

# The Private Lives of the Pyramid-builders

By Dr Joyce Tyldesley

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Pyramids tell us about the fabulous lives of great pharaohs, who died surrounded by symbols of wealth and privilege. But the story of the ordinary people who built them is less often told. Archaeologist Dr Joyce Tyldesley redresses the balance.

## Mystery builders

Who built the pyramids? And where did those builders live? Egyptologists used to suspect that Egypt's construction sites were supported by purpose-built villages, but there was no archaeological evidence for this until the end of the Victorian age.

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Then in 1888 the theory was finally confirmed, when British archaeologist Flinders Petrie started his investigation into the Middle Kingdom pyramid complex of Senwosert II at Iahun. Here an associated walled settlement, Kahun, yielded a complete town plan whose neat rows of mud-brick terraced houses provided a wealth of papyri, pottery, tools, clothing and children's toys - all the debris of day-to-day life that is usually missing from Egyptian sites.

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If we are to make sense of the Great Pyramid at Giza as a man-made monument, this is precisely the sort of evidence that we need to uncover. But with so many splendid tombs on offer, few early Egyptologists were prepared to 'waste time' looking for domestic architecture. It is only recently, thanks largely to the ongoing excavations of Egyptologists Mark Lehner and Zahi Hawass, that excavation around the base of the Great Pyramid has started to reveal the stories of the pyramid-builders there.

## Scale of the workforce

The Greek historian Herodotus tells us that the Great Pyramid was built by 100,000 slaves who 'laboured constantly and were relieved every three months by a fresh gang'. He is, however, wrong. King Khufu - 4th Dynasty ruler of Egypt - the royal responsible for the commissioning of the Great Pyramid, did not have a vast body of slaves at his disposal, and even if he had, there was no way that 100,000 could work simultaneously on one pyramid.



King Khufu, responsible for commissioning the Great Pyramid ©

All archaeologists have their own methods of calculating the number of workers employed at Giza, but most agree that the Great Pyramid was built by approximately 4,000 primary labourers (quarry workers, hauliers and masons). They would have been supported by 16-20,000 secondary workers (ramp builders, tool-makers, mortar mixers and those providing back-up services such as supplying food, clothing and fuel). This gives a total of 20-25,000, labouring for 20 years or more.

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The workers may be sub-divided into a permanent workforce of some 5,000 salaried employees who lived, together with their families and dependents, in a well-established pyramid village. There would also have been up to 20,000 temporary workers who arrived to work three- or four-month shifts, and who lived in a less sophisticated camp established alongside the pyramid village.

## **The pyramid village**

The



A reconstruction of men labouring in the quarry close to the Great Pyramid ©

sacred precincts of the Giza pyramid village cemetery were defined by the 'Wall of the Crow', a massive limestone boundary which separated the land of the living from the land of the dead. The main pyramid village lay outside this wall, close by the valley temple of the Great Pyramid. Unfortunately, this settlement now lies beneath the modern town of Nazlet es-Samman, and is largely inaccessible.

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The village dead - men, women and children - were buried in a sloping desert cemetery. Their varied tombs and graves, including miniature pyramids, step-pyramids and domed tombs, incorporate expensive stone elements 'borrowed' from the king's building site. The larger, more sophisticated, limestone tombs lie higher up the cemetery slope; here we find the administrators involved in the building of the pyramid, plus those who furnished its supplies.

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Tomb robbers more or less ignored these workers' tombs, their rather basic grave goods being of little interest to thieves in search of gold. Consequently many skeletons have survived intact, allowing scientists to build up a profile of those who lived, worked and died at Giza. Of the 600 or more bodies so far examined, roughly half are female, with children and babies making up over 23 per cent of the total. Thus we have confirmation that the permanent workers lived with their families in the shadow of the rising pyramid.

## Managing the task

The tombs of the supervisors include inscriptions relating to the organisation and control of the workforce. These writings provide us with our only understanding of the pyramid-building system. They confirm that the work was organised along tried and tested lines, designed to reduce the vast workforce and their almost overwhelming task to manageable proportions.

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The splitting of task and workforce, combined with the use of temporary labourers, was a typical Egyptian answer to a logistical problem. Already temple staff were split into five shifts or 'phyles', and sub-divided into two divisions, which were each required to work one month in ten. Boat crews were always divided into left- and right-side gangs and then sub-divided; the tombs in the Valley of the Kings were decorated following this system, also by left- and right-hand gangs.

At Giza the workforce was divided into crews of approximately 2,000 and then sub-divided into named gangs of 1,000: graffiti show that the builders of the third Giza pyramid named themselves the 'Friends of Menkaure' and the 'Drunkards of Menkaure'. These gangs were divided into phyles of roughly 200. Finally the phyles were split into divisions of maybe 20 workers, who were allocated their own specific task and their own project leader. Thus 20,000 could be separated into efficient, easily monitored, units and a seemingly impossible project, the raising of a huge pyramid, became an achievable ambition.

