# EXAMINING LEVELS AND COMPLEXITY OF MANAGEMENT THEORIES AND SCHOOLS OF THOUGHT

**SAEED BAGHERSALIMI**

Department of Public Administration, Rasht Branch, Islamic Azad University, Rasht, Iran
E-mail: baghersalimi@iaurasht.ac.ir

**Abstract-** In this paper, we discusses about concept of “level" in organization and management theories. Then, introducing a framework for classification theory levels and argues that data measurement levels and their analysis should be fit with theory level. Next, survey the concept of "complexity level" in theory and with describing a framework for the concept, at first classifies the complexity levels of theories and then by applying some valid theoretical frameworks classifies the complexity levels of management schools of thought. Finally, we present the multilevel and metaparadigmatic theories and their advantages.

**Keywords**- Theory, Theory Level, Theory Complexity, Metaparadigm

## I. INTRODUCTION

Levels discussion is a main subject in behavioral and organizational sciences. These discussions about the "level of analysis" has been widely disputed in many areas of the organizational literature that what is the appropriate level of analysis, especially statistical analysis; questions such as: how analyze multilevel data and how to analyze the data according to the level of theory. Also, there are disputes about the level of data collection or measurement of levels. Do we collect individual data? Or group data? Or data relating to one or more organization? But, about level of a theory the discussion is very rare.

Is a theory primarily used for research (that may used the different constructs such as technology, effeciency, etc.) is more relevant to individuals, groups or organizations? Mean that, the relevant theory explain the individual, group or organizational differences (or similarities)? (Klein, Dansereau & Hall., 1994). This is a discussion that will be paid in this paper.

The complexity level of a theory is a next point that survey in a theory levels. Basically, the complexity is one of the topics that discussed since the late 1980s and its peak is related to the "complexity theory" or chaos (Rosenhead, 1998). One of the other theories that introduce the complexity level is Boulding theory which suggests system of pyramid include nine systems and when we going into the higher level, systems become more complex.

But there are debates about the complexities of theories. What is the complex theory? What is the simple theory? And why the complexity of theories is important? The second issue that we will paid it in this paper is the complexity of management schools of thoughts, that is not addressed in past.

## II. LEVELS IN ORGANIZATIONAL THEORIES

For start to discuss it is necessary note that the organizations are naturally multilevel. Peoples work in categories, groups and organizational teams. Groups are working closely with their professional peer groups in organizations and other groups and organizational teams. Even these groups may be associated with other organizations or social groups at other levels. In higher-level, organizations related with other organizations within and outside the industry. Fortheremore, the debate about the level there is in any theories and research organizations.

Each theory has one or more construct by itself (such as productivity, organizational climate) and each of these constructs are related to one or more organizational level (e.g. individuals, groups, organizations, industries, markets) are related. Thus, the levels should be considered for the study of organizational phenomena.

For better discussion about the level we're divided into three parts: theory levels, data collection levels or measuring, and analysis levels. Theory levels refers to the description of a population (such as individual, group, etc.) that theoretician or researcher who wants to explain and describe it.

Measuring level indicate that the actual source of data or unit that data directly comes from it. For example, we can say that data from individual reports are the individual-level. Or group size and group number of members are group-level data. Statistical analysis level refers to the behavior of the data during the analysis. For example, if the level of measure was individual, but in data analysis individual scores has been in different groups and were grouped, the Statistical analysis level will be group level (Kelin et al., 1994).

As noted above, the problems of levels will show when the levels of theory, measure and statistical analysis are different. The important point here is that the level of data collection and analysis should be adjusted according to the theoretical level, because, in otherwise the results may reflect the level of measurement or analysis not theory level. This is is very important especially in empirical research and during a theory test.

Since the purpose of this paper is survey the discussion related to theory level (especially the level of their complexity), because of this, we do not regard the survey of the level of measurement and analysis, and at first will focus on discussion of theories levels. Then, discuss the complexity and complexity levels and we will provide a framework for it and at the end of this section we will expansion this framework for management schools of thoughts. In result section we will be discussed about multilevel theories, metaparadigm and its benefits. In any case, it's important to be entrusted that the cooridnation of levels of theory, measurement and analysis has a great importance in management and organizational research.

