

First we input the story as text:

In[1]:=

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corpus := "THE SPIKE.
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It was late-afternoon. Forty-nine of us, forty-eight men and one woman,  
lay on the green waiting for the spike to open. We were too  
tired to talk much. We just sprawled about exhaustedly, with  
home-made cigarettes sticking out of our scrubby faces. Overhead  
the chestnut branches were covered with blossom, and beyond that  
great woolly clouds floated almost motionless in a clear sky.  
Littered on the grass, we seemed dingy, urban riff-raff. We defiled  
the scene, like sardine-tins and paper bags on the seashore.
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What talk there was ran on the Tramp Major of this spike. He was a devil,  
everyone agreed, a tartar, a tyrant, a bawling, blasphemous,  
uncharitable dog. You couldn't call your soul your own when he  
was about, and many a tramp had he kicked out in the middle  
of the night for giving a back answer. When You, came to be  
searched, he fair held you upside down and shook you. If you  
were caught with tobacco there was bell to. Pay, and if you  
went in with money (which is against the law) God help you.
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I had eightpence on me. 'For the love of Christ, mate,'  
the old hands advised me, 'don't you take it in. You'd  
get seven days for going into the spike with eightpence!'
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So I buried my money in a hole under the hedge, marking the spot with a  
lump of flint. Then we set about smuggling our matches and tobacco,  
for it is forbidden to take these into nearly all spikes, and one  
is supposed to surrender them at the gate. We hid them in our  
socks, except for the twenty or so per cent who had no socks,  
and had to carry the tobacco in their boots, even under their  
very toes. We stuffed our ankles with contraband until anyone  
seeing us might have imagined an outbreak of elephantiasis. But  
is an unwritten law that even the sternest Tramp Majors do not  
search below the knee, and in the end only one man was caught.  
This was Scotty, a little hairy tramp with a bastard accent  
sired by cockney out of Glasgow. His tin of cigarette ends  
fell out of his sock at the wrong moment, and was impounded.
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At six, the gates swung open and we shuffled in. An official at the gate  
entered our names and other particulars in the register and  
took our bundles away from us. The woman was sent off to the  
workhouse, and we others into the spike. It was a gloomy, chilly,  
limewashed place, consisting only of a bathroom and dining-room  
and about a hundred narrow stone cells. The terrible Tramp Major  
met us at the door and herded us into the bathroom to be stripped  
and searched. He was a gruff, soldierly man of forty, who gave  
the tramps no more ceremony than sheep at the dipping-pond,  
shoving them this way and that and shouting oaths in their faces.  
But when he came to myself, he looked hard at me, and said:
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'You are a gentleman?'
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'I suppose so,' I said.
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He gave me another long look. 'Well, that's  
bloody bad luck, guv'nor,' he said, 'that's bloody bad  
luck, that is.' And thereafter he took it into his head
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to treat me with compassion, even with a kind of respect.

It was a disgusting sight, that bathroom. All the indecent secrets of our underwear were exposed; the grime, the rents and patches, the bits of string doing duty for buttons, the layers upon layers of fragmentary garments, some of them mere collections of holes, held together by dirt. The room became a press of steaming nudity, the sweaty odours of the tramps competing with the sickly, sub-faecal stench native to the spike. Some of the men refused the bath, and washed only their 'toe-rags', the horrid, greasy little clouts which tramps bind round their feet. Each of us had three minutes in which to bathe himself. Six greasy, slippery roller towels had to serve for the lot of us.

When we had bathed our own clothes were taken away from us, and we were dressed in the workhouse shirts, grey cotton things like nightshirts, reaching to the middle of the thigh. Then we were sent into the dining-room, where supper was set out on the deal tables. It was the invariable spike meal, always the same, whether breakfast, dinner or supper—half a pound of bread, a bit of margarine, and a pint of so-called tea. It took us five minutes to gulp down the cheap, noxious food. Then the Tramp Major served us with three cotton blankets each, and drove us off to our cells for the night. The doors were locked on the outside a little before seven in the evening, and would stay locked for the next twelve hours.

