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**Abstract:**

Many public debates about climate change now focus on the economic "costs" of taking action. When called on to advise about these, many leading mainstream economists downplay the need for care and caution on climate issues, forecasting a future with infinitely continued economic growth. This essay highlights the roles of binary metaphors and cultural archetypes in creating the highly gendered, sexist, and age-ist attitudes that underlie this dominant advice. Gung-ho economic growth advocates aspire to the role of The Hero, rejecting the conservatism of The Old Wife. But in a world that is not actually as safe and predictable as they assume, the result is guidance from The Fool. Both intellectual and cultural change are necessary if the voice of The Wise Grandmother (which may come through women or men) is to—alongside The Hero—receive the attention it deserves.

# Is Dismissing the Precautionary Principle the Manly Thing to Do? Gender and the Economics of Climate Change

**Julie A. Nelson**[1]

> *Not understanding that doing nothing can be much more preferable to doing something potentially harmful. (Mistake made by most people who are not grandmothers.)*
>
> Nassim Nicholas Taleb *(2010, 332)*

## *Introduction*

Recent developments in cognitive science have highlighted the power that stories, metaphors, and archetypes have on our thinking. In fact, to a large extent they *are* our thinking (Lakoff and Johnson 1999, 4). Consider the archetypal image of the young adult male hero. He is brave, active, adventurous, innovative, knowledgeable, clever, confident, independent, in control, and not constrained by family, tradition, or public opinion. He is a character that appears in myths, in histories of conquest and discovery—from Odysseus to the Medusa-slayer, the dragon-slayer, the swashbuckler, the "self-made" man, the lone frontiersman, the explorer, the scientist who goes where no one has gone before. He achieves victory, dominance, status, and reaps his just rewards. The Hero is something to aspire to.

Consider, on the other hand, the Precautionary Principle. While a variety of different specific statements of it exist (Randall 2009), the term "Precautionary Principle" generally refers to an acknowledgement that there are things—in particular, the complex systems that make up the natural environment—that we as a human species do not thoroughly understand and cannot control. These phenomena, and the actions we take in relation to them, have the power to sustain us, but also to very seriously hurt us. In the face of our acknowledged ignorance, the Precautionary Principle advises that we proceed cautiously when there is a possibility that our interventions may cause harm, even if that harm is not thoroughly proven. Such a principle underlies, for example, the European banning of GMO (genetically modified organism) products, the European REACH program, which requires that new chemicals be tested before being commercially released, and the United States process of testing pharmaceuticals before their launch.

In a broader sense, an attitude of "precaution" could also be applied to many goals already being pursued and technologies that have already been implemented: Perhaps, if there is a substantial reason to believe that they are causing very serious harm, we should reduce or suspend their pursuit or use, at least until we are better able to judge their

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impacts. Recent controversies about Bisphenol-A in plastics illustrate this case. In discussions of climate change, many ecological economists advocate that affluent countries cease pursuing the conventional macroeconomic goal of growth in Gross Domestic Product (GDP), and enact a rapid and drastic reduction in the use of existing greenhouse-gas-producing technologies (Victor 2008; Jackson 2009). Enacting these proposals would involve some sense of backtracking—that is, admitting, with some sense of humility, that actions previously regarded as reflecting the heights of human knowledge and accomplishment might actually have been harmful—or at least some sense of holding back, by accepting restrictions on how fast or in what directions technologies or economies might advance. How boring, passive, and backwards "precaution" seems, however, compared to the swashbuckling accomplishments of the confident hero!