## III. THEORY LEVEL

The first step in examining issues related to the level is recognition the level of a theory. The level of a theory defines the features of theory constructs and the relationships between them. In determining the level of a theory we can denoted that whether the constructs on a theory are homogeneous, independent or heterogeneous? In the other words, determined that whether the relations between constructs are function of differences between groups, between individual differences, or differences within a group? If not specified the answer of these questions, the theories remain inaccurate and have different dispute and and interpretations. Here, it is necessary that we explain homogeneous, heterogeneous and independent.

When the group is a theory level, this means that the group members from construct perspective in theory are equal, so that groups can be considered as a whole integrated unit (Klein et al., 1994). The purpose of be equal of members in terms of a theoretical construct is homogeneous values in group members in terms of that construct. So, group is homogeneous in terms of the construct.

If the theory level is an independent person, each member of the group in terms of the construct is independent. Therfore, the value of a construct for an independent member is different for other members of the group .So, each person has their own value about studied construct and construct conceptualized in individual level (in fact an independent person).

It should be noted that morever the persons, many other organizational phenomena can be considered independently (Klein et al., 1994).

Some of the theories are neither personal nor collective, but study individuals in those groups. These theories focus on the differences between individual characteristics and the mean of groups scores on the constructs.

These theories have two distinct features. First, the effects of one independent variable (X) on a dependent variable (Y) depend on the studied context. For example, the peoples scores in Y does not depend on their X-rated, but also depends on other people X-rated. Thus, the value of a X may be to create different Y values in different contexts. The second characteristic is that they are contained a comparative process.

Means that, the people of a certain aspect have some advantage of their group and their rank from other directions may be different. It depends on the investigated construct (Kelin et al., 1994)

With an example can be identified the difference between these three assumptions. This example will show how a specific construct can depending on the nature of the theory conceptualized as homogeneous, heterogeneous or independent. Suppose that a researcher wants to investigate the relationship between participation and performance. He could define the participation as share of group members in decision making, and then examine its relationship with group performance. Or could be willing to participate in the decision making as an individual feature. Thus, individual performance is independent of the effect of group and the individual differences will determine the level of participation and performance.

Finally, s/he can assume that participation and performance are heterogeneous: if individual performance is better in compared to his colleagues, probably will have greater participation in decision making.

So far, we discuss about the theory level in organizational research, determined the levels of data collection and analysis levels. And noted that the construct or constructs in theory may study people independently or in groups or study group.

Now, we describe another aspect of the theory levels, i.e. theory complexity levels. Complexity is an important discussion because of the most organizational phenomena complex have chaotic and complex behavior. And the researcheres believed that to explain the complex phenomena we should used complex theories. One of the best examples to illustrate the complexity and multifaceted nature of organizations is Morgan's metaphors. Morgan's metaphors with using the multiple and diverse metaphor as well as showing the multilevel and multifaceted of organizations. If theories include the more organizations phases can full and better describe and explain of organization. So, the need to more complex theories is felt. In the next section we more explain complicated theories.

## IV. LEVELS OF COMPLEXITY THEORIES

What are the features of a good theory? Due attention to the previous paragraphs, ever more complex theories are better or stronger? There are several frameworks to evaluate the strength of a theory.

One of them, indicate that theory making has three processes:

1. Induction: data generalization.
2. Deduction: test of theory hypotheses.
3. Inspiration: that is the result of creativity and insight. Inspire may be stimulated by empirical research, study, accumulate experience and mentally training, but their roots are often undetectable (Langly, 1999).

Theory-building process is a scientist's mental trip amont the world events view and virtual concepts of theory (Folger and Turillo, 1999). S/he continuously and simultaneously trip to the deductive and inductive approaches to trip and in this process inspire will help and guide him/her.

One of the other frameworks argues that each theory must be strong in the three following characteristics:

1. Novelty: the new theory should be mportant, fresh, different and unique aspects in compared with previous theoretical frameworks in the field of research.
2. Continuity: the theory must also have related conceptual frameworks for researchers.

