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**ELECTRONIC HEALTH RECORDS  
AND CLINICAL ROUTINES:  
CONVERGENCE AND  
DIVERGENCE**

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## **ELECTRONIC HEALTH RECORDS AND CLINICAL ROUTINES: CONVERGENCE AND DIVERGENCE<sup>2</sup>**

The article is based on the preliminary results of author's current study of the implementation of electronic health records in one of Russian outpatient clinics. Interviews with doctors, developers, managers of the State Department of Healthcare, IT-specialists, and clinic's head, as well as observations of doctors' everyday work, show that one of the key problems in the transition from paper to electronic record-keeping is how new information system transforms (or fails to transform) doctors' routine, habitual activities. The article suggests that the widespread view of habitual action as an action in accordance with a preliminary scheme – a view that forms a basis for the majority of medical information systems – does not describe the actual structure of healthcare activities. The analysis of how doctors perceive and use electronic health records in their daily practice demonstrates that a situational approach to routine actions is more adequate. For example, the use of so-called “templates” that are created by doctors within the electronic health records cannot be understood without reference to the situational context of professional activities. Doctors, creating and using various “templates,” do this in such ways that allow them to make these health records circumstantially understandable. The view of routine activities as situated, concerted achievements not only proves the possibility of a new approach to the description of habitual actions' role and place in the structure of social action, but can be important for the design and evaluation of professional information systems.

JEL Classification: Z.

Keywords: electronic health records, habits, situated action, templates, routine medical practice.

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## Introduction

The current transition from paper to electronic health records in medicine opens to sociologists access to a number of issues and problems, which otherwise are less approachable empirically. The reason is not just that due to slowness of this transition we can systematically observe how one type of material instruments of social action is replaced by a radically different and transforms the very nature of this action. Here we also have an opportunity to see how information technologies penetrate daily activities, in this case – professional. This second theme can, of course, be seen in the context of diagnosis of the “state of modern society,” but it has a more important value in the context of the development of new methods of social analysis. In other words, the transition to electronic health records is an ideal practice to consider what the everyday world is and how we can describe it. In contrast to Max Weber’s *ideal types*, the production and use of which is sociologists’ methodological business, the *ideal practices* are produced and used by the practitioners, posing to them a number of problems and challenges they should be dealing with. These challenges and problems have unavoidably local character, they are specific to particular practice, and their separation from this practice prevents access to it (both in terms of understanding and in terms of acting). The ideal practice, therefore, is a practice that allows the sociologist to discover her or his sociological problems as practical problems of people who are not professional sociologists, without losing access to the local organization of the practice.

In the case of electronic records in medical practice we can find a sociological problem that is simultaneously a practical problem for the members: the problem of habitual action, or traditional action. Professional sociology deals with this problem; it is an integral part of the field, although it occupies a precarious position and is constantly upstaged. It is a very convenient background for a variety of sociological figures. Although to some extent the problem of “traditions,” “habits,” “routines,” and “customs”<sup>3</sup> as ways of organization of social action has interested all sociological classics, the first who has attempted to justify this interest was Weber. However, this justification was ambiguous: claiming that habitual or traditional action can be important for the sociologists, Weber at the same time tried to place it beyond the realm of meaningful behavior.

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<sup>3</sup> I will not discuss here whether we can put these concepts in one row, separated by commas, as if these things are of the same order. I must also warn the reader that in the following I will use terms “habit,” “template,” “routine” as interchangeable.

Strictly traditional behavior, like the reactive type of imitation discussed above, lies very close to the borderline of what can justifiably be called meaningfully oriented action, and indeed often on the other side. For it is very often a matter of almost automatic reaction to habitual stimuli which guide behavior in a course which has been repeatedly followed. The great bulk of all everyday action to which people have become habitually accustomed approaches this type. Hence, its place in a systematic classification is not merely that of a limiting case because, as will be shown later, attachment to habitual forms can be upheld with varying degrees of self-consciousness and in a variety of senses. [Weber, 1978: 25]

Here the traditional action acquires two distinctive characteristics: on the one hand, it can have no meaning at all (it can be an automatic, almost reflexive, reaction to stimuli); on the other hand, this is how we act most of the time in everyday life. However, these solidity and massiveness of traditional behavior do not justify for Weber the sociological interest in it; his interest is based mainly on the possibility of conscious focus on habits. Thus, the automatism of tradition is a “limiting case” – an appropriate background for the analysis of other forms of social action.

