Discussion Questions:

1. Schoenmakers and Duysters are particularly interested in radical inventions. Explain what their conceptual definition is and how it is related to their operational definition.

Schoenmakers and Duysters need to agree on the conceptual definition of what makes an invention radical (groundbreaking/transformational). One way of looking at their conceptual definition of a radical invention is something that is not an incremental invention. In other words, a radical invention is one that does not merely consist of minor improvements or plain adjustments to existing products or technology. To be more precise, their conceptual definition of a radical invention is one that is inherently different from existing inventions and more importantly, leads to many subsequent developments.

Their operational definition is based upon how often an invention is cited on other patents. They want radical inventions to be a rare occurrence and they observed that many patents are cited in 19 or lower other patents. Therefore, they consider a radical invention as one that has been cited 20 more times by other patents.

2. In your opinion, does the author's operational definition of radical invention have validity? (does it have face validity? construct validity?)

I think the author's operational definition of radical invention has face validity in that it matches the "face value" of their interpretation of what a radical invention is. However, it does not have construct validity because part of their conceptual definition of a radical invention is that they are different from incremental inventions. In contrast, using their operational definition, they found that the radical patents actually ended up citing more patents than the non-radical patents.

3. If you believe there is a discrepancy between the author's operational definition of radical invention and the intended concept, how could this affect their conclusions? What factors, other than whether an invention is radical, could be driving their results?

If their operational definition of a radical invention has a discrepancy with the intended concept, they are not measuring exactly what they are hoping to investigate. Furthermore, they can be ignoring possible secondary factors as to what makes an invention radical. For example, maybe a patent that is deemed radical because many other patents cited it is on a topic that is easily incremented from. In this case, many patents can build upon this invention, but this invention also built upon others in this topic.

4. In what other ways could you operationalize the concept of radical invention?

I think their variable of how many other patents have cited this invention is a valid variable but needs to be used in conjunction with other variables. I think they should consider an invention as radical not only if many other patents cited it, but also having fewer than normal citations to other patents.