## 3 Rivalry

Rival use or *rivalry* is the degree to which alternative goods or uses of goods come into competition. One way in which two alternative uses of a good can compete is when they are consumed in use. Eating the grain is a comparatively rival use because it can only be eaten once, and this use exhausts the possibility of its being used by another person or in another way. Enjoying the scenic beauty of the waving fields of grain is a non-rival use because not only can more than one person obtain this good from a single field of grain, scenic beauty can be enjoyed repeatedly. It is also possible to use the concept of rivalry to describe the relationship between two or more goods that can be substituted for one another and which therefore come into competition in market relations. Thus beans and corn may be rival in that both can be eaten, and a shopper may opt for beans when the corn is too expensive. But beans and corn are non-rival in that you cannot use beans to make Tennessee whiskey, so a moonshiner is never in the market for beans. Rivalry is thus situational, and situations can change. Since antiquity, farmers have made use of seeds, planting them to grow a crop. The crop produces more seed, which can be planted again. In this sense, using a seed to plant a crop is a qualified non-rival use. It does not deplete the amount of the good available for future uses, though it does make the good temporarily unavailable while the crop is in the ground. Genetic use-restriction technologies (GURTs), or so-called "Terminator" genes, can be used to create seeds that when sown as a crop will not produce more seeds. GURTs thus transform the use of seeds to sow a crop from a non-rival to a rival use (Conway, 2000).

Alienability and rivalry are critical to the creation of exchange relations because they influence the degree to which a good is amenable to the process of, and the need for, exchange. Goods that cannot be alienated effectively become a single good for the purposes of exchange, if they can be exchanged at all. Rival goods are depleted by use, and hence must be obtained and replenished prior to any use, or they may substitute for one another, also affecting the need to obtain them through exchange. Thus, whether exchange takes the form of sale, gift, or grant, it is primarily alienable and rival goods that are the object of exchange. Or to put this in somewhat different terms, although human beings can exchange glances, insults, and affection, it is the exchange of alienable and rival goods such as a sack of grain, a team of oxen or a day's work in the fields that constitute the paradigmatic form of the economic social relationship.

## 4 Exclusion Cost

The degree to which alienable and rival goods precipitate social relations characterized by commercial exchange also depends on the ease with which the various uses of a good can be limited or controlled through access or possession. *Exclusion cost* is the outlay in time, trouble, and expenditure of resources that is required to

prevent others from having access to a particular good or item of property. Like alienability, exclusion costs are in large measure a function of the material characteristics of the goods human beings utilize and on which they rely. Oxygen and vitamin D are alienable and rival goods, but it is fairly difficult to prevent people from having access to air and sunshine. It is, in contrast, fairly easy to keep jewels and trinkets where no one else can get them, hence the latter have more typically been understood as saleable items than the former. Items with very high exclusion cost are unlikely to be traded commercially.

Like alienability and rivalry, exclusion cost is amenable to situational variation. Situational change in exclusion cost has often taken the form of material manipulation of either the goods in question or of the circumstances in which they reside. Locks and fences are the classic technologies of exclusion, and a better lock will lower the cost of excluding others every time. It has also been possible to reduce exclusion costs through the development of informal institutions. Simply declaring that certain parties have an exclusive right to use a good will suffice in many cases. Queuing for service is among the most venerable of informal institutions in Western cultures, and everyone recognizes that the person at the front of the line has an exclusive right to be served next. If being served next is the good in question, we may thus say that for the first in the queue, the cost of excluding anyone else from this good is very low. By common consent, customary recognition of this right saves everyone a lot of time and trouble, making the cost of many daily transactions far more reasonable.

When customary rights of exclusion are threatened, it is always possible to bring in the coercive power of the state to back them up. The police represent a formidable way of lowering exclusion cost for all manner of private property. A person who would have to guard or defend an item of property can call on the police to do it, and the knowledge that arrest and prison are among the possible consequences of an unlawful taking raises the cost of theft, simultaneously lowering the cost of exclusion. Copyright and patent laws represent formal institutions that place the coercive power of the state behind a broad array of exclusive practices, even when no tangible property exists. The legal remedies of intellectual property law vastly reduce the cost of preventing others from using one's intellectual creations through intimidation, bullying, spying, and other forms of self help.

Alienability, rivalry, and exclusion cost represent features of the various items and entities in the world, including personal services and material things, that collectively determine which items and entities come to be the object of exchange relations, and which ones remain embedded within a more inchoate and presumptive context of social practice. It is very likely that anything alienable, rival, and excludable will be regarded as an item of personal or private property. It should not be surprising that when goods lack one or another of these three dimensions, people try make up for it either by passing laws or by changing the world in a material way. As institutional economists developed their analysis of these traits, they brought the economists' bias that enabling transaction is always a good thing. They also brought the social scientist's bias of focusing on social practice, and especially on formal institutions. As such, they have tended to focus on legal or policy reforms that will