

# Autism in Economics? A Second Opinion

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**Abstract** A popular claim among critics is that economic science is suffering from autism, a severe developmental disorder characterised by impairments in social relations and communication, combined with rigid and repetitive behaviour. So far, this allegation has not been substantiated. This essay explores the claim of autism in economics based on modern schemes of diagnostics. A key finding is that the structure of the critique against mainstream economics bears a striking resemblance to the structure of the diagnostic criteria for autism. Based on an examination of three groups of key symptoms, I conclude that the required set of criteria for the autism diagnosis are not met. However, there are parallels which may serve as constructive reminders for the future development and application of economic theories and models.

**Keywords** Philosophy of economics · Role of economics · Sociology of economics

## Introduction

As an academic discipline, economic science is a youngster. It was not before the eighteenth century that philosophers suggested that economic activities like production, distribution and trade were governed by natural laws for social behaviour (Backhouse 2004). Adam Smith (1776) is the most widely cited example in this respect, with his famous invisible hand as the governing mechanism behind economic behaviour in competitive markets. Strains of these thoughts can be traced further back, but a systematic approach had been pending, and was seen as quite original some 250 years ago. The new insights formed the basis for a new, rigorous science for studies of individual and social behaviour.

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Today economic science appears as a university discipline with high ambitions. Researchers and practitioners show a healthy appetite for new applications. The range of research areas is increasing constantly (Lazear 2000; Becker and Murphy 2001), and claims of scientific imperialism are regularly raised against economists and their research activities (e. g., Keen 2001; Fine 2002). Methods and models of economics are especially useful whenever human behaviour can be restricted a specific arena, a domain bounded by distinct intentions and a well-defined set of explanatory factors. Applied in more complex settings, challenges and shortcomings of economic methodology are often overshadowed by the persistent enthusiasm for a simple and precise instrument for studies of social behaviour.

Since the late nineteenth century (e.g., Durkheim 1895; Weber 1904), fundamental questions have been raised among researchers in philosophy, psychology and sociology, about the validity of applying methods from the natural sciences in academic studies of individual and social behaviour. Critics argue that it is unreasonable to analyse society in the same framework as phenomena of nature. Causal explanations and quantitative methods for human behaviour and social interaction tend to disregard fundamental contrasts between different sciences, it is claimed (e. g., Machlup 1978). Processes of society, institutions and individuals tend to be over-simplified by over-confident economists (Fullbrook 2004; Angner 2004). Increasingly often, methodologies and evolutionary strategies of economic science are met with scepticism, even from researchers in economics and management science (e. g., Keen 2001; Ghoshal 2005; Rubinstein 2006).

Over the last couple of decades, the critique has gained increasing momentum, with recruitment also among scholars of economics. Pressures have been building against theoretical foundations of mainstream economics in general, and neoclassical theory in particular, as well as their applications in research and policy analysis. Heterodox economics has become the widely applied term to refer to schools of thought that question the validity of neoclassical economics (Lawson 2005). In this context, economics has also frequently been labeled with terms related to childhood autism. Accusations of autistic anomalies are not limited to the individual of neo-classical models (“homo economicus”), but are also put forward against mainstream economists as individual students (Kuttner 1985) and scientists (Alcorn and Solarz 2006), as well as the body of theory, methodology, and evolutionary strategy of (especially neo-classical) economic science (Rankin 2002).

The underlying critique is neither new, nor unique to economic science. Heterodox schools of thoughts have a long tradition, with early schools like Marxian economics and Austrian economics dating back to the nineteenth century. Moreover, the general perception that scientists tend to develop a pronounced preference for intellectual activities at the cost of social interests is widespread, especially for the natural sciences (e.g., Frayling 2005).

To some extent, economic science has also responded to this type of critique, through the development of new schools of behavioural economics, with extensions and applications even in corporate finance (Baker et al. 2007). So far, this has not deterred the critics, whose discontent is directed especially at education systems (curriculum), research strategies (narrow scope) and methodology (neoclassical economics and extensive use of mathematical models). At the core of these allegations is a fundamental critique against neoclassical theory itself.

As noted by Dasgupta (2002), the critique is not always well focused. However, the degree of sophistication is compelling. The force of the opposition is also increasing, and proponents of heterodox economics currently form a regular movement, with their own journals, conferences, research networks and student organisations.<sup>1</sup>

With the critique against neo-classical theory as a common point of departure, objections against mainstream methodology and evolutionary strategies in economics can be grouped in three broad areas. First, economists are accused of weaknesses in interdisciplinary awareness (e.g., Fine 2002; Peters and Baumgartner 2002), propagation of amoral theories (e.g., Ghoshal 2005), as well as socially insensitive application and policy advice (e.g., Stiglitz 2000). This suggests some sort of deficiency of social awareness. Second, sceptics of mainstream economics see crude behavioral assumptions and lack of realism as the result of a deficiency in communication between economics and other sciences (e.g., Thaler 2000; Kirchgässner 2005), as well as with society at large (Frey and Eichenberger 1993; Frey and Meier 2005). Third, there are critics who argue that economics is suffering from a stereotypical methodology, with imprudent application of simplified mathematical models for studies of complex individual and social behaviour (e.g., Angner 2004; Rubinstein 2006). These three domains of disapproval bear a notable resemblance to the triad of impairments associated with the diagnosis of autism.