The cells measured eight feet by five, and, had no lighting apparatus except a tiny, barred window high up in the wall, and a spyhole in the door. There were no bugs, and we had bedsteads and straw palliasses, rare luxuries both. In many spikes one sleeps on a wooden shelf, and in some on the bare floor, with a rolled-up coat for pillow. With a cell to myself, and a bed, I was hoping for a sound night's rest. But I did not get it, for there is always something wrong in the spike, and the peculiar shortcoming here, as I discovered immediately, was the cold. May had begun, and in honour of the season—a little sacrifice to the gods of spring, perhaps—the authorities had cut off the steam from the hot pipes. The cotton blankets were almost useless. One spent the night in turning from side to side, falling asleep for ten minutes and waking half frozen, and watching for dawn.

As always happens in the spike, I had at last managed to fall comfortably asleep when it was time to get up. The Tramp Major came marching down the passage with his heavy tread, unlocking the doors and yelling to us to show a leg. Promptly the passage was full of squalid shirt-clad figures rushing for the bathroom, for there was Only One tub full of water between us all in the morning, and it was first come first served. When I arrived twenty tramps had already washed their faces. I gave one glance at the black scum on top of the water, and decided to go dirty for the day.

We hurried into our clothes, and then went to the dining-room to bolt our breakfast. The bread was much worse than usual, because the military-minded idiot of a Tramp Major had cut it into slices overnight, so that it was as hard as ship's biscuit. But we were glad of our tea after the cold, restless night. I do not know what tramps would do without tea, or rather the stuff they miscall tea. It is their food, their medicine, their panacea for all evils. Without the half goon or so of it that they suck down a day, I truly believe they could not face their existence.

After breakfast we had to undress again for the medical inspection, which is a precaution against smallpox. It was three quarters of an hour before the doctor arrived, and one had time now to look about him and see what manner of men we were. It was an instructive sight. We stood shivering naked to the waist in two long ranks in the passage. The filtered light, bluish and cold, lighted us up with unmerciful clarity. No one can imagine, unless he has seen such a thing, what pot-bellied, degenerate curs we looked. Shock heads, hairy, crumpled faces, hollow chests, flat feet, sagging muscles—every kind of malformation and physical rottenness were there. All were flabby and discoloured, as all tramps are under their deceptive sunburn. Two or three figures wen there stay ineradicably in my mind. Old 'Daddy', aged seventy-four, with his truss, and his red, watering eyes, a herring-gutted starveling with sparse beard and sunken cheeks, looking like the corpse of Lazarus in some primitive picture: an imbecile, wandering hither and thither with vague giggles, coyly pleased because his trousers constantly slipped down and left him nude. But few of us were greatly better than these; there were not ten decently built men among us, and half, I believe, should have been in hospital.

This being Sunday, we were to be kept in the spike over the week-end. As soon as the doctor had gone we were herded back to the dining-room, and its door shut upon us. It was a lime-washed, stone-floored room, unspeakably dreary with its furniture of deal boards and benches, and its prison smell. The windows were so high up that one could not look outside, and the sole ornament was a set of Rules threatening dire penalties to any casual who misconducted himself. We packed the room so tight that one could not move an elbow without jostling somebody. Already, at eight o'clock in the morning, we were bored with our captivity. There was nothing to talk about except the petty gossip of the road, the good and bad spikes, the charitable and uncharitable counties, the iniquities of the police and the Salvation Army. Tramps hardly ever get away from these subjects; they talk, as it were, nothing but shop. They have nothing worthy to be called conversation, bemuse emptiness of belly leaves no speculation in their souls. The world is too much with them. Their next meal is never quite secure, and so they cannot think of anything except the next meal.

