

KALEIDOSCOPE

Volume 17, Issue 2 Autumn 2011

Promethean Curse?



The Technology Issue

In the world of Greek myth the demigod Prometheus makes a great and selfless sacrifice when he ascends to the heights of Mt. Olympus and steals the gift of fire for the good of all humanity. Many have interpreted this stolen flame as a greater symbol of human knowledge and craft—a seminal technology. Likewise, the first book of the bible tells the story of Adam and Eve eating from the tree of knowledge “and the eyes of both of them were opened.” But why do both of these stories, and others like them, end in punishment, sorrow, exile, or worse? What is it about technology that instills such a universal anxiety?

As a society we have certainly taken a massive bite from that serpentine apple. Our knowledge about the world around us continues to grow beyond the wildest imaginations of people living only 100 or even 50 years ago. And though the ideas, systems, and objects we create have the potential to reduce human suffering and widen the horizons of human enlightenment, they also create a sometimes alien world populated by things that confuse, isolate, and dehumanize us.

How do we educate young people in such an environment, one that offers such opportunity and yet so many pitfalls? Here are some ruminations on just that question.

Technology and Adolescence 1,6-7

By Liz Cox

Point/Counterpoint: To Plug In or Unplug?

Pgs. 2-3

By Summer Willis & Allie Mcnall

The History of Technology Curriculum

Pgs. 4-5

By Matthew Voz

The Material and the Ideal

Pgs. 8-9

By Matthew Voz

Why Waldorf?

Pgs. 10-11

By Tom Gullion

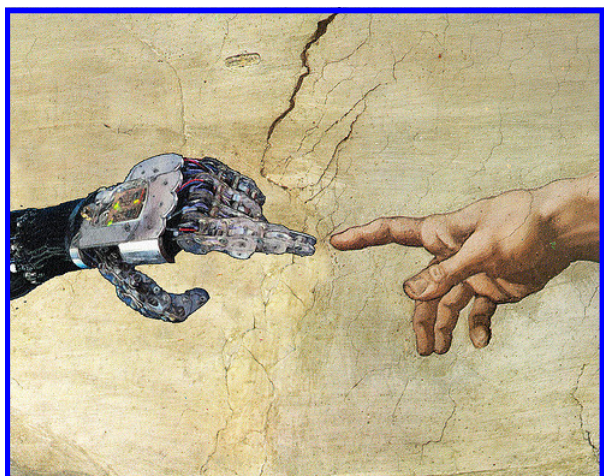
Standardized Thinking

Pgs. 12-15

By Jacob Hundi

Alumni Updates

Pg. 16



Youth Initiative Tech?

By Liz Cox

“Nobody’s making out in the hallway anymore.” This observation by one of my colleagues pretty well sums up the social effects of technology in the high school over the past few years. It has a plus side (we don’t have to ask students to keep a little sunlight between them like we used to) and a down side (many students seem more inclined to engage with their cell phones than their school mates during lunch time). When my older son was in school at the Youth Initiative, only one student had a cell phone. I remember overhearing boisterous card games in the lounge during lunch, and raucous voices after school singing along with the *Cat Empire* on someone’s little boom box while cleaning up the student kitchen. There were certainly times I wanted to tell my son to wait for me after school, and it seemed like no one

(Continued on page 6)



By Summer Willis, YIHS Senior

Facebook has become an absurd form of communication that sucks you in with all its “other” parts; the advertisements, the weird apps and games, and the overwhelming sense of people—people everywhere!

And it's true, people are everywhere and how you interact with them says a lot about yourself. I guarantee that if I made a loaf of zucchini bread and gave it to one of my elderly and under appreciated neighbors they would receive more meaning and express more gratitude than any ten people I might say happy birthday to via facebook.

Then there are cellphones which I can perceive as minorly useful in certain contexts. However, texting is something that has gone way over the line that divides meaningful communication and ridiculous distraction.

When I think of Facebook and texting my mind begins to drip with sarcasm, when really I can say what I think quite simply: I think I don't need them. Nor does anyone else. Both Facebook and texting create distraction and no one needs to suffer through the roller coaster of miscommunications they cause.

Facebook and texting are to face to face communication as buying produce from

Wal-Mart is to growing produce in your garden. At Wal-Mart the produce is generic and predictable. You pick it out. It's clean and simple. It is covered in preservatives and pesticides and you buy it half, fully, or not at all aware that it has next to no nutritional value. Picking produce from the garden, on the other hand, is exciting and scary. It even makes me nervous sometimes. I must dive deep into the weeds and bugs, having faith that I will find something delicious, and every time I do I harvest beautiful, nutritious fruits (though sometimes I may blindly grab a rotten tomato and get its reeking rot all over my hands.)

I don't see why I would want to add myself to a world of misused communication devices. There are already too many people with those things and I myself would rather speak face to face with a person. I want to see someone and be able to hear their voice. I want to be real and present and I hope everyone else can figure out how to do that also, and escape all this world's distractions.



Summer Willis, YIHS Senior



AND DISTRACTIONS

By Allie McNall, YIHS Senior

To me, having my own personal cellular phone is a fairly important matter in my life. My phone not only allows me to easily contact my friends and family, but also allows me to be contacted, to have maps, internet, and many other gadgets at the palm of my hand, and provides me with a sense of safety, knowing that if an emergency was to arise I would not be left without a mode of contact. Having a phone benefits me on a daily basis.

By having a cell phone, I am almost always able to contact the majority of my friends and family from all over the world (who, for the most part, all have cell phones also) at any given moment of my day. Cell phones also allow me to communicate with people, even at times when actually talking may be inappropriate, by having the option to send a text message. Having my cell phone with me at most times throughout my day gives me the ability to contact whomever I may need to contact when I may be running late for an important engagement, or be contacted if there is a change in plans, or an important message needs to be delivered to me. My cell phone helps me with all of these things, and makes my life flow smoothly on a day to day basis.

On my particular cell phone (a new "smart phone"), I have access to the internet at any given time, in addition to maps, navigation, music, email and many other useful gadgets. I find all of these things, however unnecessary they may be, to be extremely useful and convenient on a fairly regular basis. Whether I'm using my phone's built in GPS to get directions, or google-ing a random fact, my phone proves to be quick, useful, and efficient, always right at my fingertips.

Though all of these things make my life easier and regularly convince me of the benefits of cellular technology, the most obvious and logical reason for me to have a cell phone, in my opinion, is for safety reasons. In the case of an emergency, knowing that I will be able to contact emergency services or any help I may need provides me with a sense of security and peace of mind. Without a cell phone, traveling long distance or going places on my own would be a much scarier, nerve racking thing for me to do, knowing that if an obstacle of emergency was to arise, I would most likely be stranded and alone with no mode of contact without my phone. By having a mobile contact devise, I am provided with the ability to be more independent, and have more freedom than I would have without my cell phone.

