

## "One More Stitch": Relational Productivity and Creative Energy

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*One more stitch ... one more row ... Ah! It's dawn.*

-- Tata and Tatao

The first warning sign for many Americans of the current recession and its associated crises was the 2008 spike in oil prices. Suddenly, everyone was talking about four-dollar-a-gallon gasoline. The prospect of the increasing cost of fuel raising the price of nearly everything -- from food to travel to labor -- frightened many people, who saw shortages, inflation, and a return to the dark days of the 1970s on the horizon. Gasoline prices subsided, but the larger problems facing the American economy were only beginning to become visible: uncollectable debt, failing financial institutions, lack of credit availability, bankrupt businesses, unemployment. Consumer spending declined as people began to worry about their personal safety nets, trying to hoard their cash for the rainy days on the horizon.

In times of economic hardship, Americans have always turned to handcrafts. Making useful or decorative items by hand makes sense under these conditions as a money-saving measure, of course, but also as an attempt to insulate ourselves from the volatile marketplace with gestures toward self-sufficiency. The Depression saw the growth of the sewing pattern industry. During the World Wars, magazines and newspapers were filled with tips on do-it-yourself projects, and people "knit their bit" for the defense effort. The fifties pulled both ways at the crafting movement; women were supposed to be freed from sufficiency concerns by labor-saving devices and increased leisure time, but the decade saw a backlash against convenience products and a desire on the part of consumers to be involved in traditional domestic arts, even if only to the extent of adding an egg to a cake mix. With the rise of the counterculture in the sixties came an interest in natural, communal, self-sufficient living and personal expression, which gave rise to an explosion in crafting. Inflation and the energy crisis in the seventies built on that movement, as millions of middle-class families supported a burgeoning hobbies and crafts industry, from macrame to woodworking to crochet.

It's not surprising that people's habits change in times of insecurity. What is interesting about the production of items by hand -- intended for personal use, for sharing and gift-giving, or as a cottage industry -- is its relationship to energy both in terms of large-scale issues of fuel and infrastructure, and in terms of small-scale issues of individual habits and networking. In this essay, I argue that the unique conditions of the early twenty-first century crafting movement suggest insights about energy that have theological and philosophical consequences. In particular, the opportunities afforded by informational infrastructure

combined with the creative potential of individuals can demonstrate a middle way between the thoroughly industrialized future envisioned in the fifties and the post-apocalyptic post-industrial future imagined by many at this time of emergency. Instead, process thought offers resources for understanding the contribution of personal energy inputs into a technological nexus that results in a sustainable transformation of the material world.

When the World Wide Web was in its infancy in the 1990's, many forecasters felt that, for better or for worse, humanity was moving away from existing primarily in the material world and closer to existing primarily in a world of information. In such a world, the disembodied mind would be as well equipped --or even better equipped -- to navigate, perceive, decide, and act. Some, like Ray Kurzweil, looked forward to a future in which the mind is plugged directly into the network, experiencing virtually far more than could be experienced materially.<sup>1</sup> Others warned of a *Matrix*-like outcome in which we can become satisfied with virtual inputs, leading to neglect of the body and lack of care for our physical surroundings.<sup>2</sup> Theologians and sustainability advocates alike have made efforts in the last few decades to call us back to an appreciation of the role of embodiment in human experience, and to our physical connectedness to the ecosystem. These movements seem to be threatened by the growing complexity and availability of virtual interaction. On the other hand, process theology has long worked within a model of mutual and essential interrelatedness in terms of "data." The Whiteheadian term "prehension" attempts to broaden the range of inputs into a developing entity, covering not only those acquired through sensory perception but also through direct, intuitive, or nonsensory means. Seen in this light, the increased scope and diversity of inputs made possible by computer-mediated interaction becomes an advantage for conscious creatures making decisions and creating reality out of the data available to them. The internet may truly be the next evolutionary stage for the human mind, allowing our senses to extend worldwide and enabling the information, ideas, and memes we create to spread to an audience qualitatively larger than that reached by previous mass-media forms, with their high barriers to entry.