The above citation by Weber does not show us how he understood the relationship between the everyday and the social in general, but probably for him they may be in conflict or at least the everyday escapes from the social, just like most part of our bodily operations escape from our perception. The more usual the action, the less meaning it has. Just as somebody’s writing on paper or typing movements of hands and fingers escape her or his attention, so our everyday life is mostly automated, and if it does not become a subject of conscious effort (for example, while leaning to write), it is just an actualization of the templates of “meaningless” actions.

Such flagrant discrepancy between social as an area of meaning and everyday as an area of tradition did not go unnoticed.<sup>4</sup> Other sociologists tried to oppose such obvious underestimation of the constitutive meaning of everyday life for social reality and to provide a different concept of everyday life, where everyday was regarded not just as meaningful, but also as an origin of meaning. Here Alfred Schütz’s arguments were decisive.

[T]he experiences of everyday life seem to lend support to Weber’s thesis. When I review my daily work, the actions I perform all day, whether alone or in the company of others, and ask myself what is the meaning of all these actions, I will no doubt conclude that most of them are automatic. This conclusion seems convincing enough, because I find in many of these actions either no meaning at all or at best a very vague one. However, the meaning of an action is one thing, and the degree of clarity with which we grasp that

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<sup>4</sup> See the critique of the difficulties with Weber’s understanding of tradition in [Turner & Regis, 1990].

meaning is quite another. There is one fact which shows that most of my actions do have meaning. This is the fact that, when I isolate them from the flux of experience and consider them attentively, I then do find them to be meaningful in the sense that I am able to find in them an underlying meaning. [Schütz, 1972: 19]

Without challenging the identification of traditional actions with everyday ones, Schütz returns everyday activities into the realm of meaningless behavior. This opens up a door for all that was later vaguely termed “sociology of everyday life.” However, despite the diversity of such sociologies and their partial incompatibility, Schütz and succeeding researchers<sup>5</sup> inherit from Weber an understanding of everyday as “automatic.”<sup>6</sup> According to both Weber and Schütz, in everyday world we act non-reflectively, “as it goes,” out of habit, providing standard responses to standard situations that we ourselves create in standard ways.

Today we have enough empirical reasons to put this understanding of habitual action into question, and at the same time – because habitual action is a kind of key to the everyday world – to get a chance to develop a different technology of analysis of ordinary life. The use of electronic health records is an ideal practice to try to unravel this bunch of problems and to find ways of non-automatizing understanding of habitual action. In the present article I will delineate one of such ways. Materials are from my ongoing study of the implementation of electronic health records (EHR) in one of Moscow outpatient clinics. So far as in this text the clinic and the changes in the daily work of its doctors caused by the EHR are not the subject of a comprehensive study<sup>7</sup>, I will not dwell on what data is collected and what methods were used. The main sources are interviews with doctors and other people involved in the implementation of EHR and from observation of doctors’ work.

In the next section I will offer further justifications of why the implementation of EHR is an ideal practice to consider the habituality of everyday activities.

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<sup>5</sup> See for example [Turner, 1994].

<sup>6</sup> This is a rather rough picture, because we can definitely find at least one research tradition to which this judgment cannot be applied. This tradition is pragmatism. Beginning from John Dewey [1992] and later in the works of Donald Schön (who, of course, can be called pragmatist only in very broad sense of the word; see [Schön, 1983]) and some other authors (e.g. [Kilpinen, 2009], [Gronow, 2011]) we can see a systematic attempt to formulate a practical concept of habit, to reveal the essentially reflexive nature of habitual actions. I will show later why these efforts are unsatisfactory, and why it is necessary to abandon not just the understanding of actions as automatism, but also the concept of reflexivity as an actual meaning or knowledge.

<sup>7</sup> That is, I will talk not about the practice, but from within the practice, together with practitioners, discovering what tasks they solve and how they do it when they deal with the problem of habitual action. More detailed results of the study will be presented in future publications.

## **Problem: Standardization of Activities**

One of the main recurring themes in the academic discussions about the EHR is standardization and its positive or negative consequences. The standardization in these discussions is always contrasted with “normal practice,” non-standardized ways of acting. These ways of acting can be considered “inconvenient” because they are not comparable with each other, too dependent on particular institution or doctor, financially costly, tolerate many errors, allow doctors to evade responsibility for these errors, etc. In this case a common medical practice is understood as a well-established form of behavior that is very difficult to change – in many ways similar to smoking. Accordingly, supporters of standardization say that standardization helps to get rid of some “bad habits” of healthcare system, even if the doctors resist (it is not so easy for a smoker to quit smoking). The new standards, of course, should eventually become a habit, this time, useful. If standards do not become part of everyday medical practice, they do not work.

