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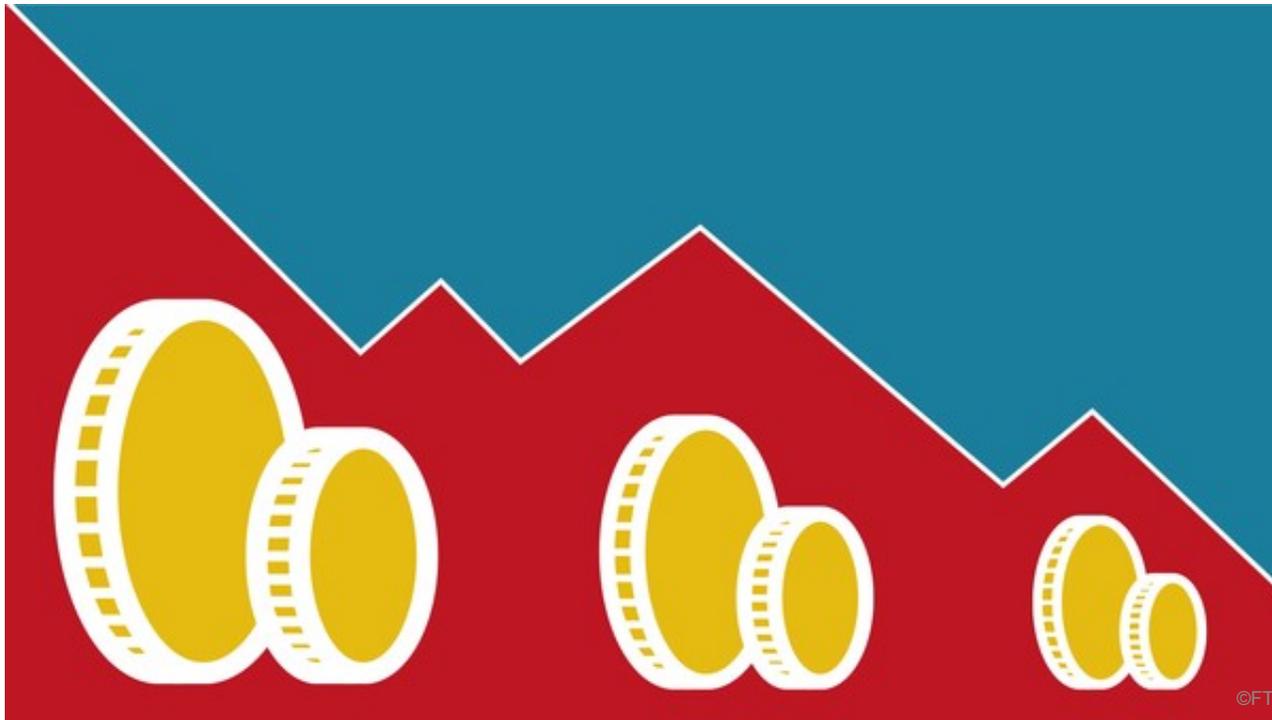
## Pensions: Low yields, high stress

John Authers and Robin Wigglesworth

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In the first article of a series, the Financial Times examines a creeping social and political crisis



**T**he 400,000 savers and members of the Central States Pension Fund, set up in 1955 to provide for truckers in their retirement, received a letter in May from their board of directors and

trustees with an unusual apology. It regretted to inform them that the fund would not, after all, be cutting their benefits because the US Treasury had blocked a plan to do so.

Central States wanted to cut benefits because it feared that it would go bust, as its assets of nearly \$18bn cannot cover the benefits worth more than \$32bn it has promised to pay out. The plan to cut pensions now was part of a rescue package intended to avert total disaster later. But the idea came under attack in Congress and from unions.

“Central States Pension Fund remains in critical and declining status, and is projected to run out of money in less than 10 years,” it warned in the letter.

Many more pensioners and savers around the world are likely to receive such letters, and many more politicians will face the same impossible dilemma. A demographic crisis for pensions, driven by longer life expectancies and declining birth rates, has now become critical, thanks to historic low bond yields across the world.

