Uses and Gratification Theory in Connection with Knowledge and Information Science: A Proposed Conceptual Model

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Abstract

This paper was aimed at clarifying the links between Uses and Gratification Theory (UGT) and Knowledge and Information Science in both traditional and modern contexts. Uses and Gratification conceptual model were also proposed both for library and information centers, and for interactive information retrieval systems. Review and analysis of published resources were used as the methodology of the article. Findings showed that UGT is in close connection with five laws of library science and their web version on one hand, and the user-oriented paradigm on the other hand. Therefore, the components of uses and gratification conceptual model of knowledge and information science in traditional and modern contexts consist of vast types of information needs, society, end users' features, information gratification sought, information gratification obtained, relevance gratification, library and information centers, and interactive information retrieval system uses. Applying UGT to knowledge and information science makes it possible to identify active and inactive users based on cognitive-cultural patterns. Moreover, automatic personalized interactive information retrieval systems were improved.

Keywords: Gratification Theory, Knowledge and Information Science, information gratification, relevance gratification, interactive information retrieval

Introduction

Theorizing about information and communication is multi-disciplinary and encompasses knowledge from various fields of science. Considering its multi-disciplinary nature, communication has different applications especially in humanities and sociology. In other words, all branches of humanities and sociology are linked to communication theories and vice versa. Theories on communication originate from fields such as cybernetics, linguistics, literature, philosophy, politics, media science, sociology, logic, humanities, film research, and psychology (Cobley, 2008). Moreover, many researchers believe that knowledge and information science is theoretically poor and lacks good theories and its theoretical aspects have been neglected (Rismanbaf, 2006; Ghafari and Shaghaghi, 2010). The ambiguity present

in theories of librarianship and information science have created problems in conceptualizing models, definitions, presumptions, evaluation, and ultimately understanding the phenomena of this field (Budd, 2004 in Sharif, 2009). To overcome this shortcoming, theories from other scientific fields can be used and their relationship with knowledge and information science can be checked in order to enrich and expand theories in this field. In this study, it was tried to assess the relationship between "Uses and Gratification Theory" (one of the most influential theories in communications focusing on the user), and knowledge and information science (the main purpose of which is to provide the needs of users), in order to clarify the applications of this theory in knowledge and information science. This clarification can lead to novel approaches in knowledge and information science.

What is "Uses and Gratification Theory"?

"Uses and Gratification Theory" or "need seeking" is one of the theories of communications that focuses on social communications. This theory adapts a functionalistic approach to communications and media, and states that media's most important role is to fulfill the needs and motivations of the audience. Therefore, the more these needs are met, the more satisfaction is yielded (Windahl, Signitzer, and Olson, 2008). The theory of satisfaction and gratification is based on two core questions: 1) why are people attracted to certain media? and 2)what kind of satisfaction does media provide for people?

This theory initially focuses on the motifs of the audience (Ruggiero, 2000 in Seekhiew, 2009) and then analyzes the message and social system (Sarkisian, Nikoo, Saeedian, 1997). In other words, this theory concentrates on how users seek media and to what extent they are satisfied with its type, content, and method of use (Amiri, Noori, Basatian, 2012). By answering the two mentioned questions in "Use and Gratification" the positive and negative outcomes of using specific media will be ultimately determined (Balakrishnan and Loo, 2012)

Origin and Development

Uses and Gratification Theory is rooted in traditional mass communication research on how a specific media is sought and selected in order to provide their needs (Katz, Blumler, and Gurevitch, 1974 in Chiang, 2013). Such research, especially those by Blumber and Kats (1974), changed the direction of research from traditional approaches evaluating "What media does to individuals?" to newer approached assessing "what individuals do to media?" (Palmgreen, Wenner, and Rosengren, 1985 in Gerlich, Drumheller, Babb, and De'Armond, 2015). The studies of Blumber and Kats (1974) are considered as an evolution in mass communication research and they can be named as the founders of the UGT. Based on their theory, people seek communication to satisfy their needs, which in turn stem from social and psychological states and conditions. In other words, their needs affect their communicative behavior (Rubin and Rubin, 1992 in Seekhiew, 2009). The uses and gratification theory has passed four developmental phases to be scientifically accepted by communication researchers (West and Turner, 2010). The first developmental stage dates back to the 1940s and included descriptive studies with conceptual and methodological deficits. In this period, most studies were related to identifying the audience of the radio and comparing it with hard copy media. In the 1950s, the tendency towards UGT decreased and few studies were done on this subject.

