Elite Sports Training as Model for Future Internet Practices?

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1 Introduction

This paper presents findings from an in situ study made at CAR (Centre d'Alt Rendiment) – a high performance center for athletes in St Cougar outside Barcelona, Spain. The study was conducted as part of the FP7 funded *Experimedia* project[1] exploring the application of future media technologies within a sports context together with CAR. The main focus of Experimedias activities at CAR is the development of technology that directly impacts the sports training such as the use of high-definition video documentation and vizualisation of sensor data. As part of Experimedia, the study of which this paper is concerned was conducted in order to give insight into the practices of the everyday life of athletes, coaches and staff at CAR. The study itself consisted of observations as well as interviews with athletes, coaches and staff and the study of printed and digital material produced by CAR. Instead of presenting the finding from this in a sports performance context, this paper will reflect on the suitability of studying elite athletes and their life at the training center as a way of gaining knowledge about possible applications and use of future media technologies.

The paper will give a background to the life at CAR then give examples of how the study provided opportunities of learning in the context of future internet use. Finally there is a discussion of the suitability of studying future internet practices with field studies in sites such as CAR as well as possible directions for future research.

2 Life at CAR

CAR is a training center for athletes from Spain, and other countries, in many different kinds of olympic sports varying from the top level of olympic athletes to young pre-elite athletes. When training at CAR, most athletes live in the residency at the facilities and spend most time of the day at the facilities under the care taking of staff and coaches, including eating meals and spending their spare time. The younger athletes also do their education from the facilities, attending either high school or university.

[1] Experimedia, "Experimedia website."

The athletes are not only supervised by their coaches, but also by medical staff, dietitians, residency mentors, career counsel, psychologist and other staff with whom they have regular meetings. The vision of CAR is to provide a center that does not only care about the athletic results of their (young) athletes, but provide an environment that provides them with a foundation for all aspect of life both during and after the athletic career. This creates a situation where the environment of the athlete is carefully "optimized" (including as shown later care-taking not to over-optimize) not only in training but in all aspects of the life at CAR; from everyday concerns such as meal plans and pairing of athletes in the dormitory rooms of the residences to long-term factors such as education and work life. This makes studying life at CAR, and similar sites close to studying a social "laboratory life".[2]

CAR is a fascinating environment in itself and would be suitable for an ethnographic study in its own right, looking at how it is to live in an entirely constructed environment optimized for a specific individual or team performance, that unlike the outside world is also adaptable enough to change to accommodate to individual needs. But here the purpose is a much more specific one which pertains to the use of media and information technology. For being an elite athlete center, CAR is not as high tech as one could think, although much administrative tasks are computerized and the medical and physicians facilities and rehabilitation parts of the center feature quite a lot of technological machinery. The constant supervising, measurement and adjustment of the life of the athletes is instead performed by a network of staff members who get to know athletes in person during the prolonged stays and who together in regular meetings piece together a holistic view of the individual athletes. Since almost all aspects of life of the athletes plays out at the center, problems that arise in one field, such as in training, are not isolated from other aspects such as diet, education or social problems. CAR therefor relies less on isolated high tech measurements of different aspects, whether athletic or not, and more on an organizational culture of subjective, personal and holistic evaluation.

3 Learning from CAR

This holistic perspective is the first aspect of learning for technology in a sports performance context specifically by showing that athletic performance is not simply achieved by optimizing the intense training sessions with technology but must also consider non-athletic aspects of the training. This means for example that relaxation, both physical and mental, is considered as crucial to an athlete as intense performance, which contrasts also to how current information technology stresses constant access and instant notification. While this is particularly sensitive and apparent in an elite sports context it can also provide a more general model of how to consider how information technology impacts performance.

This also pertains to the psychology of the athlete and the effects of quantification itself. This is not at least evident in the dietitians work at CAR where numbers, measurements and calculations are deliberately kept away from the athletes, especially the younger ones. Instead of measuring kilos, fat percentage and counting calories

[2] Latour and Woolgar, *Laboratory Life: the Construction of Scientific Facts.*

the athletes are given a general meal plan from the dietitian with advice such as "eat more fruit", "take more green vegetables", "less potatoes", "eat a bit less" which comes from an general evaluation of a broad spectrum of the athletes well-being, performance and ability to focus. The recommendations are also deliberately printed on a paper that is to be kept in the athletes room and not digitized and put in a mobile phone app that the athlete would then carry with them all day as a constant reminder of dietary restrictions. This is certainly less "optimized" from a strictly physical and technological standpoint, but the dietitian reasons that athletes should concentrate on their long and short term goals within and outside the athletic career and not get obsessed with measurements and tiny details. Instead of focusing on numbers, the dietitian aims to create good habits that are performed unconciously. Here it becomes clear how important it is for information technology to stay out of the way and do its work without occupying the mind of the "user"; something that would perhaps be more difficult to discover were it not for the fact that this happened in such an isolated and supervised environment as CAR. Every ability to concentrate on the athletic performance that would be taken away by a focus on calculation and quantification would immediately be noticed in the performance the next training session.

