

## 1: Biological basis of love - Wikipedia

*Below is a suggested reading list for someone interested in the intersection of economics and evolutionary biology. If you have any recommendations for additions, please let me know.*

Evolutionary biology Cultural genetic interaction coevolution The interrelationship between two or more inherent systems e. Examples used in this review related to lifestyle and dietary choices Overlaps identified between the following research disciplines and fields: Examples used in this review related to natural resource management Overlaps identified between the following research disciplines and fields: Examples used in this review related to conservation behaviors and management of the natural environment Overlaps identified between the following research disciplines and fields: Further, while humanity, and indeed nature also, has not entirely escaped change, it cannot be assumed that all have been shaped by evolutionary mechanisms 42 , Some have been shaped by what Radkau 75 terms as the power shift between humans and nature, which is evolving, as it has and will keep on doing. As such, the human nature relationship goes beyond the extent to which an individual believes or feels they are part of nature. It can also be understood as, and inclusive of, our adaptive synergy with nature as well as our longstanding actions and experiences that connect us to nature. Over time, as research and scientific knowledge progresses, it is anticipated that this definition of the human nature relationship will adapt, featuring the addition of other emerging research fields and avenues. It is, however, beyond the scope of this paper to review the many ways these concepts have been previously explored 84 Since then, this shift has seen a major growth in the last 30 years, primarily in areas of positive health and psychology 88 Despite its broad perspective of human health, the definition has also encountered criticism in relation to its description and its overall reflectance of modern society. Similarly, others have highlighted the need to distinguish health from happiness 84 or its inability to fully reflect modern transformations in knowledge and development e. As such, there have been calls to reconceptualize this definition, to ensure further clarity and relevance for our adaptive societies Broadly, health has been measured through two theoretical approaches; subjective and objective First, physical health is defined as a healthy organism capable of maintaining physiological fitness through protective or adaptive responses during changing circumstances While it centers on health-related behaviors and fitness including lifestyle and dietary choices , physiological fitness is considered one of the most important health markers thought to be an integral measure of most bodily functions involved in the performance of daily physical exercise These can be measured through various means, with examples including questionnaires, behavioral observations, motion sensors, and physiological markers e. Second, mental health is often regarded as a broad concept to define, encapsulating both mental illness and well-being. It can be characterized as the positive state of well-being and the capacity of a person to cope with life stresses as well as contribute to community engagement activities 83 , It has the ability to both determine as well as be determined by a host of multifaceted health and social factors being inextricably linked to overall health, inclusive of diet, exercise, and environmental conditions. As a result, there are no single definitive indicators used to capture its overall measurement. This owes in part to the breadth of methods and tends to represent hedonic e. Third, social health can be generalized as the ability to lead life with some degree of independence and participate in social activities Indicators of the concept revolve around social relationships, social cohesion, and participation in community activities. Further, such mechanisms are closely linked to improving physical and mental well-being as well as forming constructs, which underline social capital. Owing to its complexity, its measurement focuses on strengths of primary networks or relationships e. Current Knowledge on the Human Nature Relationship and Health This section summarizes existing theoretical and literature research at the intersection of the human nature relationship and health, as defined in this review. Physical Health Though it is widely established that healthy eating and regular exercise have major impacts on physical health 98 , within the past 30 years research has also identified that exposure to nature e. Empirical research in this domain was first carried out by Ulrich 46 who found that those hospital patients exposed to natural scenery from a window view experienced decreased levels of pain and shorter recovery time after surgery. In spite of its increasing findings, some have suggested

the need for further objective research at the intersect of nature-based parameters and human health 9. This presents inherent difficulty in comparing assessment measures or different data types relative to the size and scale of the variables being evaluated 9. Further, there still remain evidence gaps in data on what activities might increase levels of physical health as well as limited amount of longitudinal datasets from which the frequency, duration, and causal directions could be inferred

**Mental Health** Mental health studies in the context of connecting with nature have also generated a growing research base since the emergence of the Biophilia concept in the mids Supporting research has been well documented in literature during the last few decades. Similarly, further mixed-method approaches and larger sample sizes are needed in this research field. This would enhance existing evidence gaps to enhance existing knowledge of variable interlinkages with other important sources e.