However, the brain-in-a-jar possible future that both advocates and detractors foresee has not, surprisingly, turned out to be the direction in which online networking has taken us. Perhaps the most astonishing development in the growth of web-based interaction is the tight connection to material productivity. If this bond were better understood, those in the theological realm who fear losing an understanding of and appreciation for embodiment and physical resources might embrace the creative forces found in virtual communities, harnessing them to adorn and transform our material environment. Let me offer just a few examples of how online activity leads to a kind of real-world production that values personal energy over the mass production that is the hallmark of the industrial age. I believe that a post-industrial understanding of both energy and theology must take into account the potential, already being realized in many quarters, of the internet's empowering of the individual to become a maker of physical objects.

Threadless<sup>3</sup> is a virtual community masquerading as a clothing company. The company employs no designers or salesmen. They do not have an advertising agency and there are no professional photo shoots of models. Instead, ordinary people submit graphic designs and slogans to the Threadless website. Other ordinary people vote on which ones they'd like to see on a t-shirt. The company makes limited runs of the winning designs, with new designs

added every month, and the person who submitted the design gets a \$2000 prize plus a bonus if the run sells out and the tee is reprinted. People buy the t-shirts directly from the website and upload pictures of themselves wearing them to be used as the product images. In mid-2008, the registered user base (designers, voters, and customers) on Threadless.com was 700,000. Sales in 2008 were estimated at over \$30 million. Most importantly for our purposes, interaction on a website by a dedicated, diverse, voluntary community resulted in the production of a real-world artistic creation. As Max Chafkin wrote in a profile of Threadless for *Inc.* magazine last year, "This idea goes against a basic principle that has been taught in business schools since the invention of mass production: Employees make stuff, and customers buy it."<sup>4</sup> Instead, the consumers were supplying the creative energy by submitting information, and the company was acting simply as an enabler, organizing that information and distilling it into fabric and ink. Thinking about Threadless only a few years into its existence, Tim O'Reilly, the author and entrepreneur who coined the term "Web 2.0" wrote the following on his blog: "How far off is a future in which the creative economy overflows the thin boundary that separates 'information' from 'stuff'?"<sup>5</sup>

Around the same time as Threadless was breaking big, in 2005, O'Reilly and others started a magazine called *Make*. The project was inspired by the burgeoning hacker community, a group whose history stretches back electronics and radio hobbyists, but who had gotten a bad reputation in the internet age as destructive online vandals, largely due to oversimplified media reporting. *Make* contained features and instructional articles about the creativity of "makers," people who produced modified cases for their computer towers, or clothing with embedded LEDs, or shoes recycled from thrift-store cast-offs. The focus was on a new breed of do-it-yourselfer -- the kind that sees the technology around him as a resource for scavenging, remixing, repurposing, and expressing individuality. The print magazine was accompanied from the very beginning by an active blogsite<sup>6</sup> that updates several times a day with links to project journals on blogs, instructions posted at how-to sites like Instructables, and images of notable objects gathered from online photo sites like Flickr. Since its inception *Make* has spawned a sister publication, *Craft*<sup>7</sup>, devoted to twenty-first century implementations of domestic arts like sewing, knitting, crochet, and so on; an online storefront selling electronic hobby supplies and tools; a public television show and video podcast that premiered in January 2009; and three huge annual "Maker Faire" expos in San Francisco, Austin, and Newcastle, England. At the latest Austin event, over 1,000 exhibitors and 87,000 attendees took part. The idea for *Make* magazine isn't new at all; it's simply an updated version of *Popular Mechanics* or other publications devoted to hobbyists that flourished in the 1950s. What is new is the use of the internet to disseminate inspiration and instruction -- the overwhelming sense created by immersion in this community that this creativity is nothing out of the ordinary, and the provision of tools making it easy to join in.

