

THE MANAGER'S WEEK · CHAPTER TWO

Seventy-Four Names on One Rota

A span of control is a count of relationships, and past a certain size no leader can hold it.

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A NOTE BEFORE YOU READ

This work is offered for education and leadership development. It is not legal, financial, accounting, investment, medical or psychological advice; take the advice of a qualified professional who knows your circumstances. Companies and events are described from the public record as the author understands it; characterisations are the author's analysis. Examples are illustrative, and no particular outcome is promised to any reader.

ABSTRACT

A span of control is a count of relationships, and past a certain size no leader can hold it. It is a quarter past seven on a Wednesday, and the nurse manager of two surgical wards is standing at the desk between them with the week's rota in her hand. It is printed, because the screen version will not show both wards at once. There are seventy-four names on it. Each of them is, on the organisation chart, her direct report. She has a yellow highlighter, and she is marking the people she has not spoken to properly in a month, and she has stopped at nineteen because it was making her jaw ache. At half past seven the night charge nurse will hand over. At eight there is a bed meeting. Between nine and eleven there are two return-to-work interviews, a complaint from a family to answer and an incident review. The newly qualified nurse who started on Monday has been told she will meet her manager this week. It is Wednesday.

CHAPTER TWO

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Quarter past seven, the rota

It is a quarter past seven on a Wednesday, and the nurse manager of two surgical wards is standing at the desk between them with the week's rota in her hand. It is printed, because the screen version will not show both wards at once. There are seventy-four names on it. Each of them is, on the organisation chart, her direct report. She has a yellow highlighter, and she is marking the people she has not spoken to properly in a month, and she has stopped at nineteen because it was making her jaw ache.

At half past seven the night charge nurse will hand over. At eight there is a bed meeting. Between nine and eleven there are two return-to-work interviews, a complaint from a family to answer and an incident review. The newly qualified nurse who started on Monday has been told she will meet her manager this week. It is Wednesday.

She is a composite, drawn from the way these mornings are described in the research below and in the house's own practice, and no hospital is meant. Most managers will know some version of her rota, whether the names are nurses, drivers, call handlers or engineers, and whether there are seventy-four of them or fourteen.

Ammanuel Santa Anna's canon, writing about managers as the people on whom an organisation's development most depends, puts the stakes of her morning in three sentences that read quite differently when the list is seventy-four names long:

> *Every one-on-one conversation is a developmental moment. Every delegation decision is a growth opportunity or a growth suppression. Every team meeting either builds collective intelligence or diminishes it.*

This chapter makes one claim. A manager's span of control is not the number of boxes beneath hers on a chart. It is the number of working relationships one person's week can actually hold, and when the chart asks for more than that, the manager's time stops being leadership and becomes triage. The cost of that does not appear on the chart. It appears on the ward.

A Lithuanian's arithmetic

The first person to put numbers to the question was a management consultant named Vytautas Andrius Graicunas, who in 1933 published a short paper on relationships in organisations, later reprinted in the collection that Luther Gulick and Lyndall Urwick edited in 1937, *Papers on the Science of Administration*.[9] His point was simple and has been quoted ever since. When a manager adds a subordinate, she does not add one relationship. She adds a relationship with that person, relationships with every group that person now belongs to, and the relationships between that person and each of the others, which she must also hold in mind, because they shape the work.

Graicunas counted them. His formula gives the number of relationships for a manager with *n* direct reports as *n* multiplied by (2 to the power *n*, halved, plus *n*, minus one). With two subordinates there are six. With five there are a hundred. With six there are two hundred and twenty-two. The count roughly doubles with every person added, long before the number of people looks large.

It would be a mistake to take the formula literally, and Graicunas's critics did not. Nobody holds two hundred and twenty-two relationships consciously, and most of the possible groups never form. What the arithmetic captures is the shape of the problem rather than its size: the load on a manager grows much faster than the headcount, because people do not work alone, and every new person changes the relationships between the ones already there. A rota of seventy-four is not seventy-four conversations. It is a ward's worth of pairs, shifts and alliances, and a manager is expected to know which of them matters this week.

Santa Anna's canon describes the manager's place in exactly these terms, as the point where people and structure meet. The position, it says, is "close enough to individual contributors to influence their daily experience, and connected enough to organizational systems to shape the conditions in which work happens." Both halves of that sentence take time. The first half takes most of it.



Gulick's three questions

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Gulick's three questions

Gulick, writing in the same volume, gave the principle its best-known form: that one person can directly supervise only a limited number of others, and that the right number depends on the work.[9] He named the conditions that would move it: how different the functions being supervised are, how much time is available, and how far apart the people are in space. A supervisor of people doing one kind of work, in one room, with time to spare, can hold more than one who supervises five specialisms across three sites.