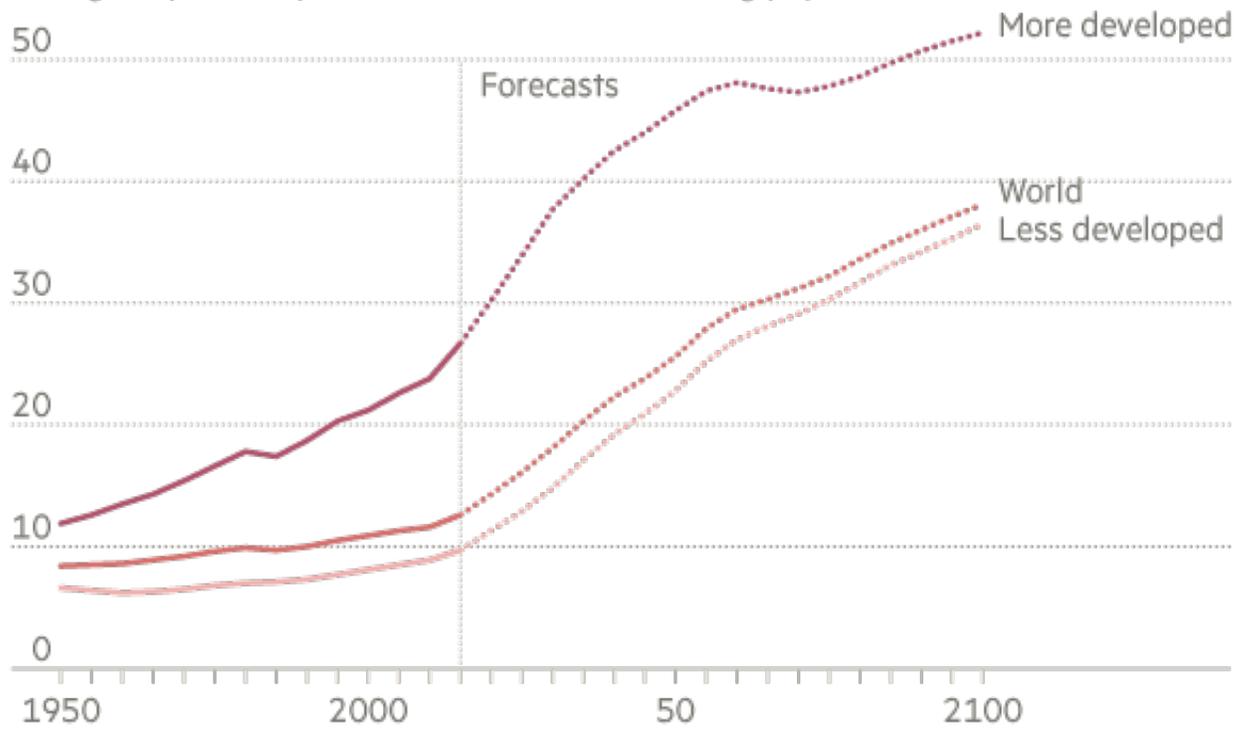
Income from bonds, especially government and fixed-income bonds, is a bedrock of pension investing. Years of declining bond yields have made it far harder for funds to buy an income for their members, leading to desperation tactics like those seen at Central States.

As anxiety mounts, some politicians are laying the blame for a looming problem at the feet of central banks. Baroness Altmann, the former UK pensions minister, said this month that pension funding had reached “crisis point” and blamed the Bank of England’s quantitative easing policy of buying bonds.

“The emergency to pension schemes has been caused by QE,” she said. “I don’t see how it is reasonable to ask companies with pension schemes to fill a £1tn hole and put money into their businesses as well. It doesn’t add up.”

## The number of retirees is growing

Old age dependency rates (over 65 as % of working population\*)



\* Working age = 15-64-year-olds

Source: UN Population Division

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BoE officials say they recognise the problem, but they are not apologetic. Andrew Haldane, its chief economist, says the central bank's top priority must be to stimulate the economy. "I sympathise with savers, but jobs must come first," he says.

