In order to master a musical instrument, it is necessary to practice for many years; however, eventually, one can master the instrument to produce beautiful music. This is the same for driving an automobile or motorcycle. It is necessary to practice maneuvering these vehicles as an extension of one's bodily movements. Thus, it is natural to expect the requirement for an adaptation time of the natural body system after implantation of a man-made artificial organ. This basic concept is easily comprehended when we apply an artificial arm or an artificial eye.

Perhaps requirements of the adaptation time after implantation of vascular prosthesis are certainly understood by most of us. However, it is very difficult for most of us to accept the fact that an adaptation time is necessary after implantation of a cardiac prosthesis. This required adaptation time is not only for the blood and tissues for the passively implanted surgical and cardiovascular prosthesis, but also neurological feedback systems for the active functioning cardiac prosthesis. Since the implanted man-made servo system does not change its basic performances, the only adaptation that will occur by the recipient's physiological system will be in changing its well established physiology to be able to cope with this man-made system. In general, the initial 2 days and subsequent 2 weeks after the implantation of the man-made machine are the most critical Phase I and Phase II adaptation periods necessary for the host.

If any recipients survive during these critical periods, the implanted man-made machine should be well adapted and possible long term compatibility should be established between these the man-made and natural systems. Complete adaptation of the host is expected in 6 weeks (Phase III). Contrary to our speculation, the simple and predictable performing man-made machine has the most potential for establishing such adaptation in 6 weeks. If the complicated servo system is built in the man-made system, it is natural to expect competitive performances of the natural system to occur. In general, the natural system of the host fails to survive in this competition against tireless man-made systems. Thus, it is essential to consider provision of such adaptation aspects when designing any artificial organ prosthesis.