At this point it is worth noting that the use of psychiatric diagnoses as metaphors for polemical purposes may be seen as inappropriate by people whose lives are touched by this kind of misfortune (Rankin 2002). This is a reason to show extra care in the choice of allegorical techniques and rhetoric also in discussions of economic methodology, and especially if the implied allegations have an unsteady foundation. The aim of this essay is to examine the asserted “symptoms” in further detail, to bring more substantial evidence into the discussion of social awareness in economics.

The paper is organised as follows. Section two offers a brief introduction to relevant issues concerning autism, including historical retrospect, definition and prevalence, treatment and training, costs to society, as well as an overview of the triplet of diagnostic criteria. In the next three sections, a comparative discussion is offered to evaluate the most common claims against economic science against the triad of impairments defining the autism diagnosis. An evaluation is offered in the concluding section.

## What is Autism?

Autism is a pervasive development disorder including three core-defining features: impairments in socialisation, impairment in communication, and restricted and

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<sup>1</sup> For examples, see the post-autistic economics network (<http://www.paecon.net>), the heterodox economics portal (<http://www.open.ac.uk/socialsciences/hetecon/>), and/or the heterodox economics web (<http://www.orgs.bucknell.edu/afee/hetecon.htm>).

repetitive behaviour (Filipek et al. 1999).<sup>2</sup> Autism is usually discovered in children at preschool age, and children have to meet certain diagnostic criteria before the age of 3 to actually meet the requirements of the childhood autism diagnosis. The seemingly mysterious combination of strange and quiet children with no physical symptoms, repetitive behaviour and special and extreme capabilities in narrow areas (savant abilities) has drawn public attention to autism. Movies like Dustin Hoffman's *Rainman* (1988) and novels like Mark Haddon's (2003) 'The curious incident of the dog in the night-time' have also propagated information and increased the general interest for this relatively rare development disorder.

There is anecdotal evidence of autistic behaviour in medical reports and literary writings from more than 200 years ago (Wolf 2004). However, Kanner's (1943) study of a group of 11 children produced the first clinical description of autism as a specific syndrom. Kanner's group of children, between 2 and 8 years of age, combined "unique" patterns of behaviour that had not been described before, including obsessiveness, stereotypy, echolalia and social remoteness. At the same time, Asperger (1944) presented related findings for a milder type of autism (Asperger's syndrom) based on studies from 200 families with children who had similarities to the symptoms of Kanner's study, but with no delays in language development. After these early accounts, there was a general neglect among psychiatric researchers for the syndrom for more than three decades, before broad academic interest was re-ignited and upheld through a range of studies starting in the 1970s (Wing 1993).

Traditionally, childhood autism and Asperger's syndrom were the two distinct diagnoses applied to autistic disorders. However, starting with Wing and Gould (1979), a gradual recognition that autism occurs in a continuum of severity degrees paved the way for the modern term Autistic Spectrum Disorders (ASD), which is also acknowledged in the latest version of the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of mental disorders (DSM-IV-TR; APA 2000).<sup>3</sup>

Epidemiological studies are yet to produce a stable consensus on the prevalence of autism, but some patterns emerge from recent research. Based on a comprehensive survey of previous research, Fombonne (1999) concludes that childhood autism occurs at a rate just above 5/10,000. A slightly higher rate for recent studies suggest that the rate has increased over the last 15 years, due both to changes in definition and improved recognition. Including milder pervasive development disorders in the ASD spectrum increases the prevalence rate to nearly 15/10,000. On average, childhood autism is about four times more common among boys than among girls, and no studies have reported more girls than boys with autism.<sup>4</sup>

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<sup>2</sup> See (US) National Institute of Mental Health (2007) for a general introduction to Autism Spectrum Disorders.

<sup>3</sup> In contrast, The World Health Organisation's (WHO) International Classification System of Diseases (ICD-10) lists 8 types of autism, but is so far less supportive of the suggested continuum of pervasive development orders (<http://www.who.int/classifications/apps/icd/icd10online/>).

<sup>4</sup> Prevalence rates for milder forms of ASD have an even larger male bias, whereas the bias is less pronounced for severe forms of autism (Filipek et al. 1999). In other words, girls with autism are more likely to suffer from a severe type than boys. See Baron-Cohen (2002) for a theory on gender differences in autism.