**Social Health** In the last two decades, the relationship between people and place in the context of green spaces has received much attention in academic literature in regards to its importance for the vitality of communities and their surrounding environments One of the main limitations within this field relates to the generally perceived idea that public green spaces are freely open to everyone in all capacities This limitation has been, as already, highlighted from the emerging arguments in the field of environmental justice and economicâ€™nature conflicts As such, many researchers highlight the need to maintain awareness of other barriers that might hinder cohesion and community participation e. Further, there still remains a gap between academic research and local knowledge, which would otherwise lead to more effective interventions. Nonetheless, for such approach to be implemented requires sufficient time, cost, and an adequate scale of resources to ensure for aspects of coordination, communication, and data validation This in part owes to the increasing evidence accumulating in research literature centering on the relationships between the following areas: Such health-related effects that have been alluded to include chronic diseases, social isolation, emotional well-being as well as other psychiatric disorders e. Reasons for these proposed links have been suggested to stem from various behavioral patterns e. Further, these suggested links have been inferred, by some, to be visible in other species e. Nonetheless, research within this field remains speculative with few counter examples e. With a growing trend in the number of chronic diseases and psychiatric disorders, costs to the U. However, this anticipated trend is considered to be both undesirable and expensive to the already overwhelmed health-care system In concurrence are the associated impacts on health equity , , equating to further productivity and tax losses every year in addition to a growing gap in health inequalities Furthermore, population growth in urbanized areas is expected to impact future accessibility to and overall loss of natural spaces. Not only would this have a direct detrimental effect on the health of both humans and non-humans but equally the functioning and integrity of ecosystem services that sustain our economic productivity Thereby, costs of sustaining our human-engineered components of socialâ€™ecological systems could rise, having an indirect impact on our economic growth and associated pathways connecting to health , As such, researchers have highlighted the importance of implementing all characteristics when accounting ecosystem services, particularly the inclusion of natural and health-related capital, as well as their intervening mechanisms. This is an area, which at present remains difficult to synthesize owing to fragmented studies from a host of disciplines that are more conceptually rather than empirically based

**Toward an Interdisciplinary Perspective of Human and Ecosystem Health** Since the late nineteenth century, a number of descriptive models have been developed to encapsulate the dimensions of human health and the natural environment as well as their interrelationships As VanLeeuwen et al 17 highlight in their review, each have not fully incorporated all relevant characteristics of ecosystems e. Further, the Bioecological systems theory model encapsulates the biopsychological characteristics of an evolving theoretical system for scientific study of human development over time 16 , However, the model has been suggested by some , to be static and compartmentalized in nature, emphasizing instead the importance of evolving synergies between biology, culture, and technology. It is broadly defined as the attainment of optimal health across the humanâ€™animalâ€™environmental interfaces at local, national, and global levels. It calls for a holistic and universal approach to researching health, an ideology said to be traceable to pathologist Rudolf Virchow in Yet, the concept has received criticisms regarding its prominence toward the more biological phenomena e. Some have therefore suggested its need to adopt an interdisciplinary approach to facilitate a deeper understanding of the complexities involved It is both inclusive of all relevant

characteristics of ecosystems, their continuously evolving synergies with human health as well as a balance between the biological, social, and spatial perspectives. I will now describe the conceptual model.

