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Time to Revive Luther Gulick
– On Span of Control and Organisation Quality

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Time to Revive Luther Gulick
– On Span of Control and Organisation Quality

Lena Andersson-Felé

This paper is about organisational prerequisites for managers at an operational level within the health care industry. These managers, with direct responsibility for personnel, are usually called supervisors, foremen, middle-managers or first line managers: They work closest to the personnel, the subordinates, and have direct responsibility for personnel, finance and the organisation on a daily basis. The main focus in this paper is on the relationship between the number of employees a manager is responsible for – the span of control - and primarily the quality of the working environment and performance – the internal quality. The purpose of this paper is to show both how the theories around the span of control have developed and also which empirical studies that have been carried out with respect to the span of control’s effect on the quality of the organisation. The paper begins with legislative demands on efficiency and quality in Swedish health care. This is followed by a section on the consequences of a more streamlined organisation, different levels of management, theories on the span of control and a review of empirical studies. The paper ends with a discussion around the importance of the span of control on work environment and performance.

Demands for Efficiency and Quality

Over the past few decades public organisations within the Swedish health care industry have had greater demands for efficiency and quality placed upon them. This is a consequence of partly a reduction in financial resources and partly the legislation that manifested itself in connection with the three extensive reforms on responsibility that were carried out within the field of Swedish health care: the Elderly Reform in 1992 (SFS1991:1150), the Handicap Reform in 1994 (SFS 1993:387) and the Psychiatric reform in 1995 (SFS 1883/94:218). The purpose of these reforms was, amongst other things, to bring together and develop collaboration between the county councils’ medical and the local authorities’ social sphere of activities. Demands for efficiency and quality are in the Health and Medical Services Act (SFS 1982:763) where it is decreed that health and medical care shall be organised in a way that meets both high quality and cost-efficiency and in the Social Services Act (SFS 2001:763) that prescribes that performances within social services shall be of high quality.
This development has not just happened in Sweden but the demand for efficiency, documentation and measurement of results have characterised the public sector in the western world for the last two decades (see, for example, Broadbent et al 1992; Hood 1995, Miller 1996; Lindvall 1997; Olson 1998; Lindholm 2003). The public organisations have also, as employers within health care, a far-reaching responsibility for yet another quality aspect, namely the employees’ work environment, where the Work Environment Act (SFS 1977:1160), chapter 3 prescribes “The employer shall take all the necessary precautions in order to prevent an employee being exposed to ill-health or accidents. A starting point should then be that everything that could lead to ill-health or accidents should be altered or replaced and thus eliminate the risks of ill-health or accidents.”

**Consequences of Streamlined Organisations**

A consequence of the reforms that have been carried out within health care has been heavily streamlined organisations. Management in these organisations perceive administrative support to be inadequate and resources for development as limited. The managers are also directly involved in day-to-day work (Arbetarskyddsstyrelsen 2000). Management and leaders then risk being caught between the overall visions, on the one side, and the employees’ needs and demands on the other. Many managers experience an abnormally high workload, where too little time can be devoted to both personnel and organisation development.

One of the prerequisites for a functional organisation, with a good work environment and a reasonable workload, is that the managers have a reasonable amount of subordinates, thus enabling the managers to get to know all of them. The managers can then not only acquire the necessary knowledge of the daily activities but also receive improved opportunities to offer support and feedback to their staff. In that way, they can improve the prerequisites for the development work that is necessary for adapting today’s health care services to legislation’s demands for efficiency and quality both now and in the future.

Prerequisites for management and leadership within different forms of health care come to light very clearly in a number of studies on the subject. Here it is essential to emphasise some of these studies and the problems that have been observed:
In 1998 and 1999 the Swedish Work Environment Authority carried out a supervision project on stress and workloads in the health care. All of the labour inspection districts pointed out that workloads had increased heavily within the entire health care industry. Particularly exposed were supervisors within the municipal care services for the elderly. According to the Work Environment Authority, the increase in workloads is a consequence of three radical changes in the health-care sector. Partly the Elderly reform (SFS 1991:1150) and the increasing number of elderly people in need of care have led to care becoming heavier within care for the elderly and home-help services. More administrative tasks have arisen since stipulations for these organisations have changed. Also, demands placed on both local authorities and county councils to make savings caused reorganisations with a reduction in personnel and flatter organisations as a consequence. The Work Environment Authority ascertained that within care of the elderly the supervisors have responsibility for larger groups of personnel. Several of the labour inspection districts reported that supervisors with full responsibility for care, personnel and budgets often had between 50 and 90 staff under them. There are even cases of supervisors responsible for groups of up to 160 people. These larger personnel groups are, according to the Work Environment Authority, the cause of management being unable to support their workers in general. The personnel supportive role of the management at these places of work is drastically neglected. At the same time, the personnel’s opportunity to personally influence their working situation decreased due to the increased workload and the larger workforce. (Arbetarskyddsstyrelsen 2000).

In 2000 – 2001 together with Sifo Research and Consulting, the Federation of County Councils and the Swedish Association of Local Authorities carried out a poll regarding performance among municipal employees and employees of private enterprise on how they think it is to work with municipal and private employers (Svenska Kommunförbundet 2001). The greatest differences between municipal and private enterprise employed managers were, according to the poll, the relationship between the individual worker and the manager and in the issues to do with being noticed, receiving feedback, positive or negative, on work carried on outside the workplace, having the opportunity to develop in your working role and that the knowledge you have can be used at work. To quote the report: “Is it because the organisations are too flat? Is there time to notice the co-workers?”

