



## Rock around the clock? Exploring scholars' downloading patterns

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### ABSTRACT

In the context of the current “publish or perish” culture of academe, scholars' working habits and work-life balance issues have become a subject of interest. The aim of this paper is to examine scholars' downloading patterns on four different timescales: daily, weekly, monthly and by season. Our analyses are based on the web log data of *Érudit*, the main journal diffusion platform of French-Canadian journals in the social sciences and humanities. We used a stratified random sample of 70 days of log files (total of 1,407,163 downloads) from 2011 to 2015. We focus on the countries with the highest number of downloads: Canada, France and the United States. Results show that Canadian and French users perform the large majority of their downloads during weekdays. Americans' online activity, however, is steadier across the day (and night) and during weekends. Canadian users' download activity increases at the middle of semesters, probably due to the high number of undergraduates using *Érudit*.

### CONTEXT

The issue of work-life balance has been discussed since the industrial revolution (Guest, 2002, p. 256). However, as stated by Guest (2002), it “has come to the fore in contemporary debates largely because in affluent society the excessive demands of work are perceived to present a distinctive issue that needs to be addressed” (p. 256). The pressures of work are getting heavier in modern societies, and scholars are no exception, especially in the current “publish or perish” culture. In this context, many authors have investigated researchers' working habits, such as work-life balance in information science (Cabanac & Hartley, 2013), calendar effects on the dissemination of science (Magnone, 2013), researchers' timetable (Wang & al., 2012), and seasonal influences and academic life cycles from a year to another (Moed & Halevi, 2016). This brief communication aims at contributing to this literature by analysing the log data of *Érudit*, the main journal diffusion platform for French-Canadian journals. More specifically, it examines users' downloading behaviour on four timescales: daily, weekly, monthly and by season.

## METHODS

Our study relies on *Érudit*'s web log data. This journal diffusion platform provides access to (mostly) French-Canadian journals in the social sciences and humanities, comprising 119 scholarly journals. We used a stratified random sample of 70 days of *Érudit*'s log files for five years, from 2011 to 2015. Overall, 1,407,163 downloads are analysed in this paper. In order to analyse the time patterns of downloads by country, the time zone of users was taken into account. A Python script was used to parse the data and identify successful downloads of scholarly papers. A robot detection technique was implemented to exclude downloads performed by web crawlers and robots behaving like humans. The geolocation was found with the IP address of the users, and the parsed web logs were imported in a PostgreSQL database.

## RESULTS

### *Daily and weekly working patterns*

A first set of analyses examined the proportion of downloads made by time of day (Figure 1) as well as by day of week (Figure 2). Figure 1 reveals that Canadian researchers start their day slightly earlier than the French, but that the French continue to work later in the afternoon and early evening. For both countries, we see the effect of lunch time (a longer and deeper decline in France) and dinner (two hours later in France). However, as was shown by Wang and his colleagues (2012), American researchers follow a very different timetable: they are active at night, even during the weekends. Their activity is steadier across the day (and night), suggesting that they eat at different moments or that they continue working while eating.

Figure 1: Proportion of downloads made by time of day, for Canada, France and USA.