The Precautionary Principle has come under fire, or is simply ignored, by many mainstream economists and many who use economic advise to formulate economic policy on the environment, particularly in the United States. Notable among these is Cass Sunstein, administrator of the U.S. White House Office of Information and Regulatory Affairs, who has dismissed the principle as "paralyzing" (2002-2003; 2005). Confident about our ability to predict and control the natural environment, Sunstein has claimed that fundamental uncertainty about natural systems arises only in "special circumstances" (2005, 114). Economists William Nordhaus (Nordhaus 2008), and Richard Tol (2009), whose models are currently being used as the major basis for United States environmental policy on carbon emissions (U.S. Department of Energy 2010), likewise advise charging forth in the pursuit of economic growth and efficiency, with only rather minor adaptations ("ramping up") of policy to mitigate climate change. Climate change mitigation policies, they and others argue, should only be implemented to the extent that they do not “cost too much” in terms of lost GDP—and even small “costs” are considered intolerable. Economist and philosopher John Broome's high profile *Scientific American* article on "The Ethics of Climate Change" (2008) enshrines notions of infinite economic growth. Economist Martin Weitzman, while he has gone further than many of his mainstream colleagues in recognizing the problems caused by fundamental uncertainty combined with the possibly of disasters, has expressed hope in untested technologies such as massive geoengineering (Weitzman 2007). While some economists are joining the calls for dramatic action on climate change (Union of Concerned Scientists 2010), the leading voices in U.S. policy—and, because of U.S. power, important voices in international negotiations—speak from a position that assumes that we are basically in control of our situation, and have no need for attitudes of care or caution.

Why does the Precautionary Principle, and the general attitude of circumspection and humility that it illustrates, seem to carry so little cachet among economists and others who have great confidence in ever-increasing economic and technological progress? There are, of course, many facets to this question and many possible angles from which to answer it. This essay will explore one suggested by the epigram which begins this essay: the association of caution or wise *in*action with grandmotherliness. Nassim Nicholas Taleb's best-selling book *The Black Swan* takes aim at economists (and others) who are in the habit of dealing with risk and uncertainty only in a mathematical,

probabilistic sense. Such folk consequently neglect to notice that most major history-changing events—inventions, wars, financial crises, etc.—come as true surprises to the people living through them, much as the presence of black swans in Australia surprised early European travelers who, based on previous experience, had believed all swans to be white. Taleb calls on cultural archetypes of grandmothers, matriarchs, and elders (Taleb 2010, 78, 332) to symbolize the sort of long-time, deep wisdom that is cognizant of rare and dangerous events. While mainstream economists have enshrined the goals of economic growth (that is, growth in GDP) and efficiency (that is, minimizing waste), this sort of wisdom advises that the way to develop resilience to truly unpredictable events often involves cautious *in*action and the deliberate creation of redundancy (e.g., backup systems that may never be used).

This essay explores the peculiar historical and sociological evolution of contemporary mainstream economics, within a cultural context of generalized sexism and ageism. This, it will be argued, had made the image of The Hero inordinately powerful. While within Hero narratives, the only options are to bravely conquer or meekly be conquered, this essay will also seek to open up broader narratives that could help to inform and balance economic theorizing and policymaking in the face of serious climate change risks.

Lest this essay be misunderstood, let it be clear that the point of it is most definitely *not* any of the following: men are by nature reckless and women cautious; that men have screwed things up and it is up to grandmothers (or women more generally) to make things right again; or inactivity and caution are always the best choice. The actual point could even be put in mainstream economic terms: people respond to incentives. In a sexist, ageist, and accomplishment-oriented culture, people are disproportionately rewarded for enacting images of maleness, youth, and heroism, and punished or at least subtly patronized for enacting images of femaleness, age, or forbearance. To the extent that economic and policy advice is unconsciously wedded to these perverse cultural biases, is unsound and—like a joy-riding teenage driver—dangerous to life and limb.

## *Economics, Archetypes, and Metaphors*

While within the profession of economics, economic models and methods are generally taught more or less as revealed truth, or at least as the progressively more-correct outcome of a unidirectional accumulation of knowledge, a more nuanced exploration of the history of economics reveals a different story. Before briefly exploring the history, however, a note about why archetypes are and why they could be important is in order.