Almost since the creation of the World Wide Web in the early nineties, handcrafters have been selling their wares on eBay, the venerable online auction site that has evolved into an all-purpose internet storefront for hundreds of thousands of home businesses all over the world. However, because the primary purpose of eBay is the selling of auctionable items (antiques and collectibles, for example), the site is not geared toward the personal production of the items sold -- only the transfer of items produced and acquired in any number of ways.

Etsy<sup>8</sup> began in mid-2005 as a space in which makers could create individual shops and sell handmade items of all kinds, from clothing to art to food. Over 200,000 people now sell their creations on Etsy, catering to a customer base of over 1.8 million users. Total sales through

Etsy in 2008 topped \$87 million. It's possible to discern a movement from the participation of users/consumers/community members in the creation of a company's merchandise (Threadless), through the promotion of do-it-yourself energy and production by media entities (*Make*), to the facilitation of individual crafters selling their items to customers on a destination site that both affords them individualized shop space and aggregates their impact with other similarly enterprising fellows.

As a final example, and the one that will provide a framework for the theory and theology of personal energy to emerge in the remainder of the essay, consider a social networking and database site called Ravelry.<sup>9</sup> The brainchild of a programmer whose wife is a knitter, Ravelry began in 2007 as a way to connect knitters and crocheters with information about their hobbies. Websites with information on yarn and patterns were nothing new, of course -- thousands littered the web, and some had community features like forums. But the vision for Ravelry was different. By providing knitters and crocheters with organizational tools, such as a projects notebook where each crafted item can be displayed and a stash feature where yarn and fiber can be catalogued, Ravelry aimed to harness its own users as the contributors, editors, and remixers of the information they came for. As a user builds his notebook by linking projects to patterns and yarn and uploading photographs, the dataset connected to that pattern and that yarn becomes richer. Others looking for something to make with a particular yarn can browse the project pages of everyone who's used it, and connect immediately to the patterns they followed. Still others trying to decide what yarn to use to make a particular pattern can browse the project pages of everyone who has made it, seeing how it looks in different fibers, on different models, with different modifications. Thousands of user-created and -moderated forums gather members around particular designers, books, magazines, even single patterns, as well as pop culture phenomena, other hobbies, religious interests, and even meta-discussions on goings-on in other Ravelry groups. One typical activity for almost all groups is the knit-along or crochet-along, in which any number of far-flung members craft the same pattern at the same time, posting on their progress and engaging in mutual support.

Ravelry membership (by invitation only, since the site is still in beta as it enters its third year) exceeded a quarter of a million in January 2009. The site came late to the so-called knitting explosion of the late nineties and early oughts. However, its embrace of Web 2.0 principles and technologies has placed this part of the crafting movement on a completely different foundation than that on which the first wave of knitting's new popularity was built. Ravelry now catalyzes the investment of personal energy into crafting by organizing and directing it in a non-authoritarian, evolving, user-controlled framework. To understand how this marriage of social networking, user-built content, and individual production represents a revolution for the post-industrial understanding of energy, consider the history of knitting information in the last century.<sup>10</sup>

- The predominant way knitting information was distributed pre-2000 was through books and magazines -- **traditional print media**. Magazines could be bought on newsstands, purchased at local yarn stores, or received via subscription. Books were heavily dependent on knitting magazines, in which they are advertised and reviewed, and with which they often shared a publisher. The only way to measure the size of the knitting community was through sales of these physical objects.

