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Building Tomorrow's Podiatrists

The Foot, the Nerve and the Wound Nobody Felt

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Introduction

The man in the chair has come because his shoe has been rubbing, and he cannot tell you where, and that is the first clinically important fact about him. He has had diabetes for nineteen years, he has lost the protective sensation in both feet, and the thing that brought him in is not pain but a stain on the inside of his sock that his wife noticed. When the podiatrist takes his foot in her hands and looks at the sole under a lamp, she finds a wound that has been there for some days and that he has never felt, and the conversation that follows is not about a corn. It is about whether he will keep the foot.

This trade works on the only part of the body that its owner routinely cannot assess. A person can tell you her eye is blurry, her chest is tight, her knee gives way; she cannot tell you that the pressure under her second metatarsal head has crossed the threshold at which skin breaks down, because the nerve that would have reported it stopped working years ago. The practitioner's hand, her lamp and her judgement therefore carry information that the patient cannot supply, which makes this trade unusually dependent on the examination itself and unusually exposed when the examination is shortened, delegated or replaced by a picture.

The machines have arrived, and they are not the machines of the earlier volumes in this series. A pressure mat can map the load under a foot in ways a hand cannot feel. A thermal camera can find the hot spot that precedes a breakdown, sometimes by weeks, and it can do it in a room with the lights on and a queue outside. A scanner can capture the shape of a foot and a printer can make the insole that offloads it, and a model can read all of that together and return a risk category for a person nobody has touched. Each of these is a genuine advance and each of them moves the trade's attention from the wound to the pattern that produces the wound, which is where it belongs and which is also where the practitioner stops being the person who finds things.

The stakes make this volume different from its predecessors. In optometry, a missed finding costs sight that might have been saved. Here a missed finding costs a leg, and the trade's most successful work is invisible by construction: a wound that never formed has no date, no photograph, no grateful patient, and no line in any read-out. That asymmetry shapes everything in the chapters that follow, from the routes into the trade to the way its practitioners describe their own day, and it explains why a trade that prevents amputations is so often described, by the people who fund it, as a service for corns.

The rules this series works under hold here as they hold everywhere. The body

prints no figures, since the numbers that matter in this trade are pressures, intervals and healing times, all of them local, all of them revised, and all of them dangerous when lifted out of a clinic and applied to a stranger. Nothing in these pages carries a trade name: not a clinic, not a supplier, not an inspecting body, not a device. And the people are made up, every one of them, down to the community clinic whose twelve months fill the ninth chapter, which says in its first sentence that it was assembled for this book and has no original anywhere.

What the book argues can be put simply and will be developed at length. This trade's product is not the treatment of a foot; it is a judgement about risk, renewed at intervals, in a person whose own warning system has failed. The instruments now arriving can watch that risk better than a visit every few months can, and they will therefore be adopted, and their adoption will be presented as an extension of care when it is in fact a change in what care consists of. A practitioner who reads a thermal image and a pressure map is doing something valuable and different from a practitioner who holds a foot and feels for the pulse, and the difference matters because only one of those two activities can detect the thing that is not on the map: the shoe that does not fit, the chair the person sits in all day, the grandchild's toy on the floor, the fact that nobody has looked at the sole of this foot since the last appointment.

The volume is written for three readers: the practitioner who suspects that her trade is being rebuilt and wants the argument set out; the student deciding whether to enter it; and the person with diabetes who has been told to check her feet and has never been told what she is checking for. All three are asking the same question in different words, which is whether the examination of a foot is a procedure that can be handed to a device or a relationship that has to be renewed by a person. The chapters that follow answer that question in the only way it can be answered, which is by describing the work.

The shape of the argument can be given in advance for a reader who wants it, provided the reader then reads the chapters, because the argument is not a summary of the book and the book is not an illustration of the argument. A trade whose product is a risk judgement has had the noticing taken over by instruments that notice a narrow thing extremely well. The trade has accepted them because they are better than a hurried hand and because they reach people no clinic can reach. What it has not done is decide what a practitioner is for once the camera has done the noticing, and the answer it gives to that question, mostly by accident and mostly in its appointment intervals, will

decide whether it remains a clinical profession or becomes a service counter with a camera attached.

That is why these pages spend as much space on waiting lists, footwear budgets, chairs, notes and the assistant who runs the dressing list as on thermal imaging and pressure mapping. The technical questions in this trade are largely settled and the organisational questions are not, and the organisational questions are decided by people who will never read a book about feet. The most a volume can do is describe the trade accurately enough that the people inside it recognise their own day, and leave them with the one question that can be answered in a room with a lamp and a foot in front of them.