### A Note on Archetypes

An archetype, according to the Oxford dictionary, is "a recurrent symbol or motif in literature, art, or mythology." Archetypes relay in outward and culturally available form, it seems, ways of thinking that also go on in our individual brains. Neuroscientists, psychologists, philosophers and linguists have discovered that involve prototypes,

stereotypes, metaphors, and "cognitive schema"—ways that we speed up and simplify our thinking by creating associations around easily available images and binary contrasts (Lakoff and Johnson 1980; Casasanto 2009). Since one of the most easily accessible binaries seems to be male vs. female, associations of contrasts a with male/female binary tends to be a building block of much human thinking (Bem 1981; Knutson, Mah et al. 2007; Most, Sorber et al. 2007; Nosek, Banaji et al. 2007). Occupations, of course, and many qualities such as competitive/nurturing are immediately gender-coded by most citizens of Western industrialized countries. But gendered thinking goes deeper than that. Consider, for example, dogs versus cats: In Western cultures, most people will associate dogs with masculinity and cats with femininity. There is historical and psychological evidence that, even more abstractly, odd numbers are metaphorically associated with masculinity and even numbers with femininity (Wilkie and Bodenhausen 2011). Our brains are, in fact, *cognitively gendered*—they make gender associations even about things that are obviously very far removed from any actual observed biological difference or reigning social patterns.

Our mental propensity to create massive thought constructs on the basis of a narrow binary of perceived sexual dimorphism seems to have both advantages and disadvantages. Research suggests that binary coding plays a very basic role in organizing mental functioning that would otherwise be overwhelmed by attention to overwhelming individual detail (Most, Sorber et al. 2007), and the associations built up around these binaries qualitatively enhance our thinking and communicating with rich and resonant images (such as The Hero). Taken too seriously, however, it is easy for archetypes and metaphorical associations to morph into stereotypes that actually short-circuit our thinking. If we confuse our cognitive processes of creating gender associations, and our cultural processes of archetype-making, with pre-existing "essences" of masculinity or femininity (Gelman 2005), we commit the fallacy of misplaced concreteness. And we may end up unconsciously attributing to things characteristics that are no more "essential" to them than femininity is to a number being even. Furthermore, these misguided attributions may blind us to the actual characteristics of people right in front of us or to opportunities for action.

This essay will take advantage of the reader's likely experience with and recognition of a number of cultural archetypes—specifically, beginning with The Hero and The Old Wife, and then moving onto their lesser-recognized relatives The Reckless Fool and the Wise Grandmother. This essay's pointing out of the fact that these archetypes exist and may hold considerable (if largely unconscious) sway over our thinking, however, should not be confused with an *endorsement* of gender (or age) stereotypes. To be clear: In the real world, there are grandmother heroes, wise daughters, reckless genderqueers, and old sons, and any other possible combination. Archetypes are symbolic representations of qualities that are, to some extent, part of simply being human. And so they are part of every human.

## Gender Metaphors and the Foundations of Economics

In the 1980s and later, the strong binary gendering that underlies historical and many contemporary images of science was brought to light by feminist historians and philosophers (e.g. Keller (1985), Sandra Harding (1986), Easlea (1980), and Plumwood (1993)). They pointed out how binaries such as man/nature, mind/body, activity/passivity, order/chaos and male/female strongly influenced the Western conception of the order of the world. From Plato and Aristotle, through Descartes and Bacon, the image of knowledge as the masculine means to firmly control a dangerous feminine Nature emerged.

In the early 1990s, feminist economists began to notice that the definition, models, and methods of mainstream economics followed just such a gender schematic pattern, as shown in Table 1.

**Table 1: Splitting the World: Gender Schemas in Neoclassical Orthodoxy**

| Economics ("Hard") | *Not* Economics ("Soft") |
|---|---|
| Definition: | |
| markets | nonmarket |
| mental choice | bodily experience |
| Model: | |
| individuality | relatedness |
| autonomy | interdependence |
| self-interest | other-interest |
| rationality | emotion |
| Methods: | |
| quantitative | qualitative |
| formal | verbal or intuitive |
| positive | normative |
| objective | subjective |
| general | particular |
| Gender: | |
| masculine | feminine |

That is, when mainstream economics is defined as the study of either markets or choice, non-market and bodily experience are neglected. The model of "economic man" is of an autonomous, rational, self-interested actor; all interdependencies and emotions are excluded. Even more than subject matter, methodology is often used to demarcate what is or isn't economics: [2] Quantitative mathematical models and empirical studies that aspire to a value-free neutrality have the highest prestige. Qualitative study and issues of ethics, or any discussion of one's standpoint or position in relation to others, are strenuously avoided.

