

# Testing a Formal Theory of Images of Stratification: A Proposal for a Research Design

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The objective of this paper is to propose a design for empirical tests of Fararo and Kosaka's theory of images of stratification. The theory provides formal and axiomatic explanation of how popular perceptions of social structure emerge out of ordinary social interaction as its by-product, and the research design described in this paper makes use of the factorial survey technique, also called *vignette analysis* to test some consequences derived from that theory. Vignettes are descriptions of fictitious persons, but they can refer to other entities as well. A number of such vignettes are presented to respondents, whose task is to assess them in terms of a criterion indicated by a researcher.

**Key words:** Fararo-Kosaka theory • images of social stratification • location in a stratified system • scope conditions • vignette analysis

## INTRODUCTION

The objective of the present paper is to propose a research project aimed at empirical testing of a recent formal theory of images of social stratification (Fararo and Kosaka 2003). The images of social stratification and class structure have been investigated by sociologists for long, but most of this work has been empirical, designed to describe differences between images held by members of different societies or the same society at different times, or by various subgroups within the same society. This project, instead, is concerned with assessing a particular sociological theory of how images of social stratification are generated in the course of social interaction (hereafter, Fararo-Kosaka theory) and, consequently, it proposes a theory-driven framework for testing the theory's predictions. That the framework is theory-driven means that empirical procedures for collecting data

and the conditions under which the data are collected are designed by theoretical concepts and assumptions. In other words, in theory-driven research the choice of empirical operations and analytical tools is justified by theory. Therefore, before presenting the details of the empirical design I first describe the theory to be tested. Once its concepts, axioms, and predictions have been presented it will become clear what kind of data is needed for the theory to be tested thoroughly. Only then will I go on to discuss the particularities of the research design.

This project makes use of vignettes. Fararo-Kosaka theory is a theory about perceptions of social inequality and the vignettes have been developed specifically to study the structure of complex judgements, beliefs, and perceptions. For this technique to be usable in tests of Fararo-Kosaka theory, it must be appropriately tailored so that its application is consistent with how social interaction is modelled in that theory.

This paper is organised as follows. Below I present an overview of Fararo-Kosaka theory, discussing the theory's axioms and predictions derived from the axioms. The predictions are divided into three groups, the first one focusing on the image of social structure, the second on the problem of self-location in the stratified system, and the third one on the question of placing others in the stratified system. In the following section, some attempts to test Fararo-Kosaka theory empirically are briefly described, but main emphasis in this section is put on criticising the logic on which those tests were based. Generally, the problem with those tests is that they used inappropriate empirical evidence and, for this reason, their results are inconclusive as to whether or not Fararo-Kosaka theory is false. Finally, in the next section I outline a research design that can be used in empirical tests of Fararo-Kosaka theory. Because the design makes use of vignettes, I briefly describe vignette analysis as a research technique for studying judgements, but go on to focus on (i) applying the technique in the context of empirical tests of Fararo-Kosaka theory and (ii) describing the features that make data collected using this consistent with the theory's scope requirements. The paper concludes with a short discussion.

## **OVERVIEW OF FARARO-KOSAKA THEORY**

### **Axioms of Fararo-Kosaka theory**

The focus of Fararo-Kosaka theory is on social interaction in social systems that are stratified along various dimensions. More specifically, the theory explains how images of social stratification, held by members of such systems, are generated as a by-product of ordinary social interaction and under what conditions such images develop into a stable form.

The theory assumes that social actors are stratified along a number of salient dimensions and that the dimensions of stratification are themselves ordered in regard

to their importance. It is therefore possible to combine positions occupied by the actors in each such dimension to arrive at a single ordering of the members of the system. In Fararo-Kosaka theory, the ordering is defined using *the lexicographic rule* (Fararo 1970; Fararo and Kosaka 2003). According to that rule, if person  $p$  occupies a higher position than person  $o$  in the most socially significant dimension, then  $p$  is higher than  $o$  in the overall ordering, whatever positions they occupy in the remaining dimensions of stratification. In turn, if  $p$  and  $o$  are status-equals with respect to the first dimension, but  $o$  is higher along the second one, then  $o$  is also higher in the overall ordering of positions.

To illustrate, imagine there is a social system comprising three dimensions of stratification such that each of these dimensions has two internal ranks: high (H) and low (L). Let us also suppose that the dimensions are themselves ordered with respect to their significance. Then, by the lexicographic rule, there are eight positions in the system: HHH, HHL, HLH, HLL, LHH, LHL, LLH, LLL. If the dimensions are interpreted as power, wealth, and skills, respectively, then the system can be represented as HHH: the powerful, wealthy, and skilled; HHL: the powerful, wealthy, and unskilled; HLH: the powerful, poor, and skilled; HLL: the powerful, poor, and unskilled; LHH: the powerless, wealthy, and skilled; LHL: the powerless, wealthy, and unskilled; LLH: the powerless, poor, and skilled, and LLL: the powerless, poor, and unskilled. As one can see, a person who is powerful is always above the one who is powerless in the stratification system, even if the former is poor and unskilled and the latter is wealthy and skilled.

The structure of the theory is such that it is based on nine axioms, some of which are theory's 'postulates', assumed to be true, and some of which are theory's 'scope conditions', or statements which define a class of circumstances in which the theory is applicable (Cohen 1989; Foschi 1997; Walker and Cohen 1985). The first axiom of Fararo-Kosaka theory is the postulate of the lexicographic rule. In turn, the intuitive meaning behind Axiom 2 (*stability of the stratification system*) is that no additional dimensions of stratification, or lines of social division, emerge when the image-formation process is operating. Also, the number of ranks within these dimensions which are salient during the process is assumed to be fixed. Thus, if power, wealth, and skills are the only characteristics which are salient in a community and, as in the example above, each of them divides the community into two categories, or statuses, then Axiom 2 implies that those same characteristics and divisions exist over time. Note that Axiom 2 contributes to an implicit definition of the time domain of the image-formation process: in systems undergoing rapid change of the stratification structure, the time-domain has to be correspondingly small.

Axiom 3 (*fixed positions of actors*) limits the theory's explanatory scope to images of social structure held by actors who are socially immobile. This is not

to say that only such social systems in which there is not any social mobility fall within the scope of Fararo-Kosaka theory. Instead, this axiom says that, while a large proportion of members of a social system may move from one position to another, the theory can account for images held by those members of that system who remain at fixed positions for the duration of image-formation process.<sup>1</sup>

According to Axiom 4 (*stream of interactive events*), each episode of interaction is defined as involving a pair of actors and each actor is assumed to be an interactant in a subsequence of such episodes that is indefinitely extended in time. Including this axiom in the theory assures that the stream of interactive episodes is long enough for each member of the social system to be able to acquire a stable image of the system's stratification.

By Axiom 5 (*by-product assumption*), members of a social system are characterised by some image of the system's stratification, where the image is treated as a 'state variable', namely, an entity that exhibits change over time. Additionally, the axiom stipulates that *any* changes in the images of stratification held by social actors occur as unintended consequences of episodes of interaction defined by Axiom 4. Thus, Axiom 5 excludes the effects, if any, of such social institutions as mass media or ideology on the formation of the images. Again, the axiom is a simplification of the actual social process, but the idealisation is motivated by the recognition that, once the said effects are included in the theory, its generality would be significantly reduced by focusing on relatively modern social situations (Fararo and Kosaka 2003: 67).