A useful discussion of the screening and diagnosis of autistic spectrum disorders is offered by Filipek et al. (1999). At the core of these procedures is the triad of impairments introduced by Wing and Gould (1979). To qualify for the autistic disorder diagnosis of DSM-IV, children have to demonstrate significant deficits, in (a) reciprocal social interactions and (b) verbal and non-verbal communication, with (c) restricted and repetitive behaviours or interests (APA 2000).<sup>5</sup> Consequently, red flags for parents who are suspicious about autism include problems with the establishment of social relations, delay in language and/or speech problems, and rigid and repetitive behaviours. Details are offered in Table 1.

There is no effective drug that addresses the fundamental causes of the autism spectrum disorders. However, medications are used to treat especially problematic symptoms, such as aggression, self-injuring behaviour and severe tantrums. Casual reports suggest that special diets and vitamin dietary have been helpful for some children with autism, but the efficiency of these treatments have not yet been scientifically proven. On the other hand, early intervention in terms of systematic and comprehensive training programs based on applied behavioral analysis has produced promising results. The purpose of early-age behavioural management is simply to reinforce the desirable behaviours at the expense of undesirable ones (Lovaas 2002). 25 years of experience has also produced valuable experience and data, and the wide acceptance of applied behavioural analysis today is firmly supported by empirical research (e. g., Dempsey and Foreman 2001).

Although the methods of treatment and training are progressing, the vast majority of people with an autistic spectrum disorder still require life-long support from family and society. The economic burden from pervasive development disorders is therefore substantial. Based on conservative estimates from a wide range of previous studies, Järbrink and Knapp (2001) study the economic impact of autism in the United Kingdom. The average invidual life-time cost for people with autism is estimated at GBP 2,940,500, with living support (73%), day-care provision (14%) and special education (7%) as the most important cost factors.<sup>6</sup> With prevalence rates of 5/10,000 the total annual cost of autism is estimated at GBP 957 million.

As illustrated in Fig. 1, the post-modern critique against mainstream economics is often also organised in a triad of claims against different methodological areas within the discipline (e. g., Fullbrook 2004; Alcorn and Solarz 2006). First, the application of normative welfare theories and neo-classical models has been attributed to poor social awareness (e.g., Stiglitz 2000; Ghoshal 2005). Second, several critics typically see the lack of realism in crude behavioural assumptions as a result of poor communication between economists, other social sciences and with society at large (e. g., Thaler 2000; Peters and Baumgartner 2002). Finally, the extensive use of quantitative methods and mathematical models has raised accusations of repeated, unreflecting, technical exercise (e. g., Mirowski 1989; Farmer et al. 2005). The next step is to examine each of these general objections in a more careful discussion.

<sup>5</sup> The full table of diagnostic criteria is presented in Appendix 1.

<sup>6</sup> Observe that the corresponding life-time cost estimate for people suffering from milder forms of autism ("high-functioning") is some 27% (GBP 785,000) of the headline estimate.

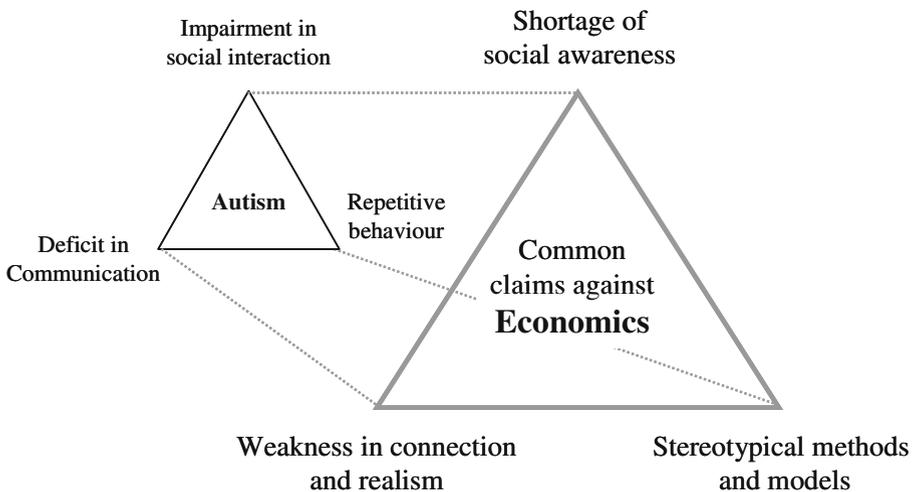
**Table 1** Parental Concerns that are RED FLAGS for Autism