[2] For more on the history of the splitting off of economics from the other social sciences in the U.S. see Nelson (2010).

For example, in the economic study of climate change, mainstream economists use mathematical models of intertemporal optimization (that is, they represent a problem in terms of equations, and then find the mathematical solution that gives the highest value summed over a number of time periods) to derive what they believe are rational and objective policy prescriptions. Adopting the position of an omniscient social planner, economists using these mathematical models purport to identify the policies that will maximize social welfare (that is, that create the highest quantity of an aggregate of individual "utilities" or levels of satisfaction, which is in turn assumed to be represented by the size of GDP per capita) into the infinite future and worldwide. Direct discussion of ethical concerns is assiduously avoided: Instead of being overt, ethical assumptions are quietly embedded in technical-seeming model parameters. In particular, the welfare of future generations is discounted using market financial interest rates (which makes the future largely disappear, see discussions in Nelson 2008; Ackerman 2009) and hidden assumptions are added to the models via "Negishi weights" that sideline consideration of global inequities (Stanton 2010). Bizarre as it might seem to outside observers, mathematics per se has been—in an economics profession which rarely looks at its own methodological or epistemological assumptions—assumed to not only provide checks on the internal consistency of models (which it does), but to also provide the models with a value-free "rigor" and "objectivity" in regards to the representation of real world phenomena and the creation of value-free policy advice (which it doesn't; see discussion in (Nelson 1996)).

The cultural and cognitive gender associations are clearly "masculine" and "hard" for the rational, quantitative, etc. left-hand column of Table 1, and "feminine" and "soft" for the emotional, qualitative, etc. right-hand side. And the relations are clearly hierarchical: the left side is more culturally valued within the profession (and, to a large extent, also society-wide). We might diagram this perceived relationship between gender and value as shown in Figure 1: masculinity is hard, superior, and virile; femininity is associated with softness, inferiority, and emasculation.

**Figure 1: The Hierarchical Gender Dualism**

masculine superior virile
|
feminine inferior emasculated

To the extent these common habits of thinking filter into economics practice, they suggest that it is "masculine" and "superior" for a researcher to see him- or herself as being above nature, and to believe that doing "good economics" means distancing one's professional practice from all things "feminine," including ethical discussions or qualitative methods.

One way of trying to fight this paradigm might be to simply turn the tables, and value everything in the "soft" column over everything in the "hard" column. That is, the only alternative may seem to be to see the world in purely "holistic" terms, rejecting notions of individuality and rationality in favor of immersion in relatedness and

experience. But a number of feminist philosophers (e.g., Plumwood 1993; Warren 2005) and feminist economists have suggested a different solution: Deconstructing the dualism itself.

As a tool for developing this more flexible sort of thinking, a "gender-value compass" (Nelson 1992; Nelson 1996) may be useful. In actuality, for example, people are being *both* individuated and connected, as illustrated in Figure 2. We humans are a part of nature and constituted in our relationships, *as well as* able to think and act as human beings and individuals (Nelson 1995; England 2003).

**Figure 2: Gender-Value Compass on the Nature of the Self**

| | |
|---|---|
| M+<br>individual | F+<br>related |
| M–<br>separative | F–<br>soluble |

The "separative" self is the mythical "independent" person who can exist without connection to nature, society, or family, while the "soluble" self is the mythical person so holistically attached to, for example, a husband, social norms, or wild nature that no self-identifying thought or action is possible. Yet in Western cultural understandings the M+/F- diagonal tends to dominate: The strength of the "individual" Mr. John Smith is praised, and the invisibility of Mrs. John Smith has been expected. The strength of relationships (F+) and the corresponding dangers of detachment (M-), located on the off-diagonal, are less often noted.

We can also examine the idea that we have an either/or choice between masculine, precise, quantitative methods and less precise qualitative analysis. Figure 3 suggests that there are costs to focusing only on precision, and benefits to be had by a richer approach.