- **Online knitting "magazines"** started to appear in the early 2000's. These sites solicited design submissions from the general public, and published them for free (supported by advertising). These sources of free patterns, presented with editorial and quality control, quickly became overwhelmingly popular among a young, "wired" group of knitters that had not been previously recognized as a large segment of the knitting population. One of the largest and best known, Knitty, racks up an average of 50,000 visits and 160,000 page views every day, with 1.5 million unique visitors a month.
- At the same time, **internet knitting businesses** came into existence, selling yarn, supplies, designs, and traditional knitting media. Some of these businesses were internet extensions of brick-and-mortar shops and LYSes; but a new breed of internet-only, mail-order-only knitting businesses emerged in the early 2000s. All these businesses formed a natural pool of advertisers for the online knitting magazines.
- The availability of designs and supplies online freed knitters from their LYSes and other brick-and-mortar craft stores in their local areas. This made it possible for **more people in more places** to become knitters -- all the materials could be mail-ordered or accessed online. The online businesses grew and offered larger selections. Two of the largest internet-only businesses (Knit Picks and Elann) started their own yarn labels, offering highly affordable yarn in a range of popular natural fibers and weights. Local yarn stores with online shopping portals made it possible for any buyer to get high-quality brand name yarns. Getting knitting supplies online increasingly involved no compromise in terms of availability, selection, quality, or price. In fact, the range of materials available from online businesses quickly exceeded that in even the most well-stocked brick-and-mortar outlet.
- **Online knitting communities** began as Usenet groups and listservs, evolved into bulletin boards, and then into forums and boards conceived as adjuncts to the online magazines and stores. These communities not only allowed knitters to share information and built brand loyalty, but they also made the scale of the on- and offline knitting community visible in a staggering way. Ravelry, the first custom-built knitting online community, signed up 100,000 subscribers in its first eight months, and continues to attract 500 new members a day while still in its beta period. Its elegant design and integration of community tools with personal organization and social networking functions attracted the notice of web design and usability writers, and its sheer scale earned mention in the mainstream media, where a spate of "hey, what's with all the knitters all of a sudden?" stories was immediately visible.
- One result of this web-catalyzed growth is that new knitters and previously-offline knitters are **more quickly and thoroughly integrated** into the knitting community than had ever been possible before. Help, suggestions, advice, and inspiration is available 24 hours a day. The eternal question "what do I knit next?" now has a universe of answers only limited by one's remaining lifespan, and any conceivable

material is available to order online. It seems logical to conclude that more people are being motivated to try knitting because of this visibility and availability, and that a smaller percentage of those novices end up being unable to sustain their interest because of lack of support, paucity of supply, or lack of information. In other words, the Web 2.0 platform for the community means that the community grows both more rapidly and more sustainably.

- Another, perhaps less intuitive result is that **traditional media are made more viable**, not less, by this online growth. Patterns in magazines and books are now "advertised" by being included in the online pattern library of Ravelry; those attracted to them seek out the magazine or book that includes them. Every new print-media release generates online discussion that exposes more community members to the ink-on-paper content. Designers and books have fan groups and knit-alongs devoted to them. And of course, magazines and books are advertised directly by their publishers on these websites, sold through online knitting businesses, and reviewed by podcasters and bloggers. The penetration of traditional media into the much larger and much more diverse knitting community that has been revealed and nurtured by Web 2.0 applications is far more thorough than could have been achieved previously.
- And finally, the boomerang effect of all this online activity is the **creation of real objects**: knitted items from scarves to sweaters to DNA models to laptop covers. Fifteen years ago, most would have considered handmade objects to be endangered artifacts in an increasingly digital world. Instead, *there are more of these handcrafted items in the world today* than there would have been without the internet, and likely many more per capita than there were in any pre-internet boom period. Of course real people have employment with real money in online-dependent businesses that make and ship real products, and real books have been written and bought and read because the internet made some knitbloggers stars, and so on in all the usual ways that the online world catalyzes real-world activity. But Ravelry is an example of Web 2.0 unleashing the power of the individual to create and therefore modify his particular environment. In larger terms, the proliferation of creative examples means that "designer" and "inventor" are no longer labels reserved for the few -- everyone can be a "maker." This movement has empowered thousands upon thousands to create and invent, then to share their knowledge with others which in turn sets off a new round of creation and invention. Informal social pressure creates a kind of healthy online competition to present and photograph one's work beautifully, and to document the process of making thoroughly and helpfully. This builds and enriches the resources to which the community can refer for help or inspiration.
- As a result, the world at large becomes newly aware that the "good old days" of craft, creativity, care, and the handmade are far from gone (as anti-digital forces used to take pleasure in lamenting). In fact, they are experiencing a renaissance and robust growth such as never has been seen before -- **a proliferation of expertise, skill, and creativity that would never have been possible before the Internet.**