The new theories and schools of thoughts must maintain a balance between teses two properties. It may be just new enough to excite the interest and yet not too far from current concepts. Postmodernism is one of the examples of this imbalance. Postmodernism is a new approach in the organization and organizational theory, but many of its claims do not match with the mentality of Western theorists (especially Americans), claims like the nativist against populist and claims that there is not "absolute truth".

1) scope: if the scope of phenomena that study by a theory or a school of thought is more, the growth and expand of it is more possible.

Forthermore, some researchers believe that if the ambiguity in the used terminology is more (will be create more than one interpretation), the willingness of researchers to empirically test the theory would be more. Theoretical and experimental confirmation is one of the factors in turn increase the attractiveness of the theory. (McKinley, Mone & Moon, 1999) However, in many cases, usually emphasized to avoid from lexical ambiguity.

Tradeoff approach is one of the most interesting frameworks. Based on this approach each theory should be appropriate balance between accuracy, generalization and simplicity. But the fact that we never have a general, simple and accuratel theory and always we will have conflict between two of these criteria with the third criterion. From Weick perspective, who has developed this approach, the simplicity or complexity is a major problem. Although, if the theory is easier the understand of it for researchers is easier and the using of it in further researches is more, but for increasing the generalization and accuracy, the complexity of theory necessarily should be increase.

The theories of complex social behavior that can be valid only where organized the complexities of social behavior. But social behavior can not be more organized in certain level (depending on location). For describe the organization can create the complex theories, but the ethical issues, realities of research, empirically testable of theories and its application limit them (Weick, 1999). There are conflicts that which criteria are important. Morris and Pentland believe that complex organizations need more sophisticated theory and the testable character is important in the second stage (Weick, 1999).

This view is almost the dominant view, because can say that mind for the analysis the theories is sufficiently complex and flexible. However, in the final analysis should be stated that in the evaluation of theories the proper balance between these three criteria is the most important criteria, and talk about complexity and simplicity can not be absolutely constant. Now, for more closely examine we introduced the levels of theories complexity and framework schools of thoughts.

## V. FRAMEWORK FOR DETERMINING THE LEVELS OF THEORY COMPLEXITY

A framework for classification the extent of complexity of management theories provide from the work of Ofori- Dankwa and Julian. They believe in any theory there are a concept or set of basic concepts that theorists use it to describe, predict or explain a particular organizational phenomenon (a construct) (Ofori- Dankwa and Julian, 2001).

From a point of view theory contains two components: what theoreticians want to explain and the tools of theoreticians for describe. Main concepts are the tools for describing a phenomenon. Quinn and Rohrbaugh in the competitive values theory described the effectiveness. The main concepts that predict the organizational and management effectiveness are including: flexibility, control, internal focus and external focus. Also, the organizational life cycle model is about organizational change and using for explain the concepts of birth, youth, adulthood and aging.

Now, for the two main concepts of a theory we will consider two dimensions.

1. **Homogeneity degree**: the number of main concepts. The question here is whether the theory used only the one main concept or a set of main concepts to describe and predict the organizatinal phenomena (constructs). In the above example, the theory of competitive values using and

explain effectiveness by four main concepts that act simultaneously and therefore the degree of homogeneity is low. Although the organizational life cycle model has four main concepts, but at any point only one of them can be exist (i.e. at any stage the organizatin be on the birth or growth, or .... and thus has a high degree of homogeneity).

2. **Change degree**: the extent of constant or flexible of key concepts in the theory. The question here is how we built a mechanism into the theory that can predicted changes for main concepts. Thus, the Change degree refers to variability of main concepts (Ofori- Dankwa and Julian, 2001).

The change degree of competive values theory is low, because has not considered the discussion changing of his major concepts. In this theory, organization in the static case is consistent with one of the four models and there is no explanation to explain of how organizations change and their move from one pattern to another pattern. But the organizational life cycle theory can be considered as having a high degree of change, because it explains why a concept changes to other. That's one organization how change cycle life e.g. from the growth stage to young stage, from youth to adulthood to old age (three particular changes).