**Figure 3: Compass on Qualities of Research**

| | |
|---|---|
| M+<br>precise<br>elegant | F+<br>rich,<br>realistic |
| M–<br>unrealistic,<br>thin | F–<br>imprecise,<br>vague |

Good analysis aims at useful combinations of precision and richness. While economists tend to assume that mathematics per se gives economics "objectivity," that belief has been challenged by feminist scholars of science. The belief that objectivity is a matter of strict method or detachment is rooted in notions of the "separative self." Feminist

alternatives, such as those called “strong objectivity” by Harding (1986), “dynamic objectivity” Keller (Keller 1985, 116), or "positional objectivity" by economist Amartya Sen (Sen 1992) incorporate a more relational approach. For example, as expressed by feminist philosopher Helen Longino, “The objectivity of individuals…consists in their participation in the collective give-and-take of critical discussion and not in some special relation (of detachment, hardheadedness) they may bear to their observations” (1990, 79). It is unlikely, for example, that future generations would consider climate change models that ignore their well-being to be "objective." Open-minded investigation is the hallmark of real science, for which math may be a useful tool. Insisting on math without the open-mindedness, on the other hand constitutes simply dogma, which the antithesis of the truly scientific attitude.

In summary, this feminist critique of mainstream economics points out that economics has not been "too objective," but rather that it has not been objective enough. By letting subjective cultural biases about the relative values of things culturally coded as masculine or feminine hold sway, economists have ended up by "playing with half a deck." By pursuing masculine-associated ideals to the exclusion of their complementary feminine-associated strengths, the goal of reliable and helpful knowledge has been lost.

## *Bravery: The Hero versus the Old Wife*

While the questioning of simple cognitive binaries begins to shed light on how the "manliness" of economics shapes the profession's work on climate change, perhaps richer insights can come out of examining more complex, more fleshed-out, images and stories. Consider a binary contrast between bravery and timidity: The symbolic representation of this in terms of brave Heroes (M+) and cautionary Old Wives (F-) combines image of both gender and age.

### The Archetypes on the Dominant Diagonal

The image of the young male hero embodies bravery, activity, optimism, and pride. When a male is perceived as *not* being sufficiently heroic—sufficiently accomplishment-oriented, strong, and brave—the standard taunts compare him to a female. "More than a handful of our male readership can likely recall vividly their grammar school physical education teacher scorning them with the proverbial 'you’re playing like a girl' rant to induce greater levels of competitive spirit," some economists (Gneezy, Leonard et al. 2009, 1638) have noted. In regard to bravery, social pressure is applied to a male believed to be driving too slowly and cautiously with the phrase "You're driving like _____." The likely term is "your grandmother," or "an old lady," signifying both gender and decrepitude. Youthful virility is contrasted to its opposite, emasculation and age.

While the young girl or ingénue, in her innocence and vulnerability, may be the antithesis of the Hero on scales of knowledge and forcefulness, on the scale of bravery and general sallying forth it would seem that the archetype of Old Wife of "old wives'

tales" forms the relevant antithesis. The heroic male doctor with his shiny instruments versus the dirty, germy, ignorant midwife/witch with her herbs and spells symbolically portrays the battle between science and superstition. The Old Wife is ignorant, her every move dictated by false beliefs in uncontrollable spirits and demons, her prescriptions and remedies handed down from tradition rather than tested. She is fearful and conservative to an extreme, sucking anyone who consults with her into a mire of magic and irrationality. She is usually portrayed as staying close to her hut in the dark woods. Her "tales" are more often than not scares stories about the dire consequences (e.g. seven years of bad luck from a breaking a mirror) of actions that are in fact harmless. To the extent she has power, her community stagnates and suffers. She is the very antithesis of the swashbuckling hero.

## The Old Wife in Contemporary Studies of Risk Aversion

But enough of stories and archetypes—how could this possibly related to 21st century economics? A companion paper to this one (Nelson, 2012) documents how the story that "women are more risk-averse than men" has taken hold in the contemporary economics profession, in spite of evidence that that is at best weak and often contradictory. That is, it seems that maintaining the belief that women are timid while men are brave has sometimes taken priority—probably quite unconsciously—over making valid empirical inferences. In this literature, greater risk-aversion is also associated with increasing age (Dohmen, Falk et al. 2011).

