The dissolution of carbon dioxide in water reduces the pH of an aqueous system by imparting acidity due to the formation of carbonic acid. There is a large body of recent scientific literature that deals with the exchange of carbon dioxide between the atmosphere and the oceans. A substantial volume of current published research is devoted to the understating of carbon dioxide dissolution in the ocean water and the potential impact of increased acidity to marine life. Another phenomenon that influences carbon dioxide absorption or release from the ocean surface is the formation of sparingly soluble carbonate minerals (i.e. calcium carbonate) that tend to precipitate to the ocean floor and can sequester large amounts of carbonate in the process. Precipitation of these minerals becomes favorable once their solubility in the saline water is exceeded. As we learned in EN 570 the direction and extent of the acid-base and mineral precipitation reactions are governed by the thermodynamics of the system with the pH being the master variable that regulates the amount of inorganic and organic substances in the ocean water column. A major concern that is being investigated by many marine biologists around the world, is the impact that even small disturbances in the ocean pH could have on sensitive ecosystems such as coral reefs. There are numerous claims found in peer reviewed literature that slight increases in the acidity of the ocean could impede the calcification process of corals (and foraminifera species such as the miliolid Archaias angulatus) and therefore their ability to grow. On the other hand recently publish literature in scientific journals supports the hypothesis that coral reef calcifiers can cope with potential ocean acidification by buffering their responses using carbonate and bicarbonate. Use the thermodynamic principles that we learned in EN 570 and current scientific literature to write a critical review of the article given below by Knorr et.al. (2015) on the potential effects of ocean acidification on the growth and health of benthic foraminifera organisms. Your critique should be limited to four pages, single space, not including references. You are expected to study this article over the next few weeks from a biological and chemical perspective and support your conclusions and opinions using scientific evidence and thermodynamic arguments we developed in class. Only published papers from reviewed science and engineering journals will be accepted as references. Website citations are not acceptable.