While being quite self-contained, the space is however porous, not at least through the introduction of social media where athletes mediated connection to fans, friends and publicity also are able to influence the performance. Also in this case, CAR has opted for concentrating of creating habits and an early attempt to turn off the local internet at bedtime was abandoned (wireless 3G-connections would anyway make such an attempt all but meaningless). In this situation there is a negotiation between privacy and efficiency going on where feeling of privacy would also be a presupposition for long-term motivation. This highlights a question of how much so called objective principles of success are made to dominate over subjective feeling of self-control and how much a young athlete is expected and willing to give up of their immediate agency and autonomy in order to excel at sports and grow as a person. It is also a question of how much the athlete is willing and able to postpone wellbeing in the present in order to reach future potential goals. This is also something that information technology system must negotiate and their tendency is to come down on the side of presence and transparency.

These practices can make social scientists think too easily of Foucault and disciplinary technologies[3] and see this as negative. While there certainly are ethical problems associated with discipline and elite atheticism, especially concerning younger athletes, it must also be recognized that there is a high degree of voluntarism and even pleasure associated with being subjected to these technologies of the self.[4] This is not only the case with elite athletes striving towards athletic goals but of the general culture around "the quantified self" made possible by new information technology and available sensors.

The emphasis on the development of habits and a specific organizational culture is crucial and any replacement of current practices with technological information systems should be vary of not designing away this culture. The threat against this

[3]Foucault, Deleuze, and Bouchard, *Language, Counter-memory, Practice: Selected Essays and Interviews.*
[4]Foucault et al., *Technologies of the Self: a Seminar With Michel Foucault.*

organizational culture comes with the general increasing professionalization and formalization of sports training and of increased quantification through information technology as a vehicle for this development.

Given that the environment is so tightly attuned to the performance of athletes also a research project such as this one is an intervention in the daily process of considerable extent. Especially the elite level athletes have very little time and focus left for taking part in research experiments and of testing out new technological devices and systems. Especially – as is often the case in research – when they tend to be buggy and require the hands-on live adjustments of a technician. Improvement in performance due to new technology is expected immediately or they are discarded. More experimental interventions should therefor be limited to pre-elite levels only where there is a higher tolerance for failure.

4 Discussion – Studying CAR

CAR can be defined as a *Talent Development Environment*, a term introduced by Martindale,[5] who focused mostly on the coaching environment of such centers. Henriksen broadened this approach and dubbed it a *holistic environmental approach*[6] and this is where CAR should be placed; both the way the study approached it and how it self-identifies. It is in particular in CAR's characteristics as such a "holistic environment" that its suitability as a site for studying future internet use is valuable.

While the examples given above are but a few examples, it illustrates that athlete centers such as CAR can be a fruitful place of study for studying the role of information and information technology in everyday life. Some of the factors that make CAR suitable for this is:

1. It is a relatively closed environment making holistic studies of the life of athletes possible.

2. There is immediate feedback on changes in the environment reflected in athletic and non-athletic performance.

3. There are strict limitations on available time and ability to focus making design processes having to take these factors into consideration.

There is also a general trend towards quantification of the self not only in exercise type sport activities, but also other aspect of work and private life. In this sense, the life of the athletes at CAR serve as an indicator and a more clear example of what this quantified life can look like and what restrictions should perhaps be placed on it.

On the other hand, athletes live a quite special kind of life where all aspects of the life at the center is focused on very specific and quantifiable goals such as the target athletic performance. There is a pressure of performing in a quantifiable way

[5]Martindale, Collins, and Daubney, "Talent development: A guide for practice and research within sport."

[6]Henriksen, Stambulova, and Roessler, "Holistic approach to athletic talent development environments: A successful sailing milieu."

in training on a daily basis that not necessarily have a counter-part in everyones life outside of this environment. Life outside of environments such as this are to a higher extend filled with opposing or unclear goals and norms. This puts a limit on much much studies in environments like this should be generalized.

5 Future Research

Finally I want end with some reflections on where research such as this could go further. First of all a study like this could be done for a longer period and in a more proper ethnographic way to get a fuller picture of the experiences of the athletes at the center. In particular this could focus on the peer relations between the athletes since this study focused more on the institutionalized, yet informal, relations between athletes and coaching and staff. A longer study could also follow the introduction of new information technological systems, which is partly coming out as a result of the *Experimedia* project and to see how the introduction of these negotiate with the organizational culture. Apart from this, comparative studies could also be made of other aspects of social life that is governed by the same normative aspects of optimization and efficiency. This could be studies of work life, of the "quantified self" movement and self-tracking within healthcare,[7] or of concepts such as "smart cities"[8] that aims to optimize the performance of entire cities with the help of measurements and digital information technologies.

[7] Swan, "Health 2050: the realization of personalized medicine through crowdsourcing, the Quantified Self, and the participatory biocitizen."

[8] Hollands, "Will the real smart city please stand up?."

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