To summarize briefly, very often a finding of a statistically significant difference between the mean scores of men and women on some measure of willingness to take risks, or the perception of the severity of various risks, is taken as evidence that there exists a substantively significant sex-linked trait that affects all individual men and women. This is an invalid inference for many reasons, including a confusion of the general (affecting all men and women) with the aggregate (a difference in mean scores, which could come from only a subset of subjects); a neglect of consideration of intra-group variation; publication conventions that tend to lead to a "file-drawer effect" in which non-statistically-significant results do not get published; a confusion of statistical with substantive significance; and a neglect of issues of context and gendered socialization. A review of 28 published studies found that the actual data often indicated only very small differences, if any, and a large degree of similarity between men's and women's behaviors (that is, 80-90% or more of men and women act in the *same* way) (Nelson, 2012). To some extent these problems affect both the psychological and economic literatures on the topic, though the problem is more pronounced in the economics literature. A broader view of the literature also found that risk aversion did not seem to simply rise with age (Byrnes, Miller et al. 1999, 373).

What appears out of this literature on gender and risk-aversion is not so much evidence of (by "nature") brave (young) males and fearful (old) females, as of the power of the *belief*—on the part of both authors of studies and of research subjects—that males should be brave and females should be less so. In one psychological study, for example, a group of males who underwent a manipulation ("testing" a floral-scented hand lotion)

that may have made some of them feel that their masculinity self-identity was threatened seemed, on average, to compensate by placing higher bets in a subsequent gambling experiment (Weaver, Vandello et al. 2012). Various sorts of evidence suggest that male risk-taking may be accentuated in all-male groups, where social identity theory suggests that many men may feel pressured into demonstrating more masculine-stereotyped behaviors (Ronay and Kim 2006). This is not to claim that there is absolutely "no sex difference" in risk-taking, but only that it seems that, in magnitude, the effect of gender *beliefs* seems to be the more important factor.

What is more, being risk-averse is predominantly portrayed in the 21st century economics literature as something *negative*. It is conjectured that "women's greater risk aversion" leads women to invest too little of their retirement portfolio in the stock market, to take too few risks as entrepreneurs, and to make less money in employment because they do not take the risks necessary to advance in their jobs. Women are encouraged to become more like men in their risk preferences, in order to succeed in "modern societies" (Eckel and Grossman 2002, 291). The power of the images of the adventurous, prize-winning Hero and the stick-in-the-mud Old Wife lives on.

The type of risks evaluated in the economics literature also deserve re-examination. The studies rely heavily on lottery and gambling experiments in which outcomes and their probabilities are usually known, and gains and losses can be mathematically calculated and are strictly limited in magnitude. Real world risks involving true uncertainty about probabilities and even perhaps complete surprises about possible outcomes, or about losses such as death or the extinction of species, are not studied in this literature. The sorts of courage and rationality required for addressing the second type of risk may be quite different from those required for the first. Is seems rather odd to harp on women's presumably greater risk aversion and its presumed roots in biological and social evolution, when historically childbirth was a very risky business, and still kills over 350,000 women per year worldwide (World Health Organization 2010).

## *Carefulness: The Wise Grandmother versus The Reckless Fool*

The "compass" tool is designed to open up for discussion the often-forgotten dangers of one-sided masculinity (the M- cell) and strengths culturally associated with femininity (F+). The dominant diagonal of The Hero (M+) and the Old Wife (F-) emphasizes the value of bravery. The off-diagonal may be characterized, as shown in Figure 4, as contrasting the careful Wise Grandmother with the reckless Fool.

**Figure 4: Compass on Attitudes Towards Risk**

| | |
|---|---|
| M+<br>The Hero<br>(brave) | F+<br>The Wise Grandmother<br>(careful) |
| M–<br>The Fool<br>(reckless) | F–<br>The Old Wife<br>(fearful) |