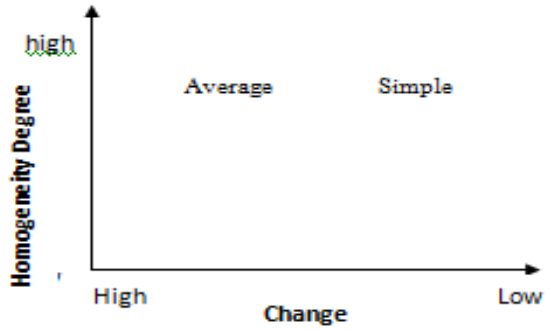



**Fig. 1) Framework for evaluation of theory complexity level**

These two dimensions set out in figure 1 as one framework. Range from the simple to the very high indicate the complexity level of management theory. If theories has higher degree of change and lower degree of homogeneity are more complex. "Chaos" Theory is one of the theories that have been in this situation. This theory assumes that any number of factors of a phenomenon influence and associated with each other and they are constantly changing in different directions. If we accept that each schools of thought is composed of a series of theories and ideas, we can be generalized this framework to determine the level of complexity management schools of thoughts.

Therefore, we used two prestigious framework for classification of management schools of thoughts and then compared them with this framework. These frameworks includes Queen et al (2010) and Richard Scott (1998) frameworks. It is necessary to be noted that in the future studies can use the other frameworks such as the classification of Roberts, Rousseau & Hulin (1978), can be integrated with frameworks of the evaluation of complexity level and then achieved to the valuable results.

## VI. COMPLEXITY OF MANAGEMENT SCHOOLS OF THOUGHTS

Queen and his colleagues for investigate the various management schools of thoughts considered two dimensions: flexibility and control; and internal and external environment. The extent of flexibility and control refers to the freedom and flexibility lead to creativity and devolution. Internal environment indicate the moving towards maintaining the current system and external environment means the moving to competition with other organizations. Queen et al (2010) based on these dimensions create a framework that provides four schools of thoughts (Fig. 2).

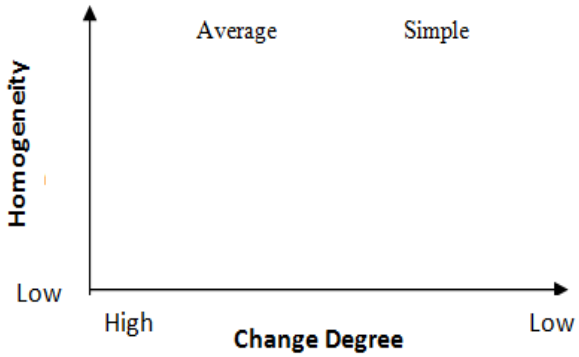



**Fig. 2) Queen et al theoretical framework**

By comparing the considered dimensions for determining the level of theory complexity with the Queen et al (2010) theoretical framework we can found interesting similarities. Results appears that there is a relationship between environment and homogeneity degree. If different schools of thoughts have more attention to the external environment will deal with a larger number of environmental variables (specific or general environment, i.e. customers, suppliers, political environment, social environment, etc.).

Indeed, they involve more concepts. Once only internal issues have been considered the number of variables and concepts that must be evaluated, will be less. Also, conceivable that there is a relationship between change degree and the degree of centralization and control. If different schools of thoughts have more control in organization , the employeers do not allow to will make change in the organization. If delegate more authority to organizational individuals or units, it causes the power transmitted to lower individuals and lower units and they have the authority to do more changes.

Now, accordance with figure 3 can combined the above frameworks. The range from simple to very high indicates the complexity of management schools of thoughts.

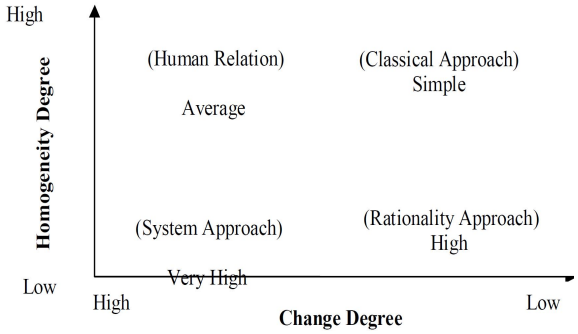



**Fig. 3) complexity Level of management schools of thoughts based on Queen et al framework**

In this section, we consider the framework of Richard Scott. He believed that there is two criteria for the classification of schools of thoughts. Based on first criterion, organization and management theories are divided into open and closed systems. And accordance the second criterion, organization and management theories can focus on two types of rational behavior and human social behavior. The summary of this category listed in figure 4.