Social concerns	Communication concerns	Behavioural concerns
Doesn't smile socially	Does not respond to his/her name cannot tell me what (s)he wants	Tantrums is hyperactive/uncooperative or oppositional
Seems to prefer to play alone	Language is delayed	Doesn't know how to play with toys
Gets things for himself	Doesn't follow directions	Gets stuck on things over and over
Is very independent Does things 'early'	Appears deaf at times	Toe walks
Has poor eye contact	Seems to hear sometimes but not others	Has unusual attachments to toys
Is in his own world	Doesn't point or wave bye-bye	Lines things up
Tunes us out Is not interested in other children	Used to say a few words, but now he doesn't	Is oversensitive to certain textures and sounds
		Has odd movement patterns

Reproduced from Filipek et al. (1999). Absolute indications for immediate further evaluation: no babbling by 12 months; no gesturing (pointing, waving bye-bye, etc.) by 12 months; no single words by 16 months; no two-word spontaneous (not just echolalic) phrases by 24 months; any loss of any language or social skills at any age

**Social Awareness**

Infants who follow the typical path of development are social beings from their earliest start in life. Children with autism on the other hand, have great difficulty learning to engage in the reciprocal relations of everyday life. They may avoid eye



**Fig. 1** Triads of impairments in autism—and economics?

contact, seem indifferent to other people, and often appear to prefer solitude. Infants with childhood autism also struggle in learning how to interpret other people's thoughts and feelings. They lack the ability to interpret body language and facial expressions. Consequently, social life may be very confusing. Autistic children do not seem to understand that other people have different information, intentions and emotions than themselves, and find it difficult to see things from other people's perspective. The relevance of these issues for the organisation of economic science concern intradisciplinary relations, interdisciplinary relations, and relations to society as such. The following discussion is organised accordingly.

Some degree of isolation is both normal and typical for human behaviour. Studies by the French sociologist Pierre Bourdieu (1984) convey insights that people tend to concentrate in sociocultural clusters in society. The general idea is that very few of us maintain relations with people that are very different from ourselves. We visit other sociocultural groups only rarely, and when we do so, a fair share of us will always feel uncomfortable. This way of thinking offers a fruitful point of departure also for the sociology of science (Bourdieu 1988, 2004).

Extending these sociological lines of thought to economic science, one dimension of professional relations is within the academic discipline of economics—or among ourselves. Economists form a well-organised international academic community, sharing references in terms of education systems, theories and models, authorities and celebrities. A study of publication patterns among economists by Klammer and van Dalen (2002) clearly implies that economic science is characterised by a high degree of intra-disciplinary awareness. Academic economists tend to converge in clusters of like-minded scholars. These clusters host their own conferences, they publish their own journals, and they develop and maintain common networks for conversation according to a common rhetoric. On the basis of intra-disciplinary relations among economists, it is therefore hard to argue the case of a severe impairment in social relations when compared to other academic disciplines. This conclusion is also supported by the close-knit consensus in methodology of mainstream economics, which save neo-classical economists of the lengthy methodology discussions which are more common in other social sciences (Frey 2001). However, there are other aspects of mainstream economics that may be consistent with the assertions of a deficit in social awareness.

As noted by Colander (2005), individuals are not born as economists, but moulded through formal and informal training. Undergraduates in economics are equipped with a specific mindset, a portfolio of models, and a distinctive analytical approach to individual and social behaviour. Through mathematical drilling, emphasis is put on rational agents and optimising strategies. Less attention is paid to the weaknesses and potential shortfalls of economic analysis. According to critics of mainstream economics, contrasts to other social sciences are often underscored, and economics is typically seen in a tradition of its own, distinctly separated from the other social sciences. Researchers in economics also experience that the prestige from cooperation across academic disciplines is limited, and only rarely bears fruits in terms of publication in merited journals (Peters and Baumgartner 2002). Sometimes described as indoctrination (e. g., Kirchgässner 2005; Rubinstein 2006), these practices of education and research have produced loyal economists, with a strong commitment to their own academic discipline. However, the same

attributes have also increased the distance between economics and the other social sciences.<sup>7</sup>

As argued above, intra-disciplinary professional relations among economists are well in line with patterns observed in other sciences (Frey 2001; Klamer and van Dalen 2002). On the other hand, inter-disciplinary relations are less developed, as evident from education systems (e.g., Colander and Klamer 1987; Colander 2005), research agenda (Fine 2002), and publication patterns (Peters and Baumgartner 2002). This lack of inter-disciplinary awareness is especially surprising for the interface between economics and other social sciences, as individual behaviour and social processes lie at the basis of economic research. At the same time, the implied downgrade of anthropology, sociology, and political science is perhaps not all that surprising, as the economic science is seen to aspire for a role among the natural sciences. However, there are potentially serious consequences involved.