The problem is clearest in the UK, where gilt yields have tumbled to unprecedented lows since June's vote to leave the EU. According to Mercer, the actuary, the UK's 350 largest listed companies face a shortfall of up to £149bn in their pension plans, with the expected cost of their guaranteed payments to pensioners — £870bn — far outstripping the assets of £721bn they hold to cover them. This gap widened by £10bn in the five days after the BoE cut interest rates at the end of last month.

Bond yields have been falling globally since the early 1980s, initially in response to the US Federal Reserve's success in bringing inflation under control. Meanwhile the returns on stocks, where pension funds put most of their assets, have been hurt by two major market crashes since 2000. In the US, the assets held by pension funds have roughly doubled — up 105 per cent — since 1999, but the cost of their liabilities to pensioners has almost quadrupled — up 278 per cent, according to the actuarial group Ryan ALM.

The result is enormous pension deficits. In the US, pensions run by companies in the S&P 1500

index were underfunded by \$562bn by the end of last month, according to Mercer — nearly \$160bn wider just seven months earlier thanks to further drops in bond yields.

For US public plans — which are allowed to assume far higher interest rates than are available in the bond market, making their liabilities look unrealistically cheap — the problem is far worse. Joshua Rauh, a professor of finance at Stanford University, estimates that their total deficits, if liabilities were priced in the same way as corporate plans, would be about \$3.4tn.

## Bond yields are falling

Ten-year bond yields (%)



Source: Thomson Reuters Datastream

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“It’s existential. That’s the one-word summary of the scale of the challenges,” says Alasdair Macdonald of Willis Towers Watson, an actuarial consultancy. “You can pull different levers, but the declines in rates is an existential problem for the entire pensions system.”

Low interest rates also lead to higher valuations on equities, which make up the bulk of most pension funds’ portfolios. With stocks more expensive, expected future returns are lower, making the problem of meeting pension promises even more severe.

“It’s scary and it’s surreal,” says Carsten Stendevad, who heads ATP, the \$110bn national Danish pension plan. “First, if you’re in the business of offering annuities, your product just became very expensive to produce. But secondly we can see that the impact of QE is affecting other asset classes

as well. That's the scarier part. There's nowhere really to hide."

## Policy paradox

Any solution to the problem involves individuals saving more and companies investing less — a result that blunts the primary goal of easy monetary policy: stimulating spending.

"For a given retirement income," says Antti Ilmanen of AQR, a large US fund manager, "when the market doesn't do the work for you, you've got to do the saving. It hasn't been much discussed in the context of macro stimulus, but it's a reason why it's been hard for low yields to stimulate spending."

## Companies face deepening deficits

Pension funding levels (assets as % of liabilities)



Source: Mercer

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Rob Arnott of Research Affiliates says the natural response for investors facing a zero yield is to stop spending, save more and put money into markets — actions that lead to asset bubbles. "The behaviour we are seeing is exactly what you would expect given that framework. People stop spending. It's Keynes' liquidity trap but for completely different reasons than the ones he predicted."

The problem is greatest for defined benefit plans, which can only escape their guaranteed payouts

through bankruptcy. Detroit's bankruptcy settlement, which saw non-uniformed retirees take a 4.5 per cent cut in their pensions and lose their cost-of-living adjustments in June 2014, showed the stakes.

Starting in the 1970s, many companies stopped offering DB plans, and shifted to defined contribution pensions, such as the widely used 401(k) in the US, which have no guarantee of an income for savers. Because these remove risk from companies, DC plans are very attractive to employers and they now account for 48 per cent of the \$35.4tn pensions pot in 19 developed countries, according to Willis Towers Watson. The risk instead falls on individual savers — and hence ultimately on to governments. That means low rates create the same risk of social crisis for DC plans as they do for DB plans.

Many savers started contributing when it seemed reasonable to expect strong returns over their lifetimes. A popular metric was that savers who put away 8 per cent of their income every year for 40 years would be able build up an income of 75 per cent of their final earnings by the time they retired.