In 1946 Herbert Simon published a famous attack on this whole style of reasoning, *The Proverbs of Administration*.[10] The principles of administration, he argued, came in pairs that contradicted each other, like proverbs: a narrow span of control was good because it allowed close supervision, and few levels of hierarchy were good because they kept decisions close to the work, and an organisation could not have both. The critique was so widely accepted that the subject was largely abandoned. Kenneth Meier and John Bohte, re-

turning to it in 2000, put the irony plainly: "little systematic research existed on many of the principles of management at the time Simon leveled his critique."[11]

Meier and Bohte then did the research. Using data on 678 Texas school districts over four years, they tested how the span of control at different levels of a district related to how its students performed, and found that "span of control relationships among organizational personnel significantly shape student performance."[11] In a second paper in 2003 they tested Gulick's three conditions directly, and found him broadly right that diversity of function, time and space shape spans, with the twist that these conditions "have different meanings that depend on the level of organizational hierarchy analyzed."[12] The right span for a head teacher is not the right span for a superintendent.

Gulick's conditions had already been seen at work in industry by then. In the 1950s the British sociologist Joan Woodward surveyed manufacturing firms in south Essex and found, in the study she published as *Industrial Organization* in 1965, that the spans of first-line supervisors varied with the kind of production a firm ran: unit and small-batch work, mass production and continuous process each settled at a different typical span.[13] The detail of her figures is best read in the book, which was not reopened for this book. The direction is enough. The number of people one supervisor holds well is set by what the work asks of the supervisor, not by a ratio chosen in head office.

That finding is worth holding beside the rota. A surgical ward that admits from theatre all day, with patients changing hour by hour and staff rotating across two units and three shifts, has every one of Gulick's conditions pulling the right span downward: varied work, little time, people spread across space and hours. It is close to the opposite of the conditions under which a wide span is easy.

These are studies of schools, and of the American public sector, and they measure association across districts rather than the effect of changing any one district's structure. Their value here is narrower and firmer: they show that the span is not a matter of taste. It is a design variable, it varies with the work, and it is connected to results that someone outside the organisation can count.

The canon, writing about how authority moves through organisations, makes a related point about what structure is for. Its aim, it says, is to redesign how power flows "so that authority moves toward intelligence rather than intelligence being forced to route through authority." A span too wide for a week to hold is one in which intelligence has to queue for authority. Seventy-four people, each with something the manager ought to know, are routing it through one person who has nineteen of them highlighted.

The wider the span

The most direct evidence on what a wide span does comes, as it happens, from wards like hers. Hospital restructuring in many countries during the 1990s and 2000s gave nurse managers responsibility for more units and more staff, and researchers in Canada set out to measure what followed.

In 2009 Ann McCutcheon, Diane Doran and colleagues reported a study across seven teaching and community hospitals: 51 units, 41 nurse managers, 717 nurses and 680 patients.[14] They measured the managers' leadership styles, their spans of control, how satisfied the nurses were in their jobs and how satisfied the patients were with their care. Leadership style mattered, as other research had found: the nurses of managers rated as more transformational were more satisfied. But span mattered too. In the authors' words, "the wider the span, the lower the nurses' job satisfaction and patient satisfaction." And the finding that should interest anyone who designs an organisation came last: "as spans of control increase in size, no leadership style, even transformational, can overcome the negative effects."

Two years later a related team, with Raquel Meyer as first author, looked more closely at how a manager's time with her staff fitted in.[15] Across four acute care hospitals, 31 front-line nurse managers and 558 nurses, they combined surveys with the managers' own work logs. They had expected that the time a manager spent in contact with staff might explain more than the raw count of reports. It did not, quite: span interacted with leadership and with the unit's hours of operation to explain how satisfied nurses were with their supervision. Their practical recommendation was to design the role around the manager's "daily span (average number of direct report staff working per weekday)," rather than the total on the rota, because a unit that runs around the clock spreads its seventy-four people across shifts the manager is rarely present for.

A word on the strength of this evidence. Both are cross-sectional studies, which find associations at a point in time and cannot say for certain which way the effect runs. Nursing is one kind of work, with shifts and a clear patient outcome. But the finding is consistent with Graicunas and with Gulick, it comes from people with no interest in proving a management theory, and it carries a sentence that is hard to forget: past a certain size, being a better leader does not help.