## 2: Evolutionary economics

*The theory of a biological basis of love has been explored by such biological sciences as evolutionary psychology, evolutionary biology, anthropology and neuroscience. Specific chemical substances such as oxytocin are studied in the context of their roles in producing human experiences and behaviors that are associated with love.*

Subfields[ edit ] Evolution is the central unifying concept in biology. Biology can be divided in various ways. One way is by the level of biological organisation , from molecular to cell , organism to population. An earlier way is by perceived taxonomic group , with fields such as zoology , botany , and microbiology , reflecting what were once seen as the major divisions of life. A third way is by approach, such as field biology, theoretical biology , experimental evolution , and paleontology. These alternative ways of dividing up the subject can be combined with evolutionary biology to create subfields like evolutionary ecology and evolutionary developmental biology. More recently, the merge between the biological science and applied sciences gave birth to new fields that are extensions of evolutionary biology, such as evolutionary robotics , engineering, [1] algorithms , [2] economics , [3] and architecture. The research generated in these applied fields in turn contribute to progress, especially thanks to work on evolution in computer science and engineering fields such as mechanical engineering. History of evolutionary thought The idea of evolution by natural selection was proposed by Charles Darwin in , but evolutionary biology, as an academic discipline in its own right, emerged during the period of the modern synthesis in the s and s. In the United States , many universities have created departments of molecular and cell biology or ecology and evolutionary biology, in place of the older departments of botany and zoology. Palaeontology is often grouped with earth science. Microbiology too is becoming an evolutionary discipline, now that microbial physiology and genomics are better understood. The quick generation time of bacteria and viruses such as bacteriophages makes it possible to explore evolutionary questions. Many biologists have contributed to shaping the modern discipline of evolutionary biology. Theodosius Dobzhansky and E. Ford established an empirical research programme. Ronald Fisher , Sewall Wright and J. Haldane created a sound theoretical framework. Ledyard Stebbins in botany helped to form the modern synthesis. Current research topics[ edit ] Current research in evolutionary biology covers diverse topics and incorporates ideas from diverse areas, such as molecular genetics and computer science. First, some fields of evolutionary research try to explain phenomena that were poorly accounted for in the modern evolutionary synthesis. These include speciation , [13] the evolution of sexual reproduction , [14] the evolution of cooperation , the evolution of ageing , and evolvability. This includes fields such as paleobiology , as well as systematics and phylogenetics. Third, the modern evolutionary synthesis was devised at a time when nobody understood the molecular basis of genes. Today, evolutionary biologists try to determine the genetic architecture of interesting evolutionary phenomena such as adaptation and speciation. They seek answers to questions such as how many genes are involved, how large are the effects of each gene, how interdependent are the effects of different genes, what do the genes do, and what changes happen to them e. They try to reconcile the high heritability seen in twin studies with the difficulty in finding which genes are responsible for this heritability using genome-wide association studies. This requires a great deal of mathematical development to relate DNA sequence data to evolutionary theory as part of a theory of molecular evolution. For example, biologists try to infer which genes have been under strong selection by detecting selective sweeps. Evolutionary forces include natural selection , sexual selection , genetic drift , genetic draft , developmental constraints, mutation bias and biogeography. An evolutionary approach is key to much current research in organismal biology and ecology , such as in life history theory. Annotation of genes and their function relies heavily on comparative approaches. The field of evolutionary developmental biology "evo-devo" investigates how developmental processes work, and compares them in different organisms to determine how they evolved.