According to Mr Ilmanen, this approach would have worked with real returns, above inflation, of 5.5 per cent per year. This is roughly what a US-based portfolio of 60 per cent stocks and 40 per cent bonds has achieved since 1951. But if future returns drop by only two percentage points, to 3.5 per cent, savers will need to put aside almost 15 per cent of their income. With bonds and stocks now historically expensive, 3.5 per cent is if anything optimistic.

Société Générale's Andrew Lapthorne illustrates the problem a different way. If someone today invested \$100,000 in a balanced portfolio of stocks and bonds, they could expect a return of \$21,800 over the next two decades after costs. Ten years ago, that same investor might have expected to make \$60,000, and three decades ago \$150,000.

## Pension liabilities have grown far faster than assets

US pension asset returns and liabilities (rebased)



Source: Ryan ALM, Inc

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But even if historic rates of return had continued, most US investors have failed to put enough aside to provide for their retirement. At the end of 2013, the median 401(k) plan held by US households near retirement had a balance of \$104,000, according to the National Institute on Retirement Security. Following the typical actuarial recommendation of withdrawing no more than 4 per cent a year, this would provide an annual income of about \$4,000.

The deficits for DB plans are only the most visible symptom of the problem. Low bond yields and expensive stocks are a challenge to everyone's retirement, whatever the scheme or country. "When you boil it down it's a fundamental theme that affects the entire pension industry," says Jay Love, US head of DB investment at Mercer.