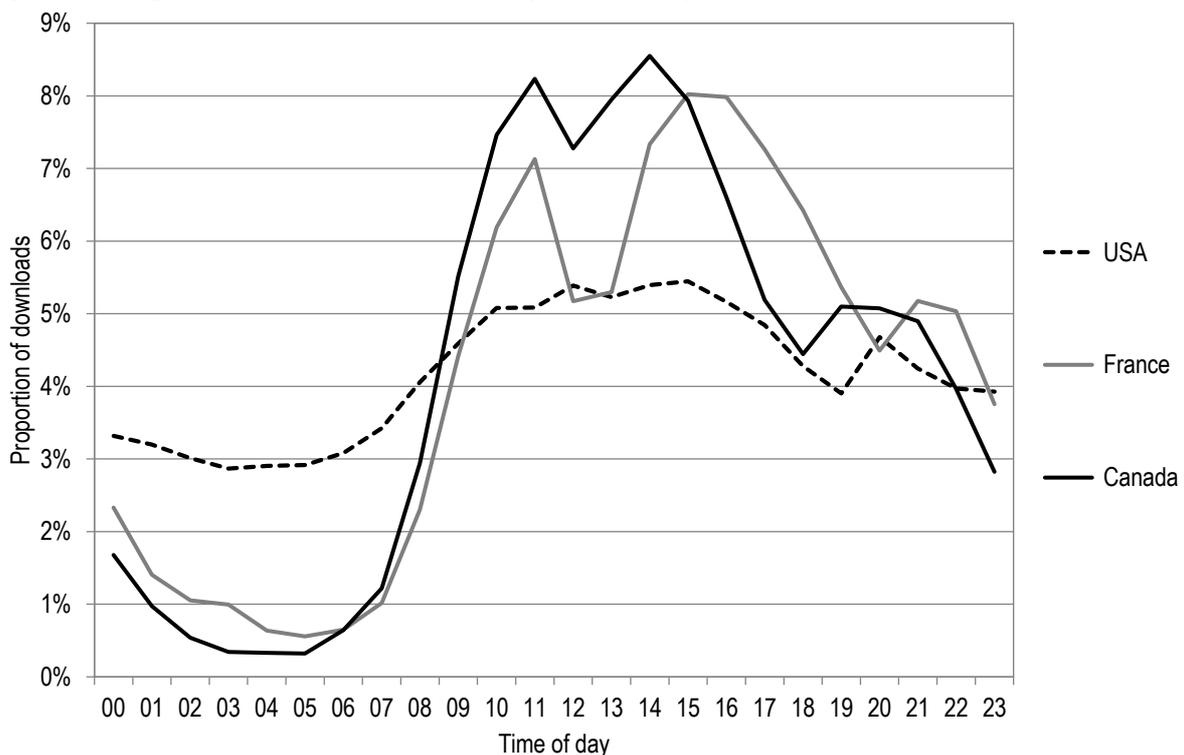
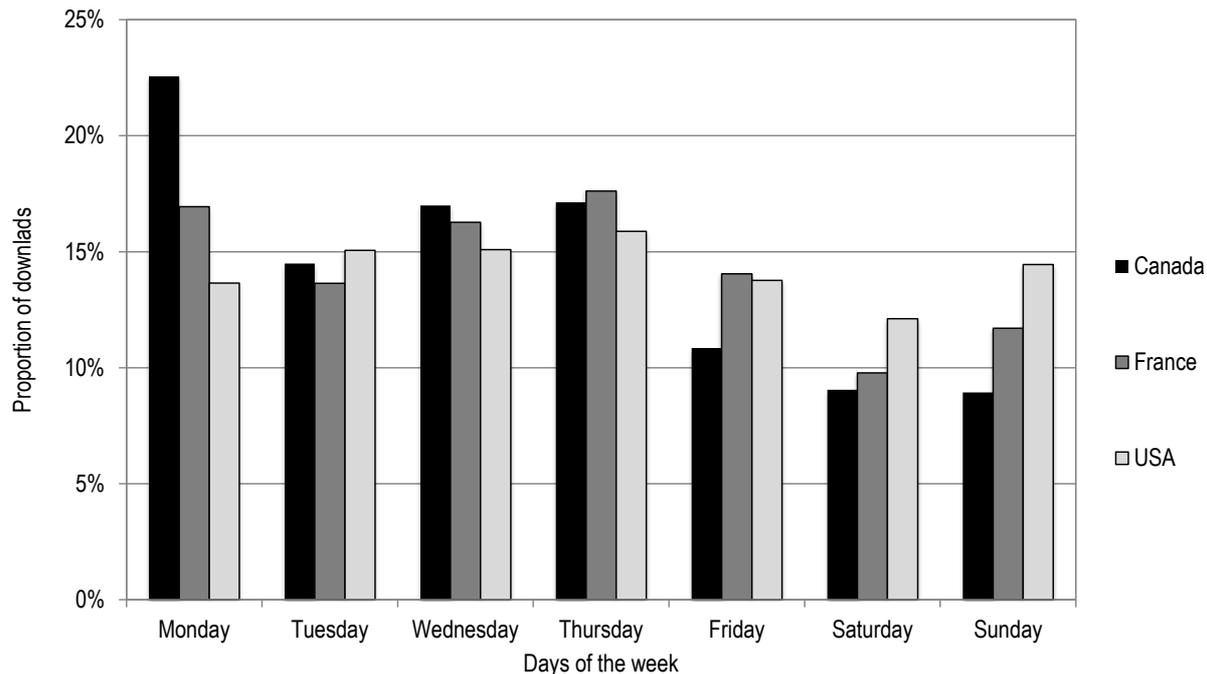


Figure 2 presents the weekly download patterns. Our results are consistent with those of Wang and his colleagues (2012): the overall number of downloads decreases in the weekends, at least for Canada and France. Magnone (2013) and Cabanac and Hartley (2013) also observed a decline in the number of paper submissions during weekends. Monday seems to be

the busiest day for Canada and France. Once again, the American average is steady across the week. We even observe for US scholars a higher proportion of downloads made on Sunday than on Friday.

Figure 2: Proportion of downloads by day of the week, for Canada, France and USA.



#### *Downloads throughout the academic year*

Figure 3 shows the monthly variations in downloads. Canadian users are especially active from September to November and from February to March—therefore mainly in the middle of semesters, which suggests intensive use by undergraduate students. In Canada and France, a decrease in downloads for December and January can likely be explained by holidays. The decrease that starts in March might be influenced by special events like conferences or spring break. Figure 4 reveals that the daily average of downloads for the three countries goes down steadily as the academic year goes by (fall being the highest and summer the lowest).

Figure 3: Proportion of downloads by month, for Canada, France and USA.