Two hours dragged by. Old Daddy, witless with age, sat silent, his back bent like a bow and his inflamed eyes dripping slowly on to the floor. George, a dirty old tramp notorious for the queer habit of sleeping in his hat, grumbled about a parcel of tommy that he had lost on the toad. Bill the moocher, the best built man of us all, a Herculean sturdy beggar who smelt of beer even after twelve hours in the spike, told tales of mooching, of pints stood him in the boozers, and of a parson who had peached to the police and got him seven days. William and, Fred, two young, ex-fishermen from Norfolk, sang a sad song about Unhappy Bella, who was betrayed and died in the snow. The imbecile drivelled, about an imaginary toff, who had once given him two hundred and fifty-seven golden sovereigns. So the time passed, with dun talk and dull obscenities. Everyone was smoking, except Scotty, whose tobacco had been seized, and he was so miserable in his smokeless state that I stood him the makings of a cigarette. We smoked furtively, hiding our cigarettes like schoolboys when we heard the Tramp Major's step, for smoking though connived at, was officially forbidden.

Most of the tramps spent ten consecutive hours in this dreary room. It is hard to imagine how they put up with it. I have come to think that boredom is the worst of all a tramp's evils, worse than hunger and discomfort, worse even than the constant feeling of being socially disgraced. It is a silly piece of cruelty to confine an ignorant man all day with nothing to do; it is like chaining a dog in a barrel, only an educated man, who has consolations within himself, can endure confinement. Tramps, unlettered types as nearly all of them are, face their poverty with blank, resourceless minds. Fixed for ten hours on a comfortless bench, they know no way of occupying themselves, and if they think at all it is to whimper about hard luck and pine for work. They have not the stuff in them to endure the horrors of idleness. And so, since so much of their lives is spent in doing nothing, they suffer agonies from boredom.

I was much luckier than the others, because at ten o'clock the Tramp Major picked me out for the most coveted of all jobs in the spike, the job of helping in the workhouse kitchen. There was not really any work to be done there, and I was able to make off and hide in a shed used for storing potatoes, together with some workhouse paupers who were skulking to avoid the Sunday-morning service. There was a stove burning there, and comfortable packing cases to sit on, and back numbers of the FAMILY HERALD, and even a copy of RAFFLES from the workhouse library. It was paradise after the spike.

Also, I had my dinner from the workhouse table, and it was one of the biggest meals I have ever eaten. A tramp does not see such a meal twice in the year, in the spike or out of it. The paupers told me that they always gorged to the bursting point on Sundays, and went hungry six days of the week. When the meal was over the cook set me to do the washing-up, and told me to throw away the food that remained. The wastage was astonishing; great dishes of beef, and bucketfuls of bread and vegetables, were pitched away like rubbish, and then defiled with tea-leaves. I filled five dustbins to overflowing with good food. And while I did so my fellow tramps were sitting two hundred yards away in the spike, their bellies half filled with the spike dinner of the everlasting bread and tea, and perhaps two cold boiled potatoes each in honour of Sunday. It appeared that the food was thrown away from deliberate policy, rather than that it should be given to the tramps.

At three I left the workhouse kitchen and went back to the spike. The boredom in that crowded, comfortless room was now unbearable. Even smoking had ceased, for a tramp's only tobacco is picked-up cigarette ends, and, like a browsing beast, he starves if he is long away from the pavement-pasture. To occupy the time I talked with a rather superior tramp, a young carpenter who wore a collar and tie, and was on the road, he said, for lack of a set of tools. He kept a little aloof from the other tramps, and held himself more like a free man than a casual. He had literary tastes, too, and carried one of Scott's novels on all his wanderings. He told me he never entered a spike unless driven there by hunger, sleeping under hedges and behind ricks in preference. Along the south coast he had begged by day and slept in bathing-machines for weeks at a time.

We talked of life on the road. He criticized the system which makes a tramp spend fourteen hours a day in the spike, and the other ten in walking and dodging the police. He spoke

of his own case—six months at the public charge for want of three pounds' worth of tools. It was idiotic, he said.

