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*Published in:*

International Journal of Orthopaedic and Trauma Nursing

*DOI:*

[10.1016/j.ijotn.2016.04.005](https://doi.org/10.1016/j.ijotn.2016.04.005)

2017

*Document Version:*

Peer reviewed version (aka post-print)

[Link to publication](#)

*Citation for published version (APA):*

Gesar, B., Hommel, A., Hedin, H., & Bååth, C. (2017). Older patients' perception of their own capacity to regain pre-fracture function after hip fracture surgery – an explorative qualitative study. *International Journal of Orthopaedic and Trauma Nursing*, 24, 50-58. <https://doi.org/10.1016/j.ijotn.2016.04.005>

*Total number of authors:*

4

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# **Older patients' perception of their own capacity to regain pre-fracture function after hip fracture surgery- an explorative qualitative study**

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## **ABSTRACT**

**Aims and objectives.** To explore healthy older patients' perceptions of their own capacity to regain pre-fracture function in the acute phase following hip fracture surgery.

**Background.** The incidence of hip fractures is expected to increase. In Sweden, of the patients who sustain a hip fracture, 40 per cent are healthy and lived independently pre fracture. However, a hip fracture often results in declined functional outcomes for 40 per cent of these patients.

**Design.** The study had an explorative inductive qualitative design.

**Methods.** Semi-structured interviews (n=30) were conducted two to five days after hip fracture surgery. Data were analysed using manifest inductive content analysis.

**Results.** As a description of patients' perception one main category emerged: To end up in a new situation with or without control. Patients expressed that they believed in recovery and thought nothing would be altered. However, since they had to adapt to the ward culture at the acute hospital, they became passive and became insecure about their future life situation

**Conclusion.** The attitudes of staff at the acute hospital can influence the outcome for hip fracture patients. Patients believe in recovery but do not receive psychological support to regain physical capacity.

**Keywords:** acute care, content analysis, healthy patients, hip fracture, hospital care, patient-centred care, patient experiences

## **INTRODUCTION**

The number of individuals reaching old age is predicted to increase dramatically over the next decade. It is estimated that the worldwide incidence of hip fracture will rise from the current 1.66 million (in 1990) to 6.26 million in 2050 (Melton, 1993). In Sweden the annual incidence of hip fracture is nearly 18,000. Many older patients with a hip fracture are frail, have chronic disorders and are functionally impaired even before sustaining a fracture. However, data from the Swedish hip fracture register show that 40 per cent of older patients are healthy are previously healthy, but after a hip fracture only 40 per cent of these patients regain their earlier functional capacity (Hommel, 2007). The aim of this study was to explore healthy older patients` perceptions of their own capacity to regain pre-fracture function in the acute phase (the first two to five days) after hip fracture surgery.

## **BACKGROUND**

Hip fractures following a fall are amongst the most devastating consequences of osteoporosis. The lifetime risk of being affected by an osteoporotic fracture ranges from 40 to 50 per cent in women and 13 per cent in men (Johnell and Kanis, 2006). A hip fracture is a sudden, traumatic event that threatens many aspects of life, including physical aspects in the form of a decline in physical functions and increased dependence on others (Magaziner et al., 2000). Psychological aspects include existential thoughts and a reevaluation of their life situation, as well as influencing social relationships (Ziden et al., 2008). As the population ages, the care provided in order to maintain a patient´s health status is vital because frailty following surgery can hinder the recovery process (Partridge et al., 2012). Older adults are aware of their vulnerability and know that their life situation can suddenly change. They also have a strong inner driving force to maintain their health (Fange and Ivanoff, 2009). Older patients are especially vulnerable to loss of dignity during acute hospital admission because impaired

health results in loss of functions and a greater physical dependency. Staff behaviour and patient factors also affect patients' dignity (Baillie, 2009).

It is now more than ten years since fast-track pathway for patients with suspected hip fracture was implemented in Sweden. This routine includes steps such as giving patients with a suspected hip fracture fluids and pain relief in the ambulance and transiting the patient rapidly from the ambulance to the orthopaedic ward directly after radiography. Fast-track care for hip fracture patients can minimise complications, increase priorities and decrease length of stay (LOS) (Hommel et al., 2008; Larsson and Holgers, 2011; Leigheb et al., 2013). Surgery within 24 hours following fracture reduces hospital stay and may also reduce complications and mortality (Al-Ani et al., 2008; Simunovic et al., 2010).