Whether for social, business, school, or emergency needs, my cell phone provides me with abundant resources and benefits³ and enriches my life in many ways on a regular basis.



Allie McNall, YIHS Senior

	15 Years ago	Today
Listening to music		
Watching a movie		
Contacting people		
Reading the news		
Making Music		

MAN MACHINE

By Matthew Voz, Instructor in the History of Technology

We in the Driftless Region are quietly nestled in coulees filled with bucolic dairy farms and little Protestant steeples; one of the hot debates in our little hamlet is whether or not we should let horses poop on the streets. This is a rural place, and many of us have fled from the bustling cities to slow down our lives, to throw out our televisions, and to live the "simple" life.

But try as we might, we cannot escape the technology that increasingly characterizes human life. There are people living in teepees with Facebook accounts and men clad in raccoon fur with cellphones; and although that may seem like a contradiction the more one looks into the history of the human race and the things we create, the more "natural" this appears.

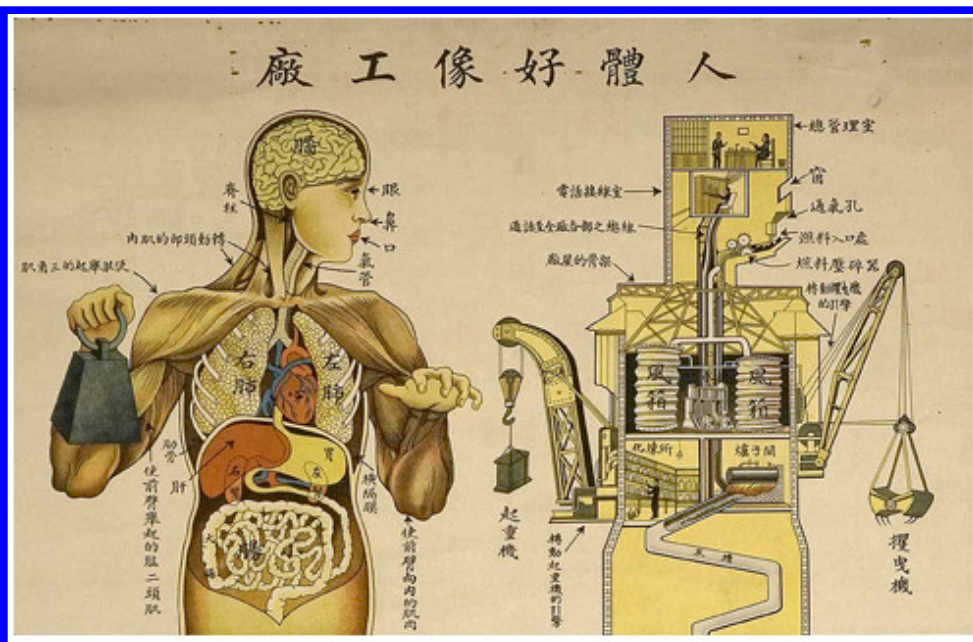
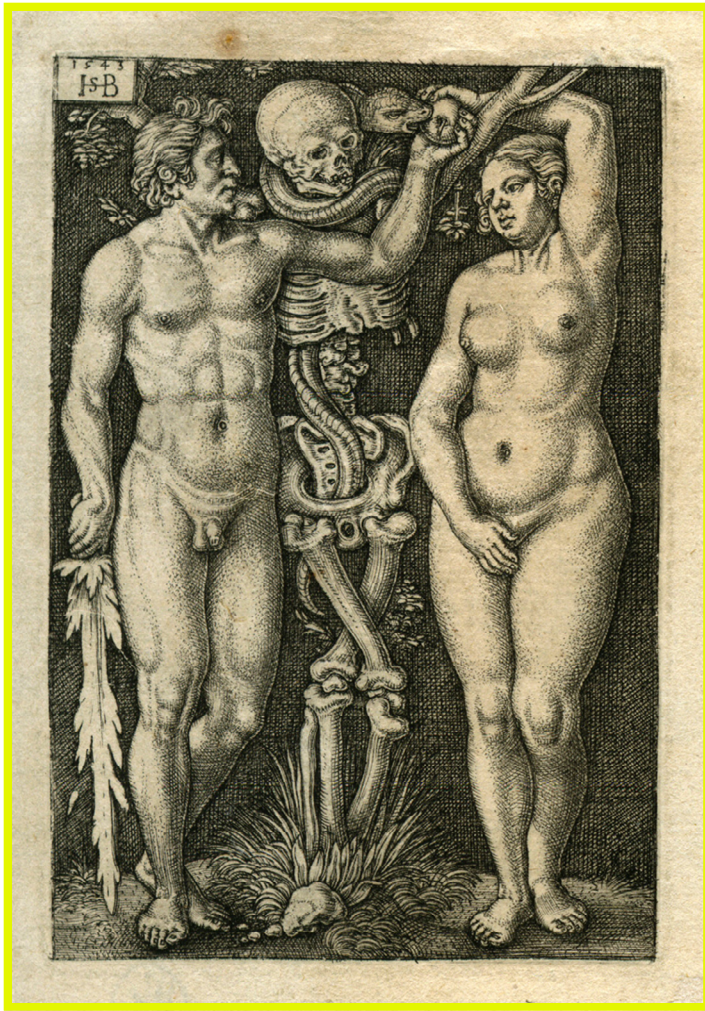
Indeed, the idea of what is "natural", and how that idea has changed over time is one of the main foci of the History of Technology class. What we think of as "natural" today, things like organic farms, are actually the result of thousands of years of technological development. In class we try to show that an heirloom tomato is as much an "invention" as a light bulb and that genetic engineering of plants and animals has been going on for millennia.

Images from the 11th grade History of Technology main lesson block.

We also call into question the western capitalist concept of invention itself. Instead, we focus on the development of technology as a social process, a continuum of shared and developed knowledge. We ask the question, "can any one person truly be responsible for the invention of a novel artifact?" We look at the adoption and obsolescence of inventions also as a social process and in that way we are able to talk about different technologies as signifiers, as symbols of deeper currents within different societies at different times.

This methodology is referred to as symptomatology by Waldorf pedagogues and works from the percept to the concept, from the *thing* to the *idea*, and not the other way around.