Then I told him about the wastage of food in the workhouse kitchen, and what I thought of it. And at that he changed his tune immediately. I saw that I had awakened the pew-renter who sleeps in every English workman. Though he had been famished, along with the rest, he at once saw reasons why the food should have been thrown away rather than given to the tramps. He admonished me quite severely.

'They have to do it,' he said. 'If they made these places too pleasant you'd have all the scum of the country flocking into them. It's only the bad food as keeps all that scum away. These tramps are too lazy to work, that's all that's wrong with them. You don't want to go encouraging of them. They're scum.'

I produced arguments to prove him wrong, but he would not listen. He kept repeating:

'You don't want to have any pity on these tramps—scum, they are. You don't want to judge them by the same standards as men like you and me. They're scum, just scum.'

It was interesting to see how subtly he disassociated himself from his fellow tramps. He has been on the road six months, but in the sight of God, he seemed to imply, he was not a tramp. His body might be in the spike, but his spirit soared far away, in the pure aether of the middle classes.

The clock's hands crept round with excruciating slowness. We were too bored even to talk now, the only sound was of oaths and reverberating yawns. One would force his eyes away from the clock for what seemed an age, and then look back again to see that the hands had advanced three minutes. Ennui clogged our souls like cold mutton fat. Our bones ached because of it. The clock's hands stood at four, and supper was not till six, and there was nothing left remarkable beneath the visiting moon.

At last six o'clock did come, and the Tramp Major and his assistant arrived with supper. The yawning tramps brisked up like lions at feeding-time. But the meal was a dismal disappointment. The bread, bad enough in the morning, was now positively uneatable; it was so hard that even the strongest jaws could make little impression on it. The older men went almost supperless, and not a man could finish his portion, hungry though most of us were. When we had finished, the blankets were served out immediately, and we were hustled off once more to the bare, chilly cells.

Thirteen hours went by. At seven we were awakened, and rushed forth to squabble over the water in the bathroom, and bolt our ration of bread and tea. Our time in the spike was up, but we could riot go until the doctor had examined us again, for the authorities have a terror of smallpox and its distribution by tramps. The doctor kept us waiting two hours this time, and it was ten o'clock before we finally escaped.

At last it was time to go, and we were let out into the yard. How bright everything looked, and how sweet the winds did blow, after the gloomy, reeking spike! The Tramp Major handed each man his bundle of confiscated possessions, and a hunk of bread and cheese for midday

dinner, and then we took the road, hastening to get out of sight of the spike and its discipline, This was our interim of freedom. After a day and two nights of wasted time we had eight hours or so to take our recreation, to scour the roads for cigarette ends, to beg, and to look for work. Also, we had to make our ten, fifteen, or it might be twenty miles to the next spike, where the game would begin anew.

I disinterred my eightpence and took the road with Nobby, a respectable, downhearted tramp who carried a spare pair of boots and visited all the Labour Exchanges. Our late companions were scattering north, south, east and west, like bugs into a mattress. Only the imbecile loitered at the spike gates, until the Tramp Major had to chase him away.

Nobby and I set out for Croydon. It was a quiet road, there were no cars passing, the blossom covered the chestnut trees like great wax candles. Everything was so quiet and smelt so clean, it was hard to realize that only a few minutes ago we had been packed with that band of prisoners in a stench of drains and soft soap. The others had all disappeared; we two seemed to be the only tramps on the road.

Then I heard a hurried step behind me, and felt a tap on my arm. It was little Scotty, who had run panting after us. He pulled a rusty tin box from his pocket. He wore a friendly smile, like a man who is repaying an obligation.

'Here y'are, mate,' he said cordially. 'I owe you some fag ends. You stood me a smoke yesterday. The Tramp Major give me back my box of fag ends when we come out this morning. One good turn deserves another—here y'are.'

And he put four sodden, debauched, loathly cigarette ends into my hand."

## Analysis

### Counting words

Simply counting the words, and what kinds of words, can be useful.