Standardization critics offer two opposing arguments. First, in their opinion, standardization can be destructive to the local forms of knowledge and action, i.e., it can break habits that are not “harmful.”<sup>8</sup> Standardization irreversibly transforms living practice and turns any unique doctor–patient interaction, mediated by professional skills and knowledge, into clichéd contact, separating health records from the context of their production and use. The standard suppresses the ordinary. Secondly, standardization can be perceived as something utopian, as something that is proclaimed, but is never attainable, because the standard can do nothing to the ordinary; routine ways of acting (at least, some of them) escape from standardization.<sup>9</sup> Routine activities are connected with such a large number of organizational circumstances of their formation and functioning, that no scheme will not be able to take into account all these circumstances. Moreover, when the standard itself becomes a habit, it is inevitably transformed in accordance with unique situations, knowledge and habits of specific individuals.

All these views on standardization have one common shortcoming, which is a serious obstacle when we consider habitual action: they are based on the premise that “standard” and “habit” can be separated, so that the habits themselves are perceived as an application of certain

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<sup>8</sup> Since this is a quite common argument, it is promoted in many works I am not going to discuss here. I will refer only to the work of Mark Berg – the most consistent advocate of this point of view. See [Berg, 1997, 2004], [Timmermans & Berg, 2003]. See also [Reich, 2012].

<sup>9</sup> See the works of Thomas Winman and his colleagues: [Winman & Rystedt, 2011, 2012], [Winman et al., 2012]. The same logic underlies the study of so-called “organizational routines” (see [Pentland & Feldman, 2005], [Becker, 2005]).

locally developed standards. Both supporters and opponents of standardization consider habitual ways of acting in terms of behavioral patterns developed by practitioners (e.g., doctors) and reproduced in similar situations along the same lines. Scheme of action is separable from the situation of action. But this understanding of standards and habits distort the practical circumstances in which the participants of specific practices act. Let us consider a simple example to clarify this point. The draft of the Russian National Standard for Electronic Health Records indicates a number of mandatory elements of EHR. One of them is date and time of signature of every single entry in the EHR:

#### **07.01.11. Date and Time of Signing EPHR<sup>10</sup>**

Mandatory element that indicates at what point EPHR is considered completed and signed, and acquires the status of an official medical document.<sup>11</sup>

Date and time are the standard elements of every EHR system, which must be present in the relevant electronic documents. This requirement is oriented primarily at EHR developers who have to create an information system in which each entry will have date and time. For everyday medical practice it seems to have no consequences, because, on the one hand, it does not require from doctors to commit any additional actions, and on the other, date is the ordinary element of doctors' activities. At the same time, every date and time is the organizational date and time, i.e., they are always connected with the concrete situations of their recording, reading and writing. For example, one of the circumstances, of which doctors have told me, is that when the information system records the start and end time of the visit, it allows to estimate the duration of the visit. In this respect, records about date and time of visit can speak (e.g., to clinic's managers or to the Department of Healthcare) about how "effective" and "professional" particular doctors. Knowing this, doctors organize their work in such a way so that the date and time keep in silence what they cannot speak about. For example, in the clinic where I conduct my research, the information system provides a particular amount of time for patient's visit: the doctor has 12 minutes, i.e., every 12 minutes there is a new appointment. Doctors thus must deal not only with the situations when this time is not enough, but also with the situations when it is too much. In the case of patient's re-visit, when doctor needs just to ask some general questions about well-being and to check the results of laboratory examinations, the visit may be very short. Accordingly, doctor, knowing who will come to see her or him (whether it is re-visit or not, what

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<sup>10</sup> EPHR stands for electronic personal medical record. According to the draft of the Standard, EHR is a sum of EPHRs.

<sup>11</sup> From the draft of the Russian National Standard "Electronic Health Records. Electronic Health Records Used in the Medical Organization." The draft was kindly provided by its author, Boris Zingerman.

is the age of the patient, what disease she or he has, and so on), can reduce or extend the real visit duration, but this work on the time is not always displayed in the information system, because doctors are interested in the system to display timing that fits the “standard” 12 minutes. In this case, if the visit has ended prior the allocated time, doctor may not close the patient’s EHR, to make it only at the end of prescribed 12 minutes. The time thus freed she or he can spend either to relax, or to start the visit of the next patient, who needs more time.