Another example is the report that county council accountants in Stockholm’s county council handed in in 2003 (Stockholms läns landsting 2003). As instructed by the accountants,
Kristina Wager from the Centre for Public Health in Stockholm’s county council carried out focus group interviews with operative managers and subordinates in the county council regarding prerequisites for leadership. The operative managers in the focus group had to answer the question: “What prerequisites do you think are the most important to be able to carry out a good leadership?” In the same way, co-workers had to answer the question: “What is the most important aspect of leadership to be able to carry out a good job?” The result of the interviews showed that both managers and their subordinates ask for resources in relation to the extent of the assignment. Both the managers themselves and their subordinates experience that managers do not have time to be bosses. This is partly due to the fact that administrative support resources have been withdrawn and administrative tasks have been given to the line managers, something which hinders them from being able to devote time to leadership. The managers’ viewpoint is mainly that a manager must have time to be a manager. In the report it is stated that that the experience that managers do not have time to be managers can be seen as a warning sign. As the writers put it: “If the managers do not have time to be managers – who is leading the operations?” Several of the members of the focus group were of the opinion that, since managers do not have time to be managers then all the issues that affect the staff cannot be given the required space. The groups were of the opinion that this leads to a poorer work environment.

In 2004 Ingrid Hjalmarsson, Eva Norman and Gun-Britt Trydegård at Stockholm Gerontology Center carried out an interview study of unit managers and their prerequisites within different forms of care for the elderly services in both the city and county of Stockholm (Hjalmarsson et al 2004). One of the results of the interviews points out that, in their opinion, only a small number of the managers interviewed experienced reasonable prerequisites for their work. The other unit managers experienced that prerequisites for their work were on a scale of tough to just about impossible. Those unit managers with the best prerequisites were those responsible for smaller groups. They state that they have time for and are able to support their staff. They even feel know the recipients of care, so that they can give their subordinates firm leadership. Many of the managers interviewed, according to the study, gave the impression that their views on organisational and time pre-requisites that were necessary for the personnel to be able to offer the elderly that care they needed were not listened to by the higher management. The consequence is that those responsible for personnel and finance are left solely to take responsibility without having sufficient opportunities to influence the pre-requisites for the work. The authors of the study point out that research on health care over the past twenty
years from different perspectives describe the character of the job and the prerequisites required in order to meet the needs of the recipients of care and give the carers reasonable conditions (see, for example, Eliasson 1992; Härenstam 2002; Szebehely 1995; Astvik 2003). The results of research point out amongst other things, the necessity of giving the personnel their own space to act in meeting the care recipients but also sufficient time, continuity and knowledge about the recipient. Access to support and guidance are given as factors of quality both for the services carried out within health care and also for the work environments for the personnel.

As a further example, viewpoints can be stated from a conference on absence due to illness, that the Council for Health and Working Life in Västra Götaland’s county carried out in April 2005 (Arbets- och miljömedicin 2005). The purpose of the conference was to generate ideas for preventing absence due to illness, shorten sick leaves and get people back to work more quickly after illnesses. Around 300 people who represented different interests and actors in working life participated in the conference. The conference was carried out around three themes: current descriptions and ideas for preventing absence due to illness, shortened sick leaves and a faster return to work after illness. Researchers at Occupational and Environmental Medicine, Sahlgrenska Academy, analysed and categorised descriptions of problems and ideas for solutions that had come up. Two of the issues that were mentioned at the conference as problematic in working life were:

- Reduced job satisfaction, where, for example, standards of quality removed job satisfaction
- Managerial areas that are too large rendering dialogues with personnel impossible

The examples referred to all point out how essential it is that employers within health care give their managers prerequisites that enable them to be good managers and leaders. They require a functional organisation and a good work environment with a reasonable workload. This will prevent managers and leaders from becoming caught between overall political visions and legitimate needs and the demands that users, care recipients, patients and their relatives and the mangers’ subordinates have.
Managers at Different Levels

In all organisations over a particular size there are different levels of managers. It is common to distinguish between three management levels. At an institutional level there is top management, responsible for formulating the general goal, the long-term planning and budget work, and, in the public sector, adapting the organisation to politically stipulated goals. The top management must give the organisation a valuable basis so that it represents something that the employees can identify with. The management must also stand for and inform of the standards that are to be indicators for the organisation. At the administrative level there is the middle management. Middle managers have responsibility for a limited area of the organisation. The most important role of middle managers is to stand for the goals, to organise, administer and integrate the work in the department or between those departments they are responsible for. Middle managers also have important communication functions that lead to operational levels where the core activities of the organisation take place. At an operational level are those managers who have direct responsibility for personnel and a daily supervision of and responsibility for the core activities of the organisation. Management tasks are obviously limited to the group they are responsible for and usually include guidance and co-ordination. This pre-supposes in many cases that the leader must have specialist knowledge of the work and know in detail how tasks should be broken up. The close social relationship to the co-workers often fills the role of leadership with social functions that are about encouragement, support and especially motivation.

In all management roles there are two dimensions of work, partly the part that is more aimed at production or tasks, the role of manager, and partly the work that is focused on relationships and personnel, the role of leader. Bo Hagström (2003) at the National Institute for Working Life describes in his article *The Return of Middle Management* this conflict of loyalty whereby a first line manager must be able to cope with being an interpreter of the organisation’s strategic goals whilst simultaneously being a leader to his staff, whereby a manager is expected to represent and be an expert within his own profession. They have the management’s responsibility for the growth, stability and manifestation of the organisation. But, they also have the leadership tasks of leading, taking an interest in their co-workers and creating a creative working climate. The flat organisations of today have led to the administrative part of management taking up too much space causing the leader to end up
further from his group. There is more management and less leadership. This has created uncertainty in the group and indistinctness in management.

