In the heuristic-bias program (1), based on the work of Tversky and Kahneman (2), heuristics have been implicated as an important source of diagnostic errors. We shall argue in this paper this is not the case and that instead heuristics play a crucial role without which diagnosis would not be possible.

In numerous experimental studies, Tversky and Kahneman demonstrated that human beings employ mental shortcuts such as representativeness (resemblance) for example, which they called heuristics, to assess an incorrect probability of an event which leads to erroneous inference.

Therefore, a heuristic causes inferential error, according to them, due to incorrect assessment of a probability from it.

The method of diagnosis in practice consists, as is clearly seen in published clinicopathologic conferences (CPCs) and clinical problem solving exercises, of a process of hypothesis generation and hypothesis verification (3).

In this method, a disease is suspected from a presentation and formulated as a diagnostic hypothesis which is verified as being correct or not by tests.

The role that a heuristic such as representativeness plays in this method is to merely make us suspect a disease. Thus we may suspect a disease due to the resemblance of the given patient to patients with this disease seen by us in the past.

As we are uncertain if this suspected disease is present or not in our patient, we formulate it as a diagnostic hypothesis.

We do not assess probability of the suspected disease from the heuristic, representativeness, and diagnose the disease from this probability during diagnosis.

Therefore the condition under which this heuristic would be considered a source of diagnostic error in the sense of Tversky and Kahneman is not fulfilled during diagnosis in practice.
We note instead that the heuristic plays an extremely important role in making us suspect a disease and formulate it as a diagnostic hypothesis without which diagnosis would not be possible.

We suggest all other heuristics such as availability, base rate neglect etc play the same important role as representativeness in making us suspect a disease which makes diagnosis possible.

The fact that a heuristic leads to a diagnostic hypothesis explains, we suggest, why it is found when a diagnosis is correct as well as when it is incorrect (4).

For if a heuristically generated hypothesis is found to be correct on testing, we shall find the heuristic to be present when the diagnosis is correct.

And if the hypothesis is found to be incorrect, we shall find the heuristic to be present when the diagnosis is incorrect.

In conclusion, we have argued in this paper that a heuristic is not a source of diagnostic error. Instead it plays a vital role in making us suspect a disease which makes diagnosis possible.

References