In fact in the 1940s and 1950s, the attention of mass communication researchers was mostly on approaches regarding the influence of media on the audience rather than the uses and satisfaction with the media because mass media aimed to change the direction of people's activities.

Another reason for lack of interest in research about this theory was the lack of clear and comprehensive rules about the theoretical hypotheses of this approach. Uses and gratification researchers started from the audience's perspective, but since they could not expand the theoretical framework and psychological principles of this theory to be further analyzed, they were unable to define a comprehensive methodology (Severin and Tankard, 2010).

The second phase in the development of this theory was that which Blumler and Katz (1974) call the practical application of sociological and psychological variables that could create the differential pattern of media use.

At the end of the second developmental phase of UGT, more systematic methods were used for assessing the typology of motivations that are combined with methods expressing the elements of gratification research from media to pave the way for the third developmental phase. In other words, typological efforts were put in place to systematically operationalize core variables (Cobley, 2008). Blumler and Katz (1974) described this stage as an effort to apply gratification data for defining other aspects of mass communication with which the audiences' motifs and expectations could be connected. Since in social sciences, defining is a prerequisite for theorizing, the third developmental phase is of utmost importance in the uses and gratification approach.

In the third developmental phase, thinking about the gratification process reaches maturity. Many of the hypotheses of this approach were created, some were revised or merged and fundamental steps were taken towards the theoretical coherence of this approach. At this stage, with their definition of the uses and gratification theory, Katz, Blumler, and Gurevitch (1974) and Katz, Haas, and Gurevitch (1973) had the most influential role. They stated that Individuals are faced with their social and psychological needs and these needs create their expectations from mass media or other sources and ultimately lead to different patterns of media use or tendency, the result of which is the gratification of needs or other outcomes in most of which deliberation is not involved. Katz et al. (1973) and Katz et al. (1974) benefitted from their description and outlined the main elements of the uses and gratification theory with the help of Rosengren's (1974) conceptual framework. Figure 1 shows the simplified uses and gratification model (Rosengren, 1974 in Lucas and Sherry, 2004).
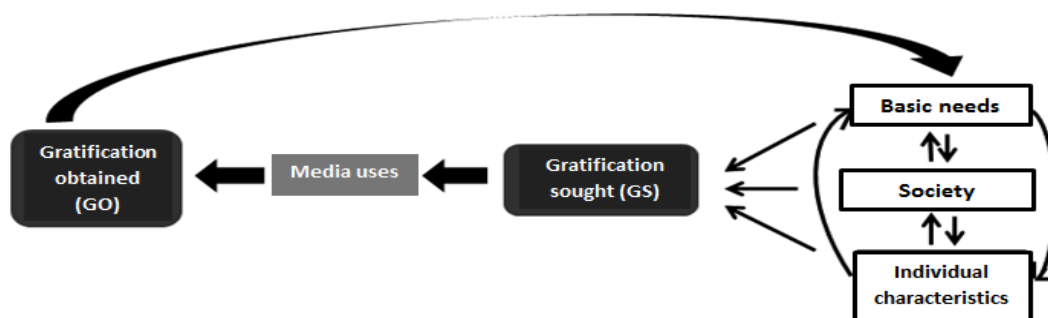
Figure 1: The simplified uses and gratification model based on Rosengren's conceptual framework

In the fourth developmental stage a relatively complex theoretical structure was presented by Palmgreen (1974). This stage was about creating a theory and testing it. Palmgreen and Rayburn (1985) emphasized that "gratification sought" and "gratification obtained" should not be considered equal in research and theory. If people choose a certain media in the hope that it will be useful, they might still not use it or like it for several reasons. This conclusion that if people think something is interesting or even pay for it, it could be successful is a false assumption (Windahl *et al.,* 2008).

Considering the evolutionary phases of this theory, it can be concluded that it is one of the most influential theories of communication because it can be used for assessing various psychological motifs and needs and communicational channels in a multicultural context (Lin, 1996). Furthermore, with the emergence of this theory a new paradigm and research methodology in communication was introduced.

