

5-25-05

Dear Oisin,

As I get used to the time here, I do seem to be more tired at night. And now the day is approaching for me to head to Germany. I'm a little bit sad to leave, because the Newton Institute was quite a nice place to work, even if just for a little while. More than anything, it's been very convenient. The apartment I am staying in is barely a five-minute walk from the institute. I can have all my meals easily at a place called Girton College, about a hundred feet down the road from the institute. And then, there is a coffee machine that always makes fresh coffee for free, and a little bar with various kinds of snacks. So it's been quite easy to do mathematics the whole time, often late into the night. I've already told you that I also know many people here, and everyone is very friendly. Yesterday, I went again to a dinner hosted by Mr. Coates at Emmanuel College. This time as well, there was a visitor from the U.S. named Mr. Skinner and several other people from the department of mathematics at Cambridge. One of them was Alessio Corti who is originally Italian. He reminded me that we had dinner together in exactly the same room about 9 years ago. Needless to say, we were quite happy to see each other again. I was glad to hear that he also has a 6 year old child, a little girl. The room in question was not the fancy hall that I ate in last week, but rather, a cozy dining room attached to Mr. Coates' office. You might like Mr. Coates' office. He's a real collector of antique porcelain from China and Japan. They're displayed, somewhat precariously, on all of his shelves and on his desk. He also has many miniatures from India, pictures of gods, serpents, and other creatures. The office looks rather like Grandma's house. I think you remember

Mr. Kato from Japan. He told me once that Mr. Coates knows much more about Japanese history than he does himself.

Just before the dinner, Mr. Skinner had delivered a lecture about his work which was really very interesting. And he also explained matters beautifully which is not so easy to do with advanced mathematics. In fact, it's often the case that someone who does really nice mathematics is quite terrible at explaining what he does. But that's not so surprising in a way, because it seems to be the same in many other things. For example, I doubt Michelangelo was very good at explaining how he made those wonderful paintings and sculptures. But it depends a lot on the person. Leonardo, for example, does seem to have quite enjoyed explaining the principles behind his work. Leonardo was also a very mathematical painter, as you know.

Unfortunately, the topic of Mr. Skinner's lecture is another one of those things I'll have to explain to you when you are older. Well, maybe I can give you some small puzzles related to it. Notice that 2 times 3 is 6. So we say '6 is divisible by 2' and also that '6 is divisible by 3.' For another example 4 is divisible by 2. Can you guess what 10 is divisible by? You figure it out like this: 10 is 1 time 10, so 10 is divisible by 1. 10 is also 2 times.... 5, so it's also divisible by 2. Then you go on, is 10 equal to 3 times something? How about 4 times something? And so on. I wonder if you're comfortable enough with multiplying small numbers to try out these problems. It's OK if you're not. If you are, it might be fun to figure out what 5 and 7 and 11 are divisible by. What about 8 and 9? Maybe I'll stop there for now. If you let me know that you can do those exercises, I'll take this topic a bit further in another letter. Eventually, these ideas are carried very far, far beyond

anything an ordinary person can imagine. That's one of the funny things about mathematics. Most of it is very elaborate, and consists of very definite facts and experiences that can make people very sad or very happy. Nevertheless, mathematical events take place in a world that ordinary people can't even begin to imagine. Over the centuries, Plato's world has filled up with all kinds of inhabitants that Plato himself couldn't possibly have imagined. Very strange indeed.

Today I had to go into town to cash a check at the bank. After that I decided to go to the Fitzwilliam museum so I could report to you about it. This is the main art museum in Cambridge.



Fitzwilliam Museum

Even though Cambridge is a very small town, because it has such an old university, the museum is quite

good. It's certainly not as large as the Louvre, but the space it occupies is packed with many good things. On the lower floor was the collection from Greece and Rome and porcelain from Asia. In that collection, I looked, I believe for the first time, a bit carefully at Cycladic artifacts. These are from digs in the Cyclades, an island group in the Aegean of which Sifnos is one. I don't know if I ever told you that those islands include sites of the oldest known settlements in Greece, even older than Crete. So the artwork from there is very interesting. It's of course not as refined as, say, later Greek pottery of the sort you like, but already there are stylized depictions of what could be goddesses and heroes, although no one knows for sure (the objects are rather worn down from age).



Cycladean figurines

Of the paintings upstairs, I liked best a picture of the holy family resting on the road from Egypt and meeting St. John the Baptist as a baby. It was done by one of the Carracci, I forget which. You and I have seen so many paintings on that theme, and most of them were quite pleasant. But the Carracci were especially noted in the 1600's for their smooth colors and good sense of proportion. I have the impression that they're not so popular any more, partly because in modern times, there's a tendency to under-value art that's too evidently pleasant. Do you remember the one you tried so hard to copy in the Vatican museums? I recall people around smiling as you walked right up to the painting to look at Mary's lips up close, in an effort to get it just right.