## The Archetypes on the Off-Diagonal

In the *psychological* literature on gender and risk, there appears to be far more awareness of the dangerous aspects of *insufficient* risk aversion. Empirical analysis of driving behavior and vehicular fatalities reveals that young males are noticeably more likely, in the aggregate as a group, to drive at fast speeds and be involved in vehicle accidents than their female peers as a group. Consistent with social identity theory, this aggregate tendency seems to be accentuated when male drivers have male passengers in the car with them (Ronay and Kim 2006). At the level of archetypes, the risk-seeker may be The Hero when he (the masculine pronoun corresponding to the archetype) is successful, but he is The Reckless Fool when his actions lead to disaster (Ronay and Kim 2006, 397). The risk-taking male teen driver is perhaps sometimes looked at with some envy (why else would a parent ever buy a teen male a fast car?), but is also socially characterized as careless, foolhardy, irresponsible, immature, and a danger to himself and society. He is impetuous, overconfident, and insufficiently cognizant of the possible repercussions on others of his actions.[3]

The idea that males and/or all-male groups, could be associated with taking excessive risks also received popular discussion in the wake of the financial crisis that began in 2007. Some have suggested that masculine-image-enforcing group-think may have contributed to the extreme risk-taking that led to cascading wealth-evaporation and economic distress (Kristof 2009). While financial leaders may be lauded as "Masters of the Universe" when they are successful, they may share the Reckless Fool archetype with teen male drivers when they are not—at least among some commentators. There is, unfortunately, far less evidence that the economists and financial leaders actually responsible for the crisis have recognized anything of themselves in this archetype.

Too little risk aversion, it has been noted, may be associated with "unrealistic illusions of control" that "suppress the feelings of anxiety that might otherwise serve to warn of danger" (Ronay and Kim 2006, 413). If risk-taking, fearlessness, and impetuousness can, in some contexts and degrees, be very harmful, then it follows that risk aversion and a proper level of fear, caution, and carefulness can, in those contexts and degrees, be appropriate and life-preserving.

[3] Remember that many young males are safe drivers. Archetypes are stories and images that burn into our brain, not truths about actual behavior.

Such a combination of slow, deep wisdom and attentive nurturance is archetypically portrayed as feminine, and in particular, as the image of the Wise Grandmother. Where the teen driver is immature, the Wise Grandmother preserves the wisdom of eons. Where the teen driver looks only at his own immediate pleasure, the Wise Grandmother's view spans time and community. While the teen driver sallies forth, attracting attention with speed and noise, the Wise Grandmother in the stories is a quieter wellspring of good advice for those who make the journey to consult her. Her stories and adages distill, illustrate, and make memorable a good variety of valuable rules for living. She dispenses both cautions and encouragements. Her advice, gained from long experience, is life-preserving.

## *The Importance of Getting Beyond the Dualism*

Being brave and risk-taking does not, in fact, preclude being *also* careful and protective. Psychologists who see elements of personality as containing many dimensions are already aware of this.[4] The analysis above is meant to highlight the positive value of simultaneous appropriate bravery and appropriate carefulness, and the drawbacks of emphasizing either attitude alone. In contemporary mainstream economics, the sallying-forth, we-are-in-control, holding-back-shows-weakness attitude dominates. Economics will need to be practiced very differently, once it is recognized that the world we live in is profoundly unsafe, interdependent, and uncertain (Nelson in press).

The gross inadequacy of the dominant economic approaches to climate change should not, however, be taken as a rationale for completing dismissing the concerns and opposing the methods of contemporary mainstream economics. Much of the "critical" literature on climate change, environmental ethics, and economic systems tends, unfortunately, to fall into a pattern of simple reactivity. If economists and capitalists are pro-growth, then critics must be diametrically anti-growth (e.g., Bookchin 2005); if the conventional approach is pro-globalization and large-scale, then critics must be diametrically pro-local and small-scale (e.g., Norberg-Hodge 2002; Curtis 2003; Watson 2005); if current elites are pro-technology, critics must be diametrically Luddite and anti-technology (Watson 2005, e.g., ); if policy debates focus on humans in industrialized societies, critics must diametrically venerate the wilderness (e.g., Norberg-Hodge 2002; a contrast discussed in Vogel 2005), indigenous cultures (a contrast discussed in Sturgeon 2005) and non-human species; if those in control praise profits and private property, those who want change must advocate a complete disavowal of both (e.g., Sivaraksa 2002; Bookchin 2005). Or so it is thought. Note, however, the way in which these contrasts can tend to evoke (while perhaps also romanticizing) the fearful old nay-sayer, withdrawn from the town marketplace, and burrowed into her forest hut. While such critics often serve a very useful role in bringing attention to pressing environmental

[4] In the HEXACO personality model, for example, "brave" (as contrasted to "fearful") is part of the "emotionality" dimension, while being "careful, thorough" as opposed to "negligent, reckless" is part of the "contentiousness" dimension. Each of the dimensions is thought of as being largely related to the others, so that knowing a person's personality type on one dimension is not very informative about any other dimensions (Anonymous 2011).

issues such as climate change, the prescriptions given for a way forward again "play with half a deck"—only, in this case, the side neglected by mainstream economists.

