

Overlooked systems in S. Baron-Cohen's gender research

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Abstract. The professor of psychopathology Simon Baron-Cohen claims that males are on average stronger at systematizing than empathizing and females are on average stronger at empathizing than systematizing. Systematizing is defined as the drive to construct or understand systems. In this paper, I observe that Baron-Cohen overlooks certain examples of systems, examples which lead to doubts about his claim.

Keywords: systematizing, empathizing, systems, Simon Baron-Cohen, laws, rules.

Introduction. A familiar thesis is that there are differences between male and female human psychology. Simon Baron-Cohen accepts a qualified version of this thesis. He makes a claim about what is true on average about males and what is true on average about females. Baron-Cohen claims that on average females have a stronger drive¹ to empathize than to systematize, whereas males have a stronger drive to systematize than to empathize (2003: 8-9). Empathy is understood as something that is shown when one correctly identifies the thoughts or feelings of others and responds appropriately. An example he gives of responding appropriately is responding with consideration towards someone in pain (2003: 2). The drive to systematize is understood as the drive to construct or understand systems (2003: 3). But what are systems? In the next section of this paper, I present a clarification of Baron-Cohen's concept of a system. I then point out that he has overlooked some systems, in a way which casts doubt on his claims.

¹ In this paper, I present Baron-Cohen as comparing drives, but sometimes he writes as if what he is interested in is not levels of drive but skill (2003: 6; Edward 2018). The problem I identify arises on either interpretation.

What is a system? In an article written for neuroscientists, which explains how his research applies to autism, Baron-Cohen writes:

What defines a system is that it follows rules, and when we systemize we are trying to identify the rules of the system, in order to predict how that system will behave. (2009: 71)

Baron-Cohen also provides some examples to help us understand his concept of a system. I present these examples later. At this stage, I shall present a slightly elaborated version of Baron-Cohen's definition, a version which I think he would regard as perfectly acceptable.

What Baron-Cohen has in mind by a system is anything which operates according to laws or is constituted by rules. Note that it is possible for something to be a system without someone regarding it as a system. Of course, they may not be aware of its existence. But even if they are aware of it, they may not regard it as a system. For example, if the imagery in dreams conforms to some laws but you do not think that there are any such laws, then dream imagery is a system though you do not regard it as a system. To think of something as a system is to think of it as something which operates according to laws or is constituted by rules.

My explanation of Baron-Cohen's concept of a system uses the term "law," which gives rise to the question of what this term means. Baron-Cohen writes as if what he has in mind by a law is a regularity (2009: 71-72). A regularity is something which can be captured in a statement of the form, "Whenever X obtains, Y obtains," or a statement of the form, "Whenever X obtains, Y will obtain." To take a familiar but questionable example, under normal atmospheric conditions at 100 degrees Celsius water boils.² Note that an element of the regularity relationship

² See Chang 2007 for an attack on this example. How best to define a law is also the object of philosophical debate (see Carroll 2016), a debate which I think can be passed over in this paper.

can be a probability, such as that whenever a fair coin is tossed, the probability of its landing heads is half.

My explanation of Baron-Cohen's concept of a system also uses the term "rule." I am using it in line with ordinary usage, where rules are typically for conscious beings capable of understanding them.³ The kind of rule which I will be interested in below can be captured by a sentence which has one of the following forms: "In circumstances C, you must do A," "In circumstances C, it is permissible to do A," or "In circumstances C, it is impermissible to do A." For example, a rule of chess is that in all circumstances it is impermissible to move a bishop horizontally.

Overlooked systems. When considering a concept, certain examples of what falls under that concept may come to mind easily and certain examples much less easily. For example, when considering the concept of a bird, it is normal for us to think firstly of birds that fly. But there are flightless birds as well, such as emus and ostriches, and they are no less birds for being flightless. Similarly, when considering the concept of a system, certain systems may come to mind easily. I presume many people today will think of computer systems. Football fans will think of football systems. But there are other examples of systems, examples that may well come to mind less easily yet still count as systems on Baron-Cohen's understanding.