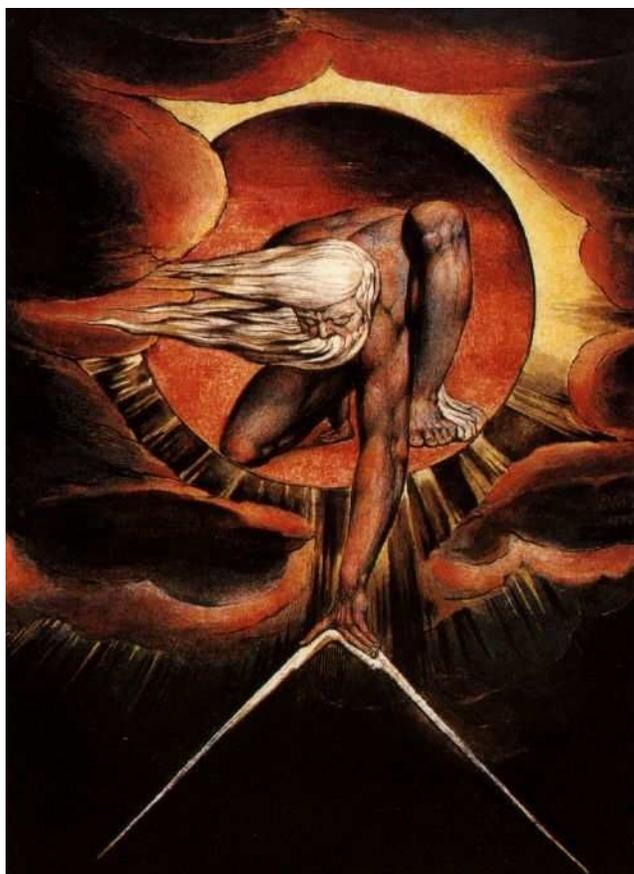
Photo © The National Gallery, London.

Holy Family by Annibale Carracci

But it's not hard to guess what your favorite room would have been. Yup. There was a room with armor. One suit was mounted on a horse like the ones we saw in the army museum. There were also the kind with the crumpled metal lion face and quite a few long swords displayed along the wall. I'm sending you two copies of a postcard with the armor on the horse, so give one to Niall. Divide the other postcards evenly between the two of you, trying especially hard to be fair and nice.



The picture of the bearded man holding the compass is quite well-known. It was done by a man named William Blake who also wrote 'Tyger, tyger burning bright.' In fact, most of his pictures were put into his books of poetry as illustrations. He carved the outlines of the picture as well as the words of the poem into wood and then stamped them onto paper. He then finished the work by applying watercolors to each of the pages. He produced many books through this laborious process and several of them are preserved in the Fitzwilliam museum. I'm sure you like the idea of his method very much.



He was a complicated man, Mr. Blake. He lived quite a poor life and also cared very much about the plight of the other poor. He was another strong romantic in the sense that he believed that modern times (for him that was the eighteenth and nineteenth centuries) had brought much misfortune upon poor folk. Of course, you didn't have to be a romantic to believe that. For Mr. Blake, it was just a matter of observing working people slaving away, shut up in unpleasant factories in big cities like London. Like many other people, he thought that working as a peasant in the fields was a much better life than working in a factory. This is a complicated subject, about which we could talk for many days without reaching a satisfactory conclusion. But suffice it to say for now that it's hard to say in a general way that one or the other is better. Of course, Mr. Blake's sentiment was motivated by real compassion for the poor. It went

together with a lot of anger against the rich, rather like Robin Hood. But I don't think I'll send you one of his angry poems because they're not so much fun to read until you're older. There are indications of his frustration, you can see, even in the 'Tyger.' Mr. Blake was a very religious man, but he did find it vexing that God had created an animal like the tiger that was simultaneously beautiful and terrifying, that had to be very cruel to smaller creatures just to live. So he asks if the lamb had the same maker. There are other poems where he expresses deep and painful sympathy for all kinds of suffering, whether it's by humans or by tiny animals. But what I'll send you today is a relatively gentle poem that continues the theme of creation but in a more quiet direction.