A note on method, since a book that prints no numbers should say where its material comes from. It comes from the trade's own descriptions of itself: its curricula, its guidelines, its professional literature and, above all, the way its practitioners talk about their days when they are not being measured. Where a claim concerns what a service does rather than what a foot does, the volume describes the arrangement in general terms and leaves the local details to the reader, because a commissioning rule in one country is frequently illegal in another, and because the trade's practitioners know their own system better than any book can describe it.

The chapters follow the series' order but they do not carry equal weight, and a reader should know which are load-bearing. The fifth chapter, on the rules of the craft, is the one to keep. The ninth, a year in a clinic that does not exist, is the one that shows why the rules are hard to keep. The eighth, on instruments, is the one that will date fastest, and it is written deliberately so that a reader in ten years can see what was being assumed about machines at the moment this book was made.

What the volume asks of its reader is a single act of recognition: that the trade it describes is not a service for feet but a discipline of keeping a person independent, conducted on the part of the body where independence is decided, at intervals, with a hand, in a room with a lamp. Everything else in these pages follows from taking that seriously, including the parts that are uncomfortable about money, status, power and the quiet decision by a funder that some feet are not worth the interval.

A word on the title, since titles in this series carry an argument. Building Tomorrow's Podiatrists is not a promise about the future of the trade, and the

three words after the colon are not decoration. The foot is the body part whose neglect produces the trade's caseload. The nerve is the reason the neglect goes unnoticed. The wound nobody felt is the outcome the trade exists to prevent, and it is the one outcome that a camera can now find earlier than a person, which is why the machine is in this book at all. A reader who remembers those three words will have the argument.

One last thing about the way this volume treats its own trade. It has been written by somebody who is not a podiatrist, from the outside, using the trade's own descriptions of itself, and it therefore runs the risk that every outside account runs, which is to be accurate about the structure and wrong about the feel. Where it is wrong about the feel, the practitioners will know immediately and the correction belongs to them. Where it is right about the structure, it is because the structure is visible from outside in a way that the feel is not, and a trade that is being reorganised usually needs an outside account more than it needs another description of its own competence.

The trade has one feature that makes it unusually good material for a series about machines, and it is not the machinery. It is that a podiatrist's judgement is testable against the thing itself: a foot that was thought safe either stayed intact or did not, and the answer arrives within months and does not require a trial. A trade with that property has no excuse for not knowing how good it is, and it does not know, because it does not record what it prevented and cannot therefore learn from its own successes. The instruments will not fix that and they will make it more urgent, because a camera produces a record of risk that a clinic will eventually be judged against, and the judgement will be made by somebody who assumes the clinic intended to act on it.

Chapter 1: The Trade That Works on What Nobody Feels

The caricature is old and it is not quite dead: the podiatrist is the person who cuts nails and shaves callus, a small service for small problems, the foot's equivalent of a barber. The caricature survives because most of the trade's encounters in most countries are exactly that, and because a profession that begins its history in the chiropody of corns and ingrowing toenails has never entirely escaped its own origin.

The second picture is the one held by people who work in hospitals, and it is the flattering one. The podiatrist, in this picture, is the last line of defence before the amputation, the clinician who finds the ulcer nobody noticed, who offloads the pressure nobody measured, who saves the limb. This story is true and it is unrepresentative, because it describes the minority of cases that reach a hospital and not the ordinary work of keeping a population of feet intact, and because it locates the trade's value in a rescue rather than in a routine.

The trade itself is a discipline of the lower limb in which the practitioner's central task is to estimate risk. Risk of a wound forming. Risk of a wound that has formed failing to heal. Risk of an infection reaching bone. Risk of a deformity turning a manageable foot into an unmanageable one. The estimation is made with hands, eyes, a lamp and a handful of instruments, and it is made repeatedly, in a relationship that lasts years, because a foot that is safe this month can be dangerous next month for reasons that have nothing to do with the foot: a new pair of shoes, a change in medication, a fall, a bereavement, a move into a care home.

Two features make this estimation unlike the estimations described in the earlier volumes of this series. The first is that the patient cannot check it. A person with intact sensation is a partner in her own examination, since she can say where it hurts and what has changed; a person without it is a subject, and the practitioner carries the entire burden of noticing. The second is that the consequence of a wrong estimation is unusually binary. A missed change in a prescription produces blur and a return visit. A missed hot spot produces an ulcer, and an ulcer in a foot with poor circulation produces a conversation about amputation, and that conversation takes place in a surgical ward with a family in the room.