## 3: Evolutionary economics | Economics Help

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From Utility to Fitness: A fine summary of the most serious attempt to accommodate human evolution into theories of economic growth. Highly technical and not an easy read. Economic Origins of Human Evolution: The book has many novel arguments on how economic factors affected human evolution – although I read it so long ago that I need to re-read it in the light of what I have learnt since. The Evolutionary Origin of Freedom: Humans naturally seek political freedom and Modern Western societies do the best job of meeting these needs. A Natural History of Economic Life: Parents can relax as there is not much they can do to change their children. How Civilization Accelerated Human Evolution: Human evolution is getting faster. The Fates of Human Societies: Jared Diamond gets a lot of flack for his strong support of environmental causation, but I believe the thesis in Guns, Germs and Steel is basically right – you just need to add in some evolutionary feedback with the environment. The Strategic Role of the Emotions: A fantastic game theoretic approach to the role of the emotions. Gerd Gigerenzer, Peter M. As the title suggests, simple heuristics allow us to make smart choices. I could have put any number of Gigerenzer books here, but this is possibly the best. Why Success Always Starts with Failure: Harford applies evolutionary thinking to business, war, accidents and other human pursuits. Beyond the package of genes, parents have limited influence on their children. An excellent examination of cultural evolution, although plenty to question. While the field of behavioural economics has not yet made the step into evolutionary biology, this overview is the best. My thoughts on a second reading are here. This might be the best modern exposition of sexual selection there is, and the argument that sexual selection shaped the human mind is compelling. Sex, Evolution, and Consumer Behavior: Evolution shaped our consumer preferences but they do not always work perfectly in a modern environment. Sex and the Evolution of Human Nature: The book that triggered my interest in evolutionary biology and convinced me that it was relevant to human affairs. The seminal book that established evolutionary economics as a serious field. Evolution, Complexity, and the Radical Remaking of Economics: Economics and Sociobiology, Journal of Economic Literature 14 3, pp. One of the earliest calls for biology to be used in economics. The desire for conspicuous consumption was shaped by sexual selection and is consistent with a utility maximising economic framework. The earliest article I am aware of that explicitly examines the evolution of an economic preference. Another of the earliest calls for biology to be used in economics. An argument that if happiness is a tool through which human choices are directed to evolutionary goals, constraints on our feelings may lead to relative preferences and habit formation. One of the first articles to propose an evolutionary basis to time preference. A great article on how risk affects the optimal rate of time preference. A thorough and excellent review of the literature on the evolution of preferences. A fantastic example of how an evolutionary framework can yield new results. Genoeconomics Beauchamp, Jonathan P. A good discussion of the potential use of molecular genetics in economics and economic policy my post here. A sound reminder to take a lot of genoeconomics research with a grain of salt. The seminal article proposing that evolution affected economic growth through a genetically based preference for quality or quantity of children. An outstanding discussion of the deep roots of economic development and how persistent differences in development are. An argument that the genetic distance between populations acts as a barrier to the transfer of technology, leading to income differences between groups my post here. The proposal that examining the actions of economic agents as trial and error, and adaptive and imitative behaviour may be a better basis for examining economic behaviour than perfectly rational profit maximisation.

## 4: The Evolution of Culture and Biology and How To Mend our Political Divide - The Daily Libertarian

*The Evolutionary History of Love* Dario Maestriperi, Ph.D., is a professor of comparative human development, evolutionary biology, *An Undercover Investigation of the Evolution and.*