In Axiom 6 (*initial-image state*), social actors are assumed to begin their interactions in their actual classes, so that each actor initially views the social system as undifferentiated, that is, comprising only his or her own class. Axiom 7 (*conditional-probability matrix*) is a scope condition which states that, in the course of social interaction, an incumbent of a given class position interacts with incumbents of all positions in the stratification system defined by Axiom 1. The intended interpretation of Axiom 7 is that, for any two classes, the two classes are not socially isolated from each other.

Two final axioms are crucial, because they specify what changes are possible in the images of stratification developed by social actors and how these changes occur. According to Axiom 8 (the process of information search), actors enter successive episodes of interaction with an implicit goal of locating the other person they interact with in the stratification system. Importantly, not all possible information as to the class location of the other is sought out, only that which is sufficient to making a distinction between self and other. The process of information search reflects the ordering of the dimensions in that actors start the search by comparing their position with that of the other along the first, most socially significant dimension, then move to the second most important dimension, and then to the

next one until all the dimensions are exhausted or a difference between self and other is identified. In the former case, the other is classified as belonging to the same class.

In regard to the hypothetical three-dimensional system mentioned above, suppose that an actor belonging to the HLL class encounters an other who occupies the same position. Searching for the status-relevant information regarding the other, the actor compares his or her position on the first dimension with that of the other and, as no difference can be identified with respect to this characteristic, he or she continues to do the searching along the second dimension, where no distinction can be drawn either, and the same happens in regard to the third dimension. Therefore, the other is classified as status-equal.

Suppose further that in the next interactive episode the actor encounters someone from the HHL class. Again, the process of information search is activated and, as no difference can be identified on the very first dimension of power, the actor goes on to compare him- or herself with the other in regard to the second dimension of wealth and finds the other to be located higher on that dimension. Consequently, the other is classified as HH.

Further, let us imagine that on still other occasion the actor interacts with someone from the LHH class. Upon activation, the information-search process is terminated already on the first dimension. By Axiom 8, the other is therefore classified as L. Note that if the other were from any of the classes LHH, LHL, LLH, or LLL, the same conclusion would be obtained.

Finally, Axiom 9 (*image-state transformation*) specifies how an actor's image at time  $t$  is transformed into that actor's image at time  $t+1$  as a result of the information search process. That is, once that process is completed in the given interactive episode, the actor obtains what is termed *the sampled part of the actual class location of the other*, denoted by  $cl(o)$ , where  $o$  stands for the other in the interactive episode. This concept of the sampled part pertains to the actor's perception of the other's class location at the point where the difference between self and the other has been found. For instance, in the three hypothetical encounters described above, the sampled part of the other's class location is given by HLL, HH, and L, respectively. According to Axiom 9, transition of the image from the state at time  $t$  to the state at time  $t+1$  is determined by the following rules:

- a. if  $cl(o)$  is represented in the image held by the actor, no change occurs,
- b. if  $cl(o)$  is above the highest class in the image, then  $cl(o)$  becomes the new highest class,
- c. if  $cl(o)$  is below the lowest class in the image, then  $cl(o)$  becomes the new lowest class,
- d. if  $cl(o)$  is between some pair of classes, then it is 'inserted' between them in the new image.

To sum up, the nine axioms listed above define what is referred to as ‘the elementary form of the image formation process’ (Fararo and Kosaka 2003: 67). As we have seen, some of these axioms are simplifications of the actual social processes. This approach stems from the following: on the one hand, the scientific approach focuses on building simple models of complex phenomena; on the other, it is often useful to begin investigating a process with the simplest model and then gradually move to increasingly more sophisticated formulations.

### **Predictions of Fararo-Kosaka theory**

The objective of this section is to investigate implications which follow from the nine axioms presented above. Instead of proving the theorems formally, however, I will rely on an illustrative application of the axiomatic basis to the hypothetical social system that was also used in the preceding discussion. Recall that members of the system are stratified along three socially significant dimensions: power, wealth, and skills, each of which divides the population into two statuses: high and low, and that power is more socially significant than wealth which, in turn, is more socially significant than skills. By Axiom 1, combination of the three bases of differentiation yields eight class locations: HHH, HHL, HLH, HLL, LHH, LHL, LLH, and LLL.

The predictions to be considered concern two major problems investigated by Fararo-Kosaka theory, that is, (i) the problem of ‘structural image’, or how are images of social stratification dependent on the actual stratification of the social system? (ii) the problem of ‘self-location’, or how is an actor’s perception of his or her own class position dependent on his or her image of social stratification. A third major area of interest – how are images of the distribution of actors over the positions in a social system generated and how are they related to the process of image formation (Fararo and Kosaka 2003) – is not dealt with in this paper. Instead, in a further section, I present a novel prediction concerning locating others in the social hierarchy.

### **The structural image**

In order to consider how images of stratification are generated in the social system of interest, I make use of ‘the focal actor technique’. That is, I let a member of class HLL be the focal actor, denoted by  $p$ , and show how  $p$ ’s perception of social stratification changes as an unintended consequence of social interaction. The choice of the focal actor is, of course, arbitrary and it only serves illustrative purposes.

By Axiom 6,  $p$ ’s initial image of social structure is given by [HLL].<sup>2</sup> Suppose now that the actor is involved in six successive encounters with members of classes

HLL, HHH, HLH, LHH, LHL, LLH, respectively. As regards the first encounter, searching for the status-relevant information regarding the other,  $p$  compares his or her position on the first dimension of power with that of the other, denoted by  $o$ , and, as no difference can be identified with respect to this characteristic, he or she continues to do the searching along the second dimension of wealth, where no distinction can be drawn either, so he or she goes on to search for the difference along the third dimension of skills, where  $p$  and  $o$  are identical as well. Therefore, the other is classified as status-equal and no revision is introduced into the image initially held by  $p$ .

In the next interactive event, the actor encounters someone from the HHH class. Again, the process of information search is activated and, as no difference can be identified on the very first dimension of power, the actor goes on to compare her- or himself with the other in regard to the second dimension of wealth and finds the other to be located higher on that dimension. Hence,  $cl(o)$  is given by HH in this encounter and, by Axiom 9,  $p$ 's image changes into [HH HLL].

In still another episode of interaction,  $p$  encounters a member of class HLH. As the person is equal to the focal actor in regard to the first two dimensions and higher than the focal actor in regard to the third dimension, the other comes to be classified as HLH and the focal actor's image changes to [HH HLH HLL]. Further, on the fourth occasion the actor interacts with someone from the LHH class. Upon activation, the information-search process is terminated already on the first dimension. By Axiom 8, the other is therefore classified as L and, by Axiom 9,  $p$ 's image transforms into [HH HLH HLL L]. Note that the process of information search will lead to the same output, that is,  $cl(o) = L$ , in the two remaining encounters. Consequently, the last two encounters will not introduce any changes in the image held by  $p$  and the image stabilises at [HH HLH HLL L].

More specifically, provided that the social system under analysis is stable (Axiom 2), that  $p$ 's location in the system remains fixed for the duration of the image-formation process (Axiom 3) and no social isolation (in the sense of Axiom 7) obtains in the system, then  $p$  will come to view the system's stratification as comprising four social classes: three classes of powerful persons who differ in the amount of wealth and skill they possess and an undifferentiated category of those who are powerless. Once  $p$  arrives at this image, no further interaction is likely to modify it, since from  $p$ 's point of view all classes in the system are already represented in the image. Therefore, such an image is termed 'stable' (Fararo and Kosaka 2003: 73-79).