These results may surprise both futurists who assume we are leaving matter behind for a superior virtual existence, and neo-Luddites who fear that information technology will destroy the virtues of traditional practices and processes. It appears that when rightly organized and presented, information can connect intuitively in the lives of individuals to the materials and the processes of making that those individuals value. It can even create that value by removing the barriers to individual material production that frustrate and stymie many of us.

Process theology spotlights the role of relationships in the production of reality. Every individual creates herself out of the relations that pertain in her past. This self-creation has clear analogues to artistic production, although the stereotype remains that artists are solitary, reclusive types. We recognize nonetheless that they create out of their influences -- and more so today, when art has become self-consciously an act of remixing and repurposing materials found in the environment, rather than an attempt at pure originality. The difference between art to craft has typically been understood as the difference between the creation of messages, reflections, and statements about the world, and the creation of useful and beautiful things within the world. Yet craft is increasingly seen as a tool for art, and vice versa. For example, artists install knitted and crocheted sculptures in museums and galleries, while knitwear designers, once anonymous women directed toward the utilitarian, are placed in the same creative pantheon as couture fashion designers.

The virtue of this increasingly central role for craft in the realm of creative making is that craft has always been understood to value and preserve traditions. Relationality, which has sometimes been obscured in art's quest for the novel, is highlighted in craft, focused as it is on the maintenance of techniques and forms passed down by generations of practitioners. Yet the blurring of the lines between art and craft means that art finds itself more interested in connecting with those traditions, while craft strives more than ever before toward novelty. Thanks to this mutual interpenetration, both fields have begun to exemplify the process notion of creativity, a force for the production of reality through a process emphasizing continuity but open to novelty. William Power, a process thinker at the University of Georgia, prefers the term "productivity" to the Whiteheadian "creativity," since it more accurately describes the momentum of this universal force which does not create each new moment *ex nihilo*, but produces it out of the past, which is available to the present emerging moment as raw materials. The change of language is felicitous for this essay. While the term creativity connotes artistry but lacks a sense of temporal direction, the term productivity emphasizes the "quid *ab quo*," "this from that" of the universal process. What becomes is not the only term of interest in the productive equation; what is used to make it is equally significant.

As we contemplate the use of energy in our Western way of life, focusing naturally on our dependence on fossil fuels and the need for alternative and sustainable energy resources, we typically and understandably fix our gaze at the level of the energy grid and infrastructure. We think about how electric power plants can keep supplying energy to our homes and businesses. We wonder what will fuel our transportation network, and what supply chain considerations will be necessary at a regional or national or international level. In this paper I have attempted to turn our attention to the promise of energy at a different level. The productive power of individuals is burgeoning, at a time when the productive power of industry is teetering on the edge of decline.

Our concern about energy use and abuse often leads us to advocate changes of habit on the part of consumers. We saw in the gas price spike of 2008 that consumer behavior can change very quickly in response to a strong stimulus. A few months of gasoline prices over \$3 per gallon, and both the vehicular-purchasing priorities and the driving priorities of the population shifted dramatically. However, such changes are unlikely to become habits, because they are merely quantitative reactions to a quantitatively fluctuating stimulus. If consumers reduce their driving or seek out fuel-efficient cars when gas prices are high, that effect will fade over time if prices return to their previous levels. Driving will increase, and miles-per-gallon will cease to be as crucial a factor in new car purchases. If the change precipitated by conditions of scarcity is quantitative (a reduction in consumption), then when the scarcity is perceived to have ended, the change will end as well. Those advocating wholesale change, therefore, sometimes find themselves in the uncomfortable position of hoping for the worst -- because only then will people be motivated to alter their behavior.