Evolutionary economics was coined by radical economist Thorstein Veblen. Veblen was interested in psychological factors that often gave better explanations for economic behaviour than traditional rational choice theory. For example, Veblen noted the role of social hierarchy and how individuals could be motivated by conspicuous consumption showing off you could afford designer clothes. Another important economist in developing evolutionary economics was Joseph Schumpeter. Schumpeter offered a model of creative destruction. This theory said that a capitalist economy was in a perennial state of change. When firms failed, this was important for freeing resources to be taken by entrepreneurs for more efficient and productive processes. Aspects of evolutionary economics Like behavioural economics, economic agents are influenced by a complex set of factors. For example rather than just profit, a firm may be motivated by: The economy is in a constant state of flux. The economic model of equilibrium is only a partial snapshot and understanding of the constant dynamic of changing demand and production. We cannot look at economies in isolation. Economic development will depend very much on past developments. For example, a culture of state regulation and uniformity may lead to low creativity in post-Communist states. The same economic policy can have different effects in different countries. For example, a sugar tax may lead to greater tax evasion in countries with history of poor tax collection. View of Micro-Meso and Macro levels in evolutionary economics Micro level This states behaviour depends on routines and rules, such as repetition of past behaviour. These rules and routines are more changeable than neoclassical economics suggests. Meso level The Meso level is a population which falls between micro and macro levels. It could be an influential segment of the population which is developing new behaviours. Evolutionary economics realises any macro population is diverse and there is not a uniformity of approach. It is this diversity which allows the economy to develop at both micro and macro levels. Macro level The macro level is much more than just an aggregation of micro economics like neoclassical economics assumes. For example, aggregate labour supply does not behave like a uniform population, but there are many subcategories self-employment, public sector, ambitious workers, manual labour e. Recent trends in Evolutionary theory of economic change In , Richard Nelson and Sidney Winter offered a new interpretation of previous works on evolutionary theory in a paper They suggested a link between evolutionary economics and evolutionary biology. In a market place, consumers are free to choose the various products they deem to be the best. This means that some firms grow, make profit and expand, but others who offer inferior products cannot survive in the market place. Only the successful profitable survive. There are constant evolutionary pressures to increase efficiency and offer better choices to consumers. Differences with evolutionary biology Other economists argued the comparison with evolutionary biology is partly misplaced. Entrepreneurs are not throwing out random variations. But, offering innovative ideas and products springing from their imagination and creativity. Network effects Another aspect of modern evolutionary theory is that success or failure is magnified by network effects and self-reinforcing loops. When a firm is profitable, it gains more resources to buy up rivals and invest in new products. This can create barriers to entry. Network effects are particularly strong for new tech industries. Being the first mover in the industry gives a strong advantage as people join the social network with the widest following. Therefore, evolutionary economics explains how a few firms come to dominate markets, with a few small firms meeting certain niches. For modern evolutionary economists, the economy is a series of networks where individuals and firms make connections through different behavioural rules Importance of evolutionary economics Failure of firms is as important as the success. The development of economies relies on variety. In economic terminology this involves competitive markets, but also conditions that encourage innovation, imagination and creativity. Therefore, governments could support education, training and entrepreneurs. Stable legal and political systems are important for enabling creativity. Competitive prices are only one aspect of competition. Companies who can offer a new variety which is desirable will do well. Luddite fallacy is that a fallacy

## THE ECONOMICS AND EVOLUTIONARY BIOLOGY OF LOVE pdf

Related branches of economics Laissez-faire economics. By focus on competition and allowing failure, evolutionary economics has a broad sympathy with laissez-faire. Though like Adam SMith, they may be concerned with the monopoly power of those firms who come to dominate Behavioural economics. Evolutionary economics stresses a wider range of factors in agent motivation.

## 5: The Human-Nature Relationship and Its Impact on Health: A Critical Review

*Inappropriate The list (including its title or description) facilitates illegal activity, or contains hate speech or ad hominem attacks on a fellow Goodreads member or author.*