And we do in fact study a lot of "things"; from Spinning Jennies to horse collars to electromagnetic waves, and along the way we meet all sorts of fascinating people and go to all sorts of fascinating places; like any history class.



But unlike many history classes we always seem to end up in the present. The reasons for this are obvious. Students live in a world that is literally saturated with technology, and what is more, it is saturated with the type of technologies that are not readily comprehensible as an automobile engine or a weaving loom might be. They are tiny, hidden, almost magical. What's

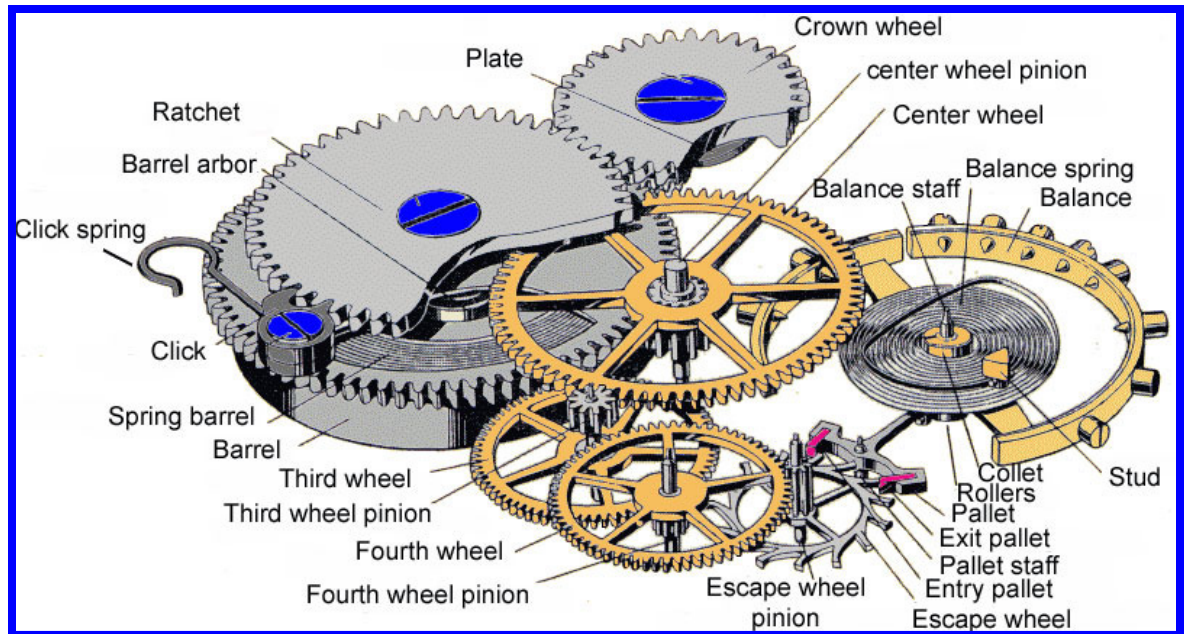
more, computer, bio-, and nano- technologies increasingly blur the lines between what it means to be human and what it means to be artificial. I have watched as students grapple with the theoretical possibility of digitally uploading the entire active consciousness of an individual to a computer system, or whether or not a cloned human being would be a "full" human being.

And though many students find these ideas somehow inherently repulsive they are simultaneously unable and unwilling to extricate themselves from the web of technology in which they find themselves.

The answer to this riddle may be found in another of the topics we discuss in this class: the fact that human and technological evolution are so interwoven that it is at times impossible to untangle them. In short, being human is in many ways defined as using and developing technology. The things we have created; hand axes, agriculture, penicillin, have actually altered the course of our *biological* evolution, have made us different as a species. We are a *technological* species. All the proof one needs is the fact that literally all of the solutions to the environmental mess we have created with industrial technology include *more technology!* No one is advocating a less prominent role for technology but, on the contrary, more developed, more sophisticated technologies such as solar panels and electric cars

And so I urge the students to see that just as having two legs allows human beings to do certain things (e.g. walk upright) and excludes us from doing others (e.g. running as fast as a cheetah) so does having a cell phone allow us to do certain things and disallow us from doing others. Technology is *not* neutral, it changes the course of individual's lives and of society's development. But though it is not neutral, it can be chosen or discarded based on the merits of what it allows us to do and the demerits of the ways in which it can paralyze us.

The goal of this class, in the end, is to awaken students to these choices they make everyday, to demystify the role of technology throughout history and in their lives, and enable them to make a little more sense of the world in which they live.



(Continued from page 1)

ever answered the phone, or at least never passed along a message, and, well, we all made it through the year anyway. Now, wearing the shoes of the administrator, the selfish me appreciates the dearth of “tell Bobby not to get on the bus” calls. But I would definitely rather be fielding those calls if it meant that students interacted with each other more.

Today’s adolescents are becoming far more dependent on the virtual world than the physical world. Writer Sarah Weir interviewed young teenage girls who performed in *Facebook Me!*, an original drama at the New York International Fringe Festival, and found that the pressure to have a desirable presence on-line exponentially compounds the age-old stress teen girls have always faced: look good, be popular. “There is so much pressure to look happy all the time—you can never just be yourself—because everyone is always taking pictures and posting them,” says a 13-year-old with a role in the play.

Boys’ performance in traditional school settings continues to decline, and, according to psychologist Philip Zimbardo (the same man who engineered the controversial Stanford Prison Experiment back in 1971), excessive internet use is digitally re-wiring their brains “...for change, novelty, excitement and constant arousal so they are out of sync in traditional classes, which are analog, static & passive. They’re also out of sync in romantic relationships which build gradually and steadily.” He calls this phenomenon “arousal addiction”.

Nicholas Carr, author of *The Shallows: What the Internet is Doing to our Brains*, states that humans are able to hold only 2-4 pieces of information in our working memory. I often think of this as the bookshelf of my mind, which is always at its book-holding capacity, and when I try to shove a new one in, one of the others falls off. The “data deluge” in which we find ourselves operating today threatens some very basic abilities that are necessary to a rich, full life:

- We begin to lose our ability to consolidate information from our *working memory*—or the things that we are aware of, into our *long term memory*—or the things we think of as our memories. This consolidation process creates “the wealth of internal connections that give richness to our thoughts.”
- We are losing the ability to discern the important information from the trivial.
- We are losing productivity while operating under the myth of “multitasking.” Our brains really can only *focus* on one thing at a time—so there is actually no such thing as multitasking. What we do is shift constantly from one thing to another. And each time we change our focus, there is a “switching cost” in productivity, making people who multitask less productive than those who don’t.
- We are losing the ability to filter out distractions, which is essential to deep creativity.

