Collective Attention on the Web

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Its one of the most popular YouTube videos ever produced, having been viewed more than 840 million times. Its hard to understand why this clip is so famous and actually went viral, since nothing much happens. Two little boys, Charlie and Harry, are sitting in a chair when Charlie, the younger brother, mischievously bites Harrys finger. Theres a shriek and then a laugh. The clip is called "Charlie Bit My Finger–Again!"

Generally, understanding the dynamics of collective attention is central to an information age where millions of people leave digital footprints everyday. So, can we capture the dynamics of collective attention mathematically? Can we even gain insights into the underlying physical resp. social processes? Is it for instance fair to call the video "viral" in an epidemiological sense?

In this talk I shall argue that computational methods of collective attention are not insurmountable. I shall review the methods we have developed to characterize, analyze, and even predict the dynamics of collective attention among millions of users to and within social media services. For instance, we found that collective attention to memes and social media grows and subsides in a highly regular manner, well explained by economic diffusion models [2, 4]. Using mathematical epidemiology, we find that so-called viral videos show very high infection rates and, hence, should indeed be called viral [1]. Moreover, the spreading processes may also be related to the underlying network structures, suggesting for instance a physically plausible model of the distance distributions of undirected networks [3]. All this favors machine learning and discovery science approaches that produce physically plausible models.

References

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