In an article for neuroscientists, Baron-Cohen provides a helpful list of different kinds of system. He writes:

These are some of the major kinds of systems: collectible systems (e.g., distinguishing between types of stones), mechanical systems (e.g., a video-recorder), numerical systems (e.g., a train timetable), abstract systems (e.g., the

³ In the earlier quotation from Baron-Cohen, he uses "rule" to cover both law and rule as I am using these terms.

syntax of a language), natural systems (e.g., the tidal wave patterns), social systems (e.g., a management hierarchy), and motoric systems (e.g., bouncing on a trampoline). (2009: 71)

This list is rich in examples. Nevertheless, I think that at points Baron-Cohen overlooks some things that count as systems if we use the definition of a system that he relies on.

In a 2003 book for non-specialist audiences, Baron-Cohen writes that before doing scientific research, we intuitively recognize that there are some people with brains more oriented to systematizing and others with brains more oriented to empathizing. I shall quote the entire paragraph where he makes this point because it is helpful for revealing overlooked systems:

We have always known that people are drawn to certain subjects when they want something to read. In the newsagent's on the railway platform or airport departure lounge, those with brain type E will go to the magazine rack featuring fashion, romance, beauty, intimacy, emotional problems and agony-aunts, counselling, relationship advice and parenting. Those with brain type S will go to a different magazine rack... featuring computers, cars, boats, photography, consumer guides, science, science fiction, DIY, music equipment, hi-fi, action, guns, tools and the great outdoors. (2003: 12)

Baron-Cohen uses "brain type E" to refer to a type of brain which causes a person to be stronger at empathizing than systematizing, and "type S" to refer to a type of brain which leads to stronger systematizing. But the reading material he associates with type E contains systems (Kranz and Long 2002: 526-527). Take reading material about appearances. Some of this material contains sets of rules for achieving appearance-related goals: diets, skin types and suitable cosmetics for them, etc. To read about these rules is to read about systems. Take also

reading material about relationships. Such material contains attempts to specify laws of relationships: types of men (or women) to avoid because they will ruin your life, compatibility between types of men and women, signs that your relationship is suitable for marriage, signs that your marriage is heading for divorce, etc.

In the writings of Baron-Cohen with which I am acquainted, there is no attention to these systems or attempts to understand certain phenomena as systems (attempts at systematization). For example, his questionnaire to determine the brain type of a person does not ask questions about whether a person is interested in the systems just mentioned (see 2003: 206-211). It asks about interest in machines, numerical patterns and grammatical violations, but not in these systems. Perhaps Baron-Cohen will say that the systems I have drawn attention to or the attempts at systematization are unreliable, and so they do not really count. But are they always unreliable? To take just one example, there is a lot of academic research directed at developing reliable predictors for when a couple will divorce (see Rodrigues et al. 2006). It seems a risky commitment to dismiss this kind of research completely. Furthermore, I believe that Baron-Cohen will want to count some unreliable attempts at systemization as the results of a drive to systematize, for example some economic theories, in which case how can he ignore the systems referred to earlier?

The absence of attention to these systems casts doubt on his results. In addition to type E brains and type S brains, Baron-Cohen also identifies a type B brain: a brain that results in a balance between the drive to empathize and the drive to systematize (2003: 7). If we start with gender stereotypes about reading interests, as Baron-Cohen invites us to, it is not at all obvious that the average female brain is type E rather than type B. Of course, Baron-Cohen does not aim to depend on such stereotypes, rather on empirical research. But the evidence he gives from

empirical research is not strong enough to support his claims about what is true on average for females or for males, partly because insufficient attention is paid to the systems I have mentioned.⁴

I shall end this paper with a side-remark about Baron-Cohen himself. At one point in his popular book *The Essential Difference*, Baron-Cohen strongly suggests that he has a type E brain:

I, for example, am male, but would be totally unsuited to a job in technical support for any kind of system (computers or otherwise). I was drawn to the helping profession of clinical psychology – a female dominated world. (2003: 8)

But Baron-Cohen has spent much energy researching a system, or at least something that he treats as a system. He posits laws, such as that in any human society males on average will be better at systematizing and women on average will be better at empathizing. This is a claim of the form “Whenever X obtains, Y obtains,” with X being a human society, and Y being two averages. So it is natural to wonder whether Baron-Cohen really is a person with a stronger drive to empathize than to systematize, or whether his tests simply overlook some systems, including the system of gender differences, and this oversight leads to misclassifications.

⁴ Even without paying attention to these systems, Baron-Cohen only finds that 44% of women have type E brains and 56% of men have type S brains (2009: 76). Like Amanda Schafer and Cordelia Fine (2010: 16), I cannot see how this warrants speaking of type E as the female brain and type S as the male brain.

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