To understand what the Standard says, one needs to read it as part of the local practice of medical information system coding, clinic’s management or interaction with the patient. This does not mean that the standards do not grasp the real organizational context of medical practice. The problem lies elsewhere: the standard is itself a local practice. Standards cannot do anything not with the practice they are implemented in, but with their own practice, their own locality, i.e., with the habits in which their production and reading consist of. The understandability of the standard is provided by the practice of which it is part and which is its context, in this case the practice of reading Standard as a particular type of document. “Date and time” from the Standard and “date and time” in the real EHR are not different dates and times, but dates and times that are accountable only in situated practices of their creation, reading, usage. For standard to be a standard, one needs to accomplish a local work of its production as a standard.

If we cannot separate the scheme of action from the action itself, we have to change our view of the habit. The habit should not be understood as an application of the pattern of behavior in repetitive circumstances. We need a situational analysis of the habits.

A similar need has emerged in the field of artificial intelligence. For AI specialists the task was not just to find possible links between standards and actions, but to identify how to standardize the action itself. The fact of habits’ presence in people’s behavior suggests that, apparently, human action can be schematized, in principle. Since in some circumstances people can act schematically, reproducing the same pattern of behavior, why not consider any action in this way? Hence the notion of action as the actualization of the “plan,” “frame,” “scheme,” “script,” “model,” “rules,” etc. in particular circumstances. However, almost immediately it became clear that this approach overlooks something, namely, how people really act. In the works of Hubert Dreyfus [1992] and, to a greater extent, Lucy Suchman [2007] it has been shown that situated human activities, firstly, are ineradicably social and, secondly, do not consist in the application of the action scheme to the situation but form a situational context of any such “scheme.”



The difference between attempts to bring to life the idea of human action as action-by-the-scheme and the ways people organize their behavior in ordinary situations is particularly dramatic when this difference leads to the creation of technical systems that obstruct everyday activities. The copier, described by Lucy Suchman, that created many problems for its users, is precisely this kind of system. But her analysis of causes of these problems shows that even if they are not there, it does not mean that the concept of human action, which guides the decisions of developers of such systems, is adequate to users' actions. Rather, the successfulness of interaction with such systems is provided by the ways unknown to the developers. To understand what this means, we need to "look into" the habit.

## **Templates, Routines, Actions**

For the initial clarification of what the habit is, consider a relatively simple example. In the building where I live, there is a freight-passenger elevator. Its floor buttons are equipped with LEDs, which light up when the button is pressed. There is no separate button for closing the door. The usual ride in the elevator goes as following: you walk into elevator, press the button, its LED turns on, after several seconds the door starts closing, and when it is closed the elevator starts moving. However, in the course of using the elevator, I discovered that the time between pressing the button and closing of the door depends on when the button is pressed: if it is pressed after the door is fully opened, it works as a door closing button. So now my usual *modus operandi* is following: when elevator arrives and the door starts to open, I step inside, wait until the door opens completely (the door is wide enough to get inside before the it is fully opened), and in that moment I press the floor button and the door starts to close immediately. Sometimes synchronization of the moment when door is fully opened and the moment when floor button fails, because I press the button before the door is fully opened, and then I have to press it again. Those passengers who are not aware of this feature and press the floor button before the door is fully opened (for example, at the moment of entering the elevator), have to wait a few seconds before the door begins to close. This pause is long enough to make some passengers feel that there is something wrong with the elevator and it "does not work."

This habit has formed quite a long time ago, and if I make a ride on the elevator alone, I try to minimize the pause between the pressing of the floor button and the closing of the doors. Does this mean that I have formed a pattern of action that is reproduced every time, because

every time the situation repeats, and with it my actions repeat? The problem here is not so much in the causes of my actions as in the intelligibility of my actions. What makes my habit understandable? Firstly, its orderliness. The fact that I am acting methodically is a source of situation's accountability. This methodicity needs no explanation, as it provides an explanation. The similarity of my actions in every new situation is provided not by the same movements, but by the same procedure. Every time I act in the same way, use the same method, which in turn provides the sameness of my movements (up to the hand trajectory). Secondly, it is important that my acts are accomplished in the world, they are material actions, actions in the elevator and with the elevator. These actions are fundamentally observable, even if no one at the moment is looking at me. Observability of my actions is of social nature, but not in the sense that there are other people who act the same way as I do, or in the sense that anybody in my place would have done the same. Rather, the point is that whatever elevator riding habit I have, anybody can understand it. The very visible structure of my action makes the action meaningful. And thirdly, the meaningfulness of my actions is provided by the situation in which I have found a solution to a specific problem: the long waiting of the doors closing. My habit solves some practical task. This solution, as a practice, is a context of my concrete actions whenever I ride the elevator.

