

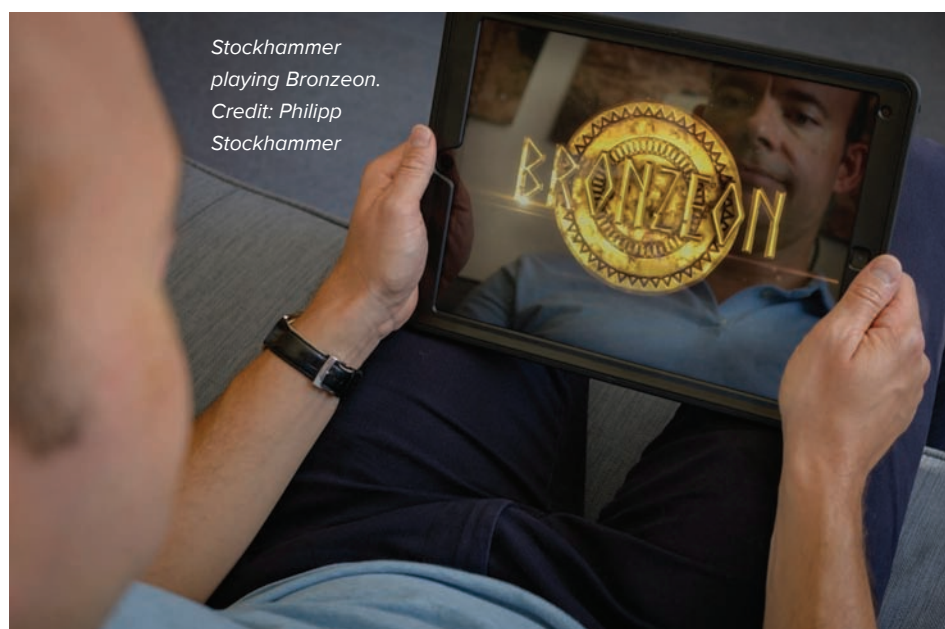


BRONZEON

Learning about the Bronze Age by gaming

Philipp W Stockhammer

Prehistoric archaeology has a long story of success in attracting public interest. So far, its major public audience are members of the educated middle class, who enjoy visiting archaeological museums or special exhibitions or watching popular archaeology-style television programmes. However, archaeological research still faces the problem of how to attract a young audience – especially teenagers – in spite of their interest in pseudo-archaeological movies such as *Indiana Jones* or *Tomb Raider* and related computer games as well as civilisation build-up/strategy games like *Civilization* or *Age of Empires*.



In order to reach out to this group, I developed the idea of a computer game that presents the most recent insights from archaeological research. Together with the computer game producer Milkroom Studios GmbH and the marketing agency elfgenpick, I created a civilisation build-up/strategy game whose rules are all based on the most recent scientific results. It is designed for school teaching, especially at Bavarian grammar schools of *Gymnasium* type, where the topic of prehistory is discussed in a few lessons at the beginning of grade 6. We were lucky enough to receive €100,000 funding by the Volkswagen Stiftung and, with this money on hand, we developed the game and the corresponding marketing material from March to July 2019 in order to be ready for the new

school year starting in Bavaria by mid-September.

Bronzeon is freely available for download for Android and Apple users. It was designed for tablets and mobile phones in order to reach a broad audience and to enable pupils to play it on their own devices so that they can continue playing after school. As edutainment game, it acts as a subliminal, but historically precise, pedagogical tool because of its science-based background. As well as the game, I designed accompanying material for teachers: a draft of a letter to parents explaining why their children will be playing a computer game at school and why they should bring a tablet or mobile phone with them; an outline of a 45-minute school lesson

integrating the game; and a draft of a summary of possible insights after playing.

The scientific background of the game is based on the results of our collaborative research project *Times of upheaval: changes of society and landscape at the beginning of the Bronze Age*, funded by the Heidelberg Academy of Sciences from 2012 to 2018. Within this project, we conducted a comprehensive (bio)archaeological study of 200 Final Neolithic and Early Bronze Age burials (c2800–1500 BC) in the Lech river valley in southern Germany. We were able to gain ground-breaking new insights into social structures, human mobility and infectious diseases: we studied the settlement pattern with single farmsteads along the fertile loess terrace in the centre of the Lech valley and farmstead-related cemeteries. With the help of archaeogenetics and isotope analyses, we reconstructed patrilocal communities in which all women came from afar. However, depending on the size of distance of their origin, their role within the farmsteads was different^{1,2}: women from other areas within southern Germany had children buried in the same cemeteries and became part of the farmstead's biological family tree. Women from more than 400km away – at least one third of the women analysed – never had children buried in the Lech valley. However, they were buried with rich grave goods and probably played an important role in bringing bronze technology into the valley. Women (and men) presumably from southern Germany with poor graves and no biological relatives within the valley might represent menial staff. Moreover, we traced one of the earliest pieces of evidence for the Plague in Central Europe.³

We were convinced that these insights (eg the high degree of female mobility, women as mediators of technological knowledge, appearance of the Plague, etc) were important to be communicated, as they had already had broad media coverage in newspapers, magazines, radio, and television.



The game informs the player about the hard life in the Bronze Age ... the importance of (female) mobility, and the development from copper to complex bronze technology.



Bronzeon. Credit: Philipp Stockhammer

Within the computer game, the player starts with his family in a riverine landscape copying the Lech valley. (S)he has to build houses, cultivate farmland and keep domestic animals in order to produce enough food. All daughters will leave the Lech valley at a certain age and all sons welcome women from afar. Only foreign women bring technological development into the game, and if the player is unlucky, floods will destroy the village, or the Plague will kill part of the population. Thus, the game informs the player about the hard life in the Bronze Age (children starving, infectious diseases, forces of nature, etc), the importance of (female)

mobility, and the development from copper to complex bronze technology.

Many teachers have already integrated the game into their lessons, and hundreds of pupils and adults enjoyed playing it, as is visible from all the positive feedback I have received in the past months. I am deeply convinced that this kind of edutainment will increase knowledge and awareness of the importance of archaeological research. The next game is already in production!



¹ Mitnik, A, et al 2019 Kinship-based social inequality in Bronze Age Europe. *Science*, 366, 731–734.

² Knipper, C, et al 2017 Female exogamy and gene pool diversification at the transition from the Final Neolithic to the Early Bronze Age in Central Europe. *PNAS*, 114:10083–10088.

³ Andrades Valtueña, A, et al 2017 The Stone Age plague and its persistence in Eurasia. *Current Biology*, 27, 3683-3691.e8.

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