The recovery process after a hip fracture consists of both physical and psychosocial care. Previous research has tended to focus on physical function, which includes post-hospital discharge rehabilitation. Interventions relating to physical function showed no differences in improved mobility at 12 months (Handoll et al., 2011). Other frequently used outcomes are in-hospital mortality, length of stay, time to surgery and complication rate (Liem et al., 2014). There is insufficient evidence relating to the social and psychosocial factors influencing recovery from a hip fracture. Further research in this area is required, which should include patient-reported outcomes to identify essential factors in hip fracture care (Crotty et al., 2010). Factors associated with a reduced level of mobility after hip fracture surgery are affected by psychological factors (fear of falling, lack of confidence, frustration and feeling lazy), physical factors (fatigue, pain, balance, weakness, co-morbidities) and social and environmental factors (reliance on next of kin, changed living arrangements). Patients receiving inpatient rehabilitation were very optimistic within the period of three weeks after the injury in contrast with the pessimism that arose after patients returned home. The

significance of psychological factors and social support should be considered in the recovery process after hip fracture (Taylor et al., 2010).

There are several qualitative studies focusing on experiences of recovery after hip fracture surgery. The studies consider all types of patients, not only healthy ones (Archibald, 2003; Griffiths et al., 2015; Olsson et al., 2007; Ziden, Wenestam, Hansson-Scherman, 2008) Olsson et al.(2007) described three groups of patients based on perceptions of responsibility in the rehabilitation process: 1) autonomous, self-sufficient patients who take care of themselves and search for relevant information; 2) modest, frail patients in need of more support who want information but do not ask for it; and 3) heedless, patients who are already dependent, not aware of their own responsibility and not interested in information.

Experiences of the recovery process for older patients have been explored five to nine weeks after a hip fracture with patients in a community hospital (Archibald, 2003). Major themes consisted of coping with the pain, beginning the struggle to recovery and regaining independence. Patients describe struggling with the disability itself, the recovery experience, depending on others and being housebound.

Interviews conducted one month post hip fracture indicate that the recovery process affects personality. Individual changes concerning the relationship with one`s own body can cause social and existential changes in relationships with others and to one`s life situation as a whole (Ziden et al., 2008). The ability to adapt to reduced mobility was considered to decline with age, but striving to regain pre-fracture mobility was important for managing personal care and day-to-day activities (Griffiths et al., 2015). Patients with hip fractures all worried about their future ability to walk again (Griffiths et al., 2015; Olsson et al., 2007; Ziden et al., 2008). The importance of psychological and social factors in the recovery process was investigated in patients who were independent before the hip fracture (Taylor et al., 2010). To

our knowledge no such study with a selected group of previously healthy patients has been conducted in the first days after hip fracture surgery.

The aim of this study was to explore healthy older patients' perception of their own capacity to regain pre-fracture function in the acute phase (the first two to five days) after hip fracture surgery.

## **METHODS**

### **Design**

The study had an explorative inductive qualitative design employing interviews.

### **Data collection**

#### *Setting*

The study took place in five orthopaedic wards at three hospitals, one university hospital and two central hospitals, in three county councils in Sweden.

#### *Sampling*

A convenience sampling procedure was used. Included patients were day two to five post hip fracture surgery at the time of recruitment. Patients were considered eligible for inclusion if they met the following criteria:

- 1) age 65 years or older;
- 2) were classified in the ASA I (healthy) or ASA II (mild systemic disease) (American Society of Anaesthesiologists, 1963) (Fig. 1);
- 3) had no cognitive impairment; and
- 4) spoke and understood Swedish.

When a patient was eligible for inclusion, the registered nurse (RN) responsible for the nursing care informed the patients of the study and collected the signed informed consent document.

Insert Figure 1 about here

A total of 30 patients participated in the study; 3 men and 27 women. The mean age was 82.5 years (range: 65–97 years). Six patients were classified as ASA I and the remaining 24 as ASA II. All 30 patients were admitted from their own home and were independent before the fracture.