Thus, when analyzing habits, there is no need to appeal to the formed and internalized cultural, cognitive, motor, or situational schemes. We do not assess the current situation, and then, if the results of the assessment coincide with our existing model, exercise a specific course of action. Our task is to accomplish an understandable action. In my example, I have to press a button at the moment when the doors are fully open, and that means that my habit is not something that I “pull” from some repository, but something that takes place between me (my body, my eyes), floor button, and elevator doors.

A similar understanding of the habits is proffered by Philip Agre [1985, 1997] under the rubric of “routine.” The crucial moment of his approach is that a new perspective on routine everyday activities allow to consider habit as a dynamic practice.

A routine is a frequently repeated pattern of interaction between an agent and its familiar environment. . . . A routine, like any dynamic phenomenon, is purely a descriptive construct, not a thing in the head, not a plan or procedure. It need not correspond to an ingrained habit or rigid custom. No specific knowledge or competence or cognitive machinery is required to engage in routines. Doing something the same way every time, in other words, need not result from a specific intention to do it the same way every time. An agent can engage in routines without knowing it. A routine might involve a series of actions, each a response to the situation resulting from the previous action, without a specific prior intention to perform *that* series of actions. [Agre, 1997: 108]

If routine is dynamic, then there is no point in trying to discover what ensures its stability, since it itself provides its own stability. However, in contrast to Agre, we should argue that dynamic relationship between the situation and the action does not have the character of “adjusting” to familiar environment, because otherwise it is not clear in what sense it is familiar to the actor. Following the rejection of the cognitive interpretation of knowledge, we have to abandon the cognitive interpretation of familiarity of everyday situations. Then familiarity of situation will occur simultaneously with habitual action and as a result of habitual action. Practitioners know it very well. For example, in conversation with me one doctor has described the primary care physician’s “way of thinking” in the following way:

When I came to outpatient clinic [from cardiology center], I had the feeling that I went back to 19th century: zemsky doctor, listen with your ear, tap with your finger, breathe / do not breathe, and then from all this you have to assume something, explain to the patient, talk, speak. So you open all this stuff [books] at home and read about diagnoses, approximate manifestations, symptoms, diagnosis corresponding to what, what’s the percentage of each disease on your territory, and all that. That’s how these small algorithms emerge, precisely algorithms: if – then, this follows from this, this, this. < . . . > When I visit patient [at home], I do not know where I go, what I am coming to. You are calling me because of the high temperature, you are waiting, and you do not know what’s going on with you. But the same thing: I am coming to you, and do not know what going on with you. < . . . > Going to the patient, I often do not know what I will find. Well, high temperature is high temperature. So I begin: why temperature, what kind of temperature, how many days, what, why, when has it started, what was first: cough or fever, runny nose or fever, chills or fever.

For the physician the understandability of the situation is provided by what he calls “algorithms” – specific ways of understanding, thinking, and action, that help to produce this understandability. Responding to patient’s call, he does not know what he will face, even if he has some initial knowledge of the situation. Therefore, “small algorithms” are not just an action patterns. These are the repetitive ways of thinking and acting plus situated ways of organizing a familiar look of things. “Algorithm” is not an action scheme, but something that is performed in the situation. Compare this view of the algorithmization of doctor’s actions with the point of view of a specialist in computer technologies who represents the EHR developer in the clinic under study: “Who is the doctor? What kind creature it is? Doctors try to remember an algorithm in advance, and then act on the basis of this algorithm. They do not think about what

they are doing.<sup>12</sup> This is their major defect.” Applying to the activity of the doctor the same term (“algorithm”), the specialist in information technology uses it for a completely different purpose: he wants to show that doctors act in once established ways and therefore resist everything new simply because of the reluctance to get rid of their habits. For him, habit is a pure action carried out only because it was carried out before. Thereby he misses the import of habits in physician’s professional situations.<sup>13</sup>

Of course, the approach to algorithm as something that allows you to save on thinking can be easily refuted with empirical evidence that any, even the most schematic, action is based on some “thinking,” has a certain degree of reflexivity. Many examples of this kind have been provided by pragmatists, Schön, and Edwin Hutchins [1995, 2005]. But even if we show that there is an actual meaning in habitual actions, and even if we demonstrate that this actual meaning is rooted in material artifacts, this does not answer the question of what kind of “knowledge” we are dealing with here. To reveal knowledge-in-action, we should take for granted the situational understandability of habitual actions and ignore the work of the understandability production. It seems like doctors understand this better than social scientists, and implementation of EHR in routine medical practice is a perfect exhibition of this understanding.