**Span of Control**

Use of the conception span of control for the number of subordinates a manager is responsible for and who do not come under another manager’s area of responsibility (Taylor 1911) dates back to the classic industrial work organisations where more or less normative establishment indicated guidelines or set limits for a suitable number of subordinates. A wide span of control occurs when a manager responsible for personnel has many subordinates and a narrow span of control means that a manager responsible for personnel has few subordinates.

The principles for the leading and distribution of work that characterised the classic work organisations were built on essentially a negative outlook on mankind. The starting point was that people were lazy and uninterested in work and responsibility. Therefore, the work had to be planned and controlled in detail. It was essential to have tight restrictions and control in order to counteract people’s supposedly innate laziness and destructive instincts. Both production pre-requisites and social climate made it natural to form larger organisational units within industry and administration on the same principles that were within the armed forces and the church. Ideas from those times were based more on practical experience rather than logical theory and a manager was considered only to be able to have a strictly limited number of subordinates.

Fredrik W Taylor’s Scientific Management theories from the beginning of the 20th century have a mathematical and quantitative approach to work organisations (Talyor 1911). Goals were using scientific methods such as time and motion studies, find the best, that is the fastest and most efficient method of working by applying these theses: there is a best way and the right man in the right place. It was also considered that there was an optimal span of control for the business, even if a slight increase in number of subordinates could improve the efficiency of the works managers. There was however a limit where too many subordinates affected efficiency in a negative direction.

In March 1933 Vytautas Andrius Graicunas, an industrious Lithuanian management consultant living in Paris, published an article in *The Bulletin of the International*
Management Institute on span of control where he pointed out that there was no theory supporting the general empirical understanding on limits for span of control (Graicunas 1937). In this article Graicunas suggested that a manager could have five, or in most cases four subordinates. Graicunas based this claim on calculations of three types of relations between a manager and his or her subordinates: Direct simple relations, mutual relations and group relations between the manager and combinations of subordinates. According to Graicunas calculations the complexity of the relations and contacts increase exponentially the more subordinates the manager have to supervise. For example a manager with two subordinates have six different kinds of relations to the subordinates, while a manager with six subordinates has 2 376 different relations and contacts (Table 1). This discussion has later been developed within network theory (see for example Håkansson and Snehota 1995; Höpner 2002).

**Table 1: Graicuna’s calculations**

<table>
<thead>
<tr>
<th>Type av relation</th>
<th>Number of relations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 people</td>
</tr>
<tr>
<td>Direct single relations</td>
<td>2</td>
</tr>
<tr>
<td>Mutual relations</td>
<td>2</td>
</tr>
<tr>
<td>Direct group relations</td>
<td>2</td>
</tr>
<tr>
<td>Total number of single and mutual relations</td>
<td>4</td>
</tr>
<tr>
<td>Total number of single and group relations</td>
<td>4</td>
</tr>
<tr>
<td>Total number of direct and mutual relations</td>
<td>6</td>
</tr>
</tbody>
</table>

*Notes: The more subordinates a manager has the more single, direct, mutual and group relations and contacts the manager and subordinates required. The amount of relations and contacts therefore limits the number of subordinates a manager can have.*

The French executive Henri Fayol (1841 – 1925) summarised his experiences as a business executive in the Book *Administration Industrielle et Générale* (Fayol 1916). His understanding was that a manager’s most essential task was to utilise available resources in the best possible way in order to achieve the organisation’s stipulated goals. This task could be performed through a good organisation which included planning, organising, steering, co-ordinating and control. Henri Fayol is usually looked upon as the founder of the so called school of administration who also established a number of administrative principles, two of them being *Unity of Command* and *Line of authority*. In this way Henri Fayol linked up with the earlier military commanding officers and their understanding of lines of order, authority
and span of control. Henri Fayol’s understanding was that the limit for a span of control at a lower level of the organisation was fifteen subordinates, while at a higher level four subordinates was advisable.

The first English translation of Fayol’s book was published by International Management Institute (IMI) in Geneva. IMI’s director was at that time Lydall Urwick. Urwick and Luther Gulick were commissioned by the American government to answer the question what good administration is. This assignment was given an account of in 1937 in Papers on the Science of Administration, where Luther Gulick and Lydall Urwick assumed Fayol’s description of good administration, when they summarised the manager’s role in the formula POSDCORB; Planning, Organising, Staffing, Directing, Co-ordinating, Reporting, Budgeting. Graicunas’ article on span of control was also republished in this book (26). Lydall Urwick also describes in his article from 1956 The Manager’s Span of Control in Harvard Business Review that he helped Graicunas to draft his article from 1933.

Luther Gulick was the person who developed the classic theories on span of control to another level, but his belief was still that a manager should not have more than three to seven subordinates (Urwick 1956). Luther Gulick pointed out however that the width of the span of control also depends on the manager in question’s preferences and ability and that the width of the span of control depends on, which is of more significance, three essential organisational variables, namely Diversification of Function, Time and Stability as well as Size and Space (Figure 2). In an organisation with a number of different functions, it is vital to reduce the span of control since the managers with responsibility for personnel integrate with many different types of individuals. If, on the other hand, all the subordinates carry out the same monotonous tasks then it is possible for a manager to lead and co-ordinate a larger group of people. Even if Luther Gulick’s definition of a great number was limited to the same tasks, this method can be applied to the amount of tasks that different people carry out, number of occupations or professions or amount of education and knowledge on the part of the subordinates. When it comes to time and stability Luther Gulick focused mainly on stability. In a stable organisation, with low staff turnover, the managers with responsibility for personnel do not need to train and supervise new employees. Individual employees, in a stable organisation, require less guiding since they know how to carry out their tasks. A stable environment, where demands on the organisation remain unchanged for longer periods of time, means that routines can be built up and a wider span of control is possible.
Herbert Simon (1946) argued that if the width of the span of control were limited and a manager were responsible for a relatively small number of subordinates it would result in an increase in the number of levels within an organisation leading to difficulties with vertical communication. Simon’s argument remained unchallenged and organisation researchers found new areas of interest. The span of control was forgotten and the main focus for research was moved from the characteristics of organisations to organisational behaviour and to an attempt to show that the importance of the old management had a limited value. However, there was, at that time, no empirical research that showed the importance of variations in the width of the span of control for the result which was shown by different organisations.