### *Procedure*

Thirty qualitative semi-structured interviews were conducted at a time that suited each patient (two to five days postoperatively) at three different acute hospitals between August and December 2013. All interviews were carried out in a room without any disturbances. A semi-structured interview guide was used. Prior to the study, the interview guide had been pilot tested and no changes made. All interviews were conducted by the first author (BG), lasted between 35–60 minutes and were recorded and transcribed verbatim. The interviews began with following questions: ‘Could you please tell me about what happened when you fell and broke your hip?’ and ‘What do you think about your possibilities of regaining your functions and recovering after the hip surgery?’ Individual follow-up questions were asked to elicit more detailed responses.

### **Data analysis**

Qualitative manifest inductive content analysis as described by Elo and Kungäs (2008) was used. The content analysis processes contained preparation, organising and reporting phases (Elo et al., 2014) as detailed below.

### *Preparation phase*

- The interviews were transcribed verbatim



- The written transcript was read through several times in order to capture the content. The unit of analysis was selected on the basis of the aim of the study, inspired by Elo and Kyngas (2008).
- The written transcript was read (in Swedish) repeatedly (BG) to grasp the content and to obtain a sense of the whole. AH and CB read the entirety of the text transcriptions once. The results and selected quotations were then translated from Swedish to English when reporting all steps in the analysis process.

#### *Organisation phase*

- Open coding with written headings was performed and the headings were recorded on coding sheets by the first author (BG). After initial coding of 15 transcripts, BG, AH and CB reviewed and discussed the coding to reach agreement.
- The headings of the coding sheets were grouped by gathering those that were similar into higher order subcategories covering the meaning.
- To ensure that data accurately represented the information that the participants provided, similar subcategories were grouped into higher order generic categories, the stage of interpretation degree.
- One main category was generated from the three generic categories in order to give general descriptions of the content of the written material. BG, AH, CB and HH reviewed the subcategories, generic categories and the main category and a final decision was made.

#### *Reporting phase*

- An overview of the abstraction process with the generation of subcategories and generic categories was conducted (Fig.2). To ensure credibility all authors initially performed the codes individually. All researchers were involved in several dialogues during the analysis process.

To scrutinise the trustworthiness and credibility- how well the categories cover the data- the authors moved back and forth between the interview text, codes, subcategories, generic categories and the main category. These steps were taken to ensure that the intended meaning was faithfully represented i.e. to confirm conformability and authenticity throughout the entire process. A necessary part of qualitative research is that the researchers should consider whether there could be alternative interpretations. Dependability refers to the stability of data over time and under different conditions; there being a clear description of the context, selection and characteristics of participants, data collection and the process of analysis to address the issues of transferability (Elo et al., 2014; Lincoln and Guba, 1985).

### **Ethical considerations**

The study was approved by the Regional Ethical Board in Lund, Sweden (dnr 2013/320) and performed in accordance with the Declaration of Helsinki (2008). Patients received oral and written information about the study. There was an informal conversation and an explanation of the aim of the study before the interview started. Patients were informed that they could withdraw at any time with no explanation and without affecting their future care. They were also informed that all data would be treated strictly confidentially. Informed consent was obtained before the interview was conducted.

### **RESULTS**

From the analysis one main category emerged: 'Ending up in a new situation with or without control' as a description of patients' perception of their own capacity to regain pre-fracture function after a hip fracture. This main category was developed from three generic categories that were outlined from six subcategories (Fig. 2).

Insert Figure 2 about here

### **Ending up in a new situation with or without control**

Patients' perceptions of their own capacity to regain pre-fracture function in the first two to five days after hip fracture surgery were optimistic. The participants identified that they found themselves in a situation that they had not experienced before and therefore felt ill-equipped to manage. They were not offered opportunities to be actively involved in making decisions about their care. Experiences of being forced to adapt to routines and standard procedures entailed passivity. This was described as having limited influence over care which slowly impaired patients' inner belief in their own capacity to successfully manage their recovery. Little by little participants began to doubt their recovery and be concerned about their unpredictable future. To believe in one's own ability and commitment were shown to be crucial factors.

