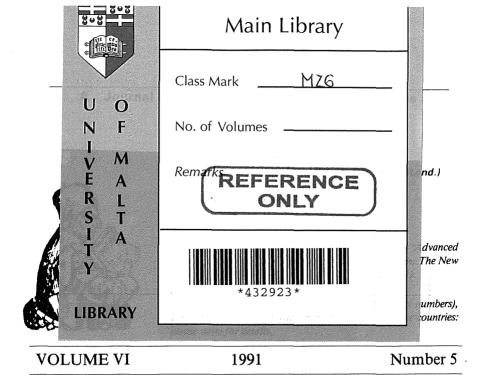
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SUPPLEMENT Systems of Knowledge

Exam Papers November 1990 Quintinus' Insulae Melitae Descriptio (1536) and Later Writers H. C. R. Vella The Critical Fortunes of Great Expectations Richard Dutton That Much Abused Word 'Environment': A Problem of Definition Patrick J. Schembri The Concept of Freedom Anthony Saliba Aeneas, Rome's Man of Destiny Jean-Paul Brisson Various Ways of Seeing an UFO C. O. Stolper



CONTENTS

Quintinus' Insulae Melitae Descriptio (1536) and Later Writers H. C. R. Vella	197
The Critical Fortunes of Great Expectations Richard Dutton	204
The Much Abused Word 'Environment': A Problem of Definition <i>Patrick J. Schembri</i>	211
The Concept of Freedom <i>Anthony Saliba</i>	217
Aeneas, Rome's Man of Destiny Jean-Paul Brisson	221
Various Ways of Seeing an UFO C. O. Stolper	226

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Cover picture: An 18th-century Marseilles pottery plate showing Aeneas leaving the burning city of Troy, carrying his father Anchises on his back. (See article by Jean-Paul Brisson, pp. 221-225).

QUINTINUS' *INSULAE MELITAE DESCRIPTIO* (1536) AND LATER WRITERS

H. C. R. Vella

T HE influence of Quintinus' Insulae Melitae descriptio (Lyons, 1536) on writings about Malta has been immense, as has recently been shown.¹ Johannes Quintinus Haeduus, a priest and a Knight of St John of Jerusalem, Rhodes and Malta, wrote what is known to be the first long printed description of Malta during his stay there from 1530 to 1536. Only a few years after its publication, Quintinus' description started to leave its mark on scholars and other writers writing about Malta, even down to the present century. Because of the rarity of copies of the book, quite a few writers of the nineteenth century appear not to have known of him, while earlier writers were obliged to follow others in quoting Quintinus or referring to him. Modern facilities, however, have made Quintinus' book more accessible to scholars, while research in the manuscripts of the Order has provided further information about Malta.

First published at Lyons in 1536, it was then re-edited in Paris in 1540 with J. Fontanus' *De bello Rhodio libri tres*; at Basel in 1541 with the *Opus historiarum nostro seculo convenientissimum*; at Nuremberg in 1566 with Conti's *Commentarij de acerrimo, ac omnium difficillimo Turcarum bello, in insulam Melitam gesto, anno M.D.LXV*.; at Frankfurt-on-Main in 1600 with the *Italiae illustratae, seu rerum, urbiumque Italicarum scriptores varii notae melioris*; and posthumously at Leyden, 1723–25, with Graevius' *Thesaurus antiquitatum et historiarum Italiae, Neapolis, Siciliae, Sardiniae, Corsicae aliarumque adjacentium terrarum insularumque*. During Quintinus' lifetime his work was translated twice into Italian, and that incompletely, first by J. Fontano, *Della guerra di Rhodi libri III* (Venice, 1545) and then by F. Sansovino, *Dell'origine de' Cavalieri* (Venice, 1566). Sansovino's

Cf. my two theses on Quintinus, The 1536 edition of Quintinus' Insulae Melitae descriptio (Malta, 1976) and A commentary on Quintinus' Insulae Melitae descriptio (Malta, 1977) presented for my B.A. (Hons.) and M.A. degrees respectively at the University of Malta, and my book, The earliest description of Malta (Lyons 1536) (Malta, 1980). All references to Quintinus are taken from this edition.

version was anonymously re-edited, with a few additions and deductions, in two books [by A. de Ulloa], one La historia dell'impresa di Tripoli di Barberia, fatta per ordine del sereniss. Re Catolico l'anno M.D.LX. con le cose auenute a Christiani nell'isola dell Zerbe (Venice, 1566), and the other La historia dell'impresa di Tripoli di Barbaria, della presa del Pegnon di Velez della Gomera in Africa, et del successo della potentissima armata Turchesca, uenuta sopra l'isola di Malta l'anno 1565 [Venice, 1569], and in another book entitled Trattato delle ceremonie, che s'vsano nel creare i Cavalieri di S. Giovanni Girosolimitano (Rome, 1566). Sansovino's translation was re-edited in Venice, 1570.²

The influence which the *Insulae Melitae descriptio* had on writers of the first few centuries after Quintinus is evident not only from these re-editions and translations, but also, as has been said earlier on, on writers who used Quintinus in their own works. Such writers have either borrowed phrases and sentences from him, or quoted him, or referred to him, or shown some dependence upon or reminiscence or echoes of him, as shall be presently illustrated.