By using Luther Gulick’s (1937) and Lydall Urwick’s (1956) principles on the span of control Kennet Meier and John Bohte (2000) have, however, more recently developed a span of control theory and been able to prove a connection between the span of control’s width and result. This developed theory means, according to Meier and Bohte, that there is a level where the width of the span of control is at its most efficient. If the width of the span of control increases, efficiency is not increased, but it risks deteriorating. The wider the span of control the more productivity increases in an organisation but a wider span of control also brings with it impaired co-ordination, management and supervision which affect the results of the organisation.

A limit worth noting in connection with the span of control theory is the presumption that a narrower span of control means that a manager with responsibility for personnel has more time over to pay attention to and support his subordinates. That a manager has more time does
not automatically mean that this time is used for the subordinates and, if that is the case, the span of control theory does not say anything about the quality of interaction

**Span of Control and Quality**

For many decades there was an intensive debate on the classic principles for span of control. In spite of this it was a long time before some empirical studies and serious analyses of span of control and its importance were carried out. The early empirical studies were intended mainly to examine what the span of control looked like and what factors could influence its width. A few of these early studies on the application of span of control, in practice, were carried out in USA. These studies supported the classic principles, by showing that the average span of control of six subordinates was usual for top management in the organisations that were studied (referring to Yukl 1998). There were, however, also examples of spans of control that strongly deviated from these classic principles. It turned out, for example, that the chain store Sears & Roebuck applied the span of control where over 100 subordinates reported to one and the same manager. The early empirical studies documented that the span of control in practice tended to be wider than recommended in the classic principles (Pfiffner and Sherwood 1960). The main impression was however that the studies could prove great variations of the actual span of control. Individual studies reported on variations from zero to 127 subordinates (Galbraith 1967).

Here it is worth giving a more detailed description of the pioneering research project that Joan Woodward carried out in England at the beginning of the 1960s. The purpose of the project was to find which factors influence the width of the span of control (Woodward 1965). Even this study showed that there were great variations in the width of the span of control. This variation could not be explained by either the size of the company, which branch it belonged to or the company’s business success. According to Joan Woodward, the factor that could best explain this and other structural variations could be retrieved from the production system. Companies with similar production systems tended to have similar organisation structures. Joan Woodward divided the production system into three main categories: mass production in accordance with the conveyor-belt principles, piece production, e.g. tailors, and process industries with continuous and highly automated production of oil, chemicals and the like. It turned out that the top managers’ span of control was widest within the process industry, with
an average of ten subordinates per manager. The organisation which lay closest to the classic principles was mass production in accordance with the conveyor-belt principles, with an average of seven subordinates per manager. At middle management level the span of control was at its widest within piece production, but the span of control had a tendency to become narrower the more advanced the production system was. The first line managers’, those managers responsible for personnel, span of control was very wide in cases of mass production, relatively narrow within piece production, and the narrowest within the process industry.

In her analyses Woodward explained this relationship: the process industry has the most advanced working methods and a larger number of specially trained personnel at all levels within the organisation. Typical for the process industry was also that a wide span of control was applied to the leadership of the organisation, while the span of control at operative level was narrower. This is quite contrary to the pattern that arises within mass production. The technical complexity within the process industry contributed to not only a widening of the top managers’ span of control but also bore a relation to an increase in the number of managers, in relation to the number of subordinates, who were directly involved in production.

This classic study also showed that the classic principles on the span of control were only consistent with reality in a limited part of industry, namely standardised mass production of the conveyor-belt principle. Nevertheless, it is this type of organisation structure which emphasised as ideal and which is recommended as a general pattern in most parts of the classic organisation literature. The study therefore offers strong empirical support since it is essential to apply an approach which is more adapted to situations, even in the case of the concept of the span of control.

Joan Woodward’s research results have even received support from later studies. This applies to both the tendencies to apply a narrower span of control, when tasks are more complicated and uncertainty greater and that the number of managers in relation to the number of subordinates becomes higher the more qualifications the employees have (amongst others Galbraith 1967). However, this should not be interpreted as an expression for a greater need of control in this type of organisation, but rather a way of exchanging information and creating better pre-requisites in order to make more complicated decisions (amongst others Pfiffner and Sherwood 1960; Woodward 1965).
The early empirical studies of spans of control were mainly aimed at examining which width of span of control that was applied in different types of organisations and those factors that determined the width of it. Interest in studies of the span of control were for many years, after the classic studies, extremely limited, but have since the middle of the 1990s started to grow again. The main difference, compared to earlier studies, is that the more recent studies are not so much about how or why narrow or wide spans of control are applied but rather what importance the span of control has on organisations or what effects the span of control’s width has on the organisation’s results, in English known as *outcomes*. Altogether eight empirical studies have been identified (see table 2), all of which were carried out during the last ten years, something which indicates that interest in the importance of span of control on organisations is growing.