For the record, both of these assumptions are scientifically valid, and for the same reason: Culture is tyrannical because it was created for the past rather than the present or the future, and as a consequence, culture needs to constantly evolve to keep up with time. Gender is fluid because it is a part of our biological makeup, and our biology is a product of evolution. Culture evolves much faster than does biology; biology can take thousands, or even millions, of years, but both are evolutionary constructs. Both evolve to meet the needs of a constantly changing world. Western culture is the most evolved culture on Earth. This is, of course, a value statement. All cultures evolve, and different cultures differ because they have evolved around different things. I say that Western culture is the most evolved because it has evolved around values I hold dear—values that as a young man I found important enough to pledge to protecting them, but there are other cultures, and other value structures than those of the West. Saudi Arabia has, historically, evolved around a school of Islamic thought called Wahhabism. Wahhabism treats science the same way the Catholic Church treated it during the Middle Ages and early Renaissance, which is to say that Wahhabism treats religious doctrine as absolute truth, and then gauges science based on how well it does, or does not, support religious doctrine. Such a view is no more inherent to Islam than it was to Christianity, but once Saudi Arabia became rich in oil, they were able to propagate this view throughout much of the Sunni world. Many cultures in the East and Far East evolved around the greatness of society. China wants not so much to become a super power, as to demonstrate the greatness of China. Becoming a super power is but a necessary component of that end. Western culture, by contrast, evolved around the notion that the greatness of a society can be determined by how well it supports the supremacy of each individual. Western culture has evolved over time. As hunter-gatherers which we were for the vast majority of our evolutionary history, tribalism was an absolute necessity, with different groups competing with one another for food, water, and other resources. Tribalism can also, however, lead to many negative things, such as racism. Tribalism is good when it unites us against those who wish to control us, and tribalism is bad when it unites us to control, or to otherwise oppress, others. The vast majority of Americans would love to put racism into the dustbin of history, but until our biological evolution catches up with our economic reality, racism is unlikely to completely disappear. Our goal should be to ostracize it rather than to normalize it, and sadly, stories of racism sell, encouraging the media to do everything it can to make racism sound more common—and by extension, more normal—than it really is. For a tribe to survive, it must contain both men and women. More to the point, men and women have to work together to survive against a world that has innumerable ways to kill them. For most of our evolutionary history, women were vulnerable both during, and immediately after, pregnancy, and children are still vulnerable until they reach adulthood. To the degree that cultures evolved as patriarchies, it was because of these natural vulnerabilities, and to the degree that these natural vulnerabilities have historically been real, the patriarchal nature of culture was not tyrannical so much as necessary, historically speaking. Culture, however, is always built for the past, and is always playing catch-up with the present. Modern inventions, such as birth control, have made women far less vulnerable than they once were, and though culture has adapted quickly, our culture continues to need to evolve. We are, each of us, a bridge between the past, and the future. Culture is, quite literally, a blueprint for how best to survive in the world, but culture is a blueprint for survival in the past, and as such, our job in the present is to change culture into something relevant today. We then give our culture to the future, where our children will adapt it further to meet their times. Culture is always evolving, and it always evolves too quickly for some, and too slowly for others. As a general rule, the elderly focus on the wisdom of the past represented by the culture they helped create, and the young focus on the promise of the future represented by the need for culture to adapt, and this is precisely why people tend to become more conservative as they get older. This natural conflict between young and old, between wisdom and promise, and between order and chaos, is both natural, and healthy. The correct course of action is not to suppress conflict, but to embrace it, and to channel

it in productive ways. Our culture used to be good at this, allowing opposing voices to conflict peacefully. The market place of ideas was not always pretty, but it worked. There are some universal truths, represented by archetypal characters – characters that have been embodied in stories, over and over again throughout history, and across cultures. The two most fundamental characters are order, and chaos, and the third most fundamental character is the hero. If someone fights to move the culture too quickly, or too much, they become a force of evil trying to overturn all that is right in the world, whereas if someone fights too hard to cling to the existing culture, they become a force of tyranny trying to perpetuate all that is corrupt in the world. The hero represents the balance between the two, with both the wisdom to fight chaos, and the knowledge gained, from chaos, to confront tyranny. The hero is the one who removes what is corrupt from culture, while retaining what is still valuable in it. The hero of today recognizes that the ideals this country were founded on still matter. At the same time, the hero sees that we have work to do to ensure that all people can thrive, regardless of gender, ethnicity, or other trivial differences that have nothing to do with competence. Conservatives, such as myself, need to understand that our recent past the culture my age group was given really was steeped in such things as racism and male chauvinism. Liberals need to understand that, tainted as our culture has historically been, there is much to it that is noble and proper. The hero would move forward with neither hatred for the past, nor fear of the future, but instead with a willingness to take what is noble and proper, and to extend it to everyone. If we can all agree on this task, perhaps we can all move forward together, without the animosity so prevalent in our current discourse. I invite everyone reading this to choose the path of the hero, and to help mend our political divide. As always, if you agree with our message, we ask that you help us spread it by sharing this post far and wide.

## 6: economics and evolutionary biology (11 books)

*Very Preliminary Draft Comments Welcome THE EVOLUTIONARY BIOLOGY AND ECONOMICS OF SEXUAL BEHAVIOR AND INFIDELITY Donald Cox Department of Economics.*

