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The potential impact of unconscious bias on the selection process is a concern for the International Mathematical Union. As humans, many of the decisions that we make are subject to unconscious bias. Unconscious biases are simply our unintentional preferences that come from our gender, education, culture, etc. Psychologists and neuroscientists tell us that our unconscious mind automatically, rapidly, intuitively and effortlessly categorizes people. This ability enables us to make rapid decisions about people. We do this without having to engage the limited resources of the conscious mind, which are required for most cognitive tasks, such as problem solving and planning. These cognitive shortcuts that reduce the load created by complex information lead to intuitive, but error-prone, decisions. Unconscious biases cannot be eliminated, but a realistic aim is to try to find ways to mitigate them and, by doing so decrease distortion related to bias in decision-making, e.g. in selecting research proposals for funding.

### **Types of biases**

There is a growing list of cognitive biases, which have been identified over the last 50 years of research. In this document we cannot aim at describing the more than 140 specific cognitive biases. What follows are some of the more evident effects of unconscious bias observed in meetings, people management and decision-making, particularly in the context of the IMU selections.

*Affinity bias* (the most prevalent) – inclination to prefer people who are similar to us (or to what we aim at being associated with) on the basis of a wide range of characteristics including: social or career background, gender, accent, education, ethnicity, age, hobbies and interests, etc.

*Attribution bias* – refers to the systematic errors made when people evaluate or try to find reasons for their own and others' behavior. We tend to explain the success of people similar to us as being due to themselves and explaining their failures as being due to external factors (e.g., being unlucky or let down by others).

*Confirmation bias* – we see and hear what we expect to see and hear. Once we feel someone or a situation is a particular way, we seek out information to confirm it and ignore evidence to the contrary.

*Conformity bias* – is caused by group peer pressure. This can happen when an individual feels most of group leaning towards/away from a certain position; they will tend to go along with that the group thinks rather than voice their own opinions.

*Halo effect* – happens when we notice one good thing about a person, and we let that one significant skill or characteristic affect our overall opinion about that person.

*Horns effect* – is the opposite of the Halo effect. When we see one negative thing about a person, and we let it cloud our judgement of their other attributes.

*Comparison bias* – when we compare things, we tend to exaggerate the differences.

*Source bias* – sometimes the source of information becomes more important than the information itself and we tend to not challenge or test out those sources in as rigorously.

## **Impact of unconscious bias**

Unconscious biases tend to interfere with the way in which we act in various situations. Namely, in the way we:

*Listen:* we tend to listen and value the opinions of people more like us or who are in the dominant groups, and we remember contributions differently too.

*Select people and information:* in written applications and in interviews, we tend to select people that are similar to us and to concentrate on information to which we can relate.

*Work with and allocate opportunities:* we tend to prefer team members who are more like us and to allocate them more interesting, challenging and developmental opportunities.

*Feedback:* we are more comfortable giving feedback to people like us.

*Informal mentoring, coaching and sponsoring:* we tend to advise and speak up more for people like us.