However, the change of habit that we truly seek is one that will not wax and wane with the intensity of the pressure from the environment or economy. In short, we seek qualitative change. And here it appears that the crafting movement has the potential to outlast the insecurity and uncertainty of the last decade. If people turn to producing their own food, clothing, toys, furniture, or electronics because their own productivity is cheaper and more reliable than that of the industrial supply chain, that is a qualitative change of habit rather than a quantitative one. It is not reducing consumption, it is taking upon one's self a role in production. It is not negative (I will have less of what the consumer economy supplies), but positive (I will have more of what my own productivity supplies). And if the habit is acquired and is found to be enjoyable, it will persist even when the environmental conditions that sparked it abate. The material condition that governs the staying power of a qualitative change of habit is the availability of the resources that support that habit -- in this case, craft supplies such as yarn and tools. There is no reason that these supplies should fluctuate in availability or affordability in the same rhythm as the conditions that initially drove the individual to adopt the practice.

More importantly, a crucial condition has changed in the last decade that supplies a new baseline for individual productivity. The availability of information online to instruct and support crafters at all levels is not just a quantitative change. As demonstrated above, it is a kind of organization that allows for relationality on a different scale and with greatly enhanced potential. Let me enumerate just a few of the ways Web 2.0 changes the game for these productive arts.

1. **The economy of free.** Manufacturers have been giving away free samples to get business forever -- because it works. But the web allows for a huge economy of free, because marginal and scaling costs are virtually non-existent. Give away digital content (like e-books) to build an audience for the author's next book. Give away patterns or instructions either so others can make your design ("paying" you in reputation and visibility), or to build an audience for non-free content through the creation of a loyal following. Everyone can participate in the economy of free, thanks to the web. Of course, crafting has always been a leader in the economy of free. Its entry into the web means that the crucial resource -- expertise and instruction -- is always available at the exact point of need.
2. **Social networking.** Crafting is an inherently relational enterprise; we learn from each other, and we make for each other. Now those connections are built in to a

virtual community that extends one's network far beyond our physical reach. This increases the number of people we can learn from, the amount of expertise to which we are in proximity, the longevity of tradition (think web-accessible digital archives), the relevance of information (think advanced searches and context-dependent filtering), and the opportunities for connection for each member.

3. **Just-in-time production.** This phrase has been an industrial mantra for decades. But of course, mass production always depends on the market's ability to sustain the large and expensive infrastructure needed to produce when demand strikes. Many Web 2.0 organizations that harness individual creativity are cottage industries. Because what they are doing is the opposite of mass industrial production, their overhead is small: server space, an e-commerce account, connections to local artisans or small-scale manufacturing if the organization makes the product -- or no production needs at all if the aim is to distribute the production widely among members. Without costly infrastructure, which always lags behind the state of the art thanks to the time it takes to build it and the usable lifespan it needs to achieve to recoup that investment, these means of production can respond nimbly to changing demand. Raw materials obtained for one purpose can be reallocated to another without penalty.
4. **Handmade and individual.** Because of increased corporate dominance of the web in the late nineties, many concluded that the internet was no longer a place where individuals could have an identity that they controlled and nourished -- just a selection of brand names and company memberships. The individual production of hand-crafted items catalyzed by the web is the best argument against this doomsday scenario. Hundreds of thousands of people all over the world producing their own useful and beautiful things provide a potent counterbalance to the homogenization and consumerism that once threatened to sweep from offline into online life.
5. **Spinning electrons into fabric.** And back again comes the wave, from the web where information is organized and made available by thousands working in their own self-interest, to the physical world where useful and beautiful things are being made. A process that starts online, with relationships creatively ordered and nurtured, ends with homes furnished, bodies warmed and adorned, senses awakened, and spirits inspired by the energy of individuals.