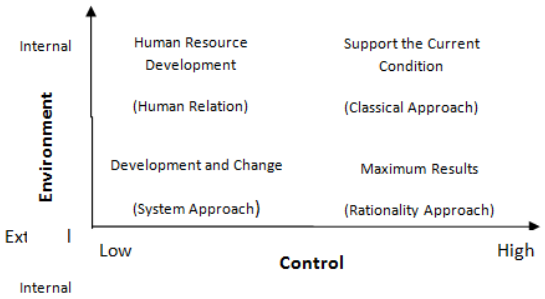



**Fig. 4) Scott theoretical framework**

By help of study the first criterion we found similarities between it and the homogeneity degree. Closed system does not relation with its external environment, and, of course, it can not gathering data and does not outputs to the environment. This obstruction and failure to communicate with environmental variables will reduce the number of effective factors and variables, while open systems due attention to interaction with the environment can interchange with many variables and factors and therefore, its homogeneity degree with the environment is low. In this situation system is versatile and has more variables.

With evaluate the second criterion we noticed to the similarities between it and the change degree. If schools of thoughts emphasis to have the rational behavior by prescriptive or descriptive model (the behaviors in organization must be reasonable or it is normally that behaviors in organizations is rational) behavior must somehow be controlled and expected that to be reasonable. Here, the emphasis is on the same or similar behaviors, and permits a little to change the behavior.

If the change of behavior and its amplitude is lower, the behaviors are better under control and seems more rational. In the other hand, with the emphasis on the social nature of human behavior (prescriptive or descriptive) the behavior to be mean in interaction with various actors within and outside the organization. According to this view, the behaviors are very complex and may be have various aspects of political, social, institutional and psychological. Thus, to understand the meanings of individual behavior the person should be examined from this aspect. So, here is a great emphasis on diversity and multi-modal behavior and variable behavior are both natural and necessary thing, and permitted.

As a result, we can implemente the framework complexity with Scott framework (Fig. 5). As seen in figure 5 by moving the current time, theories complexity are more. This is probably due to the changes in today's environment and become more complex contemporary organizations and consequently more management theories complexity to reflect these changing and turbulent environment.

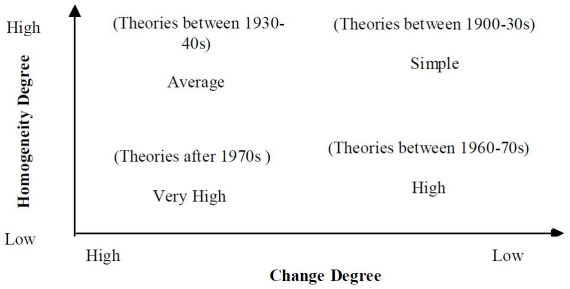



**Fig. 5) complexity Level of management schools of thoughts based on Scott framework**

## SUMMARY AND CONCLUSIONS

In this paper, new headlines was discussed about the "levels" of management theories and schools of thoughts. It was clear that the level issue related to the theory that used in researches and the theory level do not determine, data collection and analysis would be meaningless. Then, the complexity level raised as a dimension of level and by peresnet the framework we discussed the management theories and schools of thoughts complexity levels. It was assumed that the management theories and schools of thoughts was a single level.

Now, we want to do away and consider the benefits of multi-level theories. Basically, considered to the other levels of analysis lead to many theoretical advances in science (Yammarino, Dionne, Chun & Dansereau, 2005). Multi-level theory can help to understanding the organizational complexity (Weick, 1999). Klein, Tosi & Cannella (1999) described: multi-level theories are bridge between different levels of behavior and organizational performance and typically fail to describe the combination of individuals, teams, businesses, companies and industries. Therefore, multilevel theories can remove the gap between micro and macro levels and can integrated the focus of individuals and groups with

focus on organizations, the environment and strategy (Klein et al, 1999).