**Table 2: Studies that have examined span of control and results**

<table>
<thead>
<tr>
<th>Author</th>
<th>Question</th>
<th>Subject</th>
<th>Context</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burke 1996</td>
<td>Size of unit and job-satisfaction</td>
<td>Business economics</td>
<td>Service company</td>
<td>Size of unit (span of control) = number of people working in an department 22 units 1 608 employees</td>
</tr>
<tr>
<td>Meier and Bohle 2000, 2003; Bohle and Meier 2001</td>
<td>Span of control and performance Is there a width where the span of control ceases to be effective?</td>
<td>Business economics</td>
<td>School district</td>
<td>678 schools 2 1712 pupils Average size of school = 649 pupils</td>
</tr>
<tr>
<td>Gittel 2001</td>
<td>Span of control and working performance</td>
<td>Business economics</td>
<td>Airline</td>
<td>9 groups 352 people</td>
</tr>
<tr>
<td>Hechanova-Alampay and Beehr 2001</td>
<td>Span of control and working performance</td>
<td>Business economics</td>
<td>Chemical industry</td>
<td>3 plants 24 working groups 531 people</td>
</tr>
<tr>
<td>Altaffer 1998</td>
<td>Spans of control and professions</td>
<td>Nursing science</td>
<td>Hospital</td>
<td>2 hospitals 44 managers</td>
</tr>
<tr>
<td>Sanchez McCutcheon, 2004</td>
<td>Leadershi style, span of control and outcomes</td>
<td>Nursing science</td>
<td>Hospital</td>
<td>7 hospitals 51 care units 41 head nurses 717 nurses 680 patients</td>
</tr>
<tr>
<td>Cathcart et al, 2004</td>
<td>Span of control and employee engagement</td>
<td>Nursing science</td>
<td>Hospital</td>
<td>1 hospital 651 work units</td>
</tr>
<tr>
<td>Theobald and Nicholson-Croarty, 2005</td>
<td>Span of control and multiple goals</td>
<td>Business economics</td>
<td>School district</td>
<td>678 schools 2 1712 pupils Average size of school = 649 pupils</td>
</tr>
</tbody>
</table>
Ronald J. Burke (1996) carried out his study at a larger service company in Canada. The study included 1,608 employees at a total of 22 different work places within the company. The purpose was to examine how the size of the working place affected the employees’ general perception of the employer and work ethics at the place of work. In the study, a working place referred to a number of people who worked in a defined unit within the company, which can be compared with span of control¹. The size of the working places varied between 20 and 400 people. The result of Burke’s study showed that employees at larger places of work described their working environment in a more negative way than those employees who worked at smaller places of work. The employees at the larger working places were of the opinion that their results were worse compared with those employees at smaller places of work. The employees at the larger working places also had a more negative perception when it came to coordinating the work, general pleasure and work ethics. They even had a more negative opinion of their employer compared with other employers. The employees at the larger working place also intended to resign. They experienced more conflicts between work and private life. However, Ronald Burke did not study whether there was any connection between the size of the working place and the employees’ job satisfaction, nor the size of the working place in relation to the quality of performance. As a result of the study, Burke came to the conclusion that it was easier to communicate face to face at smaller places of work. This direct form of communication leads to employees having more faith in both the management and the entire company. This faith has a more positive influence on the employees’ general enjoyment and even their desire to remain working at the company.

Kennet J. Meier and John Bohte (2000; 2003; Bohte and Meier 2001) carried out a comprehensive study within the field of education in USA. In the study they wanted to test Luther Galick’s (1937) theory that the width of the span of control depends on the functional multiples, time and stability as well as size and room. They even wanted to study Joan Woodward’s (1965) theory that the span of control tends to become narrower when the complexity and uncertainty of the task increases and when the co-workers’ qualifications are higher. They also wanted to see if there was a connection between the width of the span of control and the pupils’ school results. Meier and Bohte have applied the span of control to the relationship between the number of teachers and administrators, in their respective school districts, and the number of pupils in the district. The span of control’s width has then been compared with the percentage of pupils at each school who have passed standardised comprehension and mathematics tests during the period 1994 – 1997. In the study they have
even taken into consideration the different demographic variables: the number of Afro-American pupils, the percentage of Latin-American pupils, the teachers’ experience, the teachers’ salaries and the education budget per pupil. The result confirmed both Luther Gulick’s (1937) and Joan Woodward’s (1965) theories. The study even showed that the width of the control span has crucial effects on the pupils’ results in standardised tests. In schools with fewer pupils per teacher/administrator more pupils passed the standardised tests. There was a significant connection between the width of the control span and the results of the pupils. Merier and Bohte established after their study that there appeared to be a fixed width where the span of control is at its most effective. Should the span of control become wider the results do not improve; on the contrary there is a risk that results deteriorate.

Judy Hoffer Gittel’s (2001) study was concerned with working groups that shared a common responsibility for different tasks in connection with flight departures. These tasks included catering, aircraft cleaning, refuelling and check-in. In this study Gittel wanted to examine whether performance was improved in groups with narrower spans of control. Her idea was that the group process should be strengthened in groups with narrower spans of control. Gittell used both the quality and efficiency measurements in her study. As a measurement of quality she used: customer complaints, baggage handling and delays. In her measurement of efficiency she used the relationship between staffing and the time that was required at the gate in connection with flight departures. The result showed that those groups with a wider span of control performed worse, both in matters of quality and efficiency, than those groups with a narrower span of control. Gittel explained this by saying that those managers with a narrower span of control had more opportunities to communicate with their staff. The managers with a wider span of control, on the other hand, were more distanced from their subordinates. The managers’ communication with their groups even affected communication within these groups. Variation in communication within the groups led to a lower level of problem solving within groups with wider spans of control than groups with narrower spans of control. Gittel also came to the conclusion that even self-governing groups require a certain amount of supervision; partly to support the members of the group, but also to inform of common goals and to be able to give feedback on the group’s performance.