Ghoshal (2005) argues that the application of strict scientific methods in economics and management science has strengthened many of the practices of economics and management that we later have come to condemn. Moreover, Ghoshal (2005) also questions the social attitude, moral and ethical standards of homo economicus, as reflected in applied business economics (see also Elster 1989; Klamer 2006). His examples include principal-agent theory, based on assumptions that company managers can not be trusted to do their job—even when the objective function is reduced to the maximisation of shareholder returns. Organisation design founded in transaction cost theory also promotes tight monitoring and control to prevent opportunistic behaviour. This kind of propagation of amoral theories, Ghoshal (2005) argues, has unlocked students, scholars and researchers from any sense of moral responsibility. Rubinstein (2006) provides a closely related argument based on the extensive use of mathematics in modern economics.<sup>8</sup> The common point of these allegations is the implied allegation of social and ethical neglect in mainstream of economics. Whether this serious objection is justified remains an open question, but it still provides some degree of underpinning for the criticism that economic science lives a life of its own, unplugged from the society it is meant to study.

The importance of a close relationship with the social environment is fundamental to the very justification of economic science, as well as its effectiveness and advancement. Consequently, attention should be focused on economists' view on the validity and quality of their own methodology. In his 1974 Nobel Memorial Lecture, Friedrich von Hayek argued that important social aspects of economics are clouded by the “pretense of knowledge” implied by methodology: “It seems to me that this failure of economists to guide public policy more successfully is clearly connected with their propensity to imitate as closely as possible the procedures of the brilliantly successful physical sciences”.

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<sup>7</sup> Economics rather seems to be struggling for a position in line with academic disciplines like physics, chemistry and mathematics. Heterodox economists argue that the toolbox of makes economics look like social physics (Mirowski 1989), and ‘physics-envy’ is a term that appears ever more often to describe these tendencies, even among financial market economists (e. g., Lo 2002).

<sup>8</sup> For a comprehensive and general discussion of ethics and economics, see Sen (1988).

A popular counterargument in this discussion of objectives and methods is that ethics and politics should determine the ends, whereas economics should provide the means. However, this view requires that a clear demarcation line can be drawn between positive and normative economics, which in turn raises the fundamental question if objective or value-free economics is at all possible. Robbins' (1932) widely applied definition of economics clearly implies that the concept of scarcity is essential to economics.<sup>9</sup> Economic policies without any distributional impact are hard to imagine, and any economic research directed at policy will therefore necessarily include a normative element (e. g., Weston 1994).

The logical follow-up is if economics for applied policy analysis is handled with the required sobriety. More specifically, a crucial question for economists in the interface between economics and politics is if their analyses are balanced, independent of values and norms, social structures and ideologies – and unaffected by the researcher's personal interests. In an empirical study among AEA economists, Mayer (2001a) finds a significant role for ideology in disagreements among economists; value judgments do have an influence on the subjective demarcation line between science and society. Another example is the interference of prominent game theorists in debates on US foreign policy and in the conflict between Israel and Palestina. Krugman's (2007) portrayal of Milton Friedman provides another illustration of the controversies in the interface between economics and politics, not only on Friedman's, but also on Krugman's behalf: "When Friedman was beginning his career as a public intellectual, the times were ripe for a counterreformation against Keynesianism and all that went with it. But what the world needs now, I'd argue, is a counter-counterreformation." As we can see, whether or not politically neutral economics are at all possible remains a highly debatable issue.

Whatsoever, economists do take an active role in political processes and controversies, especially European economists (Frey and Eichenberger 1993). And when they do, their appearance is more often than not characterised by a high degree of firmness and self-reliance. Angner (2004) provides solid arguments for widespread over-confidence among economists acting as macroeconomic policy advisers. Among the more prominent supporters of this kind of thoughts we find Nobel prize laureate Stiglitz (2002), who argues that the persistence of neoclassical economics in applied policy analysis 'bears testimony of a triumph of ideology over science'. If this statements is representative for economics and economists, there is indeed a potential for improvement in the relation between economic science and society in general.

## Connection and Realism

The development of communication abilities varies a lot among children with autism. Some remain mute throughout their lives. Others may be delayed, developing language as late as age 5 to 9. Autists who learn to speak may use

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<sup>9</sup> "Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses" (Robbins 1932, 15).

language in peculiar ways, and some times they are unable of combining words into meaningful phrases and sentences. Speech in terms of single words is not uncommon, and some autists also tend to repeat specific phrases again and again. Direct imitation of sounds and phrases is typical for children with autism, and this echolalia may also prevail beyond childhood. Autistic children who do develop language, may have great difficulty in establishing and sustaining normal conversation: “The “give and take” of normal conversation is hard for them, although they often carry on a monologue on a favorite subject, giving no one else an opportunity to comment” (NIMH 2007).