This multi-level process makes achieved more systematic insight of the phenomenon. Also, the gaps filled by combination and synergy and established the connection between construct that previously were unrelated. Multi-level theories evaluated the effect of higher or lower levels on studied level and do not believe that structuers are equal (Upton, 2006).

Of course, there are obstacles for building multi-level theory (in fact it is more complex). For example, determine the appropriate range for this theory, if not too simple nor too complex to be tricky. Also, in order to testing these theories collecting data from different people in different units and organizations is essential, and this work is complex and challenging. Main challenge is the record and explain the complexity that occurs at different levels.

People in organizations work in pairs or in groups and teams and there are a relationship between these organizations and other organizations within and outside the industry. Because of this, levels in theory and organizational research have a main role and any construct is meaningful when level is peresent. So, must be move to the more complex and multi-level theory, because they offer better picture of the real world.

Theory making will be upgraded by the exact description of the theory level and related assumptions to homogeneity, dependence and heterogeneity.

Morgson and Hoffman (1999) defending of collective constructs and shows examples in the multilevel theories in many fields. Some examples from different fields includes:

Innovation (McAdam, 2005; Mumford and Hunter, 2005); knowledge management and organizational learning (Hannah and Lester, 2009; Beesley, 2004); leadership (Palanski and Yammarino, 2009; Yammarino and Dansereau, 2008; Hogue and Lord, 2007; Waldman and Yammarino,1999; Hunt and Ropo, 1995); performance and performance appraisal (Coovert and Burke, 2007; Stagl , Salas, Rosen, Priest, Burke, Goodwin & Johnston, 2007; DeNisi, 2000); justice (Rupp, Bashshur & Liao, 2007; Liao and Rupp, 2005; Simons and Roberson, 2003; Mossholder, Bennett & Martin, 1998); strategic management (Drnevich and Shanley, 2005; Mac Key and Barney, 2005); team work (McComb, 2007; Cannella et al, 2005). Next, we illustrate some exapmles.

**Justice:** justice is a subject at the individual level and means the employees perception form fair behavior (Colquitt & Shaw, 2005). In the late nineties decade the researchers introduced the justice atmosphere, for example Mossholder et al argued that justice may be perceived in the aggregate and in general in the group. Specifically, procedural justice in the unit level and impcat on the individual's perception of justice. Also, Simons and Roberson (2003) and Liao and Rupp (2000) extended justice theory to the organizational level. Rupp et al. (2007) based on the multilevel framework findings have presented a theory of justice that takes four levels for Justice (Rupp et al., 2007).

**Employees selection:** As Schneider, Smith, & Sipe (2000) have mentioned in the selection of personnel psychology the determining factor is employees' individual differences as individual performance. In this view, individual performance interpretation as organizational performance. But, now the selection psychology science concluded that because of the absence of multilevel constructs in theoris that can link different levels with each other's, this field is in danger of marginalization. For this reseason, researchers such as Schneider et al. (2000); Ployhart and Schneier (2000) have presented a multilevel model in which can be established the relationship between individual differences, individual performance, organizational differences and organizational performance.

**Leadership:** in multi-level context leadership is a key subject but in this field has been made little progress. One study has shown that the majority of empirical research on leadership for implicitly assume that leadership is based on individual differences and leader consider as the unit of analysis. In fact, only %9 of all empirical research in 1995-2005 have mentioned the level of analysis, exactly (Yammarino et al, 2005). Thus, these studies focused on the features, functions and behaviors and followers indicidual perceptions and they do not attention to the interactions of leader - follower and context of these interactions. But leadership is a complex phenomenon that requires a higher complexity level.

With using the different levels in the building of a theory we can inter the different paradigms. Thus, managers can overcome the limited rationality and attention to conflicting views in a metaparadigm. The abstraction level of this metaparadigm is high. Surely, the combination of different paradigms in a paradigm is not synthetic but meaning the understanding of differences, similarities and relation between different paradigms (Lewis and Grimes, 1999). "Metatriangulation" is in this regard. We can using the theory of Metatriangulation for create the multiple paradigms. This concept is comparable with the traditional concept of pluralism, which almost caused a paradigm. Therefore, this approach by using the theoretical perspectives and different understanding can be a good alternative to study the complex organizational phenomenon (Lewis and Grimes, 1999).