Currently, this paradigm is very crucial for those involved in media because of the emergence of various television, radio, video, satellite, and teletext channels and considering the intense competition between different media (Sarkisian *et al.,* 1997).

Components

Uses and Gratification Theory has several components as follows:

Active audience

Over time, theories about the audience have changed. In the literature, the characteristics given to the audience differs greatly (Windahl *et al.,* 2008). One viewpoint (mass society theory) considers the audience as a large geographically heterogeneous group and at the same time socially inactive. Psychological factors are more determining in defining the audience's behavior than social factors (De Fluer and Ball-Rokeach in Windahl *et al.,* 2008).

In another approach, Bauer (1964) uses the expression "obstinate audience" to show that sometimes the "active audience" does not want to accept what is presented in the media. He considers deliberate selection as one of the important characteristics of the audience (Windahl *et al.,* 2008).

With the introduction of the uses and gratification theory, a great change occurred in the quality of paying attention to the audience (Windahl *et al.,* 2008) and the researchers in this field assumed that the audience are aware of their own reasons for using media content and can express them (Amiri *et al.,* 2012).

The main assumption of the uses and gratification theory is that the audience are actively seeking content that gives them the highest level of satisfaction (Windahl *et al.,* 2008). In general, the audience's degree of gratification depends on their needs and desires. The more a person feels that the real content fulfills his/her need, the more possible the selection of that content is. The activeness of the audience is a variable construct recognized with audience demonstrating different degrees and types of activity.

Needs and Motifs

Discussion on the needs and gratification theory often starts with a person's needs. In initial drafts of this model, needs were considered to be equal to the basic human needs. The latest developments of this theory shows that the needs are not limited to the five basic needs (Maslow's hierarchy of needs) and also comprise needs such as needs for guidance, security, mutual interaction, and reverting from tension and stress (Windahl et al., 2008). Figure 2 shows the revised model of Uses and Gratification Theory according to its developmental stages.
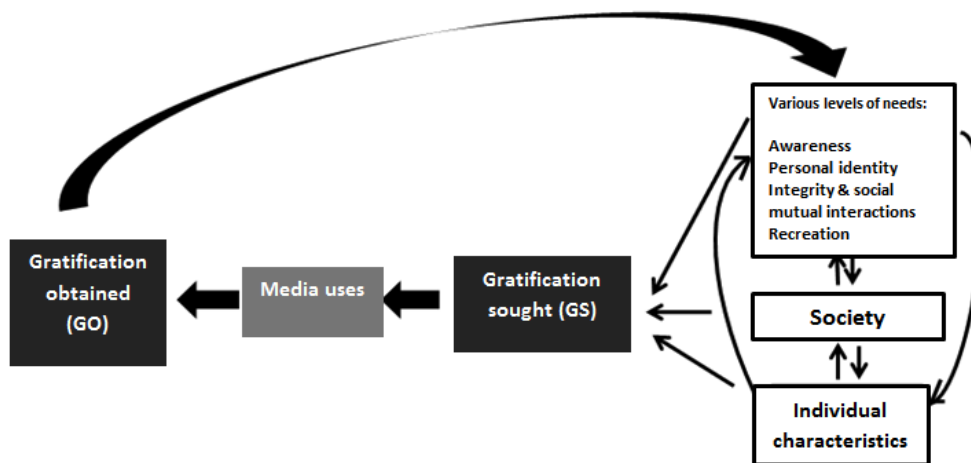

Figure 2: The revised model for Uses and Gratification Theory

As mentioned before, Katz *et al.* (1973) and Katz *et al.* (1974) considered the needs surrounding the uses and gratification theory to be psychological and social. Uses and gratification researchers state that needs create motivation. In other words, motifs are rooted in needs and comprise their action aspects. Different categories have been suggested for motifs but the categorization defined by McQuail (1984) is the most famous. This categorization includes awareness, personal identity, integrity, social mutual interactions, and recreation. It can be concluded that there are various underlying motifs for using media. Therefore, the common assumption that people use media for reasons media makers have in mind is false (Windahl *et al.,* 2008).

