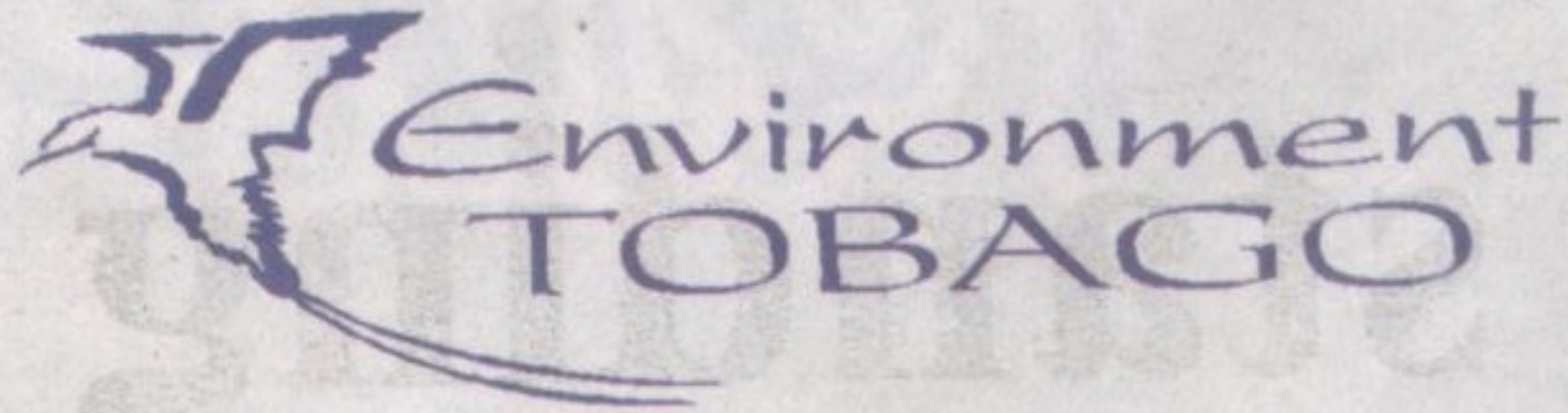


Two faces of competition

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COMPETITION is something that all living things on this planet face, even more so in light of our dwindling natural resources.

But is all competition really the same? The word "competition" has quite a simple definition, "an event which occurs when two or more individuals strive together for something in short supply." This definition suggests that there are different types of competition.

In this case we shall be focusing only on two types; scramble and contest, as well as examining scenarios to better illustrate the two types.

Firstly, "scramble" also referred to as "exploitation" competition can be defined as an event that occurs when the individuals, in this case of the same species, compete with each other for a resource, however, they are not necessarily in direct contact with each other.

An example of this would be herbivores such as Holstein cows grazing on grass in a pasture, where the grass is the resource and the cows are the competitors.

And when most of us have passed cows grazing along the countryside we would notice that they not in direct contact with each other, so that one individual is grazing on a patch of grass while the others have to eat whatever grass is left in the pasture. Each animal will choose its own patch of grass to consume, while preferably trying to select a patch which has the highest density of grass. But if another cow is already grazing there the individual will move on and select another site to graze.

However, in contest or interference competition, again the individuals are competing for a resource but they are in direct

contact with each other. An example of this can be given by altering the scenario presented for scramble competition, but keeping number of cows and size of the pasture the same as in the previous scenario.

In this altered scenario the competitors are once again the Holstein cows and the resource is the grass in the pasture.

However, suppose that rainfall was low for that particular year and the density of grass is low with it being completely absent in some patches.

Therefore each cow would want to get to a site which had the greatest density of grass or any grass for that matter in order to get enough energy to survive and reproduce.

This need is very great and since the resource is so limited the cows could resort to physically confronting each other in order to gain access to that resource. Such example of physical contact could be butting or pushing each other.

The reason for these two types of competition occurring even though the resource and competitors remained the same was the availability of the resource. In the first scenario the pasture had a high density of grass with probably nearly a hundred percent of top cover of soil provided by the grass. Giving allowances for the one or two percent which could be uprooted by the movement of hooves.

In this case the resource is in great abundance so it would make very little difference to the cow where it grazed since it would probably be consuming the same

amount of grass and thus obtain the same amount of energy as any of the other cows grazing in the pasture.

However, in the second scenario, the density of grass was greatly decreased maybe due to abiotic factors such as a decreased amount of rainfall.

Therefore the resource becomes more limited. In the first case, it was only limited by the boundaries of the pasture gates.

But now the grass would only grow in patches. So each individual has to get to a patch before another one did. If it did not it would get little or no food to enable it to survive and it would eventually die.

So they are forced to take whatever steps are necessary to survive.

Even if it means applying physical force to another individual in order to prevent them from consuming that patch of grass.

Also that individual will have to use physical force to defend it from other individuals that want to try and consume it as well. Another strategy would be for the cow to consume that patch of grass very quickly and move on to another patch.

Since a cow just consumes the grass but digests it at a latter time.

In this manner it will get more grass however, it will have to keep using physical force in each case to get to these patches for grass which means more energy.

Therefore it can be seen that competition does not always depend on the nature of the competitors but on the availability of the resource.

