

The theory of collectivity of drinking cultures: how alcohol became everyone's problem

In 1985, Ole-Jørgen Skog published "The collectivity of drinking cultures: A theory of the distribution of alcohol consumption", in which he outlined his influential theory of population drinking. Skog argued that there is a strong collective component to population drinking so that when the mean consumption changes drinkers across the entire distribution will move in concert. The implication—that there is a collective drinking culture—has formed a cornerstone of the public health approach to alcohol problems, because it provides a link between per-capita consumption and rates of harm. His work has thus contributed to fundamentally reshaping both alcohol policy and alcohol research, shifting the focus from dependent or heavy drinkers to more universal preventive efforts. With increasing availability of better data and advanced statistical methods, today's researchers should re-examine and re-evaluate this pivotal theory. In a broader sense, Skog's work should also inspire us to theorize about the objects of our research and develop new theories of drinking.

In 1985, Ole-Jørgen Skog published his article, *The collectivity of drinking cultures: A theory of the distribution of alcohol consumption* [1], in the *British Journal of Addiction*. In the article, Skog outlines the central arguments for his theory that he summarizes as follows:

"If certain structural requirements are fulfilled, nearly everybody will influence and be influenced by nearly everybody else, either directly or indirectly. In this case, the population will tend to behave as a collective. Therefore the population might be expected to move in concert up and down the consumption scale, thereby creating a close connection between the general level of consumption in the population and the prevalence of heavy use." (1: p. 97)

This theory of collectivity of drinking cultures has been a key influence on alcohol research and policy ever since its publication. This is at least partly due to the fact that Skog is one of few quantitative researchers in the field who has attempted to develop a theory to explain population changes in drinking. His arguments intersected with a growing public health emphasis on alcohol and led to a strong focus on alcohol consumption in the population, not just among heavy drinkers.

The story of collective drinking cultures, however, starts out with the French researcher Sully Ledermann's observation of a correlation between per capita alcohol

consumption and cirrhosis mortality. Ledermann was baffled by these results and could see no plausible reason for why they would occur. Drinkers from the normal population did not die from cirrhosis of the liver, those suffering from alcoholism did, and in the 1950s, the predominant idea was that the drinking of the general population and the problematic drinkers was inherently different. Ledermann therefore sought an explanation for the correlations observed. What he proposed was that the distribution of drinking in a population was always the same. If the mean then changes, the levels across the entire distribution will follow suit. This is an oversimplified brief overview of what is usually referred to as the single distribution theory [2].

When Skog later expanded these thoughts, he did so mainly by proposing a mechanism by which this distribution is created and through which changes spread in a population. Skog noted that drinking is mainly a social activity and that people are interconnected actors in a network where we influence and are influenced by the behaviour of those around us.

"A society can be conceived as an enormous social network—i.e. a system of actors tied together by different types of social relations which tend to produce a co-ordination of their behaviour. Each actor is influenced by a fairly small number of co-actors, but he is indirectly tied to a very large number of others (possibly all members of the society) by common friends, by common friends of friends etc. In effect, one can argue that each actor is influenced, directly or indirectly, by practically every other member of his culture." (1: p. 88)

He argued that this social interaction means that people adjust their drinking behaviour in accordance with those in their network. Skog argued that our closest network is one of the most important arenas for the formation of our drinking behaviour and that a theory of changes in drinking behaviour needs to acknowledge and incorporate this. The people in our closest network in turn influence and are influenced by their networks and thus behavioral changes spread throughout the population 'likes waves in the water'. Skog notes that:

"Therefore a drinking culture should not be conceived as an aggregate of independent individuals, but rather as a highly organized system of independent actors. The descriptive parameter 'mean consumption' therefore

has a socio-cultural content which goes far beyond its technical content” (1: p. 91)

Both Ledermann and Skog had fundamentally the same idea: alcohol consumption in a population is spread with some form of regularity, so when changes occur in the overall population mean the entire distribution follows along. It follows, then, from this conclusion, that we can reduce alcohol related harm through efforts directed towards reducing the mean consumption in the population, because this will also reduce drinking among the heaviest drinkers and by extension rates of harm. This was in contrast to the prevailing (medical) paradigm of the time that we should only treat the drinkers with problematic use and in even starker contrast to policy responses like the rationing system in use in Sweden between 1919–1955 aimed particularly toward regulating and controlling the problematic drinkers [3].

Skog’s theoretical development sparked a large body of empirical work demonstrating a link between per capita alcohol consumption and a wide range of harms [4–6]. These associations have become so well established that they today are largely taken for granted. This evidence combined with the idea of a collective drinking culture formed the cornerstones of the argument for a broader shift towards a public health approach driven by Bruun and others [3] that fundamentally reshaped alcohol policy in many countries. This perspective, launched by a group of sociologists and public health researchers, advocated the use of universal alcohol control policies to reduce drinking in the entire population. Policy-makers and researchers in many jurisdictions gradually shifted their focus from dealing solely with heavy or dependent drinkers and aimed instead at changing population consumption via broad measures like taxation or availability restrictions. This was especially true in places like the Nordic countries, with cohesive populations and strong collective social welfare systems.