Gratification

At best, receiving messages should be gratifying. The uses and gratification theory often focuses on gratifications that result from use and do not consider use as a goal. Researchers have stated two different types of gratification; "content gratification" and "process gratification". In content gratification receiving certain messages is more important, while in process gratification, participating in the "use process" is of much higher value (Windahl *et al.,* 2008). Different models of gratification have been presented in the uses and gratification theory, of which the cognitive and cultural models are two important models introduced by MacQuail (1984). The cognitive model has the highest similarity to the original uses and gratification model. However, the cultural model cannot be neglected. In the cognitive model, motivation consists of common interests and curiosity while in the cultural model, motivation includes the general expectations and preoccupations of an individual. Considering these two

models and differentiating between them would yield a better understanding of UGT. Furthermore, it shows that people use media for different reasons that do not necessarily correlate with their intents. For example, one might use a certain media solely because of a sense of dependency and belonging (cultural model) and not be willing to use and listen to the message portrayed by that media (cognitive model) (Windahl *et al.,* 2008).

In the uses and gratification model there are two components; gratification sought (GS) and gratification obtained (GO). These two components differ with respect to concept and applicability, and neglecting their difference leads to misconception and misinterpretation of the results. These two components can be studied separately, but studying both would enrich the findings and improve interpretations. When measuring the difference between these two concepts, the less the difference, the higher the possibility that the audience conceive higher value for that certain media or communication channel. Moreover, larger difference shows that people somehow feel misled (Windahl *et al.,* 2008). To measure the difference between these two, gap analysis models are used. It should be mentioned that these models assess the difference between desired and existing states.

Use and Effect

The pioneers of "uses and gratification" had two major goals. The first goal, which they have considerably achieved, was focusing on the needs of the audience in assessments related to audience cognition. The second goal was assessing the effect of media, which can be seen in most uses and gratification models. Researchers believe that since people use media for different reasons, the accurate recognition of media's effect is possible only by identifying the reasons for which they are used. The pioneers of this approach emphasized on the fact that people have different reasons for using media and its possible effects. They believe that one person likes a TV program to forget his/her problems, while another one likes that program to obtain information on how a specific group lives in the society. Can it be assumed that the effect of such a program is similar for both people? In other words, different types of uses yield different results and the type of use content, amount and mode of use are important factors in using content for predicting results (Windahl *et al.,* 2008).

"Uses and Gratification Theory" in the 21st Century

UGT has been traditionally used for assessing how and why people use mass communication media such as the radio, television, and newspaper. This is while some mass communication researchers claim that this theory is not as strong as other social science theories. In his article entitled "uses and gratification theory in the 21st century", Ruggiero (2000) opposes this viewpoint and states that any theorizations in communication science is dependent on the uses and gratification theory. Furthermore, with the emergence of communication technology, this theory has become increasingly important. These technologies provide users with various forms of media and therefore, studying the needs, motifs, and satisfaction of users is of utmost importance. Previous studies on cell phones and the Internet within the uses and gratification theory are consistent with Ruggiero's findings (Bryant and Miron, 2004; Castañeda, Frías, and Rodríguez, 2007; Seekhiew, 2009; Smock, Ellison, Lampe, and Wohn, 2011; Balakrishnan and Loo, 2012; Ji and Wayne Fu, 2013; Wei

and Lu, 2014). In expanding the uses and gratification theory, Ruggiero emphasizes that existing and future models should be developed and created considering concepts such as interactivity, demassification, hypertexuality, and asynchroneity. These concepts are actually the characteristics of communication technology. (Rezagholizadeh, 2013).

In modern uses and gratification models, the above mentioned characteristics should be considered because each one leads to various communication behaviors which should be tested and assessed. Considering the importance of the uses and gratification theory and its increasing use in the 21st century, it is important that researchers in this field use a holistic methodology and assess qualitative and interpersonal aspects of this approach more than before in order to assess communicative behaviors in the 21st century more accurately (Ruggiero, 2000).

"Uses and Gratification Theory" and "Knowledge and Information Science"

The theories of communications have always been used in the field of knowledge and information science; whereas, the connection between the two has been rarely studied. Few studies have assessed UGT in information seeking behavior. For example, Chatman (1991) assessed information seeking behavior of the low social class (including workers) in order to understand their motifs and needs for seeking information. The results showed that although people from this social class have extensive informational needs in different fields such as occupation and daily issues, they are not active informational seekers and they have low-grade motifs.