A somewhat unrefined representation of the modern critique against mainstream economists is that they live isolated in a world of their own, absorbed by mathematics, models and simplifying assumptions. According to Mayer (2001b), this kind of specialisation has a cost in terms of communication skills. Mayer argues that high academic ambitions and a general anxiety for their position as scientists have caused a downgrade among economists for the exposure implied by popular writing: “Not surprisingly, economists tend to believe that communicating with such heathens [the general public] is unimportant, and should be left to those who are incapable of contributing to economic ‘science’.

As we see, critics of neo-classical economics establish a link between the intense focus on mathematical methods and models on the one hand, and a deficiency in communication skills on the other (see also McCloskey 1985). The result is an aloofness in the relation between economic science and the society it is supposed to explore. In this context, a common position of heterodox critics involves the rejection of the neo-classical atomistic individual in favor of a socially conscious individual (e.g., Lawson 2005). A popular focal point of this critique is the standard stereotype for individual behaviour, *homo economicus*—or ‘economic man’, which is the approximation among economists for *homo sapiens*, or the ‘wise man’.

Maximising personal utility in competitive markets, the ‘economic man’ efficiently exploits all available information and opportunities. He has a bias for utility derived by pecuniary goods and services, and is constantly seeking new sources of income, investment return and wealth. His purchasing power is insatiable, and he wants maximum consumption at minimum price. As an atomistic individual, ‘economic man’ is unconstrained by family, tradition or community, and only rarely do we see his rationality involving a broader sphere of ethical, social or humanistic values. The traditional understanding of the ‘economic man’ is therefore pretty much a self-centred egoist.<sup>10</sup> Improved communication and connections to society would provide a more reflective perspective (e. g., Thaler 2000).

Ideas of narrow-minded rationality and the ‘economic man’ have been criticised for more than 100 years. Sociologists argue that the economic view on utility and welfare is too static, that economists do not explain the origins of preferences, and also not how individual taste change over time in inter-personal relations (e.g., Durkheim 1895; Swedberg 2003). Further, the ‘economic man’ has met criticism from social researchers who put emphasis on shared values in the development of society, like altruism, teamwork and community arrangements. Pure self-interest is

<sup>10</sup> See Persky (1995) for a discussion of ethological aspects of *homo economicus*.

not only an inaccurate description of human behaviour, it is also unethical (Hoas and Wilcox 1995; Ghoshal 2005). All in all, objections against this simple behavioural assumption are meticulously corroborated.

The development of behavioral economics should be seen as a direct response to the above critique (Camerer and Thaler 1995; Hosseini 2003). Behavioral economics illustrates how communication with critics and society brings about a flexibility in the evolution of economic science. However, the development of alternative approaches in mainstream economics is neither expeditious nor extensive, and penetration into general curricula and applied research is still pending (e.g., Klamer 2006).

Communication and connection is not only about what is being said, but also how and where it is being said. Inspired by Feyerabend's (1975) radical theory of knowledge, McCloskey (1985) argues rhetoric plays an important role for the social process of scientific progress and influence. As important as content is the design of the message ("Surface is substance"). Klamer (2001) provide examples of useful extensions of McCloskey's ideas, arguing that rhetoric is varying across different disciplines, even within economics. As an example, the language applied in studies of capital markers, performance and profitability differs from the rhetoric applied in discussions of labour markets, income distribution and tax.

At the same time, rhetoric can also be exploited to build a reputation that makes you stand out from the crowd. In this context, the positioning and communication habits in economics can be seen as a conscious choice to optimise position and impact. In economics, social facts and phenomena are addressed by methods from the natural sciences. Theories are formalised through mathematical models and human intention is seen as predetermined and indisputable. Economists seem to strive for a position in line with academic disciplines like physics, chemistry and mathematics. Of all the social sciences, economics is also the only one with its own Nobel prize.<sup>11</sup> According to Colander (2005), three out of four US graduate students in economics agree that their discipline is more scientific than the other social sciences. Thus, the general reputation of economics as a science seems to be consciously backed by choice of methods and models, education systems, academic culture and attitude—which again can be seen as elements in a broad strategy of communication.

In some perspectives, the communication strategy of economics has been successful. Economics is perceived to be more scientific than other social sciences, not only among scholars and scientists (e. g., Colander 2005), but to some extent also in the general public. The scientific esteem of economics is supported by mathematical methods, by the intentional departure from the other social sciences, and through the deliberate positioning of economics along with the natural sciences. However, these gains come at a cost. Critics argue that clearly defined mathematical models put severe restrictions on the spectrum for inter-personal behaviour, and that important nuances and details escape the attention from economists. Cold-hearted, quantitative methods for human behaviour and social interaction tend to disregard

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<sup>11</sup> The real name of the prize is "The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel." Inaugurated in 1968, Sveriges Riksbank (Sweden's central bank) established this Prize in memory of Alfred Nobel, founder of the Nobel Prize (<http://nobelprize.org/>).

fundamental contrasts between different sciences, it is argued (e. g., Machlup 1978; Ghoshal 2005).