## REFERENCES

[1] Beesley, L. (2004). Multi-level complexity in the management of knowledge management. *Journal of knowledge Management*, 8(3): 71-88.

[2] Cannella, A.A. & Holcomb, T.R. (2005). A multi-level analysis of the upper-echelons model. In: Dansereau, F. & Yammarino, F.J. (eds), Multi-*level Issues in Strategy and Methods*, Oxford: JAI Press, 197-238
[3] Colquitt, J.A. & Shaw, J.C. (2005). How should organizational justice be measured?. In: Greenberg J and Colquitt J (Eds), *Handbook of Organizational Justice*, NJ: Lawrence Erlbaum Associates, 113–152
[4] Coovert, M.D. & Burke, J.L. (2007). T-MOP: A tetrahedral model of performance. In: Dansereau, F. & Yammarino, F.J. (eds), *Multi-level Issues in Organizations and Time*, Oxford: JAI Press, 65-82
[5] Denisi, A.S. (2000). Performance appraisal and performance management: A multilevel analysis. In: Klein, K.J. & Kozlowski, S.W.J. (Eds.), *Multi-level Theory, Research, and Methods in Organizations: Foundations, Extensions, and New Directions*, San Francisco: Jossey-Bass, 121-156
[6] Drnevich, P. & Shanley, M. (2005). Multi-level issues for strategic management research: Implications for creating value and competitive advantage. In: Dansereau, F. & Yammarino, F.J. (eds*), Multi-level Issues in Strategy and Methods*, Oxford: JAI Press, 117-162
[7] Folger, R. & Turillo, C.J. (1999). Theorizing as the thickness of thin abstraction. *Academy of Management Review*, 24(4): 742-758
[8] Hannah, S.T. & Lester, P.B. (2009). A multilevel approach to building and leading learning organizations, *The Leadership Quarterly*, 20(1): 34–48.
[9] Hogue, M. & Lord, R.G. (2007). A multilevel, complexity theory approach to understanding gender bias in leadership. *The Leadership Quarterly*, 18(4): 370–390.
[10] Hunt, J.G. & Ropo, A. (1995). Multi-level leadership: Grounded theory and mainstream theory applied to the case of General Motors. *Leadership Quarterly*, 6(3): 379-412.
[11] Klein, K.J., Dansereau, F. & Hall, R.J. (1994). Level issues in theory development, data collection and analysis. *Academy of Management Review*, 19(2): 195-229
[12] Klein, K.J., Tosi, H. & Cannella, A.A. (1999). Multilevel theory building: Benefits, barriers, and new developments. *Academy of Management Review*, 24(2): 243-248.
[13] Langly, A. (1999). Strategies for theorizing from process data. *Academy of Management Review*, 24(4): 114-123.
[14] Lewis, M.W. & Grimes, A.J. (1999). Metatriangulation: Building theory from multiple paradigms. *Academy of Management Review*, 24(4): 183-190.
[15] Liao, H. & Rupp, D.E. (2005). The impact of justice climate and justice orientation on work outcomes: A cross-level multifoci framework. *Journal of Applied Psychology*, 90(2): 242–256.
[16] MacKey, A. & Barney, J.B. (2005). Developing multi-level theory in strategic management; The case of managerial talent and competitive advantage. In: Dansereau, F. & Yammarino, F.J. (eds), *Multi-level Issues in Strategy and Methods*, Oxford: JAI Press, 163-176
[17] McAdam, R. (2005). A multi-level theory of innovation implementation: Normative evaluation, legitimisation and conflict. *European Journal of Innovation Management*, 8(3): 377-388.
[18] McComb, S.A. (2007). Mental model convergence: the shift from being an individual to being a team member. In: Dansereau, F. & Yammarino, F.J. (eds), *Multi-level Issues in Organizations and Time*, Oxford: JAI Press, 95-148
[19] McKinley, W., Mone, M.A. & Moon, G. (1999). Determinants and development of schools in organization theory. *Academy of Management Review*, 24(4): 231-238.