What is more, the content of the stable image does not depend on the order in which the episodes of interactions occur. In other words, an image of the form [HH HLH HLL L] is predicted to emerge as  $p$ 's stable image regardless of the sequence in which members of the four classes distinguished in the social system under

analysis are encountered by  $p$ , provided that a member of each class is encountered at some point in the sequence of interactive events involving  $p$ . More generally, the image-generating process is of a Markov type and the stable image is an absorbing state of that process.

Thus, for the focal actor belonging to class HLL, the image [HH HLH HLL L] is the absorbing state of the image-formation process, because once the image is arrived at, it is reproduced with probability 1 in further episodes of interaction. Also, there are different paths leading to this absorbing state, where each such path is defined in terms of a sequence of probabilities of interaction with members of a particular class location. Therefore, the content of the absorbing state, or the stable image, is independent of particular path. Instead, all paths lead to that state and the sum over all paths is unity.<sup>3</sup>

**Table 1** Stable images for class positions in the hypothetical social system

Focal actor	Stable image
HHH	[HHH HHL HL L]
HHL	[HHH HHL HL L]
HLH	[HH HLH HLL L]
HLL	[HH HLH HLL L]
LHH	[H LHH LHL LL]
LHL	[H LHH LHL LL]
LLH	[H LH LLH LLL]
LLL	[H LH LLH LLL]

Using similar reasoning, one can derive stable images for all other class positions in the hypothetical social system. The images are shown in Table 1. As one can see, there are four types of stable images in the system: two higher-class perspectives in the form [HHH HHL HL L] and [HH HLH HLL L], respectively, and two lower-class perspectives in the form [H LHH LHL LL] and [H LH LLH LLL], respectively. Let us call the image developed by the members of the two top classes an *upper higher-class image* and the image developed by the members of classes 5 and 6 a *lower higher-class image*. Similarly, we will refer to the image developed by the members of the two bottom class as a *lower lower-class image* and to the image developed by the members of classes 3 and 4 as an *upper lower-class image*.

Let us now compare the contents of these images in terms of power, wealth, and skills as the three salient dimensions of stratification in the system under study. The higher-class perspectives are shown in Table 2 and the lower-class



**Table 2** Comparison of two higher class images of social structure

Upper higher-class image	Lower higher-class image
The powerful, wealthy, and skilled	The powerful and wealthy
The powerful, wealthy, and unskilled	The powerful, not wealthy, and skilled
The powerful but not wealthy	The powerful, not wealthy, and unskilled
The powerless	The powerless

**Table 3** Comparison of two lower-class images of social structure

Upper lower-class image	Lower lower-class image
The powerful	The powerful
The powerless, wealthy, and skilled	The powerless and wealthy
The powerless, wealthy, and unskilled	The powerless, not wealthy, and skilled
The powerless and not wealthy	The powerless, not wealthy, and unskilled

perspectives in Table 3. As one can see, the two higher-class images have one element in common, namely, the interpretation of the bottom of the social stratification as an undifferentiated category of the powerless. Similarly, the two lower-class images have one common element, that is, the top of social stratification is represented an undifferentiated category of the powerful. It would be interesting to investigate the implications, if any, of there being some common elements in the images of social stratification held by members of objectively distinct class locations – for instance, incumbents of higher class locations may come to share social identity and class identification as opposed to those who are perceived by them as simply ‘lower class’ – but this line of inquiry is left for future work.<sup>4</sup>

The stable images of social stratification have several interesting properties. First, they are *different at different class locations* in the stratification system. Second, they are reductions of the actual stratification, as the number of classes in the stable images, or ‘image-classes’, as Fararo and Kosaka call them, is smaller than the number of classes in the actual stratification. As we have seen, the number of image-classes in the stable images developed by members of the hypothetical community in the examples above was 4, while the number of class location in the system was 8. More generally, let  $c_i$  be the number of categories, or classes, along the  $i$ -th characteristic and  $s$  the number of socially significant characteristics in the system under study. Then, the number of image classes in the stable image,  $n$ , can be shown (Fararo and Kosaka 2003: 84) to be given by:

$$n = 1 + \sum_{i=1}^s (c_i - 1)$$

To illustrate, for  $s = 3$  and  $c_1 = c_2 = c_3 = 2$ , we have  $n = 4$ , as in the examples above.

Further, the images are *order-preserving reductions*: even though the number of image-classes is smaller, the classes which are ‘objectively’ higher are also seen as higher. More specifically, if class  $i$  is higher in the actual stratification than class  $j$ , then class  $i$  is also mapped into a higher position than class  $j$  in the stable images, or, at the very least, two classes which are actually different may be perceived as being equal to one another. In the examples above, we have seen that those who are powerful are always *seen* as occupying higher positions than those who are not powerful. However, those who are powerful are divided into four distinct class locations in the actual stratification, but, from the perspective of the lower-class actors, the four classes are indistinguishable.

Finally, the mapping from the actual stratification into the stable image always loses some information, due to how the information-search process is assumed to operate (see Axiom 8). In other words, precisely because the information as to the class location of the other is sought only to the point that a class distinction is made, some of the classes are merged together in the stable images to constitute one broad undifferentiated social class. For instance, in the stable image developed by the actor HLL, the two top classes, HHH and HHL, are represented as a single class of the powerful and wealthy (HH), and the four lowest class locations are all represented as the powerless. This conclusion is consistent with an empirical finding common to much research on perception of inequality, namely, that social actors make finer distinctions about classes close to their own than about classes that are more removed.

All these conclusions are summarised by Fararo and Kosaka (2003: 73) in what they term *stable-image theorem*:

### **Theorem 2.1**

*If all axioms 1 thru 9 are satisfied, then the actors develop stable images of the stratification system that have the following properties:*

1. *Each stable image depends upon the class location of the focal actor.*
2. *Each stable image is a homomorphism: an order preserving reduction of the actual system.*
3. *Each stable image makes finer class distinctions among nearby classes than among more remote class locations in the stratification system.*

### Self-location in the stratified system

An important property of the stable image is the actor's perception, or evaluation, of his or her own class position; this is the problem of 'self-location' or 'self-placement' in the stratified system (Fararo and Kosaka 2003, ch. 4). From the point of view of Fararo-Kosaka theory, the problem is secondary relative to the process leading to the stable image, and the stable image itself. This is the case because, in order to be able to make judgements regarding their own location in a system, social actors first have to acquire some perspective on how that system is stratified.

Fararo and Kosaka proposed a formula for deriving the focal actor's self-location in the stable image of the stratified system. Let  $\alpha$  denote the rank of the focal actor's class in that actor's stable image. Also, let  $r_i(p)$  be the focal actor's rank in the  $i$ -th dimension of social stratification. Thus, in our example of the three-dimensional social system, the focal actor HLL has  $r_1(p) = 2$ ,  $r_2(p) = 1$ , and  $r_3(p) = 1$ . Finally, we let  $s$  denote the number of socially significant dimensions. Then, Fararo and Kosaka (2003: 87) state the following result:

#### **Theorem 2.2**

*If all axioms 1 thru 9 are satisfied, the rank  $\alpha$  of the focal actor's class in that actor's stable image is invariant over all possible lexicographic orderings of the  $s$  dimensions of stratification and is given by:*

$$\alpha = \sum_{i=1}^s r_i(p) - (s-1)$$

To illustrate, let us consider our hypothetical three-dimensional social system. Thus,  $s = 3$  in this example. As noted above, the actor HLL has  $r_1(p) = 2$ ,  $r_2(p) = 1$ , and  $r_3(p) = 1$ , which, after substituting into (2) above, yields  $\alpha = 2$ . Suppose, however, that in another community power, wealth, and skills are also the only salient characteristics, but their ordering is different, such that wealth is most salient, followed by power and skills, respectively. In that community, the actor who is powerful, but not wealthy and unskilled (i.e. our focal actor in the examples above) is now represented by LHL and has  $r_1(p) = 1$ ,  $r_2(p) = 2$ , and  $r_3(p) = 1$ , which, after appropriate substitutions, yields, again,  $\alpha = 2$ . This illustrates the property of invariance referred to in Theorem 2.2.

