

## One, two, three! Can everybody hear me? Can everybody see me? – Acoustics and proxemics of Roman *contiones*

Both historical sources and contemporary historical spectacles often give us a vision of inspiring speeches delivered before large crowds of soldiers or people. One bears in mind the speech of Russell Crowe's Maximus to the soldiers before the *Gladiator's* (2000) opening battle or the speech of Charlton Heston's Mark Antony before the people in *Julius Caesar* (1970) – not to mention the famous speech of Mel Gibson's William Wallace in *Braveheart* (1995), if we can leave ancient Rome for a moment. They are truly inspiring but if one looks at them a bit deeper, one begins to wonder: how many people in the crowd could actually hear what the protagonists was saying. Perhaps such speeches actually looked more like a parody of the *Sermon on the Mount* in *Life of Brian* (1979), in which people standing far from the speaker not only misheard and twisted his words, but also jammed him. Since political and military speeches played an important role in ancient Rome study of speech intelligibility – i.e. hearing it well enough to be able to understand – seems to be an interesting subject of research with a potential to add new knowledge about one of the greatest Empires in history.

The aim of our research is to determine the number of people who could hear speech well enough to be able to understand it for several speaking platforms in the heart of the capital city of the Roman Empire, the Roman Forum and the Capitoline hill. Thanks to written sources, we know that during the Republic Romans used to speak from: *rostra* – a special speaking platform decorated with rams of enemy ships -, the podium of the temple of Castores as well as podiums of the temple Jupiter Capitolinus and temple of Bellona located at *Campus Martius*. Taking into account the fact that at the turn of the Republican and Imperial periods, the Roman Forum underwent major changes that affected the rhetorical landscape of the main square of Rome, we also decided to examine the acoustic properties of the early imperial speaking platforms: *rostra Caesaris* and the podium of the temple of Divine Caesar. Moreover, taking into account the importance of military speeches, we decided to study the squares adjacent to the headquarters of two military camps being the subject of research by Polish archaeologists: Novae in Bulgaria and Dajaniya in Jordan.

As we learn from reading Roman rhetorical treatises (such as Cicero's *Orator* or Quintilian's *Institutes of Oratory*), in addition to words, gestures were also extremely important for the art of speaking. Therefore, apart from acoustic analysis, we will also conduct an analysis of the visibility of gestures for the abovementioned places.

In order to achieve our goals, we will have to create 3D virtual reconstructions showing the reconstructions of the places we are interested in, reflecting their ancient appearance in accordance with contemporary knowledge on the subject. Once we have achieved this, we will be able to begin the acoustic analyses that we will conduct in the software used to study concert halls and theatres. In our research, we will take into account the different levels of background noise that drown out speech. At the same time, we will conduct an analysis of the visibility of gestures. The result of both analyses will be maps showing the audibility of speech and the visibility of gestures. On the basis of these maps we will be able to estimate the size of the crowd, taking into account modern knowledge of how people behave in similar situations. As a result, we will know how many Romans could hear the great speeches of Cicero or Caesar delivered before the Roman people.