

theoretically interesting node is selected, but in some contexts, this may not be obvious. Another problem is that merely collapsing a two-mode network into a one-mode network ignores that some nodes may be more connected than others. One solution is to weight the ties after conversion, with weights proportional to the number of ties between the nodes.

A less tractable problem with conversion is that because one node is projected onto another, there is a loss of information. Technically, information loss entails nonreversibility, and conversion is nonreversible, since after projection it is impossible to use the resulting information to obtain the prior two-mode network. An additional problem with conversion is that there is a tendency toward higher levels of clustering (that is, there is an inflation in the number of links after conversion). In fact, studies have shown that a one-mode projection of a random two-mode network will have a higher clustering coefficient than would be expected by chance alone.

Alternative Approach

An alternative approach to conversion is to conceive both types of nodes as identical nodes in the same network. This kind of direct analysis is most appropriate when it is thought that the nodes are of equal theoretical importance or if correspondence among the nodes (regardless of node type) is of particular interest. However, even with direct analysis, there is still a kind of conversion to a one-mode network, since all nodes are considered equally important in the network. Comparatively little work has been done in developing techniques for analyzing two-mode networks directly.

By combining two distinct types of nodes into the same network, two-mode networks offer a way of including an additional aspect of social structure. Two-mode networks offer many avenues for further research and development. Particularly interesting directions include the use of modified weights after conversion, multiple correspondence analysis and generalized blockmodels of two-mode networks, and studies of the properties of networks with three or more types of nodes. An especially promising avenue for further research is the application of multilevel models in which there are two or more distinct sets of entities to describe and analyze two-mode networks.

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See Also: Agent-Based Models; Blockmodeling; Networks, Constraints on; Random Graph Models.

Further Readings

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Two-Step Flow of Communication Theory

The two-step flow of communication theory emphasizes the social networking aspects in the process of communication. At the most basic level, the theory focuses on the centrality of opinion leaders and interpersonal communication in mass media influence. According to the theory, the influence of mass communication flows in two stages, or steps. The first step occurs at the level of media messages’ influence on the opinion leaders, the “influentials” who are usually paying closer attention to the media. These influentials interpret what they gather from the mass media and relay it to members of the social networks close to them, which is the second step in the flow of communication. Empirical research has supported this model, underscoring the power of social networking in areas as diverse as advertising and technology diffusion.

Influence, Opinion Leaders, and Mass Media

The two-step flow of communication was serendipitously identified in an unrelated study of Ohio voters’ decision-making processes during the 1940 presidential election, published in *The People’s Choice* in 1948. The research team of Paul Lazarsfeld, Bernard Berelson, and Hazel Gaudet were surprised to discover that voters who made up their minds late in the campaign ascribed their decisions to personal influence from daily associates. These voter types reported that they heard about

the presidential candidates more from family members and other daily social contacts than from the news media. The study also revealed that “opinion leaders” exist at every level of society and resemble the people they influence. These opinion leaders are more exposed to media messages than the associates they influence. The researchers concluded that ideas often flow from the mass media to opinion leaders and from them to the less active members of society. In short, as Elihu Katz puts it, the impact of personal influence, the flow of personal influence, and opinion leaders and mass media constitute the theory’s three main components.

The historical context of the theory is important because it denotes a shift from the dominant belief that the mass media have powerful, direct, and uniform effects on people, long known as the magic bullet theory. Underlying this belief was the perception that in 20th-century mass society, people were leading socially isolated lives, lacking the social networks and social fabric to enable them to resist the powerful effects of

media messages. People were assumed to be powerless and easily influenced by propagandists using modern mass media. The use of radio in Nazi Germany bolstered these beliefs. However, the two-step flow of communication theory subverted those perceptions in reinstating the resourcefulness of the social mind and the power of social networks in modern mass communications. In emphasizing the power of personal influence and the capacity of opinion leaders to filter media messages, this theory led to a paradigmatic shift in thought regarding the power of the mass media. The new shift underscored the limited and indirect effects, rather than powerful and “hypodermic needle” effects, of the mass media in infiltrating social networks.

Later research on the two-step flow of communication theory further delineated the power of the opinion leaders as sources of information in social networks. Among the findings is that less-active members of society turn to those opinion leaders for information, then turn to news media sources for confirmation and more



A crowd listens outside a New York radio shop for news on President Kennedy's death, November 22, 1963. Later research found that over half the population obtained the news from personal sources first and only later turned to mass media for confirmation.

information, depending on the importance of the issue. In a study comparing the diffusion of the news of the death of Senator Robert A. Taft in 1953 and the assassination of President John F. Kennedy in 1963, over half of the population was found to have obtained that information from personal sources first and only later turned to mass media for confirmation and additional details. Far fewer people initially heard of Senator Taft's death from personal sources. Overall, the more significant a news event becomes, the more powerful the role of personal sources becomes in social networks.

While empirical support for the two-step flow of communication exists, it has consistently encountered methodological challenges. One of the earliest challenges included how to find and study the influentials in random samples of the population and compare them with their followers. Another problem concerns the concept of "opinion leadership" and how many people an opinion leader needs to influence to be considered influential. To complicate the questions further, there is the issue of those who influence the opinion leaders. From studies on voting behavior to examining the influence of opinion leaders on doctors' adoption of new drugs, along with studies on fashion changes and social trendsetters, the research designs have grappled with those methodological challenges while consistently documenting the impact and flow of personal influence in communication social networks.

Further research has documented that opinion leadership shifts along with shifting subjects, expertise, and leadership characteristics. For instance, while one person can be an opinion leader when recommending the best tourist attractions in Africa, the same person can be a follower in situations where she or he has to decide on the best fertility treatment. Nevertheless, the two-step flow of communication theory has found many enthusiasts among advertisers who seek to locate and use these influentials to drive the adoption of new products, services, and trends. Advertisers understood that social pressure is one way of wielding influence in social networks. As Lazarsfeld and others have argued, casualness, flexibility, trust, strength of personality, and the ability for "persuasion without conviction" provide personal contacts with more persuasive power than the mass media. In other words, persuasion occurs in a way similar to the spread of rumor or word of mouth that faces less resistance. PBS *Frontline*'s "The Merchants of Cool" documentary (2001) and Malcolm Gladwell's

The Tipping Point (2000) readily illustrate the role of these trendsetters in social networks and how the two-step flow of communication works in advertising and popular culture.

Finally, as Hans-Bernd Brosius and others have observed, the opinion leaders neither replace the mass media nor have absolute control over the communication process in social networks. Instead, what the two-step flow of communication theory has consistently asserted is that group and interpersonal contacts wield significant influence in the overall communication process of social networks.

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See Also: Communication Networks; Corporate Networking; Diffusion/Contagion Networks; Networks, Marketing to; News Media Networks; Personal Network Analysis; Social Influence; Tipping Point; Twitter.

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