The trade's jurisdictions differ more than its practitioners like to admit. In some countries the podiatrist holds a surgical scope, manages wounds

independently, prescribes and performs procedures in an operating theatre. In others she is confined to the skin and the nail and must refer everything that goes deeper, which means her skill is concentrated in the recognition of the boundary rather than in crossing it. A practitioner trained in the narrow settlement will describe her work in the language of maintenance; one trained in the broad settlement will describe it in the language of medicine. They are both right about their own countries and neither can fully practise in the other's, and the public in both is told that the trade is about feet.

What the trade actually sells, once the caricatures are put aside, is time with a part of the body that nobody else examines. A general physician will look at a foot for perhaps a minute, and will do so through a sock, and will be looking for a pulse rather than for a pattern. A nurse will look at the skin and the wound but not at the mechanics that produced them. A surgeon will look when the decision has already been made. The podiatrist is the only clinician whose entire attention is on the thing itself, and the value of that attention is easy to demonstrate and almost impossible to bill, because the attention prevents events rather than treating them.

There is a structural consequence of this that runs through the whole volume. A trade paid for procedures will do procedures. A trade paid for visits will do visits. A trade whose product is a prevented wound has no natural unit of payment at all, and it has therefore organised itself, in most systems, around the units that can be counted: the nail cut, the callus reduced, the dressing changed, the insole issued. The instruments arriving now will make the surveillance cheaper and will not change the accounting, which means the trade's most valuable activity will remain the one that appears in no ledger, and practitioners will keep describing their work in the vocabulary of what they are paid for rather than of what they do.

The definition this book works with is therefore deliberately uncomfortable. The trade is the practice of keeping a foot functional and intact in a person who cannot fully monitor it, by examining what cannot be felt, by estimating risk that cannot be measured directly, and by persuading somebody to change a shoe, a chair or a habit for reasons she will never be able to verify. That last clause is the trade's hardest problem and the one no instrument addresses, and it is where the volume will end.

The trade's history explains its present more than its present admits. The chiropodist of the nineteenth century was a craft worker who served the poor: cheaper than a surgeon, faster than a physician, and expected to solve

problems that medicine did not want. The professionalisation of the twentieth century gave that worker a curriculum, a register and a scientific vocabulary, and it did so by borrowing from medicine while keeping the craft's intimacy of hands. The result is a profession that is unusually comfortable with touching people and unusually anxious about being taken seriously, and both of those traits come directly out of the same history.

The anxiety shows up in small habits that practitioners recognise in themselves. The instinct to describe the work in surgical language when speaking to a physician. The defensiveness about the word chiropody. The impatience with cosmetic cases, which are most of the work and are treated by the profession as though they were an embarrassment. And the recurring argument about whether the trade's future is in the high street or the hospital, which is really an argument about who the practitioner is trying to be taken seriously by.

The intimacy is the trade's real inheritance and it is worth describing without sentimentality. A podiatrist touches a part of the body that many people are ashamed of, and she touches it while sitting below the person, looking up, in a room where the person is undressed from the ankle down. That arrangement produces a particular kind of confidence: people tell a podiatrist things they have not told a physician, because the setting is unthreatening and the practitioner's attention is entirely on a part of them that nobody else examines. The trade's clinical advantage therefore comes from a physical arrangement rather than from a technique, and practitioners who move into a hospital clinic discover that the advantage does not travel with them.

There is a further and less comfortable feature of the trade's position, which is that its patients are frequently poor. Foot disease follows diabetes, poor housing, ill-fitting shoes bought for price, long hours standing, and a lifetime of not asking anybody about anything. A trade that serves wealth produces confidence; a trade that serves poverty produces a specific kind of knowledge, and this one has it: its practitioners can tell from a pair of shoes what a person's week looks like, and they are among the few clinicians who will ask.

The definition in the previous paragraphs has one practical consequence that runs through the whole volume and is worth stating here rather than later. If the product is a judgement about risk, then the trade's unit of work is not the procedure and not the visit but the interval: the period between examinations in which the judgement remains valid. Everything about a well-run service follows from taking that seriously. The recall system, the risk stratification, the

telephone advice line, the surveillance camera, the letter to the general practice, the conversation about shoes: each of them is an attempt to extend the interval safely rather than an attempt to treat anything. And everything about a badly-run service follows from ignoring it, which is why so many clinics are busy, competent and unsafe at the same time.