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As bureaucracy responded to the challenges of pyramid building, the builders took full advantage of an efficient administration, which allowed them to summon workers, order supplies and allocate tasks. It is no coincidence that the 4th Dynasty shows the first flourishing of the hieratic script, the cursive, simplified form of hieroglyphics that would henceforth be used in all non-monumental writings.

## The temporary workers

The many thousands of manual labourers were housed in a temporary camp beside the pyramid town. Here they received a subsistence wage in the form of rations. The standard Old Kingdom (2686-2181 BC) ration for a labourer was ten loaves and a measure of beer.

We can just about imagine a labouring family consuming ten loaves in a day, but supervisors and those of higher status were entitled to hundreds of loaves and many jugs of beer a day. These were supplies which would not keep fresh for long, so we must assume that they were, at least in part, notional rations, which were actually paid in the form of other goods - or perhaps credits. In any case, the pyramid town, like all other Egyptian towns, would soon have developed its own economy as everyone traded unwanted rations for desirable goods or skills.

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The temporary labourers who died on site were buried in the town cemetery along with the tools of their trade. As we might expect, their hurried graves were poor in comparison with those of the permanent workers who had a lifetime to prepare for burial at Giza.

## The industrial complex



The remains of a fish processing unit has been found in the Great Pyramid's industrial district ©

To the south of the pyramid town lay an industrial district, a gigantic, cohesive complex divided into blocks or galleries separated by paved streets equipped with drains, and including some workers' housing.

Again investigations are still in progress, but Mark Lehner has already discovered a copper-processing plant, two bakeries with enough moulds to make hundreds of bell-shaped loaves, and a fish-processing unit complete with the fragile, dusty remains of thousands of fish. This is food production on a truly massive scale, although as yet Lehner has discovered neither storage facilities nor the warehouses.

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The animal bones recovered from this area and from the pyramid town include duck, the occasional sheep and pig and, most unexpectedly, choice cuts of prime beef. The ducks, sheep and pigs could have been raised amidst the houses and workshops of the pyramid town but cattle, an expensive luxury, must have been grazed on pasture - probably the fertile pyramid estates in the Delta - and then transported live for butchery at Giza.

## Who were the pyramid builders?

After comparing DNA samples taken from the workers' bones with samples taken from modern Egyptians, Dr Moamina Kamal of Cairo University Medical School has suggested that Khufu's pyramid was a truly nationwide project, with workers drawn to Giza from all over Egypt. She has discovered no trace of any alien race; human or intergalactic, as suggested in some of the more imaginative 'pyramid theories'.

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Effectively, it seems, the pyramid served both as a gigantic training project and - deliberately or not - as a source of 'Egyptianisation'. The workers who left their communities of maybe 50 or 100 people, to live in a town of 15,000 or more strangers, returned to the provinces with new skills, a wider outlook and a renewed sense of national unity that

balanced the loss of loyalty to local traditions. The use of shifts of workers spread the burden and brought about a thorough redistribution of pharaoh's wealth in the form of rations.

Almost every family in Egypt was either directly or indirectly involved in pyramid building. The pyramid labourers were clearly not slaves. They may well have been the unwilling victims of the *corvée* or compulsory labour system, the system that allowed the pharaoh to compel his people to work for three or four month shifts on state projects. If this is the case, we may imagine that they were selected at random from local registers.

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But, in a complete reversal of the story of oppression told by Herodotus, Lehner and Hawass have suggested that the labourers may have been volunteers. Zahi Hawass believes that the symbolism of the pyramid was already strong enough to encourage people to volunteer for the supreme national project. Mark Lehner has gone further, comparing pyramid building to American Amish barn raising, which is done on a volunteer basis. He might equally well have compared it to the staffing of archaeological digs, which tend to be manned by enthusiastic, unpaid volunteers supervised by a few paid professionals.

## Find out more

### Read on

*The Pyramid Builders of Ancient Egypt: A Modern Investigation of Pharaoh's Workforce* by AR David (Boston and Henley, London, 1986)

*The Complete Pyramids* by M Lehner (London, 1997)

*Private Lives of the Pharaohs* by J Tyldesley (London, 2000)

*The Pyramids: Their Archaeology and History* by M Verner (London, 2002)

## Links

**The British Museum.** Great Russell Street, London. Tel: 0207 323 8299. The British Museum is free to everybody and opens at 10am every day.

## About the author

Author and broadcaster Joyce Tyldesley teaches Egyptology at Manchester University, and is Honorary Research Fellow at the School of Archaeology, Classics and Egyptology, Liverpool University. She is author of *Tales from Ancient Egypt* (Rutherford Press, 2004) and *Egypt: How a Lost Civilization was Rediscovered* (BBC Publications, 2005), written to accompany the BBC TV series of the same name.