## **Templates-in-Situation**

The appearance of EHR as a part of everyday medical practice forces doctors (as, indeed, other participants in medical practice: managers of medical institutions, nurses, registry office staff) to routinize information system, using it to solve their daily tasks in particular circumstances in which they should organize their work. These circumstances may consist, for example, in the necessity to build relationships with the patient at the time of visit, and in this case the very existence of a computer in the doctor’s workplace and the need to type must be coordinated with the remarks and actions of the participants of the situation so that the visit remained visit and doctor could “do the medicine.”<sup>14</sup> However, in some cases, working practices

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<sup>12</sup> In some studies of organizational routines habitual actions are also characterized as “mindlessness.” See [Ashforth & Fried, 1988].

<sup>13</sup> Below I will show how this view influence the development of EHRs.

<sup>14</sup> The description of how this happens can be found in: [Heath & Luff, 2000]. For the review of research in this area, see: [Fitzpatrick & Ellingsen, 2013].

clearly contradict the model of these practices, underlying the information system. Let us consider an example.

The CEO of the company that developed EHR for the clinic under study said in conversation with me that the basis of this information system was the so-called “clinical simulation”: first the leading doctors of different specialties (chief pediatrician, chief cardiologist, etc.) were asked to create a models of visits for different medical specialists, and then these models were used in developing EHR interface.<sup>15</sup> The sequence of steps during a visit for all doctors is the same: complaints and anamnesis → examination → diagnosis → prescriptions → services and certificates → end of visit. Every step is a new window that opens only after filling out the obligatory fields in the current window. It is assumed that this sequence of steps corresponds to the logic of the real work of the doctor. But here is what one of the doctors who used the system says:

The only thing I do not like is this sequence, the windows. That is, you cannot open a certain window without opening the previous one. If you could, for example, to add something quickly to the one, then switch to another, it would be more convenient. Or, for example, you want to see if you wrote something correctly – you have to open it once again, and once again you have to it scroll through till you get the desired item.

The logics of actual visit differs from the model offered by EHR: doctors harvest information not in the order prescribed by the system, but in the order that is determined by the structure of interaction. Patients do not tell and do not do only what they are asked by the doctor, and the doctor does not say or do only what is required by the pre-defined sequence of steps. Complaints of the patient, the possible diagnosis, examination results – all these do not occur sequentially, but rather randomly or, alternatively, simultaneously. But EHR requires this information to be entered step by step. This slows down doctors’ work, though probably enhances the completeness of health records.

This is an important example to consider when we deal with the problem of habits’ place in the structure of actions, because it demonstrates the inadequacy of understanding habits as actions-by-scheme. If doctor’s routine activities consisted in application of a series of “templates,” then it would be possible to set the task to create a model of the templates that guide

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<sup>15</sup> It is curious that my interlocutor emphasized that instead of “electronic health records” one should say “integrated healthcare information system.” In this change it can be seen how specific organizational reality where “health records” is a familiar object of references, writings, readings, transfer from registry office to doctor’s office, providing to the patient, pasting the results of laboratory examinations, storage, etc., gives place to a different organizational reality – the reality of the developer where health records is just a temporary information carrier to which doctors are accustomed to, but which can be replaced by another carrier, the electronic one (to which doctors will be accustomed to, one just needs to wait).

doctor's practice, and then bring this model to life in the form of information system. Accordingly, this model could be more or less corresponding to the "real" pattern or algorithm of doctor's activity. However, this case shows that the problem lies elsewhere. It is not that the developers have built a bad model. They have not. The fact is that any model assumes situational work of its use that is not described and is not predetermined by this model. In other words, routine medical work consists not in the application of existing template to the current situation, but in the organization of the current situation as a professionally ordered one. In terms of the development of information systems this means that it is impossible to build the model of medical practice in the first place. The goal should be different: to create a system that would be sensitive to the doctor's situated work of routine order production, i.e., that would help the doctor. To do this, the basis for the system should be not the model of doctor's activities but the mechanisms for obtaining information about her or his work and responding to this work.

Another example that shows that the issue is not how good or bad is the underlying EHR model of doctor's actions, is the use of so called "templates." EHR users can create their own templates. Doctors find this feature very convenient.

Yes, there are templates. You can create templates, edit them. Plus, there is a very handy feature, I started to actively use it recently: if the patient has already visited you, you have her or his examination, this is a re-visit, you can just click "Repeat" and all the data are automatically opened. There you just change what you need to change. That is, it takes just 2–3 minutes, even less.