Regina Hechanova-Alampay and Terry A Beehr (2001) studied what importance the width of the span of control could have on work environment work at a larger chemical company in USA. The company had recently implemented a reorganisation. In connection with the
reorganisation the number of levels within the organisation had decreased. The intention had been to increase independence and people’s own responsibility within their working groups in both production and safety issues. Previously, the production managers had had two levels between them and the working groups. These levels had been removed in connection with the reorganisation and afterwards the groups became direct subordinates to the production managers. By those means the span of control had widened. In connection with the reorganisation a support programme was also implemented. Through the support programme the groups had access to resource personnel. Their task was to support the current changes. The purpose of the study was to find a connection between the width of the span of control, the support the groups received and behaviour involving risks and work related accidents. The results of the study showed that both the groups with access to support from resource personnel and the groups with a narrower span of control showed less behaviour involving risks and fewer work related accidents.

Ann Altaffer’s (1998) study is one of the first and few studies carried out on span of control in a health-care environment. In her study Altaffer has tried to measure the differences in spans of control between department managers that are nurses and department managers with other backgrounds. She has even studied the managers’ own conception of the efficiency of the department as well as which span of control they perceived to be optimal. The nurses’ own perception was that their optimal span of control was an average of 38 subordinates, whereas non nurses thought 26 subordinates to be optimal. She also stated that department managers with more subordinates and fewer assistants thought they were more efficient. However, the study has its limitations, one of them being an measurement of the notion efficiency without it really being defined.

Amelia Sanchez McCutcheon’s (2004) study is another of the few studies of the span of control in a health-care environment. In her study she has examined the style of leadership and the effect of the span of control on the organisation. The purpose of the study was to examine to what degree different leadership styles and different spans of control influence job satisfaction, staff turnover and personnel stability. Job satisfaction referred to the degree that the employees liked their work. Staff turnover related to the percentage of nurses who resigned during a one-year period. Personnel stability referred to the number of nurses remaining in employment after one year. The study took into consideration such factors as age, education level and experience among both department managers and nurses. The results
of Amelia McCutcheon’s study show that different styles of leadership influence job satisfaction and staff turnover. However, they also show, and this is the first empirical study to show it, that the width of the span of control influences job satisfaction, staff turnover and personnel stability. The personnel in those departments where the department managers have a wider span of control experienced less job satisfaction, which in turn led to higher staff turnover and lower personnel stability. The study also showed that, whatever the style of leadership the managers had, the style could not compensate for the negative consequences of wide spans of control. The study went on to show that there are isolated exceptions, where nurses in departments where managers had wide spans of control, experienced more job satisfaction than those working in departments where managers had narrower spans of control. Something which McCutcheon, somewhat surprisingly, explains by saying that it is conceivable that managers with wider spans of control and a “let it go” attitude usually avoid pointing out mistakes and errors to their subordinates, She also claims as a result of her study that, in the case of the span of control, the study shows that staff turnover increases by 1.6% and personnel stability decreases by 1.5% for every ten subordinates a span of control has.

Deb Cathcart, Susan Jeska, Joan Karnas, Sue Miller, Judy Pechacek and Lolita Rheault (2004) are all department heads at a university hospital in Minneapolis in USA. They carried out an action research project at the hospital. The study was initiated on account of the managers’ worry that the wide spans of control applied at the hospital had a negative effect on medical staff’s commitment to their jobs. The point of the study was to ascertain whether the width of the span of control had any significance on the commitment of the staff. Department heads studied the answers to the working environment survey that was carried out at the hospital and found that staff commitment decreased as the span of control got wider. Commitment was not affected when the survey was checked taking into consideration demographic information on age, length of employment or position. In departments with 15 or less employees the employees experienced that their views were of significance in the work place and this affected the level of commitment. In departments with more than 15 employees it seemed as though the level of commitment was higher if there was someone in the workplace who encouraged their development. The action research project led to the recruitment of four more managers and consequently an adaptation of the size of workplace and width of span of control. After one year positive changes could be noted when the employees’ commitment to their work was measured. The research group even made a judgement as to the when the width of the span of control started to have a negative affect on commitment in the workplace.
They found that the experience of involvement clearly decreased when the span of control became wider than 15 subordinates followed by a further deterioration when the span exceeded 40 subordinates.

Nick Andrew Theobald and Sean Nicholson-Crotty (2005) have worked further with Kenneth Meiers and John Bohtes material from the school study in Texas and carried out more in-depth studies of the material. Their thoughts at the start of these continued studies were that public bureaucracy, which here is represented by the schools, has a number of goals for its organisation. These goals can be in conflict with different options when it concerns the structure of the organisation. The width of the span of control, which can be optimal in order to attain one goal, can also be worse when it comes to attaining another goal. Theobald and Nicholson-Crotty therefore analysed how four different span of control measurements influence three different results in different school districts. The result of the study showed that there is optimal span of control, but that it varies depending on the individual goal.