The answer is an emphatic no. Neither would they likely be familiar with sexual selection, haplodiploidy, pleiotropy, or the Trivers-Willard hypothesis. In some ways, this is a blessing. By ignoring dopamine, a neurotransmitter linked to the brain chemistry of pleasure, economists have followed a tradition of avoiding the deeper questions connected with human happiness, in order to concentrate on more manageable problems. Economists approach the psychology of pleasure with humility, parsimony and circumspection. There is no scientific way to compare the utility level of different individuals, intones Edwin Mansfield in an italicized passage from his economics textbook. All textbooks agree; better to concentrate on easier stuff like income and prices. By focusing on simpler questions, economists escape getting sucked into the labyrinthine intricacies of the human brain. Contrast the success of cautious economists with the failures of intrepid Freudian psychologists, who plunged into the dark recesses of the mind and came up with so little that has stood the test of time. Early economists were smart to ignore nuances of the brain because those nuances were poorly understood. Recent discoveries and technology enable researchers of every stripe to learn more about what goes on inside the once inscrutable black box economists call the utility function. Recall that cocaine was not an illegal drug at the time. He would have been able to observe, through the use of positron emission tomography PET scanning, the exact parts of his brain that were activated by his cravings. But the dopamine splurge is short lived; the brain soon re-engineers itself to stanch the flood, causing the user to need a lot of cocaine just to feel normal. Goodbye, euphoria; hello, addiction. Were such a thing ever to be perfected it would likely shake the very core of welfare economics and public policy. For the past dozen years, increasing numbers of people have been altering their brain chemistry by raising their serotonin levels with drugs like Prozac. Drugs like these offer people a chance to literally choose their utility functions, a decision which, as far as I know, has not received much analysis by economists. Insights from plain old high school biology classes—“or high school dances for that matter”—can contribute fundamental insights into the workings of the utility function. Consider the possibility that, for biological reasons, the utility functions of men and women might differ because of differences in reproductive capacity. A typical woman, in her whole life, produces only about viable eggs; a typical man, in just one day, produces enough sperm to populate a country the size of Japan. Even though the dictates of evolutionary biology—“survive and reproduce”—hold with equal force for men and women, their means of achieving these goals differ. This conflict of interest between the sexes was first remarked upon by Charles Darwin, and later formalized and tested by Angus John Bateman in his pioneering experiments with fruitflies, first published in *Evolution*. But for females, monogamy was the road to increasing the prevalence of their genes in future generations. Male-female differences in human sexual behavior are usually experienced first hand at the high school dance, or something like it. The stereotype of eager boys pursuing recalcitrant girls, while not universally true, is nonetheless close to the mark. Several psychological studies indicate that men usually have a more avid desire for short-term sexual liaisons. The worst economic calamity to befall a family, and especially women and children, is divorce. A leading cause of divorce is infidelity. And the Bateman effect sheds light on the problem of infidelity by addressing its biological roots. Economists do study things like mating, marriage and family behavior, but what is astonishing, in light of concepts like the Bateman Principle, is that they hardly ever assign any special role to being male versus being female. Spouses might just as well be persons 1 and 2. Sex differences in behavior get more attention from stand up comics. I expect, though, that these concerns will evaporate, and probably soon, because of the excellent recent work of feminist scholars from several fields—“especially anthropology and primatology”—which addresses issues related to reproductive biology. None of them would likely be offended by discussions of the Bateman Principle. The economic implications of sex differences in utility functions extends beyond family behavior. For example, there is emerging evidence that men invest differently than women. They tend to be more active traders, take bigger risks, and, in at least one study, earn

lower returns. Biologists trace the male propensity for risk-taking back to reproductive concerns. But all these brain chemicals and genes—do they paint free will into an ever shrinking corner? One of the big surprises of the human genome project is how few genes we have—30,000, instead of the expected 100,000. In fact, evolutionary biology interprets the capability to make choices in a fast-changing environment as a key adaptation. The ability to think about new problems and to choose under uncertain and unfamiliar conditions helps us to survive and reproduce. Genetic determinism is not the only fallacy that bedevils biological inquiry. So what accounts for her knowledge of words, the capability to store them or the opportunity to hear them? Hitler favored nature and thought people could be bred like chickens. Stalin and Mao favored nurture and thought people could be trained like seals. Each had a stupid model of human nature. Understanding human behavior requires more knowledge about the utility function—to understand why we care about the things we care about—along with knowledge about prices, incomes and how we make choices. In other words, the time is ripe for combining biology and economics. His email address is donald. For more articles by Donald Cox, see the Archive. Gordon, Professor of Biological Sciences at Stanford University, is an authority on ants and order that emerges without control or centralized authority. The conversation begins with what might be called the economics of ant colonies, how they manage to be organized without an organizer, the division of labor and the role of tradeoffs. The discussion then turns to the implications for human societies and the similarities and differences between human and natural orders.