In[82]=

```
Print["Number of words:"]; WordCount[corpus]
words := ToLowerCase[StringSplit[corpus, Except[WordCharacter] ..]]
sentences := TextSentences[corpus]
Print["Number of distinct words: "];
CountDistinct[words]
```

Number of words:

Out[82]=

3367

Number of distinct words:

Out[86]=

1129

Using the two above, we can create a measure of the vocabulary variety, by dividing the distinct words by the total words, we get a measure from 0 to 1 of the word variation. 1 being every single word is different.

In[20]:=

```
Print["Vocab density: "];  $\frac{\text{CountDistinct}[\text{words}]}{\text{Length}[\text{words}]}$  // N
```

Vocab density:

Out[20]:=

0.32858

We can also remove words such as “then”, “this”, “and”, known as *stop words*, and then repeat the vocab density calculation. This should be a larger number more often than not.

In[87]:=

```
trimmedWords := DeleteStopwords[words];
Print["Vocab density, without stop words: "];
 $\frac{\text{CountDistinct}[\text{trimmedWords}]}{\text{Length}[\text{trimmedWords}]}$  // N
```

Vocab density, without stop words:

Out[88]:=

0.639148

In[23]:=

```
Print["The 20 most commonly used words:"];
Take[WordCounts[DeleteStopwords[corpus]], 20]
```

The 20 most commonly used words:

Out[23]:=

```
<| spike → 24, tramps → 16, like → 15, away → 13, Tramp → 12, Major → 11,
  tramp → 10, time → 9, man → 9, hours → 9, workhouse → 8, ten → 8, road → 8,
  food → 8, said → 7, little → 7, clock → 7, went → 6, tea → 6, talk → 6 |>
```

We can also look at the density of certain types of words, for example:

In[80]:=

```
Print["Density of adjectives:"];
 $\frac{\text{Length}[\text{Intersection}[\text{WordList}["Adjective"], \text{trimmedWords}]]}{\text{Length}[\text{trimmedWords}]}$  // N
```

Density of adjectives:

Out[81]:=

0.196405

Note that the above example may count words as adjectives when they are not being used as such in a sentence, however it should be good enough for a rough measure.

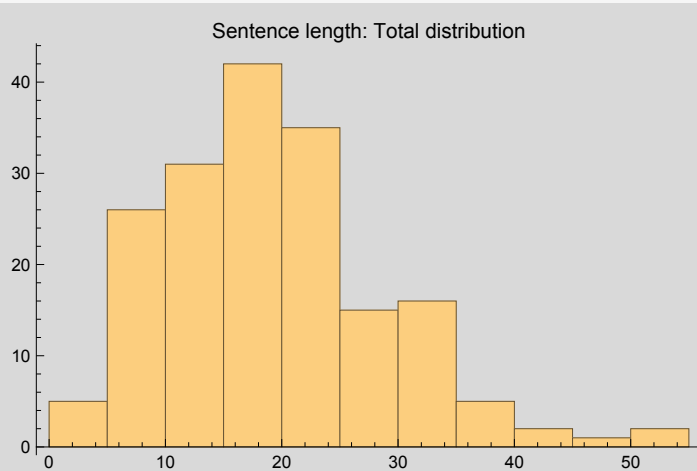
## Sentence length

We can also look at the sentence length throughout the text

In[38]:=

```
sentenceLengths := Length /@ StringSplit /@ sentences;  
Histogram[sentenceLengths,  
PlotLabel → "Sentence length: Total distribution"]
```