To summarise it can be claimed that in half of the identified when sought studies of the width of the span of control and its influence on an organisation, namely those studies carried out by Ronald J Burke (1996), Regina Hechanova-Alampay and Terry A Beehr (2001), Amelia Sanchez McCutcheon (2004) and Deb Cathcart and others (2004), researchers have found evidence that the width of the span of control is of significance for the employees’ experience of confidence, job satisfaction and commitment. The participants’ experience of quality in the working environment and quality of performance was influenced by how wide the span of control was in the organisation. The width of the span of control can henceforth be presumed to influence the inner quality of the organisation. McCutcheon’s study also showed how the span of control had a measurable effect on personnel mobility, which directly affects the costs in the organisation. It is true that there are no standard costs for personnel mobility, but costs can be calculated by measuring and costing the time consumed when terminating a position, recruiting, introducing and training a replacement for the person who has left (Liukkonen 2000; Johansson and Johrén 2001). It is also very interesting to observe that in a further two studies, those carried out by Kenneth Meier and John Bohte (2000; 2003; Bohte and Meier 2001) as well as Judy Gittel (2001), the researchers have also been able to prove that the width of the span of control has significance on both the external qualities and efficiency in the organisation. Anna Altaffer’s study (1998) even shows that efficiency can be affected by the width of the span of control. It is, however, difficult to come to any conclusions from this,
since Altaffer’s study has not given a definition of efficiency. Nick Theobald and Sean Nicholson-Crotty (2005) state in their study that there is an optimal span of control, but that it varies depending on the goal that is to be attained. They also point out that most larger organisations are not flexible enough when it comes to structure, but that organisations ought to choose the structure and width of span of control that is optimal for the majority of goals.

Those empirical studies that have been carried out so far unfortunately do not offer any support for how many subordinates a manager should have in order to be a good leader. On the other hand, without a doubt, the empirical studies support the fact that Luther Gulick’s (1937) classic theories on functional multiples, time and stability as well as size and room can still be applied. The number of subordinates a manager can be responsible for depends on the type of organisation being run, the goals to be attained, the surroundings the organisation works in and the competence of the co-workers. An organisation in stable surroundings, where demands on the business remain unchanged for longer periods of time, make the building up of stable routines possible and this enabling a wider span of control to be applied. In much the same way it is possible that an organisation with a limited number of functions can apply a wider span of control. If the organisation works in conditions where the requirements often change then there is a need for a narrower span of control. Likewise, if the organisation is responsible for a number of different functions. If, on the other hand, the subordinates all carry out the same monotonous tasks then it is possible for a manager to lead and co-ordinate a larger number of people.

Something else that is supported by the empirical studies is that the number of subordinates a manager is responsible for can influence productivity and efficiency as well as outer and inner quality of the organisation. Half of the studies carried out in recent years showed that what we can call inner quality, i.e. the co-workers’ interpretation of quality in the working environment, both the physical and the psychosocial, and the performance quality, was influenced by the width of the span of control. Two of the empirical studies showed that even external qualities, productivity and efficiency, were influenced by the width of the span of control. Admittedly, none of the studies referred to took into consideration care of the elderly services, but there are reasons to assume that prerequisites for leadership within this type of health-care do not differ so much from those prerequisites for leadership within, for example, hospital care. Those studies that were carried out in hospitals have shown that the width of the span of control has significance on inner quality as well as efficiency and productivity in the
business. It ought to be reasonable to presume that the width of the span of control has significance on quality, efficiency and productivity even within care of the elderly and disabled.

So far, no empirical studies have been carried out in Sweden concerning the span of control, as a phenomenon, and the span of control’s effect on the subordinates’ experience of enjoying work, health in the workplace and staff turnover. However, the span of control pays a significant role in the prerequisites for the leadership of the organisation. It is therefore essential to call attention to Anna Nyberg’s, Peggy Bernin’s and Töres Theorell’s (2005) summary of their own research and information retrieval they carried out in order to examine what international research has to say about the relation between leadership and the health of the subordinates. They state that only a limited amount of leadership literature discusses the leadership’s influence on the subordinates and that even fewer studies refer to the significance of leadership on the health of the subordinates. The leadership of middle managers and first line managers is, according to Nyberg, Bernin and Theorell, particularly important. These managers are responsible for direct contact with the subordinates and play an important role regarding the health and stress of the subordinates. It is the leadership of the closest manager that determines whether the individual subordinate experiences care and support. It is also the middle and first line managers who determine how the degree of freedom and limits, which are set by the organisations culture and structures, are shaped in reality. These degrees of freedom and limits have a direct effect on the working environment and health of the subordinates.

Stefan Szücs, Örjan Hemström and Staffan Marklund (2003) write about the organisational factors significance on variations in health on a working place level or organisation level, that even if research and theory formation is limited today there is a field of research close at hand that at least indirectly mentions how a health promoting place of work should be organised. As early as the 1920s and 30s researchers within the so called Human Relation Movement showed that well-being and efficiency among personnel could be increased through what could be called organisational factors at individual places of work. A prominent figure within the Human Relation movement, Elton Mayo, whose theoretical fundamental idea was that through a certain organisation and leadership, one could improve the results of an enterprise, particularly emphasised that it was through the humanising of an organisation that an enterprise could reach higher efficiency (Mayo 1933). Within research on working life and
health a similar theory on working life’s social organisational foundation has developed from comprehensive empirical studies. The principal contribution in this context is probably the so called demand/control model developed during the 1980s by Jeffrey V Johnson, Robert Karasek and Töres Theorell (Karasek 1979; Johnson 1986; Karasek and Thorell 1990; Theorell 1997). The theory states that both the employee’s health and the demands that can be placed on the employee are dependent on the social support provided the employer and a work organisation that enable an employee to have control over his own work situation.

To conclude we can refer to Chris Argyris’ (1990) so called fusion theory. Chris Argyris claims that there is a mutual dependence between financial profitability, efficiency and survival and the employees quality of working life. This means that a high degree of job satisfaction and a good psychosocial working environment are advantageous to both organisations and the employees. The individual’s potential resources cannot develop and lead to positive commitment unless the work organisation is in tune with the needs of the individual. In the long term a good working environment for both managers and their subordinates is probably always profitable and will lead to high efficiency and quality.

