Over time, medical practitioners evolved into two distinct professions—physicians and surgeons. Historically, their training, approach to medical problems, and practice patterns differed considerably. Although the best physicians and surgeons always communicated and worked collaboratively to treat patients, they were usually unwilling to cross the boundaries between the professions. In the realm of heart disease, this pattern dominated for several decades as cardiovascular medicine and cardiac surgery differentiated into subspecialties. Cardiologists viewed themselves as thinkers who employed diagnostic tools and pharmacotherapy to create a management plan, whereas surgeons used their skills to heal the body by physically altering its parts.

These two disciplines coexisted peacefully until 25 years ago, when interventional cardiology developed rapidly into a distinct and somewhat divergent subspecialty of cardiology. In an increasingly aggressive fashion, a new cadre of interventionalists, trained as thinkers, ventured into the realm of doers. Sometimes, they were not warmly welcomed. Many cardiac surgeons viewed interventional cardiologists as reckless, dangerous, and lacking in the discipline needed to succeed in the surgical environment. In some cases, the criticism may have been warranted. However, unfazed by these characterizations, interventionalists persevered and dramatically improving their safety and objectively measured outcomes.

**Taking the two-hat advantage.** Interventional cardiologists found advantages in wearing their dual hats. In taking a dual role, the best interventionalists rapidly advanced clinical progress through rigorous scientific methods, such as randomized clinical trials, independent core laboratories, and objective event-adjudication committees. Gradually, interventional cardiology ventured into new fields by using technological innovation to approach seemingly unsolvable problems. From the beginnings of the subspecialty, the innovation cycle time for introduction of new devices was very short, with as little as 18 months between generations of equipment.

Eventually, cardiologists expanded their fields of interest to other vascular beds. Vascular surgeons embraced the changing treatment paradigm. Now, many in vascular surgery employ both catheter-based and traditional surgical techniques to treat major vascular disease. In the best centers, vascular surgeons and cardiovascular practitioners collaborate seamlessly in the management of these patients.

**Innovation anew in heart valve disease.** Once again, interventional cardiologists are entering new, uncharted waters. Increasingly, they are seeking to intervene in patients with valvular and congenital heart disease. However, until recently, only a small number of interventionalists performed intracardiac procedures such as trans-septal catheterization, mitral balloon valvulotomy, and aortic balloon valvuloplasty. Accordingly, many who will be performing the new valvular procedures must learn new skills. In addition, more attention to learning various imaging methods will be required. Transesophageal and intracardiac echocardiography, magnetic resonance imaging, and computed tomographic imaging will be indispensable in the transcatheter treatment of valvular heart disease. On the brink of this new era, cardiac surgeons are keenly observing the early developments of catheter-based valvular intervention with both enthusiasm and anxiety. In some surgical centers, hybrid approaches using percutaneous techniques through limited incisions or thoracoscopic approaches are being investigated.

**Constant collaboration required.** Some degree of scientific skepticism among cardiac surgeons is appropriate with catheter-based valvular intervention. Surgery for valvular heart disease has evolved over a half century into a mature treatment modality with outstanding and predictable outcomes. Our surgical colleagues have a thorough understanding of the pathophysiology of complex problems that afflict the valves. Most important, they know what works and what does not in the operating room. Accordingly, the field of transcatheter treatment of valvular heart disease requires close cooperation between interventional cardiologists, cardiovascular surgeons, and imaging specialists. Such collaboration requires a team-based approach in which practitioners of different subspecialties consult and cooperate in the best interests of their patients.

This changing paradigm will force us to create teams of cardiovascular specialists who can use their skills synergistically to solve the complex problems of structural heart disease. From the beginning, it is essential for cardiologists and cardiac surgeons to partner in patient selection and
work together in the development and evaluation of new techniques. We must avoid the conflicts that sometimes characterized the early years of coronary intervention.

An optimal relationship will require cardiovascular practitioners to respect the expertise of cardiac surgeons and acknowledge the outstanding results achieved with surgical approaches to valvular disease. On their part, cardiac surgeons must accept that progress requires adoption of new approaches that may initially seem less advanced than surgical options but offer the advantage of a less traumatic method for improving symptoms and extending quality of life.

Cardiologists and cardiac surgeons must welcome each other into the catheterization laboratory and operating room and willingly share their expertise to enable this nascent field to progress and realize its full potential. When surgery and medicine collaborate rather than compete, patients are the ultimate winners.

Address correspondence to: Dr. Steven E. Nissen, American College of Cardiology, c/o Cathy Lora, 9111 Old Georgetown Road, Bethesda, Maryland 20814-1699.