An important consequence follows from that theorem (Fararo and Kosaka 2003: 89):

**Corollary 2.1**

*Any two actors whose ranks  $r_i$  have the same sum will self-locate themselves, in their respective images, in the same relative position.*

In order to see that consequence, let us once again consider our hypothetical three-dimensional system. In that system, some actors are predicted to have the same self-locations even though they actually occupy different class positions. For instance, according to Theorem 2.2, ‘the powerful, but not wealthy and unskilled’ (HLL) are objectively higher than ‘the powerless, not wealthy, but skilled’ (LLH), and yet both classes will come to view their position as second from the bottom. Recall, however, that ‘the bottoms’ are quite different from one another: in the former case, the bottom of the system is constituted by the undifferentiated category of the powerless, while in the latter case the bottom is seen as comprising only the powerless, not wealthy, and unskilled.

There is even more striking consequence of Theorem 2.2, as stated in the following corollary (Fararo and Kosaka, 2003: 91):

**Corollary 2.2**

*Reversal of the comparative positions in the actual class system and in the stable images can occur.*

In order to illustrate this statement, let us consider two actors: one is located in position HLL and the other in position LHH. In terms of position in the actual stratification, the former actor’s rank is 5, and the latter actor’s is 4 from the bottom, so actor HLL is higher in the actual stratification structure than actor LHH. However, by Theorem 2.2, actor HLL has  $\alpha = 2$ , while actor LHH has  $\alpha = 3$ . In other words, actor LHH views his or her own position as third from the bottom, and actor HLL views his or her own position as second from the bottom, even though in the actual stratification these actors’ positions stand in reversed relation.

**Placing others in the stratified system**

Let us now turn to applying Fararo-Kosaka theory to the study of how one perceives social positions of others in the stratified system. There are several reasons for this question to be investigated thoroughly. An important reason is that it can aid in understanding how social distances are perceived by members of the social system under study. To give an example, social surveys sometimes ask respondents to indicate where they think members of certain occupations, such as unskilled worker or doctor in a general practice, fit in the social stratification.<sup>5</sup> Provided that we are able to characterise both the respondents and the various occupations they are to place in the stratified system in terms of ranks along several dimensions, we

are then able to use the resources of Fararo-Kosaka theory to generate predictions as to the statuses assigned by the respondents to those occupations. In turn, these predictions can be compared with the subjects' actual responses in order to check if the predictions are accurate. What is more, such a test would be much more rigorous than if self-locations were predicted instead and compared with the actual ones. In order to see this, consider the following argument.

Suppose that we are interested in deciding between two theories, one of which is Fararo-Kosaka theory, and the other is a theory that shares most axioms with Fararo-Kosaka theory, but makes a different assumption regarding how social actors process status-relevant information. Namely, let us imagine that the other theory postulates social actors to be motivated by an implicit goal of reducing status inconsistency in their images of social stratification. Therefore, in searching for status-relevant information they focus on the largest possible subsets of ranks within which status-consistency exists.<sup>6</sup> To give an example, if an actor's position in the actual ordering is HHH, then the actor will be viewed as HHH, because the ranks he or she occupies in all the socially significant dimensions constitute the largest possible subset of consistent ranks. Similarly, if another actor belongs to class HHL, then he or she will be seen as HH, since the position he or she occupies in the third dimension is inconsistent with the remaining two and, by the axiom above, will be discounted. Finally, an actor whose position is HLL will come to be seen as LL, because in this case it is the actor's position along the first dimension which is inconsistent with his or her positions in the other dimensions.

As applied to our hypothetical three-dimensional system, the alternative information-search assumption predicts, like the original Fararo-Kosaka theory, that members of that system develop stable images of social stratification containing four image-classes. Unlike Fararo-Kosaka theory, however, the alternative theory predicts the stable images to be the same at each class location in the system and have the following form: [HHH HH LL LLL]. Further, the image does not preserve order – members of class LHH are represented in the image as HH, *above* those belonging to class HLL, who are represented as LL in the image, even though the latter are actually higher than the former in the objective ordering of class locations – and it merges together class locations that are objectively fairly distant from one another – classes HLL and LLH are merged together, for instance, and so are classes HHL and LHH.

Note, however, that in spite of all these differences between Fararo-Kosaka theory and its alternative, the two lead to exactly the same conclusion concerning self-location. This is shown in Table 4 which summarises predictions of the two theories as to the stable images and self-locations at each class location in the system under study. The conclusion, then, is that if the prediction concerning self-location were consistent with relevant data, one wouldn't be able to decide between

the two theories. Testing predictions regarding perception of the social positions of others, instead, would likely yield a result that would be discriminating.

**Table 4** Comparison of derivations from two theories (in columns 2 and 4 actors' self locations are given in bold)

Class location	Fararo-Kosaka theory		The alternative theory	
	Stable image	Self-location	Stable images	Self-location
HHH	[ <b>HHH</b> HHL HL L]	4	[ <b>HHH</b> HH LL LLL]	4
HHL	[HHH <b>HHL</b> HL L]	3	[HHH <b>HH</b> LL LLL]	3
HLH	[HH <b>HLH</b> HLL L]	3	[HHH <b>HH</b> LL LLL]	3
HLL	[HH HLH <b>HLL</b> L]	2	[HHH HH <b>LL</b> LLL]	2
LHH	[H <b>LHH</b> LHL LL]	3	[HHH <b>HH</b> LL LLL]	3
LHL	[H LHH <b>LHL</b> LL]	2	[HHH HH <b>LL</b> LLL]	2
LLH	[H LH <b>LLH</b> LLL]	2	[HHH HH <b>LL</b> LLL]	2
LLL	[H LH LLH <b>LLL</b> ]	1	[HHH HH LL <b>LLL</b> ]	1

Another reason for the interest in the problem of placing others in a stratified system is that when subjects are asked to locate others rather than themselves, their assessment is likely to be more impartial, because self-location may be coloured by self-interest. In other words, to the extent that a bias resulting from self-interest actually operates, it can introduce more or less serious distortions into subjects' evaluation of their own location. Arguably, these distortions are absent when the subjects make judgements concerning others' social positions rather than one's own.<sup>7</sup>

The latter observation suggests that Fararo-Kosaka theory shares many important features with the theory of comparison processes by Jasso (2006b). In both theories, there are two types of actors: on the one hand, *observers* who make judgements regarding either location in the social structure or justice issues and, on the other hand, *the observed*, or those whose situation is being assessed. When the observer and the observed are two different persons, then the judgement by the former is termed *nonreflexive*. When they are the same person, the judgement is termed *reflexive* (Jasso and Wegener 1997).

