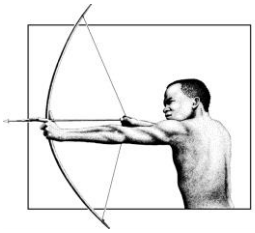

CyberTracker

Why "CyberTracker"?

Louis Liebenberg

The Roots of the Name CyberTracker

The name "CyberTracker" refers to the combination of indigenous tracking skills (Tracker) with modern technology (Cyber). CyberTracker combines technology and human expertise in a way that has been recognized internationally as unique and ground-breaking.

The word cybernetics is rooted in the Greek *kybernetes*, meaning steersman (of a sailboat) or guide. In modern times, the term became widespread since 1948 when Norbert Wiener published his book *Cybernetics: Or Control and Communication in the Animal and Machine*. It connects control (actions taken to achieve a goal) with communication (information flow between the actor and the environment). Both animals (biological systems) and machines (non-biological or “artificial” systems) can operate according to cybernetic principles.

Cybernetics involves a self-correcting process of positive and negative feedback to achieve a goal, in the same way that animal tracking is a self-correcting process involving positive and negative feedback to find an animal. Tracking is therefore a cybernetic process.

The CyberTracker Tracker Certification system involves a process of positive and negative feedback to achieve a goal and is therefore also a cybernetic process.

Modern Indigenous Culture

The Kalahari San have adopted the CyberTracker name as their own, taking ownership of it in a way that is very important to them.

In contrast, there are ongoing Eurocentric misconceptions and romanticised stereotypes of what is perceived to be "primitive Kalahari hunters". This stereotype is perpetuated by the "Living Hunter Museum" project, where the San hunters dress up in skin clothes so that tourists can take photos of them. It perpetuates the misconception that they still live as "primitive hunters". The very idea that people want their lives depicted in a "Living Museum" is demeaning and plays into racist

stereotypes. !Nate once said to me that they do not like it when tourists come to look at them as if they are animals.

It is no longer viable for the Kalahari San to subsist primarily as hunter-gatherers, due to encroachment of cattle farming and the fact that they lost most of their land due to colonialism. In Botswana indigenous hunting was banned for a number of years. Many of them are living in extreme poverty.

For more than half a century they have moved away from a primarily hunter-gatherer subsistence towards a mixed economy. Their mixed economy includes hunting, plant food gathering, farming with cattle, goats, vegetable gardens, and doing part-time work for cash income. Throughout history, indigenous cultures have adopted artifacts and technologies from other cultures when it was to their own advantage. For example, horses were introduced to North America by Spanish colonialists, after which native American hunter-gatherers adopted horses, in the same way that horses and dogs were adopted by the Kalahari San for hunting since the 1960's. Kalahari San arrow points have been made from European fencing wire since it was introduced by European farmers more than a century ago.

The Kalahari San are modern people with modern aspirations. They have adopted western clothes. Their children go to school to prepare them for modern employment opportunities. They use smartphones and social media. What is invaluable is their cultural heritage in the form of their indigenous knowledge and expertise, such as the art of tracking, their knowledge of plants, how to hunt with bow-and-arrow, how to make fire, how to construct a grass hut... these are valuable aspects of their culture which they still practise within a mixed economy.

In 1990 !Nate, who is depicted in the CyberTracker logo, told me that they are struggling to survive and asked me to help them create jobs for trackers. We have had lengthy discussions around the fire over many years and this has been the primary focus of CyberTracker.

What we are trying to promote is a new form of modern indigenous culture that combines the best of traditional indigenous knowledge and skills with modern skills and technology, including the use of the CyberTracker software to gather scientific data, in order to create new employment opportunities. In principle, from an indigenous cultural point of view, there is no difference between the Kalahari San adopting European fencing wire for arrow points more than a century ago and adopting modern smartphones using the CyberTracker software.