[20] Morgeson, F.P. & Hofmann, D.A. (1999). The structure and function of collective constructs: Implications for multilevel research and theory development. *Academy of Management Review*, 24(2): 249–265
[21] Mossholder, K.W., Bennett, N. & Martin, C.L. (1998). A multi-level analysis of procedural justice context, *Journal of Organizational Behavior*, 19(2): 131–141.
[22] Mumford, M.D. & Hunter, S.T. (2005). Innovation in organizations: A multi-level perspective on creativity. In: Dansereau, F. & Yammarino, F.J. (eds), *Multi-level Issues in Strategy and Methods*, Oxford: JAI Press, 11-74
[23] Ofori-Dankwa, J. & Julian, S.D. (2001). Complexifying organizational theory: illustrations using time research. *Academy of Management Review*, 26(3): 51-62.
[24] Palanski, M.E. & Yammarino, F.J. (2009). Integrity and leadership: A multi-level conceptual framework. *The Leadership Quarterly*, 20(3): 405–420.
[25] Ployhart, N. & Schneier, B. (2000). A multi-level perspective of personnel selection research and practice: Implication for selection system design, assessment, and construct validation. In: Dansereau, F. & Yammarino, F.J. (eds), *The Many Faces of Multi-level Issues*, Oxford: JAI Press, 95-140.
[26] Quinn, R.E., Faerman, S.R., Thompson, M.P., McGrath, M. R., & St. Clair, L. S. (2010). *Becoming a Master Manager: A Competing Values Approach*. NY: John Wiley & Sons
[27] Roberts, K.H. , Rousseau, D.M. & Hulin, C.L. (1978). *Developing an Interdisciplinary Science of Organizations*. San Francisco: Jossey-Bass
[28] Rosenhead, J. (1998). *Complexity theory and management practice*. available at: http://human-nature.com/science-as-culture/rosenhead.com
[29] Rupp, D.E., Bashshur M. & Liao, H. (2007). Jusice climate past, present and future: Models of structure and emergence. In: Dansereau, F. & Yammarino, F.J. (eds), *Multi-Level Issues in Organizations and Time*, Oxford: JAI Press, 357-396.
[30] Schneider, B., Smith, D.B. & Sipe, W.P. (2000). Personnel selection psychology: multilevel considerations. In: Klein, K.J. & Kozlowski, S.W.J. (eds), *Multilevel Theory, Research, and Methods in Organizations: Foundations, Extensions, and New Directions*, CA: Jossey-Bass, 91-120.
[31] Scott, R. (1998). *Organizations: rational, natural, and open systems*. NJ: Prentice-Hall
[32] Simons, T. & Roberson, Q. (2003). Why managers should care about fairness: The effects of aggregate justice perceptions on organizational outcomes. *Journal of Applied Psychology*, 88(3): 432–443.
[33] Stagl, K.C., Salas, E., Rosen, M.A., Priest, H.A., Burke, C.S., Goodwin, G.F. & Johnston, J.H. (2007). Distributed team performance: A multilevel review of distribution, demography, and decision making. In: Dansereau, F. & Yammarino, F.J. (eds), *Multi-level Issues in Organizations and Time*, Oxford: JAI Press, 11-58.
[34] Upton, M.G. (2006). Toward a multi-level theory of career development: Advanicing human resource development theory building. PhD Dissertation, Texas A & M University.
[35] Waldman, D.A. & Yammarino, F.J. (1999). CEO charismatic leadership: levels-of-management and levels-of-analysis effects. *Academy of Management Review*, 24(2): 266-285.
[36] Weick, K.E. (1999). Theory construction as disciplined reflexivity: Tradeoffs in the 90s. *Academy of Management Review*, 24(2): 138-151.
[37] Yammarino, F.J. & Dansereau, F. (2008). Multi-level nature of and multi-level approaches to leadership. *The Leadership Quarterly*, 19(2): 135–141.
[38] Yammarino, F.J., Dionne, S.D., Chun, J.U. & Dansereau, F. (2005). Leadership and levels of analysis: A state-of-the-science review. *The Leadership Quarterly*, 16(6): 879–919.

★★★