#### *Belief in recovery, nothing will be altered*

The patients had no doubt about being able to manage this situation. The hip fracture was considered to be an accident that resulted in impairment from which they would recover. They were aware that they possibly had to accept some limitations in function in the near future because of the hip fracture.

#### *No problem, I will manage this*

Patients were convinced that the limitations from the hip fracture would pass within a few weeks and life would continue in the same manner as before the fracture. The fracture would, of course, be a reminder for a while, but no difficulties would remain in the future. To believe in one's ability and to not become worried mattered a lot. They thought the hip fracture would not influence their future life, as they felt sound in mind and body and visualised themselves as healthy.

... I think I will recover, get through this successfully and I will go on with my life as before. I don't think the hip fracture will affect anything in my life situation at all, not at all, no, no ...

(Woman, 78 years)

*Unexpected event, determination will be needed*

The event of fracturing the hip was conveyed as a sudden interruption in life, an accident that resulted in a temporary impairment. In the beginning it was expected to cause some problems with mobilisation and patients expressed the importance of using their inner strength to recover. The most important driving force was about looking forward to regaining their everyday life as soon as possible. The patients considered themselves to have a fighting spirit, durability and persistence that they had adapted from their lifetime experiences.

... Life will not be in this way in the future, but it is at present, to begin with. This is transient, and I have patience. I think I will recover and be able to keep up with things like before ... (Woman, 89 years)

*Adapting to a new situation in hospital*

To adapt, accept and follow the routines that were offered in the acute ward resulted in an inner feeling of uncertainty about how to meet expectations and what to manage oneself. The patients expressed their need for confirmation that they were doing well. They tried hard to adapt to the routines in the acute ward which, according to them, led to passivity.

*Need for appraisal*

The patients wanted to manage things by themselves: They did not want to be dependent. The hip fracture operation forced them into hospitalisation. It became important to follow practice guidelines and to receive praise from the hospital staff. The patients wanted to live up to expectations. Something that influenced their self-confidence and inner belief in recovery was to feel an improvement day by day.

... The carers had never before seen a patient get mobilised as quickly as I did after the hip operation. They were quite impressed ... (Woman, 73 years)

### *Context as a negative influence*

Because the patients had no earlier experiences of having a hip fracture or of being hospitalised, they did not know what to expect. They adapted and accepted the view from both hospital staff and relatives that they had become vulnerable due to the hip fracture.

Because of some impairment in physical health they were told not to try some activities alone at this stage. As routine in an acute ward, they were assigned a walking frame, which they saw as a symbol of sickness. Patients were requested to be careful and to not walk without assistance. This made them become more dependent on the carers in the ward. At the same time they were expected to carry out some activities, such as activities of daily living (ADL) in a time frame that they could not decide for themselves. The ward staff informed them that they would receive some help at home.

... Here I am like a ... well someone who does what they instruct me to do... I do not decide anything here. I believe they have taken it from me. I think I will return to earlier function, but now I will ... I will ... you know, I constantly have to ask for support. I would prefer to be independent ... (Woman, 93 years)

### *An unpredictable future*

The experience of the hip fracture was an unexpected event. Patients cherished hope and felt they would have enough strength to manage everyday life at home after leaving the security of the hospital. They were aware that the time at home would be different from before, and this included some kind of uncertainty about the future.

### *When and how to recover*

At the hospital patients felt secure as they could receive support and help if needed. They speculated about how to manage the pain at home and about the incident itself. These thoughts contributed to the worries about returning home and fears of a new fall. The older adults strived to manage things by themselves as much as possible.

... Well I will try but then I will see how much strength I've still got, time will show. I really want to try to do it well and manage these exercises I am expected to do. At the hospital you feel strong but when you go home it could be different. You have to be careful. Besides all of that, I do not know if I will regain the same strength as I had before. I wish to recover as soon as possible ...

(Man, 83 years)

### *Uncertainty*

Since the hip fracture event was a new experience there was uncertainty about how this would affect life in the future: insight into the ongoing ageing process occurred. To fall and have a hip fracture is expected when you get older. Thoughts about future life concerned doubt, fear and hope regarding the strength to recover and regain previous function. Patients were confident about the fact that time would show what would happen and the need for taking it step by step.

