Table 1. QUALITIES ATTRIBUTED BY SCHOOLBOYS ($n = 390$) TO TWO FIGURES: "THE NOVELIST" AND "THE PHYSICIST"

Novelist		Physicist	
Imaginative	0·86	Valuable	0·72
Warm	0·48	Intelligent	0·58
Intelligent	0·41	Hard-working	0·51
Exciting	0·38	Dull	0·32
Valuable	0·31	Dependable	0·31
Undependable	0·30	Cold	0·29
Smooth	0·19	Hard	0·28
Soft	0·19	Manly	0·27
Feminine	0·12	Rough	0·13
Lazy	0·04	Unimaginative	0·03

Mean ratings on the semantic differential converted to a scale from zero to 1·00, where zero represents the absence of a given quality, and 1·00 the maximum possible rating upon it.

zero: $P < 0.05$). Furthermore, the two groups agree closely in their rank ordering of discriminative adjectives from "warm" to "dependable" for the arts group, and from "imaginative" to "dependable" for the young scientists: $r_s = 0.88$, $P < 0.01$.

Analogous results emerge from the contrast between the wife of the Novelist and the wife of the Research Scientist. Both groups agree that, of the two, the wife of the Novelist is significantly the more exciting, feminine, soft, imaginative; while the wife of the Research Scientist is the more dependable. (In each case, $P < 0.05$.) Agreement in the rank ordering of adjectives is again high: $r_s = 0.91$, $P < 0.01$. Substantially, the relations shown in Fig. 1 hold true for boys of all academic specialities, and for all typical figures relevant to the arts/science choice. Furthermore, such stereotyped attitudes are found as pronounced among unspecialized 13 year olds as among specialists of 17.

A clear implication of these data is that adult scientists are seen by both future arts and science specialists as leading dull personal lives. It was to explore this particular inference that a "typical graduates questionnaire" was devised. A typical male arts graduate and a typical male science graduate are compared in the light of thirty characteristics, some general (such as "competitive with others") and others specific (such as "wears fashionable clothes"). Responses are on a five-point scale, ranging from "arts graduate much more likely" to "science graduate much more likely". The sample used was of similar composition to the first. Each item in the questionnaire yielding a significant rating for both arts and science specialists is given in Table 2 ($P < 0.05$). These results suggest that both groups see the typical arts graduate as the more pleasure-seeking and irresponsible figure, and the typical science graduate as the more puritanical. The agreement between the rank ordering of items is again high: for all thirty items, $r_s = 0.82$, $P < 0.01$.

It might be protested that such evidence is trivial: arts and science specialists may differ in the value they

Table 2. COMPARISON OF QUALITIES ATTRIBUTED TO THE "TYPICAL ARTS GRADUATE" AND THE "TYPICAL SCIENCE GRADUATE" BY YOUNG ARTS SPECIALISTS ($n = 79$) AND BY YOUNG PHYSICAL SCIENTISTS ($n = 59$)

	Young arts specialists' view		Young physical scientists' view	
Arts	Wears fashionable clothes	0·62	Wears fashionable clothes	0·57
Graduate	Sociable	0·61	Gets divorced	0·39
>	Likes wife to look		Panics in emergencies	0·39
Science	glamorous	0·52	Flirts with his secretary	0·38
Graduate	Flirts with his secretary	0·51	Sociable	0·34
	Gambles	0·49	Gets into debt	0·30
	Likes expensive restaurants	0·42	Gambles	0·28
	Gets into debt	0·36	Likes expensive restaurants	0·25
	Gets divorced	0·30	Likes wife to look	
	Has fast car	0·23	glamorous	0·23
	Panics in emergencies	0·18		
Science	Faithful to wife	0·19	Embarrassed (for example,	
Graduate	Embarrassed (for example,		about sex)	0·18
>	about sex)	0·24	Has fast car	0·23
Arts	Competitive at work	0·25	Faithful to wife	0·31
Graduate	Works long hours	0·58	Competitive at work	0·43
			Works long hours	0·70

Mean ratings on the "typical graduates questionnaire" converted to a scale from zero to 1·00, where zero represents the absence of a given quality and 1·00 the maximum possible rating upon it.

attach to such adjectives as "warm" and "cold". Further evidence from the semantic differential refutes this. Arts and science specialists agree overwhelmingly in attributing the adjectives intelligent, imaginative, exciting, warm, dependable and valuable to figures defined in the test as "good" (for example, Good Father, Good Teacher, Good Friend).

It seems, in summary, that whatever their speciality, the attitudes of boys towards the arts and sciences are influenced by a common set of preconceptions. Psychologically, this finding is intriguing. Large numbers of boys choose careers in the physical sciences, believing as they do so that the personal life of the adult scientist is unexciting. This choice may represent a reluctant compromise, but previous research suggests that it will frequently be made gladly, and even with a sense of relief[2]. Such stereotyped preconceptions may also help to explain why, contrary to predictions of a historical or economic nature, the proportion of able children recruited to the physical sciences in Great Britain has failed to increase since 1960 and may indeed have decreased[6]. It remains unclear, however, where boys' stereotyped ideas originate and to what extent they are open to change.

These results arise from a programme of research supported by the Nuffield Foundation.

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[2] Hudson, L., Contrary Imaginations (Methuen, London, 1966).
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[4] Beardslee, D. C., and O'Dowd, D. D., in The American College (edit. by Sanford, N. (Wiley, London, 1962).
[5] Osgood, C. E., Suci, G. J., and Tannenbaum, P. H., The Measurement of Meaning (University of Illinois, Urbana, 1957).
[6] Phillips, C. M., Times Educational Supplement (November 19, 1965).

THE NIGHT SKY IN FEBRUARY

All times are in Universal Time

MOON		CONJUNCTIONS WITH THE MOON	
New Moon	9d 11h	Venus	11d 09h, 3° N.
Full Moon	24d 18h	Mars	28d 15h, 2° N.
		Jupiter	21d 23h, 4° S.
		Saturn	12d 13h, 1° N.

PLANETS

Times of rising (R) and setting (S) during the month

Name	R/S	Beginning	Middle	End	Mag.	D_g (10^6 miles)	Zodiacal position
Mercury	S	17h 20m	18h 55m	18h 15m	−0·5	92	Aquarius
Venus	S	18h 25m	19h 20m	20h 05m	−3·3	141	Aquarius
Mars	R	23h 40m	23h 05m	22h 20m	+0·2	90	Virgo
Jupiter	S	7h 20m	6h 20m	5h 20m	−2·1	408	Gemini
Saturn	S	21h 00m	20h 05m	19h 20m	+1·3	961	Pisces

D_g is the distance of planet from the Earth on the 15th of the month.

OCCULTATIONS OF STARS BRIGHTER THAN MAGNITUDE +6 AT GREENWICH

Star	R/D	Time	Mag.
98 Tau	D	19d 01h 50·0m	+5·6
76 Gem	D	21d 18h 43·3m	+5·4

(D, disappearance; R, reappearance)

OTHER PHENOMENA
25d 20h   Uranus 3° S. of Moon