Simplistic binaries are not a good replacement for careful, contextual investigation and the search for wisdom. Better discussions would come out of asking questions such as "what do we want economic growth *for*?" and "growth of *what*, and *where*?" Exploring such questions leads us away from simplistic proclamations, and into investigations of the role that production and consumption of goods and services plays in creating—or in failing to create, or in destroying—human and other species' well-being, and to recognizing the legitimacy of the aspiration of the very poor to improve their material lives. Similar analysis can be applied to national and international economic linkages, and to technologies. Relations between humans and the rest of the natural world can be envisioned in ways that are neither separative and arrogant, nor soluble and passive (Warren 2005).

Reactions by critics against any participation of for-profit businesses in the creation of sustainable societies, or to any use of market-based processes (e.g. carbon taxes) to mitigate climate change, are often based on taking mainstream economic models *far too seriously*. Mainstream economic thought has created an image of capitalist economies as impersonal machines directed by "economic laws" similar to the laws of physics and propelled by the "energy of self-interest." While supporters of capitalist economic systems believe them to be "engines of growth," opponents characterize the same economies as destructive juggernauts, intent on destroying more socially-oriented values (e.g., Sivaraksa 2002; Bookchin 2005, 463, 474). It may help to realize, instead, that economies—even capitalist ones—are actually *part of* societies, and deeply entwined and co-constituted with public regulation, cultural beliefs, real human emotional motivations, and social and ethical practices (Nelson and England 2002; Nelson 2011; Nelson 2011; Zelizer 2011). The image of "the economy as a machine" is no more than an outgrowth of economists' historical physics-envy—the desire to have a subject matter that is understandable and controllable through detached mathematical analysis (Nelson 1996; Nelson 2006). Understanding economies as social creations opens the space for creative and transformative change—even within business, and even within markets. But it will take people who are both conscientious and forward-looking to bring this change about.

And, of course, another important dualism it is important to avoid is the essentialist one that associates only women with carefulness, morality, community, and connection with nature. While some of the important work that has been done in highlighting and revaluing aspects of human and social life traditionally associated with women has been done by people who hold essentialist beliefs, the essentialist beliefs are not necessary, or helpful, to the project of creating a more just and balanced society. The circumstances of climate change are dire enough that it will take everyone, not just half the human race, to be involved in solutions if we are to avoid disaster. Arguments from essential "difference," on the other hand, may be interpreted as giving men a "free pass" to be reckless.

## *Conclusion*

Mainstream economist policy advisors who advise only modest policy changes in response to climate change are currently acting like foolish, reckless teenage male drivers, whose belief that they are in control far exceeds their actual powers. In a culture that values the gung-ho attitude, it is difficult to make a case for valuing not only bravery, but also a wiser, slower, more careful and humble wisdom, especially since this is metaphorically associated with age and femaleness. Because of these gender-linked archetypal and metaphorical associations, feminist analysis that explodes old dualistic habits of thought and brings to light biases not only in conventional economic analysis, could play an important role in generating creative thinking about how to deal with climate change.

This essay does *not* claim that a "more feminine" economy, envisioned as being led by women and/or as based on stereotypically feminine traits such as cooperation and carefulness, would be better equipped to deal with the crisis of climate change. The proposal here is considerably more radical than that. Rather than simply reacting to the climate crisis in ways that continue old habits of thought concerning economics and gender, we need to rethink our image of what an economy is, and distinguish our archetypal images from the realities of people around us. We need all people—not just women—to participate in solutions, and we need this to happen right here and right now in the economies we live in, not in some utopian economy of the future.

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