... I do not think it is good for me to stay at the hospital but you have to cope with that. They have their special procedures they have to follow. I would like to take it easier and not to feel the stress and that you have to cope with certain things that you cannot handle when you have recently undergone an operation. The hip fracture has made me grow old, like turning a new page in a book ... (Woman, 89 years).

## **Discussion**

The main findings in this study resulted in one main category: 'Ending up in a new situation with or without control'. Directly after surgery patients described believing in their own recovery and thinking that nothing would be altered. The hip fracture was an accident from which they believed they would recover. All patients described different life experiences which they thought had made them stronger and gave them a fighting spirit. An acute event often results in temporary dependence on others. It is important to remember to take advantage of patients' desire to regain independence and incorporate opportunities to involve the patient in their own recovery (Fange and Ivanoff, 2009; Ottenvall Hammar et al. 2014).

Before the hip fracture patients in this study described themselves as independent and strong. Just after surgery they were convinced they would regain pre-fracture functions.

The findings show that patients' conviction in having the capacity to regain pre-fracture function changed as they adapted to the routines at the acute hospital ward. The psychological change that arose was crucial and depended on how patients were influenced by the hospital staff and relatives. For example, they were told to be careful, not to mobilise on their own and that they would receive different forms of assistance, which made them passive in their care decisions. The first days after hip fracture surgery patients became concerned about whether they would be forced to change their way of living. They expressed fear of becoming dependent on others and that their life situation would be diminished. Previous studies have found associations between older patients' self-esteem in having the potential to recover after a hip fracture surgery and less disability and independence. To maximise older patients' psychological resources in the rehabilitation process it is necessary to focus at the same time on striving to regain physical functions (Bowling and Iliffe, 2011; Ottenvall Hammar et al., 2014; Shaw et al., 2003). A recent study highlights that it is important to mediate realistic expectations in the acute post-operative recovery phase with the care for older patients. The complexities in the aging process result in diminishing available adaptive responses to innumerable stressors. That is the reason why old patients need more time for rehabilitation (Manor and Lipsitz, 2013).

It is important to improve patients' inner drive to recover in the acute orthopaedic ward. During the first two to five days post-surgery, patients in this study felt they had become passive and had a perception of declining function. Even though patients were hopeful they described feeling uncertain about the future. Actually, the acute vulnerability made them commute between hope, doubt and fears regarding how they would manage to regain function, and they expressed uncertainty about whether the hip fracture would affect future

life. These findings indicate the importance of paying attention to older patients' self-esteem in order to maintain their belief in recovery. A limitation with the timeframe chosen is that the patients' perceptions may be different after this timeframe as patients began to understand the full impact of the injury. Therefore a follow up study after 4 months has been conducted. To be affected by a hip fracture is an unexpected, stressful event that involves pain, surgery and staying on a ward at an unfamiliar acute hospital, and it affects older patients both in a psychological and physiological manner. Efforts to support self-determination and independence should start shortly after hip fracture surgery and continue during the whole rehabilitation process.

Patients in this study were convinced that the hip fracture resulted in temporary impairment. They wanted to manage things by themselves and tried to become independent. Their inexperience of hospital care made them adapt and accept the routines, which made them passive. Because of impaired functions they were told that they had to ask for help, to adapt to dependence. At the acute hospital ward patients are transiting into a state described as frail. Older patients are vulnerable and it is essential to combat frailty when undergoing surgical procedures. Frailty is a syndrome characterised by diminished strength, endurance and reduced physiologic function, which increases an individual's vulnerability and develops increased dependency (Morley et al., 2013). There is a distinction between being frail and feeling frail (Grenier, 2006). There is no consensus yet about whether disability should be considered as a component or an outcome of frailty (Levers et al., 2006; Sternberg et al., 2011). The concept 'feeling frail' concerns emotional aspects related to impairment, traumatic events, fear and loss of functions. The emotional impact of bodily changes may threaten identity and maintain a continuous identity reveal (Grenier, 2006; Ottenvall Hammar et al., 2014; Ziden et al., 2008).



The findings of this study were about the transition of patients from being convinced about their recovery to becoming insecure probably due to the hospital staff's and their families' behaviour. In order to strengthen and maintain the patients' self-esteem, it is necessary to change ward processes. Findings show that previously autonomous patients tended to become frail within two to five days post-surgery. This highlights that staff in acute nursing care facilities should pay attention to when and why patients transit into becoming frail. Limited psychological support seems to cause loss of self-confidence about recovery.