A reader who has followed the series will recognise the shape of the argument being set up. In every trade the machine arrives at the point where a judgement was being made from an examination, and it relieves the practitioner of the examination while leaving the judgement. In this trade the examination is a hand on a foot and the judgement is a sentence about whether that foot will still be there in a year, and the machines arriving now are unusually good at the first and entirely silent about the second, which makes this volume the clearest test the series has had of whether a profession can keep the part that matters when the part that is measurable is taken away.

The comparison with the trades already described in this series is instructive and it is not flattering to any of them, because this trade's examination is the only one in which the patient is structurally unable to corroborate the finding. A radiographer's patient can say where it hurts, and the image either shows something or it does not. An optometrist's patient can report the blur, and the report is a piece of evidence. A midwife's patient reports the movement, the pain, the bleed. The podiatrist's patient reports nothing, because the nerve endings that would have produced the report have been destroyed by a disease process that took years and produced no sensation at the moment of damage, and the practitioner is therefore working with a subject who is simultaneously the most important witness and the least reliable one.

That asymmetry has a consequence for consent which the trade handles uneasily and which the volume will return to. A person who cannot feel her foot cannot weigh the risk of an intervention in the way a person with sensation can, since the thing she is being asked to protect herself against is not available to her experience. She can be told, and she can agree, and the agreement is thinner than it looks, and the practitioners who understand this spend a great deal of time converting a risk into something the person can see: a photograph of her own wound, the pressure pattern under her own foot, the wear on the inside of her own shoe. The trade's informed consent is therefore visual, and a practice that cannot show a patient anything is a practice that cannot consent her properly.

The trade's economics follow from the same asymmetry and they are worth describing in the plainest terms, because a reader who does not know the trade will otherwise assume that its difficulties are clinical. The people who most need the work are the least able to pay for it, since foot disease concentrates in populations with diabetes, poverty, age and isolation. The procedures that can be charged for are the ones that matter least, since a nail cut is a transaction and an interval is a relationship. The services that prevent the most harm are the ones with the worst business case, since a domiciliary visit costs travel and time and produces no procedure at all. And the trade's workforce is small enough that it cannot argue with any payer from a position of scarcity, which means it accepts the prices it is offered and organises its clinics around them.

There is an image the trade uses about itself that captures the whole difficulty in a phrase practitioners repeat without thinking, which is that the podiatrist is the only clinician who looks at the foot as though it mattered. The phrase is defensive and it is also exactly right, and what it concedes is enormous: that in a health system organised around organs with prestige and procedures with prices, a foot is looked at properly only by the person whose entire job is feet. The consequence is that the trade's quality is decided by how many of its practitioners there are and how often they can be in a room with a patient, which is a staffing question, and staffing questions are decided by budgets, and budgets are decided by arguments the trade has not yet won.

The instruments will not change any of that and they will change the terms of it, which is the reason for this book. A camera that watches feet remotely could, in principle, allow a small number of practitioners to keep a large number of people safe, and if that happened the trade's staffing problem would be solved and its craft would be reduced to a reading task with a visiting service attached. The alternative is that the camera identifies who needs a hand on their foot this week, and the practitioner's time is spent where the risk is, and the trade's staffing problem remains unsolved and its craft survives. Both futures use the same device, and the difference between them is a decision about what a positive finding is worth, which nobody in the trade has been asked to make.

The trade's position within medicine is worth a paragraph of its own because it explains the shape of its patients' journeys. A foot problem enters the system through whichever door the person happens to find: a pharmacist for a corn, a general practice for a wound, an emergency department for a red swollen foot

at midnight, a shoe shop for a fitting that goes wrong. The podiatrist is rarely the first clinician and is frequently the last, and the referrals she receives have usually been filtered through somebody who did not examine the foot properly, which means her first task is often to discover what the previous clinician missed rather than to treat what was referred.

That filtering has a clinical cost that is easy to describe and hard to fix, and it is the reason the trade's practitioners develop a particular kind of scepticism. A referral that says the foot is fine is a referral that has not been examined. A referral that says the wound is superficial is a referral from somebody who has not measured it. A referral that asks for nail care is frequently a referral for a foot that has not been looked at below the nail, and the practitioner who treats the referral as written will do the nail and miss the rest. The trade's habit of examining the whole foot at every encounter, regardless of the reason for attendance, is therefore not thoroughness for its own sake; it is a defence against a system that routes feet through people who are looking at something else.

