Do E-Athletes Move?
A Study on Training and Physical Exercise in Elite E-Sports

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ABSTRACT
This article offers possibly the first peer-reviewed study on the training routines of elite e-athletes with special focus on the subjects’ physical exercise routines. The study is based on a sample of 115 elite e-athletes. According to the responses, e-athletes train approximately 5.28 hours every day around the year on the elite level. Approximately 1.08 hours of that training is physical exercise. More than half (55.6%) of the elite e-athletes believe that integrating physical exercise in their training programs has a positive effect on esport performance; however, no less than 47.0% of the elite e-athletes do their physical exercise chiefly to maintain overall health. Accordingly, the study indicates that elite e-athletes are active athletes as well, those of age 18 and older exercising physically more than three times the daily 21-minute activity recommendation given by World Health Organization.

KEYWORDS
Athletics, Empirical, E-Sport, Exercise, Physicality, Practice, Quantitative, Sport, Training

INTRODUCTION
Esports have recently become a significant part of our sports cultures. Expectedly, a number of journalists, policy-makers, and academics have thus ended up conceptualizing the cultural identity of the phenomenon. What are the relations between esports and sports, e-athletes and athletes, and esport play and physical exercise? (see Hemphill, 2005; Wagner, 2006; Jonasson & Thiborg, 2010; Taylor, 2012; Von Hilvoorde & Pot, 2016, Hamari & Sjöblom, 2017) What does esport require, and what makes it gratifying to begin with? (see Reeves, Brown, & Laurier, 2009; Lee & Schoenstedt, 2011; Witkowski, 2012a; Harper, 2013; Martončik, 2015, Karhulahti, 2016).

This study is not concerned with the above questions but provides a cluster of empirical data that the people asking those questions, among others, might find interesting. In what follows we provide possibly the first peer-reviewed study on the training routines of elite e-athletes with special focus on their physical exercise.

The solitary earlier academic contribution that we were able to find on the topic comes from Andreas Hebbel-Seeger (2012). He quotes a study from esport organization ESL (Electronic Sports League) that apparently issued an unpublished German thesis written by Lüttmann (first name unobtainable) in 2007. According to Hebbel-Seeger (2012), the study claimed that e-athletes are more active in sports than the average population, with no less than 95% of them exercising traditional sports as well.

Since we have not been able to acquire the referenced study—and since it appears to be unpublished, non-peer-reviewed, and in German—we take its results with a grain of salt. For instance,
it is not clear whether the study’s results concerned professional player, high-level player, amateurs, or fans. Hence, we recognize our study as an exploratory one, that is, \textit{a priori} hypotheses are not proposed. Training, physical exercise, and players’ perceptions will be examined at a descriptive level without utilizing any prior theoretical framework. We disclose the article along three sections: Methodology, Results, and Conclusions.

**METHODOLOGY**

The results of the study lean on a quantitative data set that we gathered with an online survey between September 2015 and June 2016. The survey was created with the LimeSurvey 2.0.5+ software. We pre-tested it quantitatively with ten and qualitatively with four scholars from the fields of play research, videogame research, information systems research, and sports research. Based on the received feedback we made small adjustments before the launch.

**Reaching Respondents**

In 2013 the global player base of videogames was estimated to exceed 1.2B, while recent speculations talk about figures beyond 1.5B (Spilgames, 2013). Of those only about 9000 have ever played videogames professionally (Bräutigam, 2015), the number of currently active e-athletes thus being drastically even smaller. Consequently, quantitative data gathering from elite e-athletes differs significantly from quantitative data gathering from the general player population.

We set a goal to reach a hundred elite e-athletes. To reach them we contacted 161 professional e-sport teams and 68 professional e-athletes directly by email and asked them to participate in the study. Expectedly, only a fraction of them responded, leaving the total number of individual respondents to 31. Notwithstanding, due to our direct contact method, we have strong reasons to believe that all the above respondents are professional e-athletes (PRO) factually, as defined by their team contracts or achievements in international tournaments.

We started looking for more elite e-athletes via popular media in early 2016. We promoted the survey through Twitter and also posted a call to six major Reddit sub forums: Counter Strike: Global Offensive (CSGO), Dota 2 (DOTA), Hearthstone (HS), Heroes of the Storm (HOTS), League of Legends (LOL), and StarCraft 2 (SC2). Our goal was now not to reach PRO players alone, but also those who were seriously striving for a PRO career. We did, however, add requirements so that each respondent should be at the very topmost tiers of the ranked player base of their e-sport; e.g. CSGO players were demanded to have played within the top three ranks, SC2 players were demanded to have played within the top two ranks, and LOL players we demanded to have played in Diamond 3 or higher. Such tiers of play represent very small fractions of the active e-sport populations.

Altogether the Twitter and subreddit calls reached 91 self-proclaimed elite e-athletes who were competing or seriously striving to compete as a professional. We went through the data manually and removed seven responses that were visibly unreliable. With reference to the widely recognized psychological factors of response bias (e.g. Nederhof, 1985; Furnham, 1986; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) and illusory superiority (e.g. Horens, 1995), there is a likelihood that some of the respondents have exaggerated their status as elite e-athletes. We took this factor into consideration by not mixing these respondents to the PRO group that was reached directly, and addressing them as a distinct group of high-level e-athletes (HL) even though many of the respondents identified themselves explicitly as professionals.

Overall, we thus managed to reach 115 consistent responses from PRO and HL e-athletes with various backgrounds. While the number is not exceedingly high, it does consist of two marginal and challenging target groups. This makes the data an exceptional material for analysis.
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