That sentence changes where the problem sits. It also explains something that managers in her position describe, and that the research does not set out to measure: the particular tiredness of being responsible for people one has no time to know. It is not the tiredness of hard work. It is the tiredness of a debt that grows every week, nineteen names long and rising, which no amount of effort in the remaining hours can repay. A nurse manager whose staff are unhappy and whose patients complain is usually sent on a course. If the span is the cause, the course will not help, and she will conclude that the failure is hers.

The flattening firm

The nurse managers' spans widened because their organisations removed layers, and in this they were part of a larger movement. In 2006 the economists Raghuram Rajan and Julie Wulf published a study of the reporting structures of more than three hundred large American firms over the 1980s and 1990s.[16] Firm hierarchies were becoming flatter. "The number of positions reporting directly to the CEO has gone up significantly over time while the number of levels between the division heads and the CEO has decreased." The chief executive's own span had widened, and so, beneath her, had many others.

The authors were careful not to call this simply centralisation or decentralisation, and the movement had good reasons behind it: fewer layers can mean shorter distances between a decision and the people it affects, less translation and lower cost. The house's own canon is not nostalgic for tall hierarchies. But it is equally clear about what the opposite enthusiasm produced: "This is not the elimination of hierarchy. That simplistic prescription — "flatten everything" — has produced its own failures". Removing a layer moves its work. On the two wards, the layer that went was a ward sister for each unit, and her work did not disappear with the post: the rota, the return-to-work interviews, the conversation with the family, the newly qualified nurse's first week. Some of it went up to the manager, who now held two wards. Some of it went sideways to the charge nurses, who were never told it was theirs. Some of it went nowhere, and that part shows up later, as the nurse who leaves in her first year without anyone having asked how she was. If nobody decides where the work goes, it goes to the people on either side of the gap, and they absorb it in their evenings.

The canon's sharper line on structure comes from a book about executive perception, and it is a question worth asking of any span: "If we replaced every person in this organization with an equally talented alternative, would the same problems recur?" Put to the two wards, the answer is plain. Another nurse manager, equally good, would stand at the same desk with the same rota and stop at the same nineteenth name. The problem is not in the person. It is in the number of people the chart has asked one week to hold, and what her week actually spends itself on, the subject of Chapter 1, follows from that number before she has made a single choice.



Counting the real span

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Counting the real span

Picture the nurse manager a fortnight later, with a different sheet of paper and a decision to make before her director's review.

She has stopped counting names and started counting relationships, in three ways. The first is the daily span the Canadian study recommended: on an ordinary weekday, how many of the seventy-four are actually on duty while she is? About twenty-two. The second is who, in a week, brings her something that needs a decision or a conversation, which she has recorded for five days on the back of the rota: thirty-one different people, of whom nine account for most of the contact. The third is the people she is responsible for and has had no working contact with at all in a month, which is the column the highlighter was really drawing: nineteen, mostly on nights and weekends.

The count is the beginning, not the answer. What it shows her is that the chart and the week are describing two different organisations. The canon has a phrase for the person the second organisation depends on, and it describes the charge nurses exactly: "the middle manager who understands the team's real capacity". The charge nurses know who is tired, who is ready for more, who is quietly covering for whom. The chart does not show them as managers at all. On the chart she has seventy-four reports. In the week she has about nine relationships she can hold well, about twenty she holds in passing, and a large group she holds not at all, among them the new nurse who has been waiting since Monday. And it shows something the chart hides completely: three of her senior nurses, the charge nurses who lead the shifts she is absent from, are already doing much of the managing on those shifts, informally and without the time or the authority for it.

What she takes to her director is not a request for a third ward manager, though that may come. It is a proposal to make the existing structure true. Each charge nurse would hold a defined group of around eight to twelve people as their own, with protected time to do it and the authority to take the decisions they are already being asked to take. She would hold the charge nurses, the newly qualified, and the decisions that cross both wards. The counting is the evidence; the redesign is a decision her director can make, and the conversation is easier because the evidence is in the room.

Chapter 7 carries the count as a working page, with its columns, the daily span, the arithmetic and the questions to ask of each group, and the section below takes up its finer points. Its finer points are where it goes wrong. A manager who counts only the names repeats the chart's mistake. A manager who gives the charge nurses a group without the time to lead it has added work to the people already absorbing it. A manager who redesigns the span without asking the people inside it will draw groups that make sense on paper and split pairs who have worked every night shift together for five years. And the most common mistake is to treat the redesign as a promotion for some and a demotion for others, when what it changes is not anyone's rank but who is answerable to whom on a shift, which is the question the view from the middle of any organisation is built around, and the subject of Chapter 3.