Also, in comparison theory a distinction is made between an expressed justice evaluation and an experienced, or 'true', justice evaluation. In studying perceptions of justice, it is important that the latter be captured correctly, because it is the true justice evaluation which carries valid information on what observers think is just (Jasso and Wegener 1997). Similarly, in Fararo-Kosaka theory a distinction can

be made between *an expressed status perception* and *an actual status perception*. Consequently, it is important that the actual status perception is measured adequately, as it is the actual status perception which carries valid information on how status information is actually processed by the observers. A rigorous approach to estimating the true justice evaluation has been developed within comparison theory (Jasso 2007), but Fararo-Kosaka theory has yet to develop a method for capturing the actual status perception. The present paper is only a first step in this direction.

Before presenting a theorem on how social actors locate others in the stratified system, let me introduce some additional notation. By  $\beta$  I will denote the actual class location. That is, the actual position of the focal actor  $p$  in the stratified system is written as  $\beta(p)$ , and the actual position of the other is written as  $\beta(o)$ . Also, I will modify the notation of the preceding section slightly, by writing  $\alpha(p)$  to denote the focal actor's self-location. More precisely,  $\alpha_p(p)$  means  $p$ 's location in  $p$ 's own stable image of social structure. Consequently,  $\alpha_p(o)$  means the other's position in  $p$ 's stable image.

The point of departure here is similar to that for the problem of self-location. Namely, locating an other in the stratified system amounts to locating him or her in one's own image of that system. Now, if the focal actor finds the difference between self and other in the  $g$ -th dimension of stratification, the rank the focal actor assigns to the other can be determined using the following theorem:

**Theorem 2.3**

*If all axioms 1 thru 9 are satisfied, the rank  $\alpha_p(o)$  of actor's  $o$  position in the stable image held by actor  $p$  is given by:*

$$\alpha_p(o) = \begin{cases} \alpha_p(p) + [r_g(o) - r_g(p)] + \sum_{h=g+1}^s [c_h - r_h(p)] & \text{if } \beta(p) < \beta(o) \\ \alpha_p(p) - [r_g(p) - r_g(o)] - \sum_{h=g+1}^s [r_h(p) - 1] & \text{if } \beta(p) > \beta(o) \end{cases}$$

where  $g$  denotes the rank order in the lexicographic ordering of the dimension in which the distinction between  $p$  and  $o$  is found.

The logic underlying the theorem is rather straightforward and can be explicated as follows. Because the difference between self and other is found only on the  $g$ -th dimension, it means they are status equals along all the dimensions preceding  $g$  in the lexicographic ordering. If the other is found to be located above (below) the focal actor along the  $g$ -th dimension, then the difference between their statuses along dimension  $g$  has to be added to (subtracted from)  $p$ 's self location. However,

this is not enough to determine  $o$ 's rank in  $p$ 's stable image of social stratification, because, by Axiom 1, if  $o$  is higher (lower) than  $p$  along dimension  $g$ ,  $o$  is also higher (lower) than actors who are higher (lower) than  $p$  along all dimensions following  $g$  in the lexicographic ordering. For each dimension  $h$  following  $g$ , there are  $[m - r_h(p)]$  classes above  $p$  and  $[r_h(p) - 1]$  classes below  $p$ , and these quantities must also be added to or subtracted from  $p$ 's self-location, respectively, in determining  $o$ 's location in  $p$ 's stable image.

To illustrate, if the focal actor belongs to class HLL and is involved in an encounter with a member of class HHL, then the process of information search is terminated on the second dimension where they differ by one position. Also, HHL are not only above HLL, but also above HLH who differ with HLL by one position along the third dimension. Therefore, in order to determine the other's position in the focal actor's image, one has to add two to the latter's self-location. In the previous discussion, HLL were shown to believe themselves to be located on the second position from the bottom. Consequently, it is predicted that they believe HHL to be located on the fourth position from the bottom, or first from the top. This prediction is consistent with the stable images shown in Table \ref{stable}, where HHL are represented as HH in the stable image held by HLL.

Also, the quantities  $\sum_{h=g+1}^s [c_h - r_h(p)]$  and  $\sum_{h=g+1}^s [r_h(p) - 1]$  in Theorem 2.3 are the greater, the more dimensions there are following  $g$  in the lexicographic ordering, which implies that the sooner the distinction between self and other is made, the greater is the subjectively felt distance between self and other.

It would be interesting to investigate substantive implications of this theorem, but this is left for future work. In this paper, my interest is in using this theorem for the purpose of designing a rigorous test of Fararo-Kosaka theory, which is described in a further section.

## ISSUES IN TESTING FARARO-KOSAKA THEORY

There have been several attempts to test Fararo-Kosaka theory empirically using data from general social surveys carried out on large probability samples of nation-wide populations. In their monograph, Fararo and Kosaka (2003, ch. 7) used data from a Japanese survey study on social stratification and mobility. They identified five salient dimensions of stratification – income, education, prestige of occupation, assets, and lifestyle – and within each of the dimensions five statuses were defined. Assigning respondents to relevant status categories in these five dimensions made prediction of the respondents' class identifications possible, using the axioms outlined in a previous section. The predictions were in turn compared with responses to a class-identification item that was included in the survey questionnaire. Finally, the familiar Goodman and Kruskal's  $\gamma$  was



used to measure the agreement between observation and prediction, even though what  $\gamma$  actually measures is *association* rather than *agreement* (Agresti, 2002, ch. 10). In any case, the strength of association between observed and predicted class identification turned out to be rather moderate, which challenged Fararo-Kosaka theory's ability to explain the data.

Karpinski (2005) also tried to test Fararo-Kosaka theory empirically, using data from Polish social surveys. His analysis made use of more complex statistical techniques than those used in Fararo and Kosaka's study in that he used log-linear models for matched pairs (Agresti 2002, ch. 10) to explore the structure of agreement between observed and predicted class identification. But the logic of Karpiński's (2005) study is similar to that of Fararo and Kosaka's and it is equally inconclusive. Hence, the results obtained in these analyses cannot be said to have falsified Fararo-Kosaka theory for a number of reasons. Let us now review them briefly.

First, because they are based on probability samples of a nation-wide population, social surveys are typically conducted in conditions that already exist in a society, conditions over which the investigator has no control, and these conditions are likely to depart substantially from those required by the theory. In other words, general social surveys are usually aimed at description of a particular society rather than testing a particular sociological theory. Consequently, much emphasis in designing social surveys is put on ensuring that the sample is representative of the society (in regard to relevant characteristics) rather than making sure that data be collected under conditions that fall into some theory's scope. Also, because general social surveys are typically based on a random sample of all adult members of a population their usability in empirical tests of Fararo-Kosaka theory is problematic, given that its scope is restricted to those persons who are immobile. To be sure, it is quite common for sociologists to control for mobility in social survey studies, it is important to recognise, however, that the operationalisation of mobility that is typical of most sociological studies of the topic is inconsistent with how the concept is treated in Fararo-Kosaka theory (For the treatment of social mobility in that theory, see Fararo and Kosaka 2003, ch. 6). Hence, general social survey data – such as those used by Fararo and Kosaka (2003, ch. 7) and by Karpinski (2005) in their analyses – do not meet the scope conditions of Fararo-Kosaka theory, and if empirical evidence doesn't meet the theory's scope conditions it cannot be used to evaluate the theory (Cohen 1989; Foschi 1997; Walker and Cohen 1985).

Second, in order to predict subjects' class identification using the axioms of Fararo-Kosaka theory, one needs two pieces of information: (i) the information on the characteristics which constitute the socially significant dimensions in the society under study, and (ii) the information on how the dimensions are internally stratified. Only then is a researcher able to reconstruct the society's lexicographic

ordering and apply the other axioms to it. The problem with the aforementioned tests of Fararo-Kosaka theory, however, is that their authors selected the dimensions, and defined the status categories within them, arbitrarily, without attempting to justify their choices in any way. Therefore, it is difficult to say if the failure to reproduce the data accurately enough is due to bad theory or unfounded decisions by the researchers.