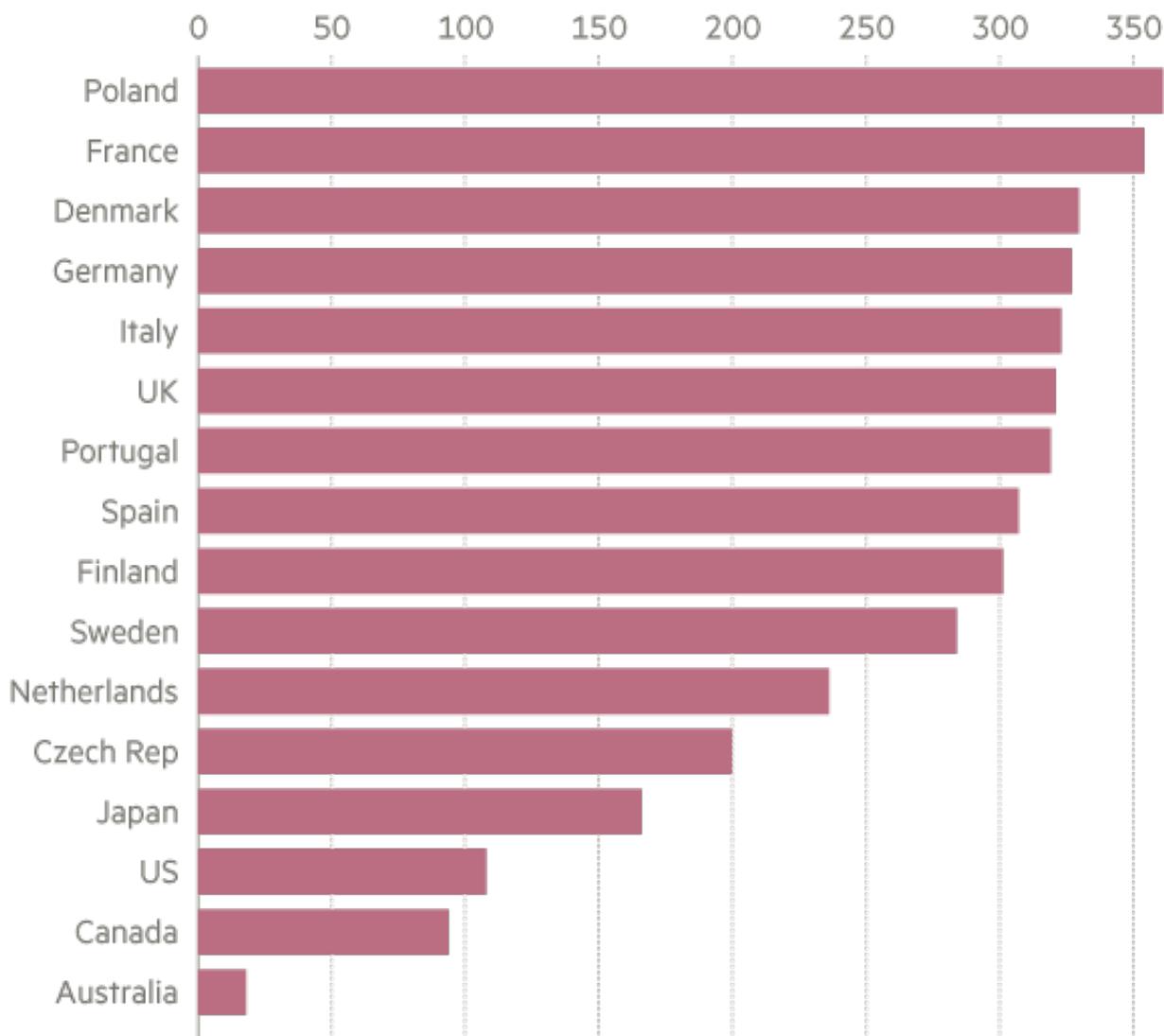
### Mitigating the risks

DB pension plans are implementing several strategies to avert disaster. The UK was first to adopt "liability-driven investing", where pension funds try to anticipate how their payments are likely to move and buy the investments that match them. In practice, this means buying more bonds. Globally, a survey by McKinsey found 62 per cent of big institutions already use liability-matching, while more than 90 per cent intend to extend the practice.

If bond prices rise, the pension funds' assets rise with them. This mitigates the problem caused by falling yields. But as bond yields fall, adopting such a strategy becomes more expensive — and by buying bonds, liability-matchers tend to push yields down further still.

## Some governments face huge liabilities

Contingent government pension liabilities (as % of GDP)



Source: Citi

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A second approach is to take more risk. In the US, many institutions had flocked to hedge funds, pools of money originally designed for wealthy individuals. Allocations to these “alternative” investments have grown from 5 per cent of total assets in 1995 to 24 per cent last year, according to Willis Towers.

But institutions are growing disillusioned by hedge funds' high fees and recent poor performance.

In the past year, big public pension plans in California, New York and New Jersey have pulled money from hedge funds as politicians attacked their high fees.

In Canada and other countries, big public pension funds have branched aggressively into infrastructure and real estate, and cut costs by running all of the operations themselves.

A third option is to sell all the risks associated with the pensions' assets and liabilities to an insurer. This gets the company out of insuring the funds, which is often not its core competency, in return for taking an upfront financial hit. Insurers are far better able to manage the risks.

But this grows less attractive for companies as bond yields fall, increasing the fee that insurers need to charge them. In the wake of the Brexit referendum, [Direct Line](#), a UK provider of motor insurance, decided against going through with such a deal.

There are ways to avert a true social crisis. Mass poverty in old age can be avoided. But the options are unpalatable. "We will have to save more, work longer and simply lower our expectations," says Joachim Fels, a global economic adviser at Pimco, the bond fund manager. "That's the sad truth."

For some, such as Central States, an ugly denouement looks unavoidable. Tom Nyhan, the pension fund's executive director, says it has promoted legislation to fix the problem, without success. "People are viewing it as a bailout and the American public are tired of Tarp and the Wall Street bailouts."