## 7: Economics and evolutionary biology reading list | Jason Collins blog

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Schumpeter offered a model of creative destruction. This theory said that a capitalist economy was in a perennial state of change. When firms failed, this was important for freeing resources to be taken by entrepreneurs for more efficient and productive processes. Aspects of evolutionary economics Like behavioural economics, economic agents are influenced by a complex set of factors “ For example rather than just profit, a firm may be motivated by: The economy is in a constant state of flux. The economic model of equilibrium is only a partial snapshot and understanding of the constant dynamic of changing demand and production. We cannot look at economies in isolation. Economic development will depend very much on past developments. For example, a culture of state regulation and uniformity may lead to low creativity in post-Communist states. The same economic policy can have different effects in different countries. For example, a sugar tax may lead to greater tax evasion in countries with history of poor tax collection. View of Micro-Meso and Macro levels in evolutionary economics Micro level This states behaviour depends on routines and rules, such as repetition of past behaviour. These rules and routines are more changeable than neoclassical economics suggests. Meso level The Meso level is a population which falls between micro and macro levels. It could be an influential segment of the population which is developing new behaviours. Evolutionary economics realises any macro population is diverse and there is not a uniformity of approach. It is this diversity which allows the economy to develop at both micro and macro levels. Macro level The macro level is much more than just an aggregation of micro economics like neoclassical economics assumes. For example, aggregate labour supply does not behave like a uniform population, but there are many subcategories “ self-employment, public sector, ambitious workers, manual labour e. Recent trends in Evolutionary theory of economic change In , Richard Nelson and Sidney Winter offered a new interpretation of previous works on evolutionary theory in a paper An Evolutionary Theory of Economic Change. They suggested a link between evolutionary economics and evolutionary biology. In a market place, consumers are free to choose the various products they deem to be the best. This means that some firms grow, make profit and expand, but others who offer inferior products cannot survive in the market place. Only the successful profitable survive. There are constant evolutionary pressures to increase efficiency and offer better choices to consumers. Differences with evolutionary biology Other economists argued the comparison with evolutionary biology is partly misplaced. Entrepreneurs are not throwing out random variations. But, offering innovative ideas and products springing from their imagination and creativity. Network effects Another aspect of modern evolutionary theory is that success or failure is magnified by network effects and self-reinforcing loops. When a firm is profitable, it gains more resources to buy up rivals and invest in new products. This can create barriers to entry. Network effects are particularly strong for new tech industries. Being the first mover in the industry gives a strong advantage as people join the social network with the widest following. Therefore, evolutionary economics explains how a few firms come to dominate markets, with a few small firms meeting certain niches. For modern evolutionary economists, the economy is a series of networks where individuals and firms make connections through different behavioural rules Importance of evolutionary economics Failure of firms is as important as the success. The development of economies relies on variety. In economic terminology this involves competitive markets, but also conditions that encourage innovation, imagination and creativity. Therefore, governments could support education, training and entrepreneurs. Stable legal and political systems are important for enabling creativity. Competitive prices are only one aspect of competition. Companies who can offer a new variety which is desirable will do well. Luddite fallacy “ is that a fallacy Related branches of economics Laissez-faire economics. By focus on competition and allowing failure, evolutionary economics has a broad sympathy with laissez-faire. Though like Adam SMith, they may be concerned with the monopoly power of those firms who come to dominate Behavioural economics. Evolutionary economics stresses a wider

range of factors in agent motivation.

## 8: Evolutionary biology - Wikipedia

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