**Discussion**

The results of the different empirical study show what significance the width of the manager’s span of control has on creating bases for efficiency and quality. It is not possible to practise efficient leadership over a large group of employees whilst at the same time efficiently overseeing the daily activities of a large department. The empirical studies also confirm that a functional leadership requires that an employer in health care services is aware of the pre-requisites needed for a manager to be able to live up to his roll as a manager and leader and also offer them these pre-requisites.

For the last few decades health care services as well as other parts of the public sector have gone through comprehensive rationalisation and financial cut-backs. Rationalisation means, almost by definition, increased demands on managers and their subordinates, since the intention is to retain an unaltered production or produce more with fewer employees. In association with rationalisation the public sector has also used many of the working and managing methods that have developed from and seen to be successful within the private
sector. Flat organisations with few management levels and lean production, without essential support resources, have been sought for.

Flat organisations, with fewer decision levels and managers, have been embraced in many ways since they shorten decision paths and give greater opportunities for the individual to take responsibility and influence their own work. In practice, flat organisations tend to have few management levels and managers have too many subordinates. The flat organisation structure has been problemised by Östen Ohlsson and Björn Rombach (1998) amongst others. A flat organisation is defined here as an organisation with few hierarchical levels. The higher the quota is between employees and managers the flatter the organisation. In flatter organisations the personnel are hierarchically closer to the manager. Small organisations are often flat since there are so few employees in the organisation that they have the opportunity to maintain communication and a mutual relationship with their manager. When organisational changes are made there is often a decrease in the number of managers and an increase in the number of subordinates per manager, but organisations, which only allow themselves what is most essential, only make short-term gains in the form of increased cost-effectiveness. In the long-term flat organisations can mean an obstacle for development and changes, since there is a lack of development functions. This means that issues like high-quality workmanship and process oriented working methods risk ending up in the background. An organisation that grows does so over a longer period of time whilst organised reduction and flattening, where levels are removed and pressed together, is often carried out over a much shorter period. This means that the structure that required several years to develop is broken down by one or more levels in just a few weeks or even days. When organisation structures are compressed it is usually the middle managers that either disappear or are transferred to first line managers. The flatter organisations entail a greater responsibility for first line managers with more subordinates to lead and more tasks to carry out. This often leads to managers feeling inadequate and co-workers feeling unnoticed.

Public organisations, both within Sweden and abroad are and have been exposed to large reforms. The heavily streamlined and often decentralised units within health care services are largely due to public employers’ demands for a rationalised enterprise that is both more efficient and more productive. At the same time these services that the enterprise provides should be, according to legislation, of high quality. It is more or less impossible to be a manager in the health care service when you are ordered by the person in charge of setting
goals to do more at lower costs and higher quality. In theory it is possible for decision makers to demand an improvement in efficiency and quality whilst reducing or maintaining costs.

As previously mentioned no empirical studies of the span of control within care of the elderly services have been found among published studies. It is however worth referring to the studies of working environments within health care services that have been given an account of. Even if the purpose of these studies, when they were carried out, was not to mention the connection between the width and quality of the span of control, efficiency and productivity within health care service comes up in every one of these studies the fact that both managers and subordinates in health care experience that the working environment has been affected in connection with the flattening of the organisation and widening of the span of control. These experiences of a deterioration of the working environment and worsened prerequisites for leadership ought not to be detracted from. There seems to be great need for further research on the relationship between managers in the health care services and the number of subordinates they can have. Particularly as nine State-owned authorities in 2002 were assigned by the Government to draw up a plan for the future supply of competence within the local authorities’ care of the elderly and disabled. The Government commission concluded in a report in June 2004. In this report the authorities propose that ten goals be established in the plan of action whose objective is to support investment in order to achieve a better working environment whilst also securing future competence within health care services. The first of the ten goals is that the number of co-workers per first line manager be restricted.

In the case of the span of control within health care services, there can also be reasons to reflect over our view of those working there and of the work carried out. Do we really look upon the work carried out in today’s flat health care organisations, with wide spans of control, as mass production according to conveyor-belt principles. In which case it could be right to have wide spans of control for the first line managers and narrower spans of control for those managers higher up in the organisation. Even Luther Gulick (1937) established that when the subordinates carried out the same monotonous work it was possible to have wider spans of control. This was confirmed in Joan Woodward’s empirical studies (1965). Uncomplicated work can be carried out in organisations with wider spans of control and less qualified managers. Unfortunately that is certainly not the case! Working with people and working within the health care services, can never be monotonous and unqualified, but instead puts great demands on both the managers and those more directly involved in the organisation.
There is a great and pronounced need for scientifically established knowledge on how the reforms within health care services have affected organisations in matters of efficiency, productivity and quality as well as the managers and subordinates prerequisites for their work. One suggestion can be an empirical study of flat organisations within health care services over several years. In this study, efficiency ought to be measured by the significance the variations in the width of the span of control have on the organisation’s costs as well as the co-workers’ experience of quality in the work environment and performance (the inner quality) and the consumers’, recipients of care and relatives’ experience of performance quality (the outer quality).

**Comments**

¹ Organisation theorist Henry Mintzberg has in a succession of work dealt with organisation structures (Mintzberg 1979; Mintzberg 1983; Mintzberg and Quinn 1988; Mintzberg, Quinn and Ghoshal 1995). Mintzberg personally dismisses the concept of the span of control since, in his opinion, it can give misleading linguistic associations. Instead he uses unit size.

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