The consequence for the patient is a journey that is longer than it should be and that is decided by geography more than by need. A person who lives near a clinic with a wound service will be seen quickly and will keep her foot; a person in a rural area with the same foot will be seen when somebody can travel, and the difference between them is not clinical and is not fair. Every practitioner in the trade knows a version of this story and can name the patients, and the trade's commissioning has never been organised to fix it, because rural services cost more per contact and the arithmetic of contact is what commissioning is built on.

The chapter's final observation is about what the trade knows that nobody else does, since a profession's value is partly its private knowledge. A podiatrist can tell from the pattern of wear on a shoe how a person walks, and therefore which part of the foot is being overloaded. She can tell from the shape of a callus whether a toe is pressing on its neighbour. She can tell from the skin between the toes whether a person has been able to reach her own feet, which is a fact about her shoulders, her weight and her household. She can tell from the colour of a wound's edge whether it is healing and from the smell whether it is not. None of those observations is written in a guideline and all of them are made in seconds by practitioners who have done the work for years, and they are the reason an experienced podiatrist can look at a foot for a minute and say something a student could not say after an hour.

A trade is defined in the series by what it is accountable for rather than by what it does, and this trade's accountability has an unusual boundary that practitioners feel and rarely articulate. A podiatrist is accountable for a foot she may see four times a year, in a person whose circumstances she cannot control, and the accountability does not pause between appointments. If the person is admitted to hospital with a wound the clinic never saw, the clinic will be asked, in some settings, why it did not. If the person's shoes destroyed the skin three weeks after an examination that found nothing, the examination will be described as inadequate by anybody reading the notes afterwards, and the description will be right and unfair at the same time, which is the ordinary condition of preventive work and the reason so much of it is defensive.

The comparison that closes this chapter is with the trades the series has already described, and it is worth setting down because it shows how far the series has moved. A radiographer's trade lost the film and kept the judgement; an optometrist's trade lost the measurement and kept the interpretation; this trade is in the process of losing the noticing itself, which is the step before judgement and the one nobody expected to be automated. A camera that finds a hot foot has done the thing a good practitioner does when she puts her hand on a foot and says that it feels warmer than last time, and it has done it from a distance, at a frequency a clinic could never match, and without any interest in why the foot is warm. The trade's remaining work is therefore the why, and the why is not a small remainder, because it is the entire difference between a temperature and a diagnosis.

A reader outside the trade may wonder why a profession would accept an arrangement in which its most valuable work is invisible, and the answer is that professions do not choose their arrangements; they inherit them and then defend them. This one inherited a retail-adjacent service for a minor body part and a public health mandate for a serious one, and it has spent a century trying to be both, and the instruments arriving now will force it to choose, because a camera that watches a population is a public health instrument and a shop that fits shoes is not. The choice will not be presented as a choice. It will arrive as a contract renewal, and the practitioners who understand what is being decided are the ones with any chance of influencing it.

The trade's relationship with pain is the last element of its identity and the one that newcomers find hardest. Most clinical work is about relieving something the patient can describe. This trade's most important work is about a person who describes nothing, and the practitioner must therefore hold a concern that

the patient does not share, in a room where the patient's own account of her foot is that it is fine. That is an unusual clinical position and it requires an unusual manner: patient, specific, and slightly persistent, because a person who feels nothing has no reason to be interested in what the practitioner is worried about, and the practitioner must make her interested without frightening her, which is the trade's central conversational skill.

There is an image that captures the trade's position better than any definition, and it is a practitioner sitting on a low stool with a foot in her lap, looking up at a person who is looking away. The person is not watching the examination. She cannot feel it, she does not know what is being looked for, and her attention is on the wall, and the entire clinical content of the encounter is happening in the gap between her inattention and the practitioner's concentration. Everything in this volume is a description of that gap, what fills it now, and what the instruments arriving will do to it.

ABOUT THE AUTHOR

Aiman JoeHanz writes about work: the trades that hold institutions together, the people who do them, and what happens to a craft when the clerical and measuring layers around it are given to a machine.

Building Tomorrow's People is his series on the professions a society depends on, each volume written from inside a working day rather than from a policy document. The series runs past ninety volumes, from engineers and statisticians through paramedics, radiographers, occupational therapists, speech-language therapists and midwives, and it reaches optometry at the point where the machine stopped assisting the examination and started performing it.

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