01 **The Lamb**

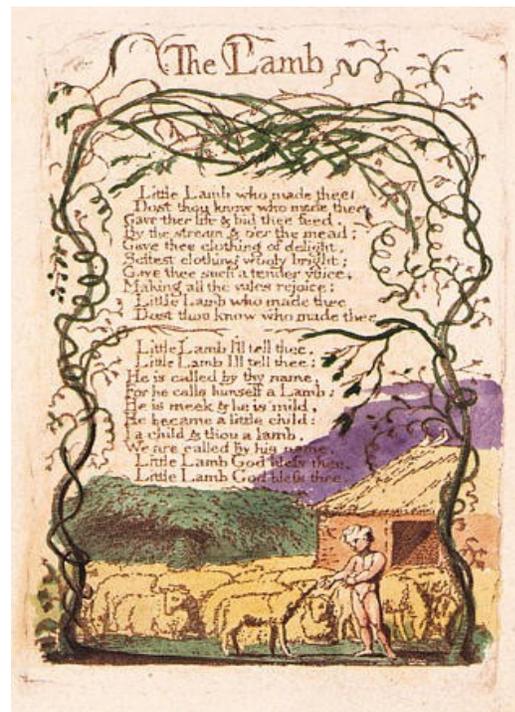
02 Little Lamb who made thee
03 Dost thou know who made thee
04 Gave thee life & bid thee feed.
05 By the stream & o'er the mead;
06 Gave thee clothing of delight,
07 Softest clothing wooly bright;
08 Gave thee such a tender voice,
09 Making all the vales rejoice;
10 Little Lamb who made thee
11 Dost thou know who made thee

12 Little Lamb I'll tell thee,
 13 Little Lamb I'll tell thee;
 14 He is called by thy name,
 15 For he calls himself a Lamb:
 16 He is meek & he is mild,
 17 He became a little child:
 18 I a child & thou a lamb,
 19 We are called by his name.
 20 Little Lamb God bless thee,
 21 Little Lamb God bless thee.

In fact, I think this poem is on a page exactly facing the page with the Tyger poem in a book called 'Songs of Innocence and Experience.' It seems he deliberately meant the two to be read together, one to represent a child's innocent vision of the natural world and the other revealing darker sentiments arising from experience. I've included copies of the two pages. If you and Nia



Tiger



Lamb

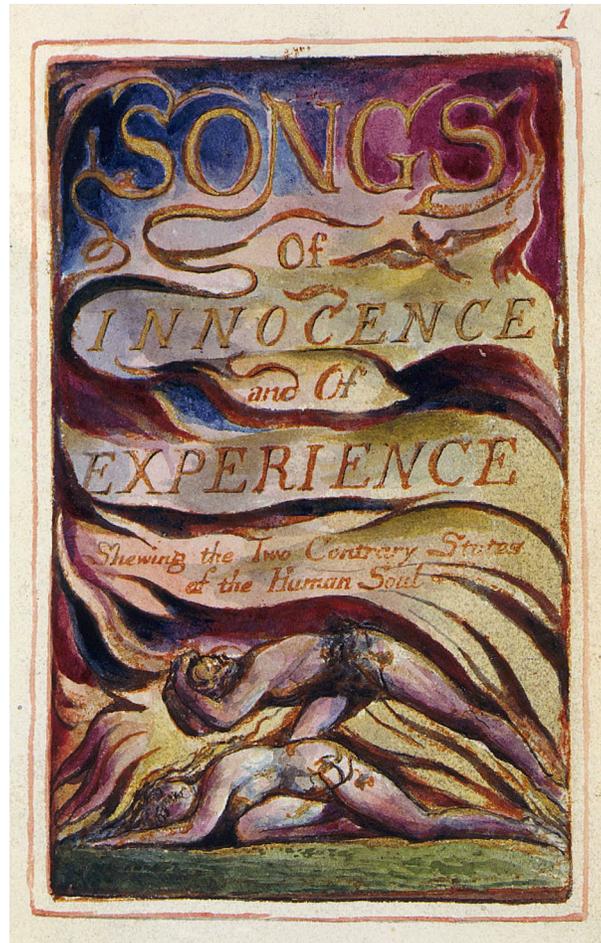
both want your own, you can make more copies on our machine.

Mr. Blake was deeply religious, but was also frustrated by the suffering he saw in God's world. So his writings and pictures reflect a very complicated personal vision of Christianity. It's another confusing thing that there are so many different kinds of Christians. That as well I'll probably explain another time, but in a way it's not so strange. You see, Jesus taught one thing, but then different people read it in different ways and thought the readings of specific teachers were better than others. The difference, for example, could be as simple or as complicated as deciding how poor a monk should be. People also differed on how important it was to learn from priests. Generally speaking, Catholics thought that it was very important, while Protestants thought that you could learn as much from reading the bible and praying by yourself. The first Catholic teacher was St. Paul who lived, as you know, in the Roman empire around the time of Tiberius and Caligula, and the first Protestant teacher was Martin Luther, who lived much later in Germany around the time of Charles V (remember the Holy Roman Emperor who fought against Francois the first and chased the pope into the Castel St. Angelo?). Both of them, of course, had very valuable things to say. Even though a full discussion of the topic would be very long, I'm sure I don't have to tell you that you and I have to learn the best teachings of all good teachers. I wonder if you can make a list of all the good teachers you know about so far, and draw some pictures of them?

Yawn, yawn. It's quite late now. Mr. Gabrielov is giving a lecture tomorrow morning at 9, so I'd better scurry off to bed.

Good night Mr. O.

Mr. D.



*Songs of Innocence and Experience,
Frontispiece*