The inability to filter certainly may be tied to the little hit of dopamine we get each time the “you-have-a-new-text-message” sound goes off. The pleasure we get from the release of dopamine has helped us survive and evolve as a species. Not only has this chemical helped us perceive that sex = fun, ensuring that we keep reproducing, its release also signals that new information = important. Ancient people needed to gather as much information as possible to negotiate the natural, often very unfriendly world, and the resulting dopamine-induced satisfaction (not to mention the fact that they woke up to live another day) helped motivate them to seek it out again and again.

While the information our primitive ancestors gathered was often crucial, that proffered on today’s informational hors d’oeuvre tray has little relevance for our actual survival. But too often, these myriad bits of information reach us with a certain urgency, sometimes implied, sometimes boldly and falsely stated, as if they *were* crucial and only perilously ignored. And it becomes harder and harder to distinguish the important from the trivial.

My perspective may seem a little parochial, and it is very much influenced by the safe and sheltered place in which I live. Last Sunday I read a NY Times article about how Twitter has become an increasingly necessary tool for daily survival in Mexico City. Thanks to social networking there, news of crime spreads quickly, often while in progress, alerting citizens about dangerous areas of the city and routes to be avoided. This is a real example of using information – and information technology - to negotiate a very unfriendly world.

So the technological has become mixed up with the social—and that’s the crux of the matter. Our social needs haven’t really changed. Aside from finding food and shelter and avoiding danger, we spend time and energy trying to connect with other human beings. Technological advances have made it easy to “connect” on a superficial level, but even though we can now be in some sort of constant contact, on other levels our need for meaningful human relationships remains unsatisfied.

Nicholas Carr ended his talk at the Economist conference by saying that perhaps what we most need to develop is the skill to *turn off* these technologies. How obvious is that? And why does it strike fear into the hearts of teenagers?

A component of one of our classes, Spirituality and Meditation, is a 24 hour fast. Last year the teacher offered students a choice between going without food and going without their cell phones: *everyone* chose to give up food.

This summer I observed an ESL teacher trying to illustrate the meaning of the word “need” by showing pictures of objects and asking if they were things the students would “have to have.” Holding up a picture of a cell phone he asked, “Would you die if you didn’t have one?” Two of the students said “yes.”

Somehow we’re losing the distinction between “can” and “need to.” Just because I *can* make a call or access the internet everywhere, do I actually *need to*? Just because I don’t have my cell phone for the 7 hours that I’m in school does it mean I will be hopelessly behind everyone else in my social circle?

This year our Administrative Group is developing an agreement about how we as a

school community hold and deal with technology. One of the goals of this agreement, however it evolves, will be to create a culture that nurtures true human contact and whole human development while taking full and appropriate advantage of the profound technological resources available to us.

Some of the questions we’ll be considering:

- Do we need to have computers available all the time for students? Do all computers need to be internet accessible? Should we have a pre-requisite computer course before students are allowed to use them?
- Should we ban cell phones on school premises?
- What’s an appropriate response time to expect from people when emailed or texted?
- Can we use these tools to help us prevent meeting burn-out?
- Do social media undermine integrity? If so, how?
- How do we feel when we “update our status”? Better? Insecure? Worse?
- Does the profusion of emails and other contacts make us immune and unwilling to respond? Is this part of the deterioration of our filtering abilities?
- How do we help our children develop capacities for discernment, filtering, and self-control?

Some of the answers certainly lie in the wisdom of the Waldorf curriculum—arts and manual skills help develop focus and creativity and connect us with capacities that define us as spiritual beings. Some answers may be simple rules that will have to be enforced. In a school like ours though, all of this will require the thoughtful participation of everyone—parents, students and teachers—to come up with an agreement we can all support.



MARX AND STEINER



Ahriman og Lucifer, by Arlid Rosenkrantz

By Matthew Voz

When I became a member of the faculty of the Youth Initiative High School I knew essentially nothing about Waldorf-education or the system of Anthroposophy which underlies it. In fact, I had been raised up academically in a Marxist tradition, ostensibly at odds with Anthroposophy on a number of levels.

Historical Materialism, the wider philosophical system that underlies Marxism much like Anthroposophy underlies Waldorf pedagogy, does not explicitly admit to any “spirituality” and perceives religion as an oppressive appendage of an exploitative economic substructure. It is based in rationalist-materialist thought and would undoubtedly scoff at the mention of “supersensible realms.”

I am still not totally comfortable with much of anthroposophy, and I’ll probably never be sold on it entirely, though my watercolor technique has improved. But upon further reflection (that great solvent of calcified conviction) there are perhaps far more similarities between the Marxist perspective on which I cut my academic teeth and the anthroposophical milieu in which I now find myself.

To begin with, both thought systems are clear reactions to a historical sea-change in the way that people in the western world experienced their lives and the world around them. The world of 1848 (the year of Marx’s *Communist Manifesto*) or 1894 (the year of Steiner’s *Philosophy of Freedom*) was almost unrecognizable in comparison to the world only 100 years earlier. These men inherited a Europe that was more urban, more removed from the rhythms of nature, and more technological than it had ever been. And though the individuals that made up this society were perhaps more conscious of their own position as human beings imbued with certain “inalienable” rights, they were also more estranged from each other and even from themselves.

Luciferic Traits & Attributes	Ahrimanic Traits & Attributes
frenzy, hyperactivity	tedium, boredom
unification, generalization	diversity, particularization
one language	many languages
speaking and thinking	statistics, proof
qualitative	quantitative
fantasy, illusion, superstition	concrete sensory-based, materialism
spirit-permeated cosmology	mathematical astronomy
flexibility, airy	solidification, granite-like
the high flight of Icarus	the humility of Francis Bacon
pagan wisdom	technological advances

But what then was to be done about this strange, dark place that now existed in the human condition? Though the two philosophers would inspire things as divergent as Eurythmy and Chairman Mao they would attempt to address the same situation—the alienation of man from his true nature.

And they perceived the true nature of man in surprisingly similar ways while using wildly divergent language to describe it. Steiner would use the language of western esotericism to tell of the growing imbalance of two great spiritual forces—the Luciferic and the Ahrimanic—and the ways in which this influenced human life. The Luciferic, once prominent in the Classical Age, has given way to the Ahrimanic, the cold forces of rationality, objectivity, science, machinery. Steiner saw man as alienated from his Luciferic self, that part of him characterized by willfulness, creativity, and spirituality. This is the great Goethean metaphor of *Faust*, whose title character exchanges his Luciferic soul for Ahrimanic knowledge in a deal with Mephistopheles. Ahrimanic forces are not evil in themselves but only insofar as they are out of balance within the human self. Man has the potential to contain and use both within himself.