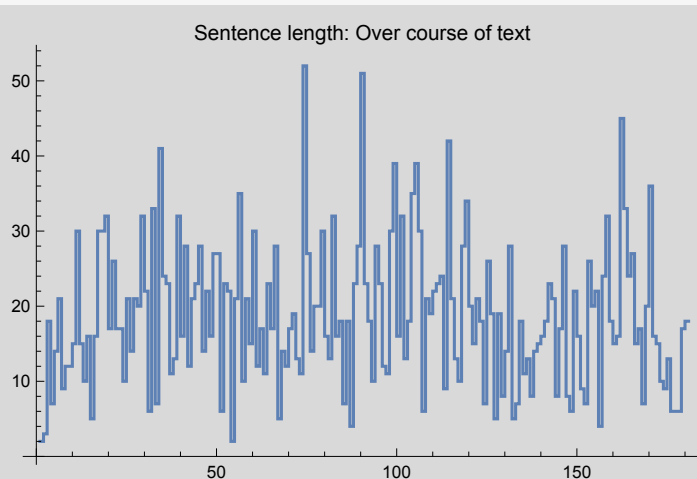
Out[39]:=



In[32]:=

```
ListStepPlot[sentenceLengths,  
PlotLabel → "Sentence length: Over course of text"]
```

Out[32]:=



We can also look at the mean of the absolute value of the second differences of the sentence length as a measure of the variability of the sentence lengths throughout the text. This gives us a sense of how much short sentences follow long ones (higher being more variation)



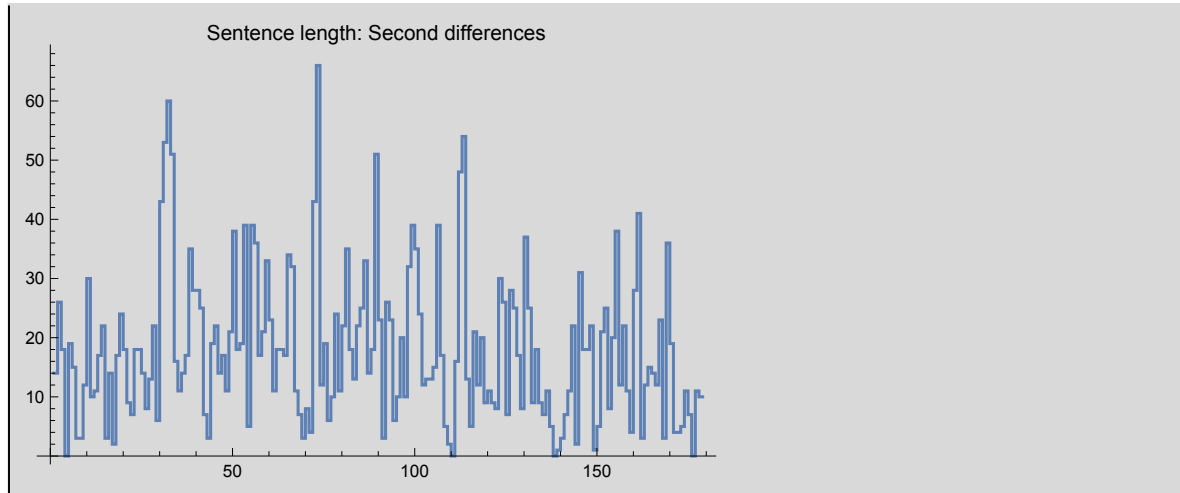
In[35]:=

```
Mean[Abs /@ Differences[sentenceLengths, 2]] // N
ListStepPlot[Interpolation[Abs /@ Differences[sentenceLengths, 2]],
  PlotLabel → "Sentence length: Second differences"]
```

Out[35]=

17.9551

Out[36]=



We can also drill down into the individual sentence structure itself

In[13]:=

```
TextStructure[sentences[[4]]]
```

Out[13]=

<u>We</u>	<u>were</u>	<u>too</u>	<u>tired</u>	<u>to</u>	<u>talk</u>	<u>much</u>	<u>.</u>
Pronoun	Verb	Adverb	Adjective	Preposition	Verb	Adverb	Punctuation
Noun Phrase					Noun Phrase		
					Verb Phrase		
					Verb Phrase		
					Clause		
		Adjective Phrase					
		Verb Phrase					
Sentence							