however, an interactive interface is absolutely necessary, with tracing capability and easy access to hard copy results, even for preliminary findings. A complete translation cycle is also absolutely necessary, moving quickly and easily from human readable, to standard notation, to stack-based symbolic code, to font-based code, to machine code, and all the reverses, for close monitoring purposes.

The font-based standard code arrangement in any implementation should be based on the latest version of Unicode. Its arrangement of coded mathematical

symbols would be consistent with all other development systems that standardize on Unicode. While the placement of symbols in font schemes in synthetic mathematical thought is best when it does not contradict Unicode conventions, each symbol position's role in the synthetic mathematical thought system grammar described herein is controlling, and it is subject to change as revisions are needed. For example, the integral sign \int has been used as a quaternary operator, however \iint may be defined as a seven-many (septenary) operator, i.e., an iterated two-dimensional double integral:

$$\int_{\sqcup}^2 \left(\int_{\sqcup}^4 \int_{\sqcup}^5 d \int_{\sqcup}^6 \right) d \int_{\sqcup}^7 \quad (12)$$

or as a tertiary operator when seen as an integral operator on an area:

$$\iint_{\sqcup}^2 d \int_{\sqcup}^3 \quad (13)$$

where \int_{\sqcup}^1 is, for example, the unit circle, and $d \int_{\sqcup}^3$ is, for example, the infinitesimal of area. The particulars of the implementation will determine these details; however, the symbol \iint will always be found in the same coded position in Unicode regardless of how its glyphs are represented in any synthetic mathematical thought implementation. For this reason, different symbols should be used for such multiple use scenarios, such as for iterated double integration and double “area” integration when (12) and (13) are both implemented.

8 The Future

How may electronic computing be used to synthetically organize, classify, advance, extend, confirm, and refute mathematical thought? Synthetic mathematical thought is one answer. A properly formed RME, well-defined equivalences, three-class reductions, and carefully planned and instrumented policies in a sophisticated implementation system could lead to a revolution in mathematical thought that could easily lead to practical results whose import is as far beyond what is known and understood today as calculus would have been to humanity 5000 years ago. Synthetic mathematical thought could become yet another great leap forward for what is inarguably the most socially significant achievement of mankind.

GREETINGS: A LAST LOOK

MARK WALDO
MARK NITZBERG

From the Café table of Mark Waldo and Mark Nitzberg



Two of Dr. Frances Cogan's former students agree that studying with her turned life into a land of opportunity. "We're still out here sowing and harvesting."

ABOUT THE CONTRIBUTORS

Mark Waldo

Artist and neo-renaissance design pioneer. Creates furniture, underwater movie sets, museum exhibits, and architecture documentaries. Day jobs include architect, digital media producer, art photographer, construction crew chief, and dog trainer.

Mark Nitzberg

Artist and capitalist. Started a German theatre company and ten technology firms including the Blindsight Corporation, which makes computer-vision technology aids for the Blind and Low-vision. Day jobs include independent film distributor and baritone.

Timothy Hall

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Jennifer Matteson

Current job title at Xerox is Course Developer, which means in addition to writing a 60-80 page training manual every 6 to 9 months, I also become a subject matter expert on the product, attend project team meetings, participate in usability studies, project manage service training and track it through deployment, and write scripts for interactive multimedia presentations. My area of expertise is color laser printers (The horror! The horror!).

I can take a color laser printer apart and put it back together so that the photos we take can be used in the training without misleading technicians; although I cannot guarantee the printer will boot up again without errors.

Most of my writing that solves unique training problems is done in Adobe Framemaker and published as a PDF, or Macromedia Flash and published as a multimedia presentation. Neither of which translate well into Word, hence I chose something non-work related to share.

Since graduating from U of O with a BA in International Studies (French Minor), I've been trained in customer service (phone support), graphic design and pre-press desktop publishing, Windows and Macintosh printer software installation and network troubleshooting, and instructional design. All of which I use daily, except of course for the French minor, and most of the international studies. Those I save for my trips to Paris. ;)

Jennifer Schroeder

Jennifer is living in Sandy, Oregon.

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Padideh is currently teaching international law at American University in Washington, DC.

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Karen is pursuing a doctorate in art at UC Berkeley.

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Mara is living in Corvallis.