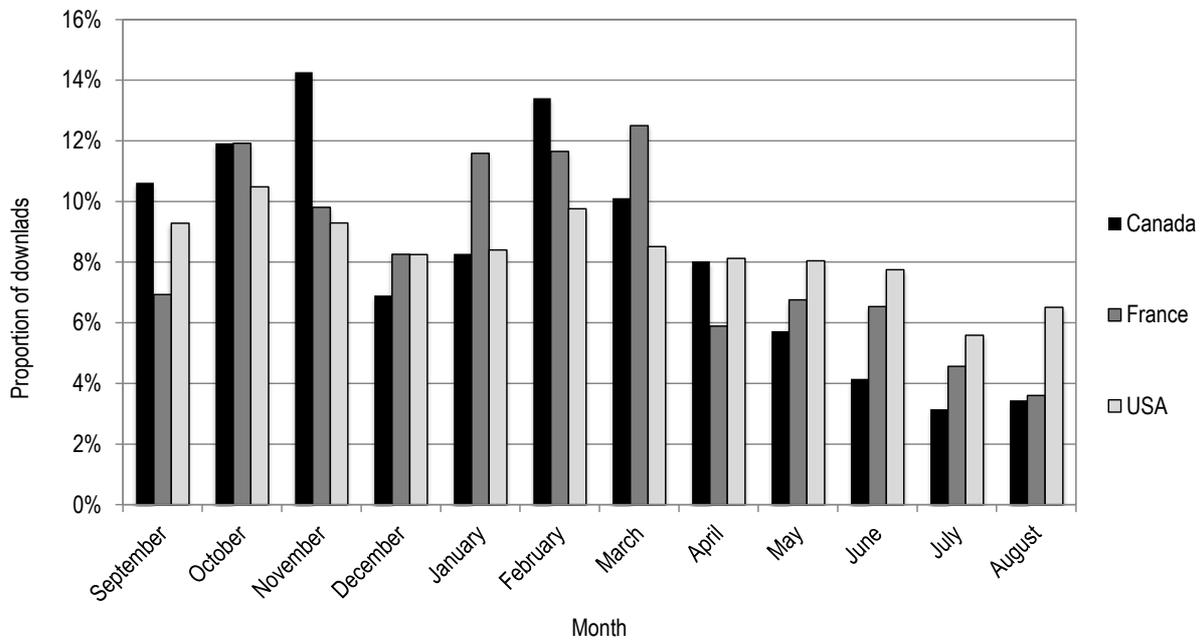
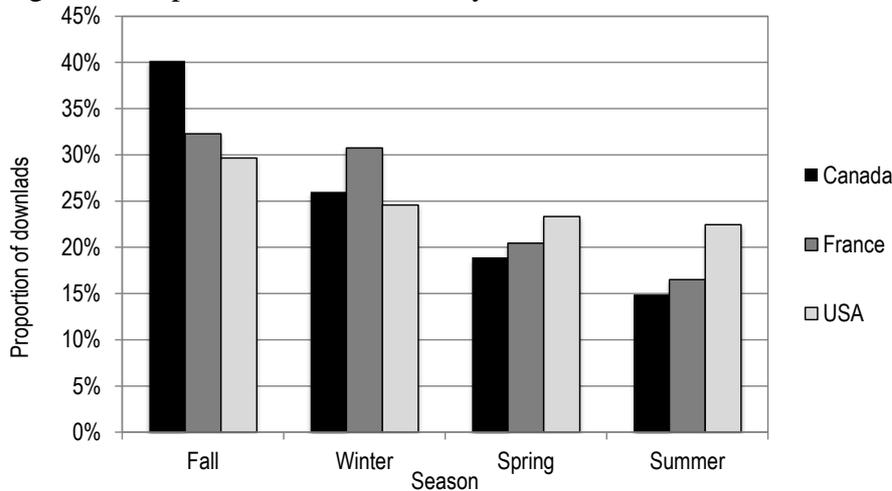


Figure 4: Proportion of downloads by season, for Canada, France and USA.



## DISCUSSION

On the whole, our results on researchers' downloading patterns are consistent with those obtained by other studies. Cabanac and Hartley (2013) saw, for instance, an increase in the researcher's work-related online activity between 2001 and 2012. However, Magnone (2013) found that the number of submissions was lower in fall and winter, which does not converge with our results. This is likely due to the fact that, while paper submissions provide an indicator of researchers-authors working habits, downloads can be performed by a much broader set of users, such as undergraduates, practitioners or the general public (Moed & Halevi, 2016). Along these lines, the lower number of submissions observed by Magnone (2013) might be due to the fact that fall and winter are more teaching-intensive than the two other seasons.

One of the most surprising results we found is the difference between the activity of American users and that of Canadian and French users. The steadiness of Americans'

downloading habits, regardless of the time scale we look at, is stunning. This might be due, again, to different types of *Érudit* users found in the various countries. While most of *Érudit* users in Canada and Quebec might be students—as this is one of the most important source of French scholarly information—downloads made in France and, especially, in the United States, might be performed by researchers, which would explain the higher proportion of downloads made in the summer.

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