However, according to the CEO of the company that developed this HER, there is a downside of templates' convenience: "Templates are convenient, but dangerous. Doctors begin just copy-paste." In his view, the use of templates leads to schematic actions. Instead of entering the up-to-date information into the system, doctors start to simply reproduce already entered information, probably in order to save their time and effort. But doctors perceive templates in a different context; the usefulness of templates is not determined by the fact that they allow to do schematic actions.

Everybody feels quite positive. Because it is really convenient, especially when there are templates and repeated examinations. Because usually, of course, we are visited by the people we know very well, and there is no need to write all this anew. Very useful. < . . > I've got a number of templates here, I title them as I prefer. There're ones titled along specific persons, for example, – who have serious illnesses – I need them. I have created them myself, for myself, to make it easier to work.

Another doctor said:

Each [doctor] created template by herself or himself and how she or he wanted. Because I know: some created templates for patients, for example, "Patient Ivanov." That's more handy for them. I prefer to give titles based on nosology. < . . > For me, they are suitable, that's how I write and I made them for myself. Someone may find it not suitable. Let's say I have a template "XXXXX [nosological unit]." Clearly, it will be virtually the same for all [patients]. < . . > So, I say: I titled templates according to diagnoses, others titled them along the patients' names. Different doctors prefer different ways. Maybe the meaning is that people receive the same treatment and all the information is already entered, and you just print it out. That is, it's not the same with everybody. It's not comfortable for me, because something may change: some medications or cough. All the same, you have to change, you still have to type it.

For doctors the use of templates is associated with a number of organizational circumstances. First, some patients are familiar to doctors. This not personal but organizational familiarity<sup>16</sup>: they can receive the same treatment, or they may have a characteristic rare disease. In this case, it is more convenient to create a template for a particular patient. Secondly, because doctors' think with "small algorithms," templates can embody these algorithms. In this case, it is more convenient to create templates for certain diagnoses.<sup>17</sup> Thirdly, template, saving time, must do it in situationally appropriate manner, since the template is used in a specific situation in the presence of the patient. It saves not the physician's time, as suggested by the developer, but visit's time, which is produced in such a way that not only the doctor was able to gather the necessary information and write it one way or another, but that this record was a natural part of what is happening during the visit. That's what doctor says:

At first this distracted very much. Now I have adapted. First you sit, talk, ask "How are you doing?", then you say, "Now, wait a second" and type all quickly, then examine the patient, . . . And if there is a template, you can just look with one eye here, with another on him, and usually it's ok.

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<sup>16</sup> Although the relationship between doctor and patient may resemble a personal relationship. For example, one district physician in the conversation said, "I made an agreement with mine [patients], so . . ." But "mine" here means not personally familiar patients but rather "her" patients, who compose a manageable constantly flowing cohort.

<sup>17</sup> The guide for doctors, written by the developers of this information system, specify this aspect in the following way: "When you select a name for a saved protocol template or protocol's section template, it is recommended to use the code or the name of the diagnosis and, if necessary, to add separate attributes: 'j04.3,' 'm42.1 (back),' 'm42.1 (neck),' 'Acute Bronchitis,' 'Normal.' The use of other identifiers, such as patient's name, date of creation, or general words like "templates," may further complicate the search and the use of created templates." Here rationale for recommending to apply the diagnoses in the template name does not refer to the organizational reality of routine medical practice. The point is the usability of the system. But, as we have seen, the doctors, as Harold Garfinkel says [1967: 186–207], can have "good organizational reasons for bad clinical record."

As doctor's professional work consists not in the application of templates of thought and action to the individual patient, but in the routine production of professional practice in concrete situations, we cannot separate the template, as a part of the information system, from the situated work of its creation and usage. This work is always observable, and that makes it available both to the doctor and to the patient during the visit. The doctor acts so that make her or his work visibly professional, which implies, among other things, organization of interaction with the patient each time in the unique circumstances. The use of templates here is not in conflict with the doctor's situational orientation, because any templates – both in the narrow sense, as a part of EHR, and in the wide sense, as a habitual actions – require some situated work for them to be the “templates” at all. Thus, the repetition of medical routines is based on situated practices of its accomplishment.

