The cradle-to-cradle (C2C) concept has emerged as an alternative to the more established eco-efficiency concept based on life cycle assessment (LCA). The two concepts differ fundamentally in that eco-efficiency aims to reduce the negative environmental footprint of human activities while C2C attempts to increase the positive footprint. This article discusses the strengths and weaknesses of each concept and suggests how they may learn from each other. The eco-efficiency concept involves no long-term vision or strategy, the links between resource consumption and waste emissions are not well related to the sustainability state, and increases in eco-efficiency may lead to increases in consumption levels and hence overall impact. The C2C concept's disregard for energy efficiency means that many current C2C products will likely not perform well in an LCA. Inherent drawbacks are restrictions on the development of new materials posed by the ambition of continuous loop recycling, the perception that human interactions with nature can benefit all parts of all ecosystems, and the hinted compatibility with continued economic growth. Practitioners of eco-efficiency can benefit from the visions of C2C to avoid a narrow-minded focus on the eco-efficiency of products that are inherently unsustainable. Moreover, resource efficiency and positive environmental effects could be included more strongly in LCA. Practitioners of C2C on the other hand should recognize the value of LCA in addressing trade-offs between resource conservation and energy use. Also, when designing a "healthy emission" it should be recognized that it will often have an adverse effect on parts of the exposed ecosystem. © 2012 by Yale University.