The director's question, when the proposal reaches her, will be what it costs, and the honest answer is that most of it is already being paid. The charge nurses are already doing the work, unprotected, in time taken from patients and from their own breaks. The proposal makes the cost visible and gives it a shape. It may need some time bought back from the rota, and that is a decision for the director, who has the budget. It does not need a new post to begin.

There is a gain in this, and it can be counted in records a hospital already keeps: in the satisfaction surveys the Canadian researchers used, in turnover among new staff in their first year, in the time from an incident to its review, in sickness absence on the shifts the manager rarely sees. Which of those is the right measure, over what history and with what allowances, is a conversation for each organisation to have before anything changes, and Chapter 5 returns to it; the house has written at length, in *Where the Flow Stops*, about

what it means to agree a measure before anyone knows what it will say. The principle does not depend on the details. A span that a week can hold is one in which leadership reaches the people it is meant for.

Counting a span in your own building

The article this chapter began as ended with a rota and a drawer. The book can go further, into the finer points a manager meets when she counts her own span, and the first of them is what to count.

The chart gives one number. A manager who wants to know what her week is being asked to hold needs four. The first is the formal span, the names on the chart. The second is the daily span, the number of those people who are at work while she is, on an ordinary day, which the Canadian researchers recommended designing around and which is very different from the first number in any organisation that works in shifts, across sites or across time zones. The third is the working span, the number of different people who, in an ordinary week, bring her something that needs a decision or a conversation. And the fourth is the unheld span, the people she is responsible for and has had no real working contact with in a month. The fourth is the one the chart cannot show, and the one the highlighter was drawing.

The second finer point is the people who are not on the chart at all. Most managers hold relationships the chart does not record: a contractor who works inside the team, a person in another department who reports to her on one project, a peer whose team is the other half of a process, an informal lead who brings her the problems of a group that officially reports elsewhere. They take time like anyone else. A count that leaves them out will show a span that looks manageable and a week that is not.

The third is the arithmetic, held lightly. Graicunas's formula is not a planning tool, and no manager should set her span by it. What it is good for is a single conversation: showing a director, who sees the span as a number of people, that the load grows with the relationships between them. A team of five that works closely together asks more of its manager than a team of eight who each work alone. Chapter 7 gives the formula with its first values worked, for use in exactly that conversation and no other.

The fourth is the work itself, read through Gulick's three questions. How different are the things the people in the span do? How much of the manager's time is actually available for them, once the week's other demands are met? And how far apart are they, in space and in hours? A manager whose span includes three specialisms across two sites and three shifts is holding a much larger span than the count suggests, and the same count in a single room doing a single kind of work may be well within what a week can hold.

The fifth is what to propose. The count usually shows one of three things, and each has a different answer. Sometimes the span is simply too wide for the work, and the answer is a structural one that belongs to the manager's director: another manager, or a split. Sometimes the span is reasonable on paper but the manager is holding relationships that belong elsewhere, and the answer is to move them, which she may be able to do herself. And often, as on the two wards, the organisation already contains informal leaders doing

much of the work without the time or the authority, and the answer is to make the structure true: to name the groups they already hold, give them protected time to hold them, and give them the decisions they are already being asked to take. This last answer is the cheapest, because most of its cost is already being paid.

There are mistakes worth naming. Counting only the chart. Proposing a new structure without asking the people inside the old one, which splits working pairs and loses the knowledge of who works well with whom. Giving informal leaders a group without the time, which converts their goodwill into overtime. And treating the conversation as a request for headcount, which invites the answer *no* before the evidence has been read. The count is evidence about how the work is held. It is best presented that way, beside the records the organisation already keeps about the people in the span: their turnover, their sickness absence, how long new joiners take to settle.

And the decision that most changes the result is whether the manager asks, for each group in the new structure, who will hold the person who is newest. The newest person in any span is the one most likely to be unheld, and the one whose first months decide whether she stays. Chapter 6 places the count in the first weeks of a ninety-day plan, and Chapter 7 gives the four columns and the questions as a single page.

Quarter past seven, a month later

It is a quarter past seven on a Wednesday, and the nurse manager is at the same desk with a new rota. It still has seventy-four names on it. Beside each name, now, is a second name, the charge nurse who holds that person this month, and three of the charge nurses have their own protected hour on Thursdays, which is written in the rota as if it were a shift, because it is.

The newly qualified nurse who started on Monday met her charge nurse on Monday, and her manager on Tuesday. The highlighter is in the drawer.

At half past seven the night charge nurse hands over, and stays for five minutes afterwards, to tell her something about one of his eight.

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