

## Films become more complex: Three case studies

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Does art become more complex over time? Is Stephen King more complex than Leo Tolstoy, and Beckett more complex than Shakespeare? In general, the question of progress in arts has been a controversial topic in arts research, and the (silent) consensus is that no, there is no progress. In this paper, we intend to empirically demonstrate three cases where there is a clear progress in film history.

In cultural evolution, complexity has been considered in relation to cumulative cultural evolution: through the retention of beneficial traits, culture can become more complex or better fit to its functions (Caldwell et al. 2016). Cumulative culture has been found a hallmark of human culture in areas where progress is easy to notice, for example technologies (Kline & Boyd 2010) or institutions (Turchin et al. 2017). However the relevance of cumulative culture for arts remains to be more closely scrutinized.

We will present three case studies on the evolution of complexity of films. Over the course of the 20th century (1) films on average tend to include a greater number of shots - due to the shortening of average shot length; (2) film production crews for popular films became much larger and obtained a more complex hierarchical structure. (3) During the 1970s-2000s popular American mystery films obtained a more complex temporal structure - with more flashbacks and flashforwards, as well as more “timelines”: individual stories located in different points of time.

These results indicate that at least for some areas of art, cumulative cultural evolution can prove a relevant and a productive research topic. Not only films, but also other arts could grow in complexity, although the exact areas where this “progress” is happening are yet to be discovered in further research.

### References

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