Marx sees the exact same thing. At the basis of Marxist philosophy is the sacred relationship between human beings and their physical environment, and the willful creativity that human beings exercise through that relationship—in a word, their labor. Through processes of industrialization and the machinations of capitalism human beings have been alienated from their true nature, that is their labor. But just as Ahrimanic forces are not inherently evil, so industrialization and even capitalism were, to Marx, morally neutral. Marx praised as often as condemned capitalism and industrial technology for their undreamed of ability to create the material environment necessary for the fullness of human destiny. But there had to be balance, attention had to be paid to human needs, not just “progress” and profit.

Unlike many of their reactionary contemporaries, Marx and Steiner believed that humanity is great enough to have both material progress and a satisfying relationship with their neighbors, their environment, and themselves. And that is where they are most inspiring: in their belief in the boundless potential of human beings. Both Marx and Steiner also shared a teleological view of history, that is they believed that history was working toward an inevitable end. That end, for both men, was the full realization of human potential.

So that must be our goal, whatever vocabulary we choose to employ, to realize our full potential. And like Steiner and Marx we must take a circumspect view of our current circumstances. We have more tools than ever before in history to use our environment for human good—we should never think of throwing them away. But the good must ultimately be human—for if our progress betrays our happiness it is no progress at all. In short, you can have a cell phone and still be a happy person.

Marx would most likely have dismissed Steiner as charlatan and a snake-charmer of the people and Steiner would surely have accused Marx of missing the point. But it turns out that they may have been giving different directions to the same place.



Mephistopheles appears to Faust

WHY WALDORF?

How many times have you flipped open the laptop only to discover it's not connecting to the Internet? Have you ever been frustrated trying to configure some electronic device that keeps flashing "12:00?" Or browsed to some page only to receive a 404 error or perhaps even the dreaded 500 error? 404? 500? Who makes this stuff up?

Given the ubiquity of computers in modern society, one might easily expect an emerging pedagogy which will make our children masters of the machine or, more accurately, the networked machine. All of us could benefit from such a thing. Even among software developers there are few who fully understand how these machines and the layers of Internet protocols actually work. Unfortunately, I've yet to see such a thing.



Tom Gullion, father of a YIHS freshman

A common approach to mastering technology is to get children using computers as early as possible. Early usage of the machine certainly improves students' comfort with the machines. I wonder what advantage children get by learning office software packages that will surely be obsolete by the time they graduate. It seems to me we're creating a generation of technology "users" who are barely conscious of the machinery behind the screen. Taking all this technology at face value is likely to produce lots of technology consumers, but probably not innovators. To put it bluntly, one might define this top-heavy approach as a recipe for ignorance - based on a definition of ignorance as the lack of comprehension of a topic.

In 1965, Intel co-founder Gordon Moore described the trend (now known as Moore's Law) that computer processing power doubles every two years. This has held true for the industry through today. It translates directly to an incredibly fast rate of evolution for hardware and software. What happens when you combine that rate of change with a shaky understanding of the foundational concepts? That question is the experiment being played out today.

Using computers as a primary educational tool has many challenges the industry has yet to overcome. The most well-known challenge was publicized by computer usability guru Jakob Nielsen in 1997. He reported that it is approximately 25% slower to read text on a screen versus paper. As a result, most people learn to skim text on the screen instead of reading the entire content. Higher resolution screens can improve the readability but people tend to stick to the habit of skimming content. What sort of education do you get when you've skimmed a majority of the content?

While people are skimming the textual content they are also being distracted by ubiquitous hyperlinks, social media, e-mail as well as visual and audible notification schemes. Once upon a time people went to quiet places to study. Many schools are suggesting their students study in one of the most distracting places available, their very own computers! What level of comprehension does one get by skimming content within the distracting nature of the modern computer interface?

All of this may make you think I'm a luddite. However, I'm not. Really. In fact, I'm a software engineer currently working on a weather satellite for NASA. Many of the above observations about technology stem from my experiences developing commercial software as well as assisting friends and family with a myriad of tech support issues. I feel

compelled to add that my own experience suggests that it isn't necessary to start studying technology early. I come from that ancient generation that didn't have computers in the classroom. Then, I only took a single programming class after completing my bachelor's degree in music. The rest of my education has been self-directed study as well as mentorship by some really talented individuals.

All this leads me to the conclusion that Youth Initiative High School has it right: a curriculum and environment that focuses on creativity and free thinking. Creativity and free thinking are endeavors that require constant effort. I'm pleased our children are getting incredible support in these important aspects of their education. *Keep in mind that technology by itself is easily learned. Understanding how and when to apply the appropriate technology requires a level of mastery that few attain.*

The software industry has recently begun to appreciate the "art" of writing code. Much like architecture, there are many ways to develop the internal structure of a software product and each varies in its strength, resiliency, security and flexibility. Many of us in the industry laugh at the term "computer science." Mainly because most of the best and brightest in the field are not just scientists but also poets, artists, musicians and writers.

It's unlikely anyone in the technology fields has found the real world remotely similar to what they studied in school, including recent college graduates. Mobile devices, tablet computers and robotics are evolving at a tremendous pace. The only thing remaining constant is Moore's Law, or the rate of change. Success in technology requires innovation which is only possible for those who can adapt and embrace change.

Which points back to the fundamentals of creativity and free thinking. In my experience, innovation boils down to basic problem solving skills. Can you clearly identify a problem and envision a solution? That's the basic recipe for innovation. But it's not so simple for many. Innovation doesn't come from well-worn or antiquated thought patterns. To do this well you must view the problem from many perspectives, feel empowered to experiment, learn from your failures and have the courage to change things. Innovation is by its very definition disruptive to the status quo. It demands creativity as well as clear thinking.

As I'm sure you've surmised, none of the above is solely about technology. Creativity and free thinking are needed in every discipline, by every human on the planet. Not because we face insurmountable problems but because we face problems that were created by the "same old, same old" thought patterns and now require innovative solutions.

Think creatively. Think freely. Throw in a little heart for good measure.

Community-Funded Education

A RADICAL TECHNOLOGY

In the Youth Initiative Development office, we use old-fashioned technology to raise money for the school; we build relationships. We're proud of the relationship we have with the Matching Gift Circle, a group of individuals and businesses that match what our students fundraise. Last year students raised nearly \$12,000 through self-organized events and the Matching Gift Circle matched their efforts with \$31,000.