To those of us who have entered the field of alcohol research more recently the theories of Ledermann and Skog have come back into focus following observations of a disconnection between levels of drinking and rates of harm in the early 2000s [7,8]. These patterns ran counter to expectations and raised some fundamental questions about Skog’s theory. If rates of harm increase while per-capita consumption declines, then perhaps consumption trends were not linked across the entire population. Indeed, some researchers suggested a potential polarization of consumption where the trends among the heaviest drinkers would be at odds with those in the broader population [9]. This has renewed the field’s interest in Skog’s work, with a series of recent papers examining the distribution of consumption and scholarly debate around the definitions and interpretations of collective shifts [9–20]. The theories of Ledermann

and Skog thus continue to inspire and provoke scholars some 50 years after they were first outlined and are most relevant still.

Ledermann and Skog did not have ideal empirical data available to test and develop their theories. Skog made a serious attempt to provide an empirical base to test and support his theoretical assumptions. His empirical observations were, however, based on multiple cross-sectional surveys from several countries and widely varying populations, and it is only recently that studies have examined if changes within the same population are collective [16].

This is perhaps mostly relevant to the mechanisms proposed in Skog’s collectivity theory where the central agent for producing and spreading change is via social contagion. A proper test of this mechanism requires advanced network data with the participants drinking and interconnections across time. Even though some work has been done along these lines [21], until today, these kinds of data have been almost impossible to compile. With new technology and data collection techniques emerging, this will perhaps provide opportunities to collect the complex data necessary.

The availability of data and statistical methods today is already much greater, increasing the opportunities to expand the models used to empirically test the theory’s predictions. In recent years, much attention has thus been directed at refining the ways to study shifts in drinking and assessing their collectivity. These advances, however, also raise the need for further theorizing. For example, Skog noted that the rate of change in a population was not likely to be stable across all consumption groups and:

“an increase in mean consumption would be expected to lead to a larger rate of increase in the consumption of light and medium drinkers than among heavy drinkers. As a result, the relative dispersion of the distribution of alcohol consumption seems to be a decreasing function of the mean consumption” (1: p. 90)

Patterns like this have recently been interpreted as either counter to collectivity [11] or labelled ‘soft collectivity’ [17]. With the precision offered by larger samples and new methods, the key question is re-vitalized; what is a collective shift and how small can a divergence be for us to dismiss collectivity? These questions, much like the theory itself, have not changed much over the last couple of decades, and one critique of the theory, as we see it, is that it has been relatively inert to changes and development. In one sense, we would argue that we contemporary researchers have forgotten the behavioural and sociological aspects of the theory and focussed on the statistical aspects of it. Skog’s writings serve as a reminder:

“Rather than postulating mathematical distribution functions, a theory of the distribution of alcohol consumption ought to be based on hypotheses about the factors influencing human drinking behaviour. These hypotheses may in turn produce some predictions about the mathematical properties of factual distributions, but a realistic set of hypotheses will probably not predict rigid distribution laws.” (1: p. 84)

Another critique that has been directed against the theory and debated in the research literature over the years [22–24] is that the theory is too vague for any precise hypotheses to be deduced from it. This opens up room for interpretation, which has resulted in similar results being interpreted in opposing ways by different authors. These debates do little to further our understanding of either the theory or changes in population drinking. If we are to move forward in the coming decades, work needs to be dedicated to developing more specific hypotheses via either developing Skog’s theoretical work or producing new theories of population drinking.

Skog’s continuing influence is a reminder of the dearth of other theories concerning population drinking, and how it changes, within the field of alcohol research. Incorporating all drinkers, even the heaviest, into one collective distribution of drinking guides us in our work trying to understand the harms caused by alcohol on a societal level. This central assumption is where the theory started once upon a time and why it is still used today. We think contemporary addiction scholars should re-visit and read Skog’s Addiction classic, *The collectivity of drinking cultures*, because this played a major part in making alcohol everyone’s problem. The argument for a shift toward population drinking also implied a shared responsibility for the harms caused by alcohol, because all drinkers were included in the collective drinking culture. Skog’s work should serve as an inspiration for us to think more deeply about the ways that population behaviours change, and to theorize and scrutinize our ideas with empirical data.

Declaration of interests

None

Author Contributions

Jonas Raninen: Conceptualization; formal analysis; writing-original draft; writing-review & editing. **Michael Livingston:** Conceptualization; formal analysis; writing-original draft; writing-review & editing.

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