In Iran, Ghafari and Shaghaghi (2010) assessed the social functions of public libraries as media-communication institutions using the meta-analysis approach to seek a suitable theory for use in such institutions. In this section we assess the connection and application of UGT in knowledge and information science in traditional as well as modern contexts. In the modern context, we specifically emphasize on the link between the uses and gratification theory and interactive information retrieval.

Books, Library, and the uses and gratification theory

Traditionally, books were in the form of clay tablets and papyrus and later print form, all of which were different forms of media. Libraries were also considered as media institutions because they have the most important role in transferring the collective and historical memory of different ethnic group and nations (Ghafari and Shaghaghi, 2010).

Although for many years libraries were referred to as storage houses and therefore, giving informational services and interaction with users were neglected, they were still responsible for informational interaction. Informational interaction can have personal or social goals. Some social goals are as follows: sharing common environmental knowledge, helping new community members socialize and follow norms, entertaining members, preventing members from remembering their problems, etc. (Budd, 1992).

Therefore, after oral culture, libraries and written media could be considered as other forms of mass communication media.

Reviewing the five rules of library science, we can see a strong link between UGT and knowledge and information science. These rules are as follows:

1) Books are for use.
2) Each reader has/his own book.
3) Each book has its own reader.
4) Save the readers' time.
5) The library is an active and dynamic organism.

All these rules are in some way or the other linked to the components of the uses and gratification approach. The responsibility of libraries is to recognize and attract people and fulfill their informational needs as quickly as possible. A user, who is satisfied with the library, will return again and this process would increase the dynamics of the library. The personal and social functions of a library can also be studied through the outcomes of using a library. The uses and gratification model of libraries in the traditional context is shown in Figure 3.
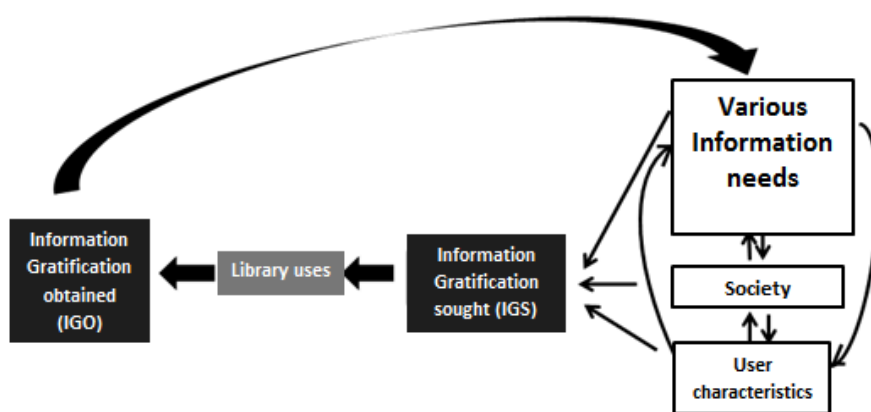

Figure 3: The uses and gratification model of libraries in the traditional context

21st century libraries and UGT

With the emergence of information technology, the form and type of library services has considerably changed. Electronic books, journals, and databases were created. These technologies have made information more accessible for users. Moreover, with the widespread use of the internet many communication channels such as weblogs, wikis, and social media were introduced to users.

Five web rules were introduced by Noruzi (2004) using the knowledge and information approach based on Ranganatan's rules, as follows:
1) Web resources are for use.
2) Each user has/his own web resource.
3) Each web resource has its own user.
4) Save the users' time.
5) The web is an active and dynamic organism.

Therefore, regardless of the emergence of novel communication and information technologies, the old rules of library science are still in use. However, the new

communicational aforementioned characteristics such as interactivity, demassification, hypertexuality, and asynchroneity, and the gradual transformation of human societies to information societies has complicated the process of understanding users.

Following Dervin and Nilan's (1986) study on information seeking behavior, the user-oriented paradigm evolved in knowledge and information science. In this paradigm, the in-depth understanding of the user with the help of a comprehensive methodology is emphasized. Dervin and Nilan (1986) encouraged the use of social science theories in studying information seeking behavior and stated that conceptual frameworks of information seeking theories need to be enhanced. Their approach was focused on an active and constructive user and his/her subjective information and experience and they emphasized on performing qualitative research. Since then, cognitive studies for assessing informational needs and the user's use of information increased (Pettigrew, Fidel, and Bruce, 2001).