High scientific ambitions and the so-called ‘physics-envy’ have laid the basis for claims of a ‘pretence of knowledge’ among economists. Friedrich von Hayek (1974) dedicated his entire Nobel Memorial lecture to the danger posed by scientific pretensions in the analysis of social phenomena: “...the effects on policy of the more ambitious constructions have not been very fortunate and I confess that I prefer true but imperfect knowledge, even if it leaves much indetermined and unpredictable, to a pretence of exact knowledge that is likely to be false.” The same key point is stressed by other critics (e. g., Ghoshal 2005), who argue that evolutionary strategies, methodology and communication has set economics apart from the society it is supposed to engage in. Such a development would certainly undermine the *raison d’être* of economics, and should therefore serve as a constructive and useful warning. That being said, the claim of a severe impairment in general communication abilities in economics is hardly justified.

### **Stereotypical Methods and Models**

Children with autism appear physically normal, but are often set apart from other children by rigid and repetitive behaviours. These odd patterns may be radical and highly apparent or more subtle in character, like a persistent preoccupation with narrow subjects. For example, autists might be obsessed with dinosaurs, bus schedules, or bird species, and they often show a profound interest in numbers, symbols or science topics.<sup>12</sup> Autistic children require absolute consistency and predictability in their environment. Rather than engaging in proper playing activities, they may arrange their toys and other objects in their surroundings in a certain way, and become tremendously upset by any disturbance in their arrangements. Any changes in routines and other parts of the environment can be very stressful. Among autistic children, the obsession with order and sameness is a substitute for stability and control in a world of total confusion.

Mainstream economics, and the neoclassical school in particular, is facing a criticism that has interesting parallels to the third domain of symptom criteria in the autism diagnosis. This critique is closely connected to the allegations against simplified behavioural assumptions, as commented above. However, the charges concerning stereotypical methods and models go further.

Once the behavioural assumptions of neoclassical theory are established, they are inserted into mathematical economic agents who are normally treated as homogeneous optimisers – of utility, profits and financial returns (e. g., Kirman 2006). Standard tools from consumption theory are usually applied to derive demand for goods and services independent of variations within and across consumer groups. Corresponding tools for profit maximisation and cost minimisation are combined

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<sup>12</sup> A rare and extraordinary condition among people with autism is the savant syndrome, characterised by some “island of genius” that stands out in absurd contrast to the overall level of disablement. Savant abilities are always linked to massive memory, and occur in approx. 10 per cent of autistic people (Treffert 2006).

with duality principles to approach the structure of production technology, input demand and output supply at the company level in industries ranging from sheep-farming to solar energy.

A similar type of critique is applied against macroeconomic policy advise. Allegations against multinational institutions like the World Bank and the IMF suggest that standard macro models and policy advise are applied across the world with few modifications or reservations, and with with rather poor results (e. g., Easterly 2006). Related interventions have been made with respect to the shock therapy recommended for Russian and the FSU countries in Eastern Europe from the early 1990s (e. g., Desai 2005). The matter is not improved by the presence of over-confidence among economists acting as macroeconomic policy advisers (Angner 2004).<sup>13</sup>

As demonstrated by the institutionalist approach of Davis (2006), economic science is not totally insensitive to criticism. Neoclassical economics is constantly challenged by the development of a range of new schools of thought, including game theory, experimental economics, behavioral economics, evolutionary economics, and neuro-economics. If Davis (2006) is correct in his assertion that neoclassical economics is currently being replaced as the hard core of mainstream economics, claims relating to stereotypia will have to be reevaluated.

The seemingly unified approach to economic problems also has a more fundamental explanation. Economics is an academic discipline with high scientific ambitions. Deeply inherent in the evolutionary strategy is the aim of producing and accumulating general knowledge about economic behaviour. Inescapably, this has to involve theories and models which can be tested and applied across large groups of people—and cultures.

Claims relating to stereotypical methods and models therefore also represent a critique against the evolutionary strategy of economics. This takes the discussion directly into the philosophy, history and methodology of economics, with perspectives way beyond the scope of this essay. However, following the path-breaking works of Kuhn (1970) and Lakatos (1970), researchers in methodology became more aware of the larger theoretical superstructures that seem to unify and determine the direction of research within different research traditions. In economics, there is a wide range of systematically unified theoretical projects or approaches. Several economists have therefore applied the work of Kuhn and Lakatos to describe the overall structure of economics (e. g., Backhouse 1998). Questions of perspective and approach in applied economic research, analysis and policy design is therefore directly linked to the underlying evolutionary strategy of economics as a science.

