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Herding humans: How people are like guppies

A few weeks ago I participated in a panel on ethics at a ‘Future of Finance’ conference at Oxford’s Saïd Business School. An audience member asked our panel to comment on herding behaviour in banks, and since then I’ve been giving this issue some more thought. To what extent can human herding be explained in terms of the same goals that motivate herding in other social species?

In human societies, herding often involves people using the actions of others as a guide to sensible behavior, instead of independently seeking out high-quality information about the likely outcomes of these actions. Herding can be particularly destructive in market contexts, because blind faith in market trends by a swarm of individuals can lead to huge bubbles and devastating crashes. But if herding can lead to outcomes that are so damaging and maladaptive at the level of the society, then why did it evolve in the first place? Because herding evolved to benefit individuals, not groups or societies.

We’re used to thinking of social groups as fundamentally cooperative entities, but with some kinds of groups, nothing could be further from the truth. In fact, the best-known biological theory of herding, William Hamilton’s “selfish herd” idea, proposes that herds are the result of individuals trying to ensure that other members of their species, rather than themselves, will get eaten by predators. According to this theory, in many social aggregations, the risk of predation is higher at the periphery than at the center. A herd’s form and movement can be the result of individuals competing to stay close to this center, so that other individuals end up between themselves and the predators. Selfish herds have been proposed to occur in many different species, from wasps to guppies to sheep.

Another likely reason why evolution has favored herding is related to information access. By aggregating in groups, individuals can more easily benefit from knowledge that other group members have gained about, for example, the location of key resources. Herding can thus improve individual foraging success, and this appears to be a primary reason why fish such as

(once again) guppies form shoals. From this perspective, as with that of selfish herd theory, herding is the by-product of individuals pursuing their own self-interest.

What do these evolutionary explanations have to do with human herding in market contexts? With regard to the second explanation—improved foraging success—the answer seems pretty straightforward. Speculators often have severely limited information about how markets are likely to move, and they think that others have better information than they do, so they base their decisions on the actions of others. This strategy can work pretty well for humans, just as it can for guppies. However humans are a lot more sophisticated than guppies in matters of market exchange, and so unlike guppies, they often base their valuations of resources chiefly on how much they think others will value those resources in the future. Which is fine, as long as these expectations don't get so exuberantly optimistic as to create a giant bubble.

What about the first explanation for herding noted above, the selfish herd anti-predator theory? It may not seem to apply so well to market speculation, because speculation doesn't normally seem motivated by fear of things like sharks and tigers. However, it's not much of a stretch to note that just as guppy schools can result from individuals striving to minimize their exposure to predators, marketplace herds can result from individuals striving to shield themselves from accusations of professional stupidity. If you lose a bet that no one else made, because they all thought it was a hopeless long shot, you'll look less competent than everyone else. But if you lose a bet that everyone else made too, because they all thought it was a sure thing, you won't seem any less competent than them.

It is likely, then, that herding in humans, as in other species, is an effort by individuals to obtain resources and minimize risks. Herding therefore often seems prudent as an individual strategy. However, it can become dangerous at a systemic level, because when combined with too much market optimism and uninformed imitation of others—plus, quite often, a significant degree of deception by sellers about how much their wares are truly worth—herding can lead to spectacular crashes. Ironically, in other words, the bubbles which are so risky for market systems are probably caused in large part not by reckless individual risk-taking, but by individuals choosing what feels to them like the least risky strategy of all: following the herd.