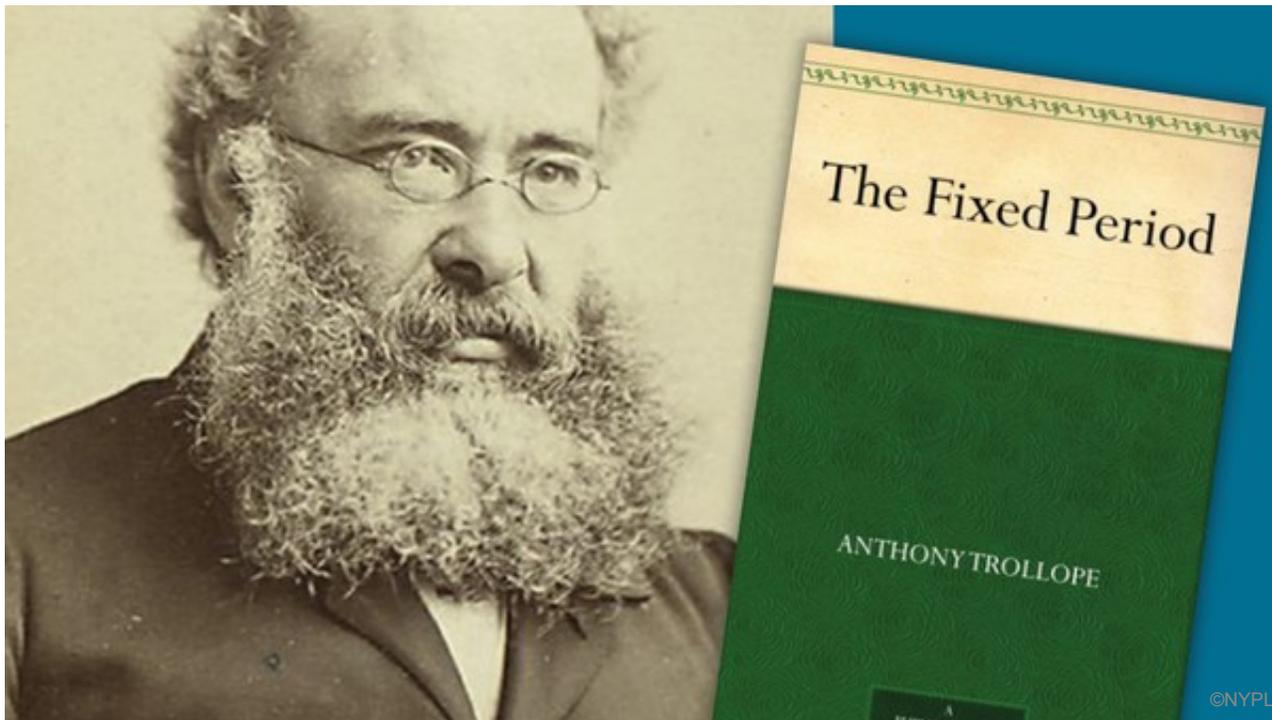
## **Pensions: mathematics in disarray**

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In 1882 the English writer Anthony Trollope offered a dystopian solution to the growing numbers of elderly pensioners in his satirical novel *The Fixed Period*. In the fictional republic of Britannula, citizens are removed to the town of Necropolis at the age of 67, and spend a year of contemplation before being euthanised and cremated.

He had recognised that growing longevity would soon create a problem, and a problem immediately emerged. Soon after Trollope's book was published, German chancellor Otto von Bismarck introduced one of the world's first modern pension systems, with a retirement age of 70. Rising prosperity has since allowed developed countries to ramp up extensive welfare states, with pensions to ensure that most people do not die in penury.

Employers used reliably high interest rates available from bonds to offer cast-iron pension guarantees. With life expectancy short, and stock markets performing well, the funds they put aside often showed a profit, and the institutional investment industry was born.



Anthony Trollope's satirical novel *The Fixed Period* envisaged a society where those in charge planned to terminate the lives of citizens at the age of 68

However, demographic changes — such as the retiring baby boomer generation in the US — have raised concerns over the longer-term viability of the global pensions industry.

The main response has been to shift risk from companies and governments to individual savers. The most significant development in the US was the Employee Retirement Income Security Act of 1974, which paved the way for 401(k) pension plans, and served as a model for new national retirement schemes across the developing world.

In the 1980s and 1990s, stock markets enjoyed their longest-ever bull market. Savers in many cases assumed that these returns would continue, and put only a small proportion of their income into the funds.

The stock markets' peak in 2000, and the fall in bond yields that started in the early 1980s, have thrown the mathematics behind both traditional and more modern pension plans into disarray. Both appear to be heading for a serious deficit.

*Additional reporting by Nicole Bullock, Mary Childs, Alistair Gray and Josephine Cumbo*

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