Third, the previous tests of Fararo-Kosaka theory used class identification as the ‘dependent variable’. That is, these tests used responses to a class-identification question as a basis with which to compare predictions of Fararo-Kosaka theory. The choice seems reasonable, given that in chapter 4 of their monograph Fararo and Kosaka introduce another axiom which relates self-locations in the stable images to class identifications in a social survey (see footnote 4). However, it is important to recognise that using class identification as a dependent variable in empirical tests of Fararo-Kosaka theory amounts to testing for two processes at the same time, the first one being mapping from actual class location in the stratified system to self-location in a stable image of that system, and the other being mapping from the self-location to class identification. This creates problems with the interpretation of the results of the test when the results are negative, that is, when the theoretical prediction departs substantially from the empirical observation, because, under such circumstances, one can never know if the departure is due to invalid conceptualisation of the first of the two said processes, or of the second, or both. Testing for each of these processes separately, therefore, would allow for avoiding such ambiguities.

To sum up, the previous tests of Fararo-Kosaka theory (Fararo and Kosaka 2003; Karpiński 2005) are inconclusive as to whether or not the theory is false and the major reason for their being so is that they used inappropriate empirical evidence. That evidence is inappropriate, because it wasn’t collected specifically to test that theory and it only superficially coincides with the theory’s scope. This is a reflection of a more general point: for empirical evidence to be usable in a test of a theory analytical procedures for obtaining the evidence should be designed by theoretical ideas which was certainly not the case in regard to the early tests of Fararo-Kosaka theory. Let us now turn to outlining a research design that satisfies the axioms of Fararo-Kosaka theory and enables direct and rigorous test of some of its predictions.

#### **VIGNETTE ANALYSIS AND ITS APPLICATION TO EMPIRICAL TESTS OF FARARO-KOSAKA THEORY**

The objective of this section is to describe succinctly the main features of vignette analysis, a research technique that is suitable for a systematic investigation into the structure of judgements, both positive and normative, made by subjects. The

technique was developed by (Rossi, 1979) in order to study popular perceptions of social status (Nock and Rossi, 1978), but the range of its applications has become much wider than that, including studies on the perceptions of justice of earnings (Alves and Rossi 1978; Jasso and Webster 1999), justice of punishments (Jasso 1998), migration (Jasso 1988), to give just a few examples. Jasso (2006a) provides a complete and formal overview of the framework for vignette analysis, including examples of studies as well as the types of questions that can reasonably be asked and answered using this technique.

A vignette is a description of a fictitious entity – such as a person, family, organisation – in terms of a few characteristics whose impact on the judgement made by subjects is being studied. The vignettes are shown to the subjects whose task is to rate each vignette in terms of a criterion specified by the researcher. To illustrate, in the context of empirical tests of Fararo-Kosaka theory, each vignette could describe fictitious persons in terms of positions they occupy on several dimensions of stratification and the subjects' task would be to assign class location to each vignette.

A typical vignette study consists in four general steps (for a complete description of the procedure, see Jasso 2006a):

- 1) choosing the set of characteristics, as well as their levels, in terms of which the fictitious entities are to be described,
- 2) creating 'the population' of all *logically possible* combinations of all levels of the characteristics,
- 3) drawing random samples – called *decks* – from the population of vignettes for presentation to respondents, and
- 4) specifying the rating task for respondents, that is, defining the criterion according to which the fictitious entities are to be judged by participants in the study.

To illustrate, in the study I am planning to do to test Fararo-Kosaka theory, I will use four characteristics: wealth, education, occupation, and gender, keeping many other characteristics constant. That is, participants will be told that they are going to be shown a number of descriptions of fictitious persons who are of the same age, unmarried, live in a large city in Poland, and have worked continuously and full-time since finishing school.

As for the levels of the four characteristics, wealth will be defined in terms of the percentage of the monthly income that is spent on basic needs, such as food, and will take on four values: below 25%; at least 25%, but less than 50%; at least 50%, but less than 75%; and 75% or more. The assumption here is that wealthier persons spend less of their monthly income on the basic needs. Also, I assume that operationalising the variable wealth in this manner will be less ambiguous for respondents than if amounts of income were used instead. The validity of the latter

assumption will be checked by in the study by a relevant item in the manipulation-check questionnaire, given to respondents once they have rated the vignettes.

Education will be coded in terms of the highest level of education completed and will take on four values: tertiary education; post-secondary (non-tertiary) education; secondary education; basic vocational education completed and elementary education.

As for occupation, its levels will be defined in terms of occupational prestige: high, medium, or low. Certainly, the labels ‘high’, ‘medium’, or ‘low’ will be instantiated with appropriate occupational titles. For instance, ‘doctor’, ‘engineer’, and ‘university professor’ will instantiate high prestige, while ‘janitor’ or ‘non-skilled farm labourer’ may be used as instances of low-prestige occupations. Again, in order to see if the respondents perceive the prestige of occupations in line with this specification an appropriate item will be included in the manipulation-check questionnaire.

There will be three distinct occupational titles at each prestige level, which yields, in effect, nine different values of the characteristic ‘occupation’. Hence, cross-classifying the four characteristics – wealth, education, occupation, and gender – will give  $4 \times 4 \times 9 \times 2 = 288$  distinct combinations, each combination being a vignette. However, not all of the combinations are logically possible. For instance, ‘university professor’ can occur only with ‘tertiary education’, therefore, combinations of ‘university professor’ with other levels of education have to be removed from the population of vignettes. Samples of vignettes for presentation to respondents will be drawn randomly from such a ‘reduced’ population.

For each vignette, the respondents will be asked to provide their evaluations of the social positions they think the fictitious persons occupy in the stratified system. To be more specific, subjects will be told in the introductory phase of the study that people are often assigned to social positions, with some people being assigned to higher and other people being assigned to lower positions in the society. In turn, for each vignette, the respondents will answer the following question: ‘Suppose you were asked to assign this person to a social position. Here is a ten-point scale with smaller numbers indicating lower positions and greater numbers indicating higher positions. Please select a number that best represents your assessment of this person’s position’. Because the statuses, or locations, assigned to social actors are interpreted as ranks in Fararo-Kosaka theory, the subjects will be asked to use integers only to represent their judgements. With four salient characteristics two of which have four internal ranks and the remaining two have three and two such ranks, respectively, the number of image-classes is predicted by formula (1) to be ten, which is why the rating task for respondents mentions a ten-point scale.

Once the respondents’ judgements have been collected, it is possible to regress them on the characteristics of the vignettes. For the sake of the regression analysis,

the levels of each characteristic will be coded as dummy variables, with the lowest level of each characteristic being the reference category. To illustrate, there will be three such dummy variables for wealth in my study,  $W_4$ ,  $W_3$ , and  $W_2$ , where  $W$  stands for ‘wealth’ and the subscripts indicate ranks along the characteristic. Hence,  $W_4$  equals one when a person spends less than 25% of his or her monthly budget on basic needs, and 0 otherwise; the remaining levels of wealth will be coded accordingly. Similarly, there will be three dummy variables for the degree of education –  $D_4$ ,  $D_3$  and  $D_2$  – and two for the prestige of occupation –  $P_3$  and  $P_2$ . Finally, the dummy variable for gender will be denoted  $G_M$ , assuming 1 for men and 0 for women. The resulting regression equation to be estimated has therefore the following form:

$$E = a + b_1W_4 + b_2W_3 + b_3W_2 + b_4D_4 + b_5D_3 + b_6D_2 + b_7P_3 + b_8D_2 + b_9G_M,$$

where  $E$  denotes subjects’ evaluations of the social positions of the persons described in the vignettes. The equation will be estimated for each respondent in the study separately. Because the dependent variable in this equation is ordinal, the ordinary least squares model is not applicable and the models for ordered-response framework should be used instead (Long and Cheng 2004).