Researchers in methodology have undoubtedly improved the understanding of the global structure and strategy of economics as a science. However, like economists, methodologists also do not agree on the vital questions. Over the last two decades,

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<sup>13</sup> Over-confidence implies that assessments of policy impact and economic developments among economists are not matched by track records. Among the more prominent supporters of this kind of critique we find Nobel prize laureate Joseph Stiglitz (2000): “IMF experts believe they are brighter, more educated, and less politically motivated than the economists in the countries they visit. In fact, the economic leaders from those countries are pretty good – in many cases brighter or better-educated than the IMF staff, which frequently consists of third-rank students from first-rate universities.”

hardcore neoclassical economics have been challenged by new and alternative schools of thought, not to mention the development of heterodox economics. Over the same period, a structured approach to economic methodology inspired by Lakatos (1970) has met increasing competition from more diverse, pragmatic and pluralistic approaches (e. g., Hands 2001; Davis 2006). This also reflects a general development of the content economic science, whereby unity and stereotypia in methods and models is gradually giving way for increased variety and diversity—or a new mainstream pluralism.

## Evaluation

In the critique against mainstream economics, an important element is an asserted lack of social awareness. In this context, economists and their academic discipline have been tagged with labels typical of autism spectrum diagnoses, usually without any further substantiation. This essay has demonstrated that the structure of the critique against mainstream economic science bears a remarkable resemblance to the structure of diagnostic criteria for autism. Specifically, the triad of impairments associated with autism fits well with the structure of the critique against mainstream economics in general, and neoclassical economics in particular.

However, this parallel does not necessarily imply that the critique is valid, or that the diagnosis is justified. In my discussion of how the three areas of asserted impairments may apply to mainstream economics, I argue that important elements of the heterodox critique are both appropriate and relevant. This may serve as a timely warning for mainstream schools of economic thought, and a fruitful reminder for the potential of improvement in social awareness, communication and pluralism in the development and application of economic theories and models.

Based on a systematic inquiry of modern criteria for the autism diagnosis, my evaluation is that the required set of criteria is hardly met, and that claims of autism in economics remain unfounded. The continued use of this polemical metaphor is also more supportive of conflict than dialogue, and is therefore not very fruitful. Some degree of anti-social behaviour, communication difficulties or habitual behaviour is very normal, especially among men.<sup>14</sup> In autism, these inclinations are blown out of proportion, which again is highly counterproductive to normal functioning and general well-being. Arguing this as the general case for scholars and practitioners of economic science remains futile, both in terms of sense and sensibility.

By and large, there is probably a bit of autism in each and everyone. Nevertheless, tagging an entire science with this pervasive development disorder is not only an

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<sup>14</sup> Recent research suggests that the higher prevalence of autism in males stems from sex differences in the brain relating to capacities of empathizing and systemizing. In general, women are relatively strong on empathizing, whereas men's relative strength typically lies in capabilities of systemizing. Baron-Cohen (2002) goes far in indicating that such a perspective allows autism to be considered as an extreme of the normal male profile. This is referred to as the extreme male brain theory of autism.

insult to economists, but also to people with autism. As both groups deserve better, their improvement should also be the principal guide for our endeavours.

## Appendix: Diagnostic Criteria for Autistic Disorder

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- A. A total of six (or more) items from (1), (2), and (3), with two from (1), and at least one each from (2) and (3):
- (1) qualitative impairment in social interaction, manifest by at least two of the following:
    - a) marked impairment in the use of multiple nonverbal behaviours, such as eye-to-eye gaze, facial expression, body postures, and gestures, to regulate social interaction;
    - b) failure to develop peer relationships appropriate to development level;
    - c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e. g., by lack of showing, bringing or pointing out objects of interest) d) lack of social or emotional reciprocity.
  - (2) qualitative impairment in communication, as manifest by at least one of the following:
    - a) delay in, or total lack of the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gestures or mime);
    - b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others;
    - c) stereotyped and repetitive use of language, or idiosyncratic language;
    - d) lack of varied, spontaneous make-believe, or social imitative play appropriate to development level.
  - (3) restrictive repetitive and stereotypic patterns of behaviour, interests, and activities, as manifested by at least one of the the following:
    - a) encompassing occupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus;
    - b) apparently inflexible adherence to specific nonfunctional routines or rituals;
    - c) stereotyped and repetitive motor mannerisms (e. g, hand or finger flapping or twisting, or complex whole-body movements);
    - d) persistent preoccupation with parts of objects.
- B. Delays in functioning in at least one of the following areas, with onset prior to age 3 years:
- (1) social interaction;
  - (2) language as used in communication;
  - (3) symbolic or imaginative play.
- C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder.
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Source: DSM-IV-TR, American Psychiatric Association (2004).

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