Pierre du Plessis, who wrote *Tracking Knowledge: Science, Tracking, and Technology* on the CyberTracker project in the Kalahari, found that the Kalahari San takes great pride in knowing that they played an important role in the development of the CyberTracker software and the vital role of their tracking expertise, and that they took ownership of the CyberTracker name as their own. Throughout the Kalahari, the "CyberTrackers" are known and highly regarded within their own communities.

Du Plessis writes: "!Nate and Karoha were key players in the creation of CyberTracker. Louis Liebenberg's ideas about developing CyberTracker came about through his work with !Nate and Karoha while researching the depth of tracking knowledge in the Kalahari. The two, especially Karoha, also played an integral role in its pilot testing. This is tremendously important to the trackers and has major implications in the way that they have incorporated this technology into their lives, to the extent that they have come to consider themselves 'CyberTrackers'.

!Nate's account speak to the ways that he views the technology as representative of the interest and value people have in his knowledge: "Louis came to me! He was looking for someone who knows

how to track. He wanted me to work with him to so he could make CyberTracker. He found me at Lone Tree, and he learned that I am the chasing guy for the kudus (persistence hunting). He said, “I want you to teach me how to chase the kudu, and give me the knowledge of the tracks for all of the animals.” So I worked with him and then Louis said he’s going to make this computer, the CyberTracker, with the knowledge of my father, of my mother, of my mother’s mother’s mother. They are going to be the knowledge of my uncles! That is how he made CyberTracker.

Du Plessis continues: "One of the key points reiterated here is that Louis Liebenberg came to !Nate. This allowed !Nate to assume the position of Louis’s teacher. !Nate takes pride in this and is quick to mention it when discussing CyberTracker. The work that they did together led to the development of a technology that utilizes !Nate’s knowledge, while also recognizing that of his ancestors. The knowledge trails of his predecessors are present in the very existence of CyberTracker. Though he has had relatively little interaction with computers, he now has computer software designed specifically for his knowledge that is often regarded as an extension of himself (remember !Nate referring to his ‘knowledge’ as his ‘CyberTracker’). CyberTracker owes its very existence to the world of tracking and, to a degree, has been embraced by the trackers as such. During my fieldwork it was immediately evident that all of the trackers take pride in calling themselves ‘CyberTrackers’.

In contrast to the misleading stereotypes perpetuated by the Eurocentric “Living Museum” projects, The Old Way project is promoting the Kalahari San in a modern context to provide a more authentic experience to visitors.

Science and Anti-Science

Over a period of several decades, on a broader, international cultural level, an anti-science movement have become increasingly dominant in America and other advanced countries. In 1993 Gerald Holton, professor emeritus of physics and history of science at Harvard University, warned of the growing threat of the anti-science movement in his book *Science and Anti-Science*. There is a reason why Steven Pinker feels there is a need for his new book *Rationality*. Today, most young people get their news from social media which uses algorithms to maximise profits. Studies have shown that fake news is far more sensational and travels much faster, and is therefore more profitable, than true news. Social media is therefore accelerating the trend towards anti-science. This has far-reaching implications for science and even democracy.

At a very fundamental level, the art of tracking can play a role in promoting scientific thinking. It involves scientific reasoning at its most basic, unmediated level. The CyberTracker name emphasise the potential role of the most ancient roots of science in a modern context when science and technology are becoming increasingly important for the future of humanity. CyberTracker also provides the tools to promote *Tracking Science* – a proposal for greater inclusivity in science.

The CyberTracker Brand Name

The CyberTracker name itself is paradoxical, combining the “old” with the “new” in one word, and this is deliberate. An effective brand name is also something that is “sticky” – it is unusual and “sticks” in your memory. For those who initially may not understand the history and meaning of the CyberTracker name, this “sticky” quality may stimulate their curiosity to understand the “why” of “Why CyberTracker?” Once they understand the meaning of CyberTracker, they may undergo a paradigm shift in their perception of the art of tracking and its potential role in the modern world.

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