The slope coefficients are informative of how much each independent variable contributes to the subjects’ perceptions of social distance. Hence, they can be used to determine how salient the characteristics are in the eyes of particular respondents, since, in line with the prediction 2.3, greater differences between self and other along more salient characteristics translate into greater perceived distances between self and other.

Also, at the beginning of the study the subjects will be asked to fill in a short questionnaire containing items regarding their own location along the four dimensions of interest. Responses to these items, together with the estimates of the dimensions’ salience for each respondent enable one to ‘reconstruct’ the images of social stratification held by the subjects. And once the images have been reconstructed, one can go on to perform three types of tests. For subjects at the same class location, evaluations of their subjective social distances between self and the various others described in the vignettes can be compared. Note, however, that these evaluations can differ considerably if there are differences among the subjects at the same class location as to how they order the dimensions in regard to salience.<sup>8</sup> But if both the subjects’ class locations and the ordering of the characteristics are kept constant, one should expect agreement in the social distance evaluations. Hence, checking for this agreement would provide one test of Fararo-Kosaka theory’s soundness.

But this agreement, while necessary, will not suffice to conclude that the theory is right. That is, if the social distance evaluations by subjects at the same class location whose images of stratification are identical were not in agreement, this alone would be enough to reject the theory. But if they were in agreement, it wouldn't have to mean that the theory is correct. Arguably, every sociological theory of images of stratification would predict that people located at the same position in the society have the same image of its stratification. Thus, the finding that there is agreement in the social distance evaluations would be in line with any theory of images of stratification.

However, Fararo-Kosaka theory predicts that not only those who share a class location, but also those who occupy the same position in all dimensions but the last one, will come to develop the same images of social stratification (Fararo and Kosaka 2003, ch. 3). Table 1 illustrates this: positions HHH and HHL differ only in regard to the third dimension and stable images at these positions are identical. The same observations concerns the three remaining pairs of positions: HLH and HLL, LHH and LHL, and LLH and LLL. Therefore, a second way of testing Fararo-Kosaka theory's soundness would be to compare social distance evaluations by actors who are identical with respect to all the characteristics under study except for the one that is least salient in their images of social stratification.

Finally, Theorem 2.3 allows for predicting social distance evaluations by actors at different locations. These predictions can be then compared with responses obtained in the vignette study to see if the former agree with the latter. This would result in a direct test of the theory's prediction.

At this point, it is useful to consider the advantages of using vignettes in a direct test of Fararo-Kosaka theory. First, by selecting the characteristics, and specifying their levels, the researcher establishes the criteria that the subjects will use in evaluating the social distances. Second, the characteristics, as well as their levels, do not change throughout the study, which helps to satisfy the Axiom 2 (stability of stratification system) of Fararo-Kosaka theory. Third, because the vignettes are rated one at a time, the research design satisfies Axiom 4 (*stream of interactive events*), according to which social encounters leading to stable images involve pairs of actors. Fourth, the axiom also requires that the series of encounters be long enough for each subject to be able to acquire a stable image of stratification. By carefully designing a sampling scheme to be used in selecting the vignette samples, one is able to satisfy that part of Axiom 4 as well. Fifth, because for the duration of the study the subjects remain at their class locations, the vignette design allows for meeting the scope condition of Axiom 3, too. Finally, Axiom 7 requires that, in the social system under study, no two class locations are isolated from one another. Once again, using an appropriate sampling design will contribute to meeting this requirement.

One other advantage of using vignettes in empirical tests of Fararo-Kosaka theory should be noted. There have been many hypotheses in sociology specifying how status information is processed by social actors (for a review of the various hypotheses, see Berger et. al. 1992). Thus, it is interesting to test predictions of Fararo-Kosaka theory against predictions obtained by employing the alternative status-processing mechanisms. If the former turned out to fit the data better than any of the latter, this would provide very strong support for Fararo-Kosaka theory and would contribute to the growth of sociological knowledge through competition between alternative theories (Wagner and Berger 1985). And the vignette design does allow for such a test.

## SUMMARY

This paper is an exercise in designing *theory-driven research*.<sup>9</sup> In this type of research, the theory provides a set of guidelines or requirements for the research setting that is to be used in testing the theory. By attending carefully to a theoretical model of interest and replicating its features in a research setting – in particular, the model’s scope conditions – the researcher makes sure that observations carried out within that setting will provide empirical material that is appropriate for testing the model.

For a research design to be theory-driven, it must replicate intrinsic features of the process explained by the theory. Fararo-Kosaka theory concerns a process through which *stable* images of social stratification emerge out of social interaction as its *unintended consequence*. The theory views social interaction in terms of a series of pairwise encounters between actors who are motivated to making a distinction between self and other in terms of the location in the social stratification. In order to make that distinction, social actors search for information regarding the other’s placement along the socially significant, or salient, dimensions, and the information they are satisfied with is sufficient for this distinction to be made rather than optimal.

In this paper, a design for a controlled test of Fararo-Kosaka theory has been proposed. A theorem has been derived in this paper which allows for predicting ranks, or statuses, that a person assigns to other members of the system under study. Alternatively, the theorem can be said to predict distances that the person perceives to exist between him or her and the various others. Finally, the theorem is used to plan a study in which subjects rate a series of vignettes, or descriptions of fictitious person in terms of a number of socially significant characteristics. As described in the previous section, an important advantage of the proposed design is that allows for meeting the axioms of Fararo-Kosaka theory and reproducing essential aspects of the process of social interaction, as envisioned by that theory.

The paper has provided only a general outline of the research design. There are still other elements which have to be taken into consideration in carrying out the study. These elements include, on the one hand, issues pertaining to recruiting subjects and assigning them to conditions of the study. On the other hand, there are issues relating to checking, by means of special *manipulation checks* (Foschi, 2007), if the proposed procedures and operationalisations are successful. These are, certainly, important problems, but I'm not going to discuss them here. Instead, their analysis is left for a separate paper.

## NOTES

- 1 To be precise, this applies to the core theory in Fararo and Kosaka's theoretical research programme, and Fararo and Kosaka (2003, ch. 6) propose an elaboration of this core formulation in which impact of social mobility on image transformation is considered. In this paper, I focus on the core theory, however, because it is often useful to test a theory beginning with a relatively simple case. Certainly, the extension of Fararo-Kosaka theory to social mobility can be tested in future, once this relatively simple case is worked out.
- 2 The notational convention here is that images of stratification developed by social actors are shown in square brackets, where the right-hand end corresponds to *the bottom* and the left-hand one to *the top* of the hierarchy of social classes.
- 3 Due to space limitations, I omit the proof of this proposition. For an elaboration of this point, see Fararo (1973, ch. 12) and Fararo and Kosaka (2003, ch. 3).
- 4 In their monograph, Fararo and Kosaka (2003, ch. 4) discuss the problem of class identification in a social survey in considerable detail, but their treatment of the problem is different from the one suggested above. Fararo and Kosaka's approach can be stated as follows: suppose that members of the three-dimensional system described above take part in a social survey and are asked a question concerning their class identification, with a menu of alternatives comprising three categories: upper class, middle class, lower class. Now, given that members of the system develop images with four classes each, how are these classes mapped into the three-categories scheme provided by an interviewer? Fararo and Kosaka (2003, ch. 4) propose their own answer to this question, but due to space limitations I do not discuss it in this paper.
- 5 'The Social Inequality' module of the International Social Survey Programme, fielded in 1987, 1992, and 1999 is an example of such study.
- 6 For an overview and empirical test of this and several other hypotheses concerning processing of status information in a different theoretical framework, consult Balkwell et al. (1992) and Berger et al. (1992).
- 7 Hegtvedt (2006) makes a similar point in regard to a social-psychological framework for studying justice.
- 8 Implicit in Fararo and Kosaka's original presentation of the theory is the assumption that all members of the society agree on the relative significance of the dimensions of stratification. In the present formulation, this assumption is relaxed.
- 9 A thorough and readable overview of theory-driven research, as contrasted with *empiricist* research, and with particular attention to experimental research, is discussed by Willer and Walker (2007).