Matching Gift Circle members receive regular updates about student fundraising and other school events. They also have the satisfaction of knowing that students are inspired by their pledge of support. As a member of the Matching Gift Circle, you underwrite student initiative and entrepreneurship.

Want to be a part of this exciting group? It's easy. There are members who pledge 10% and those who pledge 100%, and many in between. Come in at any level..

Contact us to become a member, to visit the school or to learn more.

Shawn Michael Lavoie
Development Director
shawn@yihs.net

Binary Education

By Jacob Hundt

At the point in the Book of Genesis (1:27) where it states that

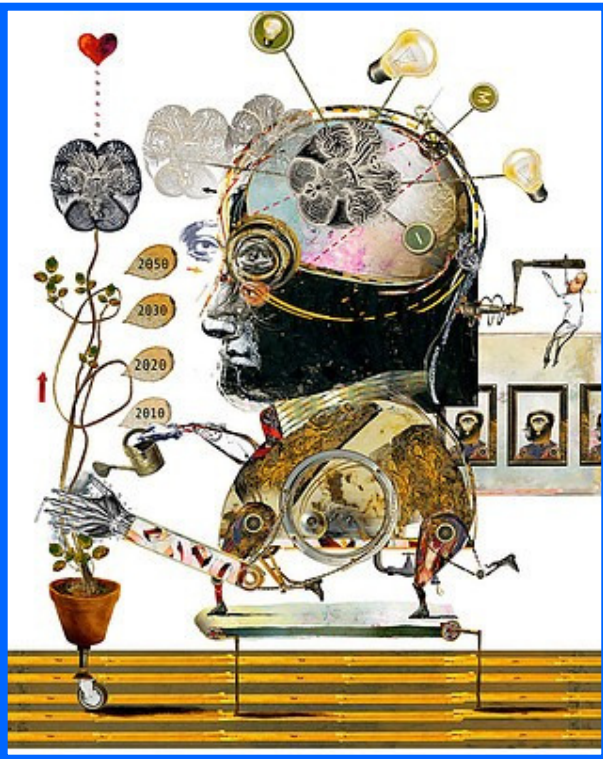
*God created man in the image of himself,
in the image of God he created him*

essentially the only sense that we have of what this Divine image might be like is that God is the Creator. Thus, man too, is a creator, starting with the imaginative creation of names for the animals which follows immediately afterwards. God fashions “all the wild animals and the birds of heaven” by speaking His Word, and Adam immediately *re-creates* them by speaking the names for them which emerge intuitively out of himself. God is the Creator, but man is, likewise and in God’s image, a creator in his own right.

Thus, the crucial question in the discussion about whether the prophesied technological “Singularity” might bring into existence an artificial form of intelligence comparable to human, or even “superhuman” intelligence (whatever that might mean) is whether computers can replicate this essentially human power of imaginative creation. If so, they *will* be able to drive cars, write books, make ethical decisions, create fancy paintings (rather than merely appreciating them), and, if they really must, even make witty observations at cocktail parties. They will also do lots of things that Grossman (see above) doesn’t mention, like generate entirely new models of physics, start political revolutions, debate philosophy, and promulgate new religions. (Singularitarianism?)

“...if computers are getting so much faster...there might conceivably come a moment (Singularity) when they are capable of something comparable to human intelligence....All of that horsepower could be put in the service of emulating whatever it is our brains are doing when they create consciousness—not just doing arithmetic very quickly or composing piano music, but also driving cars, writing books, making ethical decisions, appreciating fancy paintings, making witty observations at cocktail parties.”

-Lev Grossman, TIME magazine



Singularity by Bruno Mallert

But will they? I am no student of cybernetics or computer science, but the argument for the Singularity seems to rest on the assumption that human intelligence is essentially reducible to the power of the physical brain to complete an enormous number of calculations in a vanishingly small sliver of time. According to this view, our powers of creativity and problem solving rest on our ability to process the vast quantity of data pouring in through our senses, combine it with our past experiences and powers of abstract reasoning, and spit out an original and uniquely appropriate response – a sharp left turn, a bold splash of color, a cogent phrase, a new invention, a well-timed joke. Our creativity, in short, comes from what we make of our experiences, and essentially nothing more.

If our brains (and by extension our minds, for which this view would see no meaningful distinction), are essentially very fast computers, their basic functions—the basis for human creativity—must be a binary logic of 1s and 0s, of yes and no interactions, similar to those which underlie everything digital. 1 or 0, Yes or No; Off and On; Open or Closed; Black or White; Left or Right; Right or Wrong. If this view of human intelligence is correct, then our minds and our world are characterized by a fundamental set of mutually antagonistic polarities, and that all thought, all creativity, all imagination, all meaning is

ultimately reducible to this ceaseless warfare between our inner 1s and 0s.