This period coincides with the time when cognitive schemas were considered important in describing the "gratification" component of UGT and therefore, links between these two seem justifiable. Moreover, in assessing the users' information seeking behavior, we can inter the cultural model present in the uses and gratification theory to gain more insight into this concept.

Current libraries extensively benefit from information and communication technology, especially the Internet. Most of them use social networks for informational purposes and providing certain services. Scientific social networks are also becoming more common and can be used for assessing the users' citation behavior. Meanwhile, android versions of library software are also developing.

In short, from text messages to Wikipedia, all are used in the field of knowledge and information science and considering the necessity and importance of the user's satisfaction in this field, they can be studied in relation to UGT. Thus, answers to the following questions are sought:

  - How do information systems change information seeking activities?
  - Is the user goal-oriented when selecting a database?
  - Why do users use or don't use the library's website?
  - Why do the users use or don't use a specific database?
  - Why do users benefit from wiki-libraries?
  - Why do users follow the library's page on social media such as Facebook and Twitter?
  - Are the users satisfied with scientific social media such as Mendeley and Research Gate?

In line with the uses and gratification theory, we can evaluate libraries and information centers, identify the most useful tools and informational sources according to the users' motivations and needs, and ultimately, with a better understanding, encourage them to return to information systems. According to UGT, gratifications can rebuild needs; and this theory can elucidate how this process occurs. Moreover, the effects of using modern informational centers can be studied in a social context.

According to the above mentioned model, Figure 4 shows the uses and gratification model of libraries in the modern context.
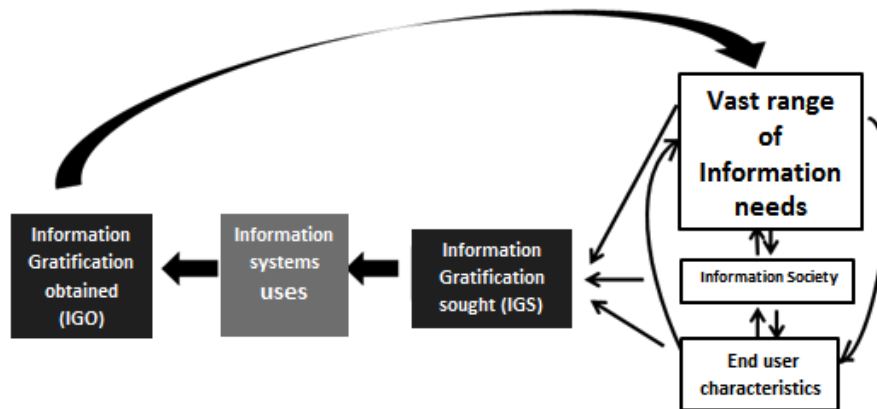
Figure 4: The uses and gratification model of libraries in the modern context

Interactive information retrieval and UGT

Interactive communication is one of the most important characteristics of information and communication technology, and is emphasized in modern models of UGT. The interaction between humans and computers is an interdisciplinary research field including fields such as information science, social informatics, information retrieval, etc. This research field opts to assess any interaction between humans and information and informational resources in order to design optimal information systems. This field has three basic principles namely design, implementation, and evaluation based on which the mental model of the user (or conceptual model) is created. The term mental model has been derived from psychology and in human-computer interaction it sows the user's concept of the system he is interacting with. The effective factors on designing the model include personal characteristics and environmental influences. Conceptual models have an important role in the user' information seeking behaviors, selecting resources, and how new characteristics of information retrieval systems are used (Mirzabeigi, 2013). These factors have a fundamental role in the uses and gratification approach. Therefore, the cognitive model adapted from psychology can be considered as the element linking these two fields.

Interactive approaches in designing information databases have created new scientific horizons for researchers designing user interfaces (Entezarian and Fattahi, 2010). With the uses and gratification theory we can realize how users use and are satisfied with user interfaces, and compare such environments and ultimately enhance and improve them.