Although patients with hip fracture are not a homogenous group, they are treated as such by the health-care system in Sweden. They are all unique with individual expectations. The results from this study highlight the need for person-centred care. According to the findings, the patients' influences in their own care are limited. Older patients value independence very highly. Any loss of function that threatens the ability to manage things by themselves has a considerable detrimental effect on their self-confidence and quality of life (Haak et al., 2007; Salkeld et al., 2000). They are especially vulnerable to loss of dignity because impaired health results in loss of functions and greater physical dependency in acute hospitals. The hospital environment, such as staff behaviour, and patient factors affect patients' dignity (Baillie, 2009). The care should be holistic and focus on working with the patient's beliefs and values and involve patients in decision making. This could result in patients' satisfaction with care and a feeling of involvement, as described by McCance et al. (2011) and Morgan and Yoder (2012). This shows that ward culture at the acute hospital may affect patients' recovery. These findings emphasise the need for proving an approach that is holistic and respectful. However, it is difficult to compare the findings from this study with previous studies because we have not identified any other interview study conducted within the first week after the hip fracture surgery, clustering healthy patients, 65 years and older old with a hip fracture.

## **Strengths and Limitations**

The purpose of using a semi-structured interview guide was to ensure all topics were covered. A strength of the study was that it included 27 women and three men, which is representative of this group and that the analysis process was conducted by investigator triangulation, i.e. independent coding and analysis by all the researchers. Another strength was that all interviews were conducted by one interviewer. This might mean that there was a slight risk that concepts could be missed.

## **Conclusion**

This study demonstrates that, directly after hip fracture surgery, older healthy patients are convinced that they will regain pre-fracture function. During the first two to five days in the hospital, patients in this study became insecure because they had to adapt to the situation on a hospital ward. They were treated as sick and became passive. This may have altered their confidence in their own capacity to recover. The temporary acute dependence on others is a crucial phase. This highlights that staff in acute nursing care facilities should pay attention to when and why older patients transit into becoming frail. It is important to observe this crucial phase and take advantage of patients' inner driving force to maintain their independence and regain pre-fracture functions. The staff need to take account of patients' different perspectives and find out potential ways of maximising older patients' psychological resources while they are striving to regain physical functions. Patients with a hip fracture are treated as a homogenous group by the healthcare in Sweden. They are all unique with individual expectations. This study highlights the need for a person-centred care for the purpose of retaining older patients' inner driving force to regain pre-fracture function and maintain independence. It is vital to prevent or delay disability in older people who are not yet disabled.

### **Relevance for clinical practice**

Acute orthopaedic ward organisation impacts on patients' outcome but does not seem to provide the best benefit for healthy, independent older patients with a hip fracture. This culture affects older patients in adapting and becoming passive. This in turn can result in loss of psychological and physical functions, impaired self-confidence and a deterioration in their inner belief in recovery and an independent future. According to the findings of this study patients' influence in their own care is limited and this highlights the need for person-centred care in acute orthopaedic settings. The temporary acute dependence on others suggests it would be beneficial to involve patients in decision making. To provide person-centred care from ambulance personnel through the whole ward process could be a concept that would take advantage of patients' inner driving force to maintain independence and regain pre-fracture functions.

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**ASA- classification**

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ASA Physical Status I	A normal healthy patient
ASA Physical Status II	A patient with mild systematic disease
ASA Physical Status III	A patient with severe systematic disease
ASA Physical Status IV	A patient with severe systematic disease that is constant threat to life
ASA Physical Status V	A moribund patient who is not expected to survive without the operation

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**Fig. 1** Physical status classification system, American Society of Anaesthesiologists (1963)

<b>Sub Categories</b>	<b>Generic Categories</b>	<b>Main Category</b>
No problem, I will manage this Unexpected event, determination will be needed	Belief in recovery, nothing will be altered	Ending up in a new situation with or without control
Need for appraisal Context as a negative influence	Adapt into a new situation in hospital	
When and how to recover Uncertainty	An unpredictable future	

**Fig. 2** An overview of the generation of categories