## REFERENCES

- Agresti, Alan. 2002. *Categorical Data Analysis*, 2nd edn. New York: Wiley.
- Alves, Wayne M., and Peter H. Rossi. 1978. 'Who should get what? Fairness Judgement in the Distribution of Earnings.' *American Journal of Sociology* 84: 541–564.
- Balkwell, James W., Joseph Berger, Murray Webster, Max Nielson-Kilger, and Jacqueline Cashen. 1992. Processing Status Information: Some Tests of Competing theoretical arguments. In: Edward J. Lawler, Barry Markovsky, Cecilia L. Ridgeway, and Henry A. Walker (eds.), *Advances in Group Processes, Vol. 9*, JAI Press, Greenwich, CT.
- Berger, Joseph, Robert Z. Norman, James W. Balkwell, and Roy F. Smith. 1992. 'Status Inconsistency in Task Situations: A Test of Four Status Processing Principles.' *American Sociological Review* 57: 843–855.
- Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgement of Taste*. Cambridge: Harvard University Press.
- Cohen, Bernard P. 1989. *Developing Sociological Knowledge: Theory and Method*. Prentice-Hall, Englewood Cliffs.
- Davis, Allison, Burleigh B. Gardner, and Mary R. Gardner. 1941. *Deep South: A Social Anthropological Study of Caste and Class*. Chicago University Press, Chicago.
- DiMaggio, Paul. 2001. *Social Stratification, Life-Style, Social Cognition, and Social Participation*. In: David B. Grusky (ed.), *Social Stratification: Class, Race, and Gender in Sociological Perspective*, 2nd edn. Boulder: Westview Press.
- Evans, Mariah D. R., and Jonathan Kelley. 2004. 'Subjective Social Location: Data from 21 Nations.' *International Journal of Public Opinion Research* 16: 3–38.
- Evans, Mariah D. R., Jonathan Kelley, and Tamas Kolosi. 1992. 'Images of Class: Public Perceptions in Hungary and Australia.' *American Sociological Review* 57: 461–482.
- Fararo, Thomas J. 1970. 'Strictly Stratified Systems'. *Sociology* 4: 85–104.
- Fararo, Thomas J. 1973. *Mathematical Sociology: Introduction to Fundamentals*. Wiley: New York.
- Fararo, Thomas J., and Kenji Kosaka. 2003. *Generating Images of Stratification: A Formal Theory*. Dordrecht: Kluwer Academic Publishers.
- Foschi, Martha. 1997. 'On Scope Conditions.' *Small Group Research* 4: 535–555.
- Foschi, Martha. 2007. Hypotheses, Operationalizations, and Manipulation Checks. In: Murray Webster, and Jane Sell (Eds.), *Laboratory Experiments in the Social Sciences*. Burlington: Elsevier.
- Grusky, David B. (Ed.). 2001. *Social Stratification: Class, Race, and Gender in Sociological Perspective*, 2nd edn. Boulder: Westview Press.
- Hegtvedt, Karen. 2006. Justice Frameworks. In: Peter J. Burke (Ed.), *Contemporary Social Psychological Theories*. Stanford University Press.
- Jasso, Guillermina. 1988. 'Whom shall we welcome? Elite Judgements of the Criteria for the Selection of Immigrants.' *American Sociological Review* 53: 919–32.
- Jasso, Guillermina. 1998. 'Exploring the Justice of Punishments: Framing, Expressiveness, and the Just Prison Sentence.' *Social Justice Research* 11: 397–422.
- Jasso, Guillermina. 2006a. 'Factorial Survey Methods for Studying Beliefs and Judgements.' *Sociological Methods and Research* 34: 334–423.
- Jasso, Guillermina. 2006b. The Theory of Comparison Processes. In: Peter J. Burke (Ed.), *Contemporary Social Psychological Theories*. Stanford: Stanford University Press.

- Jasso, Guillermina. 2007. Studying Justice: Measurement, Estimation, and Analysis of the Actual Reward and the Just Reward. In: Kjell Törnblom, and Riën Vermunt (Eds.), *Distributive and Procedural Justice: Research and Social Applications*. London: Ashgate.
- Jasso, Guillermina, and Murray Webster. 1999. 'Assessing the Gender Gap in Payment and its Underlying Mechanisms.' *Social Psychology Quarterly* 62: 367–80.
- Jasso, Guillermina, and Berndt Wegener. 1997. 'Methods for Empirical Justice Analysis: Part 1. Framework, models, and quantities.' *Social Justice Research* 10: 393–430.
- Karpiński, Zbigniew. 2005. *Images of Social Stratification and Perception of Distributive Justice: Theoretical Models and their Empirical Evaluation*. Paper presented at the 37th World Congress of the International Institute of Sociology, Stockholm, Sweden.
- Kelley, Jonathan, and Ian McAllistair. 1985. 'Class and Party in Australia: Comparison with Britain and the USA.' *The British Journal of Sociology* 36: 383–420.
- Kohn, Melvin L., and Kazimierz M. Słomczyński. 1990. *Social Structure and Self-Direction: A Comparative Analysis of United States and Poland*. Basil Blackwell, Oxford.
- Long, J. Scott, and Simon Cheng. 2004. Regression Models for Categorical Outcomes. In: Melissa Hardy, and Alan Bryman (Eds.), *Handbook of Data Analysis*. London: Sage.
- Nock, Steven L., and Peter H. Rossi. 1978. 'Ascription versus Achievement in the Attribution of Social Status.' *American Journal of Sociology* 84: 656–590.
- Nowak, Stefan. 1966. 'Psychologiczne aspekty przemian struktury społecznej i ruchliwości społecznej.' *Studia Socjologiczne* 21: 75–105.
- Rossi, Peter H. 1979. Vignette Analysis: Uncovering the Normative Structure of Complex Judgements. In: Robert K. Merton, James S. Coleman, and Peter H. Rossi (Eds.), *Qualitative and Quantitative Social Research: Papers in Honor of Paul F. Lazarsfeld*. New York: Free Press.
- Wagner, David G., and Joseph Berger. 1985. 'Do sociological theories grow?' *American Journal of Sociology* 90: 697–728.
- Walker, Henry A., and Bernard P. Cohen. 1985. 'Scope Statements: Imperatives for Evaluating Theory.' *American Sociological Review* 50: 288–301.
- Willer, David, and Henry A. Walker. 2007. *Building Experiments: Testing Social Theory*. Stanford, Palo Alto, CA.

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