Currently, the interactive approach is used in research on information retrieval and user's conceptual model for information retrieval is used commonly. Ingwersen (2010) states that not paying attention to both user-oriented and cognitive approaches in information retrieval is dangerous because the ultimate aim of research on information retrieval is currently maximizing retrieval performance through understanding the user's behavior and representing informational needs during retrieval, instead of refining techniques and text representation methods.

When interacting with an information retrieval system, the user is satisfied when he/she is able to retrieve the relevant document. In fact, the interactive approach in which relevance feedback is highly important is used to increase the effectiveness of the system. So that with

an interactive user interface besides the user's query, his/her judgment is also recorded and is used in future retrievals for query expansion and automatic retrieval enhancement. Since one document could be considered relevant by one user and irrelevant by another, the uses and gratification approach could be useful for finding the reason for which the document is considered relevant or not. Therefore, in this approach we can also incorporate "relevance gratification" and measure its degree (Figure 5).

On the other hand, personalizing the information system and benefiting from recommendation systems is gaining increasing attention in interactive information retrieval. A recommendation system categorizes information items of an information system that are close to the users' interests so that items with a higher rank are recommended when wanted. In other words, these systems recommend new items considering the previous personal interests of the user through analyzing the user's behavior. In general, the aim of this system is to provide novelty, accuracy and coverage in recommended search items. Considering the high volume of information and selection difficulty, this system has several applications. Recommended items vary from books to films, websites, etc. For instance, they are used in search engines in order to facilitate the user's selection and rapid search, or in digital libraries for finding books and articles (Abaspoursani, 2010). Correct recommendations save the users' time and prevent unnecessary searching.

Information retrieval systems have active users. Therefore, UGT can be used to better understand users' motifs and needs and create optimal user profiles. In other words, in information retrieval, based on the uses and gratification model, needs and motifs are identified based on user characteristics and saved along with their relevance gratification and used in the information retrieval process (Figure 5).
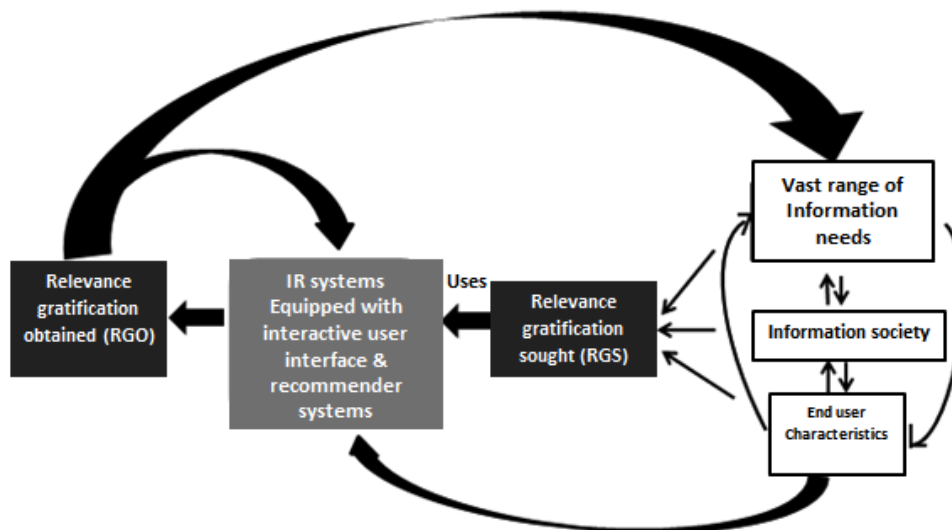

Figure 5: The uses and gratification model of interactive information retrieval systems

Conclusion

Books, libraries, and their novel forms are considered as media. The most important role of any media is to fulfill the needs of the audience. The more they meet these needs, the more

satisfied the users are. Identifying the users' needs and level of satisfaction from library services has always been important in knowledge and information science and its theoretical foundations can be improved using the uses and gratification approach, which is an important theory in mass communication.

Using this theory we can identify active and passive users based on their degree of activity in relation to the types of information and also personalize information retrieval systems for them. In this regard, it is important for researchers to pay attention to the methodology with which research should be carried out. Researcher should benefit from the qualitative, experimental, and mixed methods research designs or use neural network and fuzzy approaches to create and test ultimate user models and assess personal and cultural outcomes.

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