Therefore, for the developer of information system the structure of doctor's habitual action is determined by some scheme, which, in turn, can be either (preferably) adequate – and this adequacy can be enhanced, for example, by asking doctors to built the schemes of visits – or (undesirably) inadequate. The developer describes the real medical practice as a practice of this kind, and that makes him suspect doctors of desire to reduce their activities to simple reproduction of templates, in some cases, literally, by copy-and-paste method. However, for doctors, template is something that is always placed in the context of situated activity, which cannot be reduced to this template. Routine character of medical practice is an achievement, not the cause of doctors' observable actions.

## **Conclusion**

“This is a matter of habit” – with this phrase one of the doctors summed up her work with the new information system. This phrase refers to a special place of the habit in the structure of action. What does it mean to let the habit to do its business? What is generally a matter of habit? Whatever this matter consists of, the phrase suggests that habit is an achievement. As an achievement, it has a number of properties that make it irreplaceable in the study of the organization of human actions. The most important of these properties is that habit demonstrates: the reproducibility of action has situated character. As such, habit should be opposed no to improvisation, but to the rule-governed activities: action by the rule can be easily (even if wrongly) divided into action and rule, but in the case of habits such separation is extremely



complicated. Even commonsense understanding of habit refers to fact that in habit actions and “templates” are inseparable. Ideal habit is the one when you do exactly the same thing every time.

In fact, acting habitually, we, of course, never repeat our movements up to millimeters. And it’s not because the situation of our activity is always different. Rather, the point is that the reproducibility of the situation, which we are seeking for, consists in the production of its organizational, rather than the physical, familiarity (if we can separate the former one from the last in the first place). Try to write the same word dozens of times, and each time, in their details, these writings will vary, but, in the same details, they will be the same. We have learned how to write in a certain way, and now this habit allows us to produce more and more new writings. When I write, I do not try to repeat something, I do not try to build my action according to some rule. Now, knowing how to write, I do not try to write “correctly.” I write “as writing goes.” I let the habit to do its job.

Here, of course, somebody may ask: does the above analysis suggest that every action is a habit? Yes, it does, but only in the sense in which it is impossible to find an action without a “touch” of routine. This “touch,” however, does not mean that the everyday action is gradually habitualized, as Peter Berger and Thomas Luckmann call it.<sup>18</sup> The repetition itself does not turn the action into habit. Habitual character of the actions is provided not by the orientation on the past performance of the action as a model, but by the ability to produce the familiar course of events and look of things. Therefore, the dynamics of any action consists in expansion of our capacity to act in the world in every particular situation. Habit is something that accompanies every action by virtue of its inextricable situatedness.

The habit is often used to characterize the individual. But even this use of the habit is a social practice, because it is methodical in nature. To even greater degree the social character habits is exhibited in the situations where habit is intertwined with the particulars of the organization of certain activity, for example, professional. The example of medical practice, considered in the present paper, shows that habits is an important issue for both the performers of certain activity and for those who want to change it. The opponents of changes, as well as its supporters, may appeal to the habit as something that create obstacles or as something

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<sup>18</sup> “All human activity is subject to habitualization. Any action that is repeated frequently becomes cast into a pattern, which can then be reproduced with an economy of effort and which, ipso facto, is apprehended by its performer as that pattern. Habitualization further implies that the action in question may be performed again in the future in the same manner and with the same economical effort. This is true of non-social as well as of social activity. Even the solitary individual on the proverbial desert island habitualizes his activity. When he wakes up in the morning and resumes his attempts to construct a canoe out of matchsticks, he may mumble to himself, ‘There I go again,’ as he starts on step one of an operating procedure consisting of, say, ten steps. In other words, even solitary man has at least the company of his operating procedures” [Berger & Luckmann, 1991: 70–71].

untouchable. At the same time, as we have seen, the notion of what habit is and how it works has the most direct impact on the organization of certain practice. In this sense, doctor's routine activities and the circumstances they have to deal with when these activities are reorganized due to the appearance of EHR, are ideal practice for raising the question of the status of habit in the structure of action and of the need to find new ways for the analysis of habitual actions.

Because I discussed the habits or templates of action using the case of doctors' interaction with EHR, many aspects of this interaction remained "behind the scenes." I did not take into account the doctors' workflow burden, their salaries, their working conditions; I did not consider the economic considerations related to the introduction of electronic ways of creating medical documents and health records; I did not dwell on legal issues, e.g., on the status of electronic signature. This is not because I find these things insignificant. I just think that all these things find their place within and in relation to routine professional work of doctors. The aspects of their work, discussed in the present paper, are specifically uninteresting aspects, which even the doctors themselves may find not that important. But I wanted to show that discussion of these "small" themes, making them interesting, may be relevant to the discussion of "big" questions that are important for both medical and sociological practice.

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