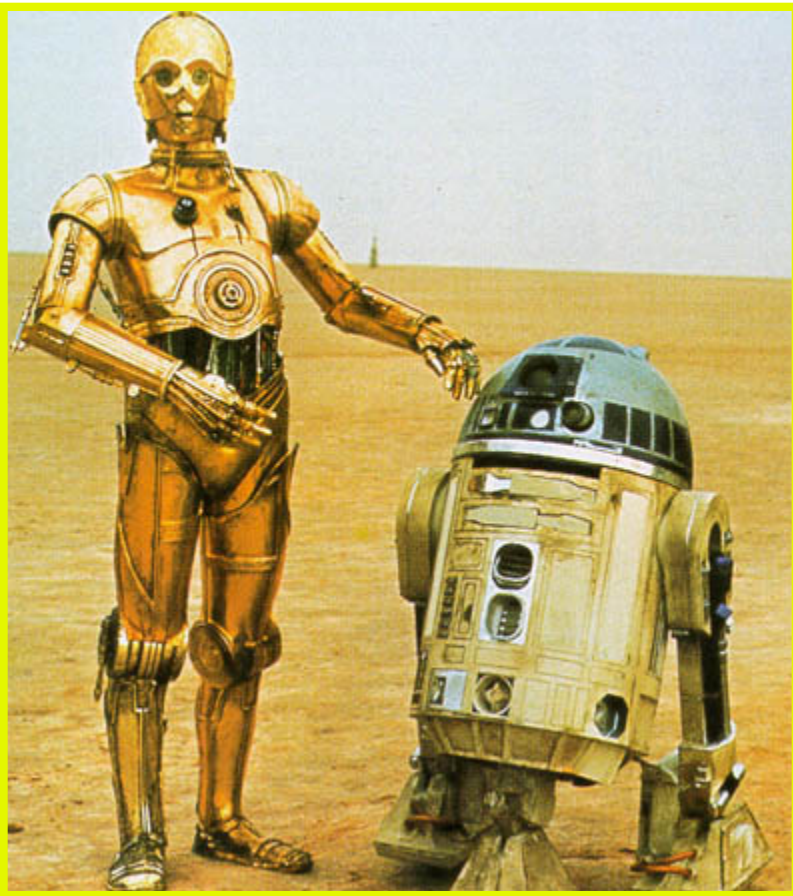
Time to Get Standardized

By now you have probably guessed that I don't believe that the ever increasing speed of microchips will ever lead to the artificial creation of anything similar to truly human creative intelligence, as it has been defined above with reference to the Book of Genesis. I don't think that this can be done even by resorting to the horrible concept of "wet" hardware, in which living biological cells are used to create computer circuitry with levels of complexity comparable to the neurons in the human brain. If it could be done, it might be a reason to celebrate, because we would have created a new fellow traveler in the universe, an alien intelligence found not in outer space, but in the astonishing reserves of our true creativity; a companion mind created, like Eve, out of the raw materials of our own selves.

What I fear, however, is that rather than successfully emulating human intelligence in order to create a new, artificial



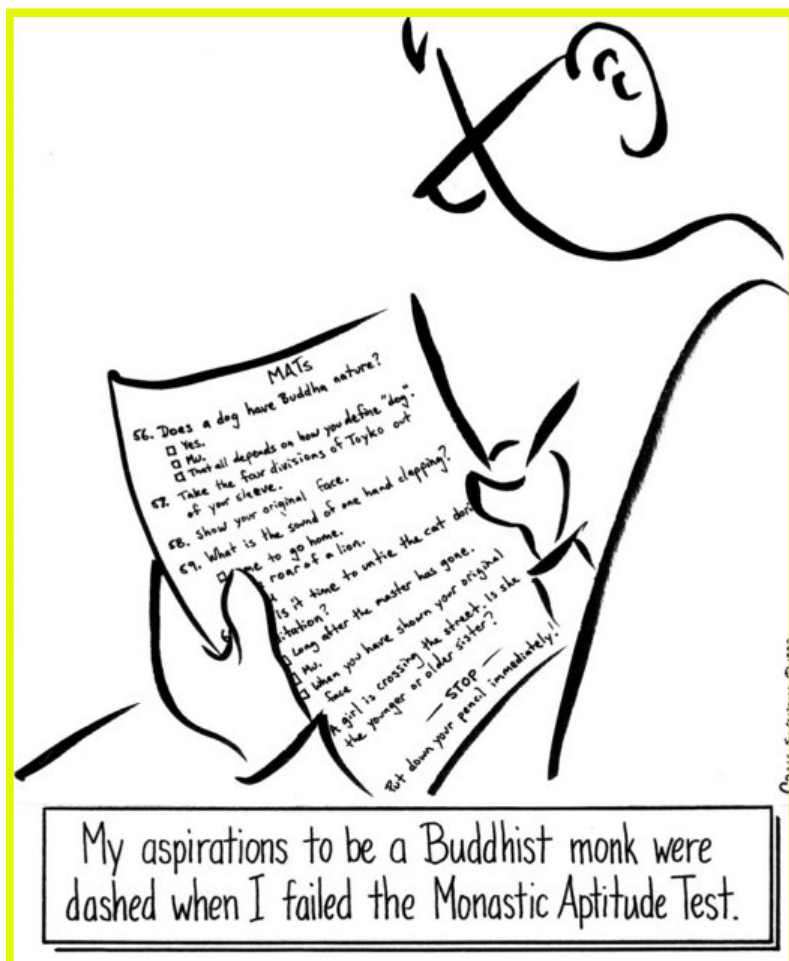
In the future someone or something like this could become the governor of a large U.S. state.



These guys totally nailed the SAT, though R2D2 did struggle on his verbal.

intelligence in our own image, we will instead do everything possible to reduce and contort the actual creative intelligence of real human beings until it comes to increasingly resemble the artificial binary digital "intelligence" that we *have* succeeded in building. The breathtaking processing speed and portability of each new generation of computing devices, coupled with the millenarian rhetoric surrounding ideas like the Singularity, raises the danger of such a confusion, as leaders and social engineers begin to unwittingly strive to make the prophecy of the Singularity a self-fulfilling one. In short, why bother trying to create machines with the messy, unpredictable qualities of humans when it just might be possible to reconfigure *humans* in the pleasantly predicable, efficient, *logical* image of our machines?

How could this be done? Example A is, of course, schooling. With each passing year and each election cycle, the rhetoric and practice of mainstream education becomes ever more tightly wound around the idea of standardized testing. That phrase "standardized



testing" should already arouse our suspicion. The biggest problem with children, and humans is general, is that they are insufficiently "standardized." They remember different things from books and lectures, they respond differently to some kinds of activities and ideas, they draw diverse conclusions from the same data, and they have many different ideas about how to spend their time, and how to organize their lives. For the social engineer, this is a problem that might possibly be solved through an incentivized series of "standardized" hurdles, or tests, which will hopefully encourage all participants in a school system, for example, to concentrate on achieving the same results, and the same state of consciousness.

And how do standardized tests do this? In principle, testing has a valid pedagogical function distinct from enforcing mental rigidity. Tests can be important tools in helping students refine their thinking and memory and in helping students and teachers to communicate about how things are going in a class. Well-constructed tests can be exercises in real intelligence, in addition to recall and application of data. The predominant form of intensive standardized testing, such as that mandated by the No Child Left Behind and Race to the Top initiatives, is very different, however.

These tests, which involve electronically scored bubble answer sheets or "Scantron" printouts, should be explicitly regarded as exercises in the repeated practice of binary machine logic.