The history of modern industrial civilization demonstrates that as the energy available from the grid decreases, the energy of personal production increases. We find ourselves in a period of decline in grid energy; some believe that this decline is permanent. Therefore we see the energy invested by individuals in their own productive material enterprises on the increase. However, even if new sources of energy are found that will reverse the trend and increase the availability of grid energy, there is reason to believe that the converse of that historical truism is not a necessary corollary. If the energy of mass production increases, the level of personal productivity may not reverse course and go into decline. I have argued that because this personal productivity is a qualitative change of habit, rather than a quantitative change in an existing behavior, and because contemporary online systems create relationships that support and catalyze this productivity, it has the potential to continue through any fluctuations in industrial and economic conditions.

In conclusion, I would like to suggest two fundamental theological lessons drawn from my observations at the intersection of handcrafting and the Internet. First, *poesis of information*

*can lead to poesis of matter.* Process theology asserts that human beings share with God the capacity to create reality. As the Greek word *poesis* connotes, our making abilities shape both the material sphere and the information sphere. Artisans shape matter into beautiful and useful objects; poets shape words and ideas into beautiful and rich communications. In the Information Age, the making of material things took on a secondary importance for many, and communicative capacities were of primary concern in western societies less and less based on manufacturing and agriculture. Yet surprisingly, as the Internet reaches succeeding developmental milestones, we find that the connection between individuals producing physical objects on the one hand, and the gathering and making available of information on the other, has been reestablished and strengthened. But this personal productivity is not empowered by any old arrangement of information. In order for virtually shared thoughts to flower in the form of individually crafted objects, the online community must be carefully shaped to form relationships, tap the knowledge of the members, and enable the remixing of data in novel and creative ways.

In stating the second lesson, I perhaps risk hubris. Yet strengthened by the process theological embrace of evolutionary change and emergent properties, I dare to suggest that the advent of online relationships represents the potential for a new stage in the *imitatio Dei*. For process thinkers, the role of God in the coming-to-be of each instance of reality serves to widen the individual's limited view. Through my relationship to God, I am freed from the narrow scope presented by my particular position in space-time. God, whose ubiquity means that God is proximate to all locations in space and time, grants me a larger perspective and presents to me possibilities for my own creative action that are not visible from where I stand, putting me in relationship to those whom I would not otherwise encounter, including entities in the past and future. As we extend our relationships online, we now in our finite way can participate in that divine role, just as we participate in the divine power of creation. We can place ourselves and other in relationships beyond our physical space, sharing data and shaping the creation of far-flung lives. This power of relatedness beyond the boundaries of our embodiment has been present ever since the development of language. Yet the internet signals a new expanse of potential relatedness, and a new level of richness to the information that can be shared. As I have argued in this essay, such relations can foster an environment where personal energy produces poetic material outcomes.

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1. See for example *The Singularity Is Near: When Humans Transcend Biology* (New York: Viking, 2005)
  2. See for example Bill Joy, "Why the Future Doesn't Need Us," *Wired* 8.4 (2004); <http://www.wired.com/wired/archive/8.04/joy.html>.
  3. <http://threadless.com>.
  4. Max Chafkin, "The Customer Is The Company," *Inc.* June 2008; <http://www.inc.com/magazine/20080601/the-customer-is-the-company.html>
  5. Tim O'Reilly, "The Significance of Threadless.com," Nov. 20, 2006; <http://radar.oreilly.com/archives/2006/11/the-significanc.html>
  6. <http://makezine.com>.
  7. <http://craftzine.com>.
  8. <http://etsy.com>.
  9. <http://ravelry.com>.

10. I first stated these ideas, in similar language, in a blog post titled "How the Web Changed Knitting (And Knitting Changed the World)" (<http://uniontrueheart.blogspot.com/2008/05/how-web-changed-knitting-and-knitting.html>).