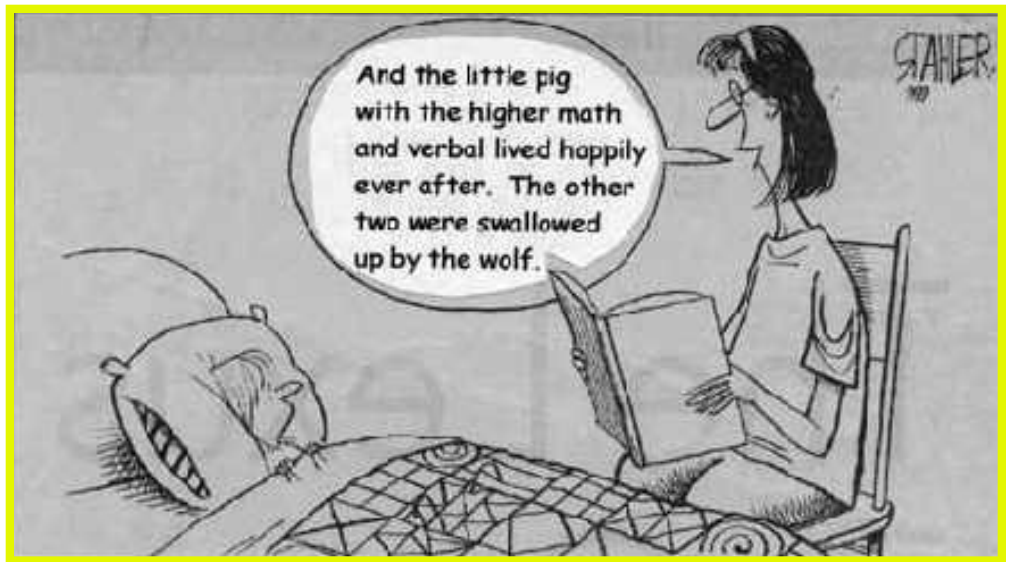
In order to achieve a high score on a test like the SAT, ACT, or the myriad state standardized progress tests, a student must match her thinking as closely as possible to the rigidly defined set of data entered into the programming of the robotic brain which will score her sheet. On the test sheet there is no room for gray areas or paradoxical truths, even if the "correct" answer is "None of the Above." A student may not qualify, or add to, or elaborate upon their responses. They may not dispute the premises of the question. They may not attempt to correct errors of fact or ambiguities in the

wording of the question, and indeed, truth of any kind has little role in such tests. Rather, the test-takers' only option is to divine which of the 4 or 5 tiny circles they must completely fill using their Number 2 pencil so that the marks on the sheet match the marks in the inscrutable brain of the machine. In other words, the student who does the best at these tests is that one who is best able mold his or her mind into the image and likeness of a fairly simple computer.

Consider, now, that an increasingly enormous amount of consequential weight is placed upon the results of these standardized tests, not only in the lives of the students, but of their teachers, and schools, and even nations. We are told that



such and such a change must be made in our educational system because the marks made on such tests by our students are allegedly currently comparing poorly with those of some other, suitably far away and exotic nations, whose children's minds are allegedly much more pleasingly machine-like and whose Number 2 pencil marks are therefore much more pleasing to the machines who score their tests. Consider that many children are now spending nearly all of their time, from kindergarten until at least 18 years of



age, primarily engaged in taking or preparing for such tests, and that some of them (the more advantaged ones, the future leadership class) pay large amounts of money to be tutored by companies like Kaplan or Princeton Review in how to think *even more* like a machine, and that some also spend large amounts of free time voluntarily filling out similar forms on websites like Facebook. What can be the result of all this, other than an ever increasing mechanization of thinking?

.....

What we are faced with here in our educational systems, in our food systems, in our political systems, and, indeed, in our technological systems, is a reflection of conflicts raging deep down in the human psyches of our time. Ironically, we moderns are a people drawn towards and captivated by stark polarities and contrasts, intolerant of ambiguity and perceived hypocrisy, and demanding of clear and testable statements of truth. All this is so in spite of, or perhaps because of, the fact that most of our prominent philosophers and scientists have been insistent for over 100 years in declaring that absolute truth is unknowable or nonexistent, that the properties time and space themselves are relative, and that the very building blocks of the apparently solid physical world are governed by shifting probabilities and shades of grey. There is a kind of shaky, frightened desperation in our demands for black and white moral, political, dietary, or scientific absolutes, because the alternative seems to be naked nihilism, a prospect from which we rightly recoil with horror.

If digital technologies are not the cause of these phenomena, however, they are, I believe, powerful catalysts driving their acceleration and expansion. During the past decade the computers and the internet have moved with blinding speed from being toys or tools to being something approaching an all-enveloping *environment* – a parallel reality which increasingly has come to penetrate and encompass physical reality in astonishing ways. When a person logs into a “virtual community” like Second Life or Facebook, plays an interactive computer game, follows hyperlink to hyperlink across the World Wide Web, or simply checks their email on their smart phone, their mental/spiritual existence can already be more convincingly located within the digital, “virtual” reality than it can be in the “real” physical world. As we navigate and communicate in a virtual world, we acclimatize and adapt ourselves to its peculiar laws and logical structures, much as we would be molded and changed through exploration of the physical world by, say, taking a walk in the woods or down a city street. In the physical world, our muscles learn to account for the laws of gravity and inertia, our minds become attuned to the phenomena of meteorology, astronomy, and biology, and in social interactions we learn to understand body language and human emotions. This is lost in binary, virtual world.



"Your Friendly Neighborhood Bike Shop"

Bluedog Cycles

325 S. Main Street

Viroqua, Wisconsin 54665

www.bluedogcycles.com

(608) 637-6993

Pete and Alycann Taylor
Owners

alumni Updates

- Cole Agar (Class of '06) has begun law school at the University of Wisconsin.
- Terra Kilkeary (Class of '08) has welcomed a baby.
- Shady Glen Willis (Class of '06) has welcomed a baby.
- Isaac Park (Class of '06) has welcomed a baby.
- Katelyn Banner (Class of '04) has matriculated into the Graduate Program for International Studies in Essex, UK
- Jeff Marshall (Class of '06) has graduated from the University of Minnesota with a degree in Philosophy
- Emily Valentine-Grimm (Class of '07) has graduated from the University of Minnesota
- Forrest Humphrey (Class of '11) has matriculated at Antioch College in Ohio
- Brenna Troy (Class of '11) has matriculated at Prescott College in Arizona
- Emily Woody (Class of '11) has matriculated at Northland College

If you have news and updates on YIHS alumni,

Youth Initiative High School

500 E. Jefferson St.

Viroqua, WI 54665

tel: 608-637-6445

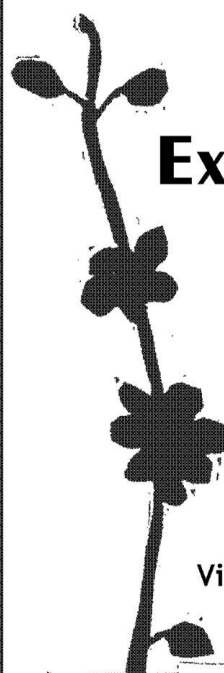
e-mail: yih@yih.net

www.yih.net



100% HANDCRAFTED

FAIR TRADE & ORGANIC



Local.

Exquisite.

Coffee.

Roasted in
the historic
train depot in
Viroqua, Wisconsin

www.kickapoocoffee.com