Writers borrowing phrases and sentences from Quintinus have done it generally through the medium of Latin itself, or sometimes through Italian. Earliest writers borrowing from Quintinus include V. Castellanus (1566), while latest ones include G. A. Ciantar (1738).³ Giacomo Bosio, writing in Italian, borrows from Quintinus far more frequently than other writers.⁴ Some others who borrow from him quite frequently are the following: A. Cirni Corso, H. Pantaleone, Th. Porcacchi, an anonymous writer (2), C. S. Curio, and Th. Fazellus.⁵ Passages in Quintinus which are borrowed by a

- For copies of the above-mentioned editions and translations of Quintinus, cf. my edition, 13, notes 66-7. I myself have discovered that the three anonymous Italian books each contain a description of Malta identical with Sansovino's translation. These can be consulted at the Public Library in Valletta, Malta, where they are preserved in a show-case.
- V. Castellanus, De bello Melitensi historia (Pesaro, 1566), 4, 4v., 5, passim; J. A. Ciantar, De B. Paolo Apostolo in Melitam Siculo-Adriatici Maris insulam naufragio ejecto dissertationes apologeticae in inspectationes anticriticas R. P. D. Ignatii Georgii de Melitensi Apostoli naufragio (Venice, 1738), 24, 25, 31, 32, passim.
- G. Bosio, Historia della Sacra Religione et Illustrissima Militia di S. Giovanni Gierosolimitano (Venice, 1695), 3. 90ff., passim.
- 5. A. Cirni Corso, Commentarii (Rome, 1567), 36ff., passim; H. Pantaleone, Militaris Ordinis Iohannitarum, Rhodiorum, aut Melitensium Equitum, rerum memorabilium terra marique, a sexcentis fere annis pro Republica Christiana, in Asia, Africa, et Europa contra Barbaros, Saracenos, Arabes et Turcas fortiter gestarum, ad praesertim usque 1581 annum, historia nova, libris duodecim comprehensa, omnibus Christianis lectu dissima (Basel, 1581), 211, 212, passim; Th. Porcacchi, L'isole più famose del mondo (Padova, 1620), 58,

large number of later writers show their importance when compared to others which are either not borrowed from at all, or borrowed by only one or two writers. I shall give two instances in which such passages have been followed almost *verbatim* by many writers; for both instances I shall quote both Quintinus and the other writers for comparison.

Ouintinus mentions Mdina, which he says is eight miles off from the suburb of Vittoriosa, situated in the middle of the island, larger than the other villages and well looked after. Octo a uico millibus in mediterraneo ciuitas est, maioris cuiusdam reliquiae: non / inamoena quidem illa, et culta satis pro loci gentisque genio (p. 30). Cf. Curio, quae in insulae fere medio (nisi auod ad meridiem magis accedit) sita; I. A. Viperanus, oppidum est in ipsis insulae mediterraneis; anonymous (2). 'Evvi ancora una Città del nome dell'Isola lontana dal Castello miglia otto, non punto spiacevole, e secondo il genio del luogo coltivata': P. Dusina, 'V'è la Città Vecchia dentro a terra': Pantaleone, nobilissima ciuitas in loco medio aedificata, quam Melitam vocant; Porcacchi, 'Otto miglia lontano di qui (Castel Sant'Angelo) fra terra è la città, chiamata Malta'; Bosio, 'La Città vecchia, è circa otto miglia da' sopradetti Borghi lontana, sopra un rileuato colle fra terra, quasi in mezo dell'Isola situata, di maggior vista, che d'essenza; con le reliquie d'edificij molto più nobili; diletteuole all'occhio, et assai ciuile per la qualità delle genti, e del Luogo; si come sono quasi generalmente tutte le case de'Maltesi. %

In the other passage, Quintinus says that as a sign of St Paul's protection over the island, no serpents, whether they are born there or brought from elsewhere, are poisonous. *Praeterea (ut haec insula non solum ab eo diligi,* sed etiam pene incoli et custodiri uideatur) Melitae nullum maleficum serpentis genus neque nascitur neque nocet aliunde inuectum (pp. 44–6). Cf. Cirni Corso, 'E stimano alcuni, che per suo rispetto non cui nasca niuno annimale, o serpente nociuo, e uelenoso: aggiungendo, che se ui è portato da altra parte, perde subito la forza'; Curio, Illud insuper quod aiunt, uidelicet in ea <u>insula malefici generis</u> animal <u>nullum</u> gigni, <u>neque</u> allatum nocere; anonymous (2), 'Non nasce in questo luogo niuno animale o serpe

59, passim; anonymous writer (2), 'Descrittione dell'isola di Malta con l'assedio di Solimano' (Bibliothèque Nationale, Paris), Fonds Italien MS. 254, folios 311ff., passim, C. S. Curio, De bello Melitensi historia nova (Basel, 1567), 30ff., passim; Th. Fazellus, Rerum Sicularum scriptores ex recentioribus praecipui, in unum corpus nunc primum congesti diligentique recognitione plurimis in locis emendati (Frankfurt-on-Main, 1579), 8, 9, passim.

Curio, 32; I. A. Viperanus, *De bello Melitensi historia* (Perugia, 1567), 1; anonymous (2), folios 313, 313v.; P. Dusina, 'Dell'isola di Malta', *Discorso di Malta* (Malta Library) MS. 433, folio 20; Pantaleone, 211; Porcacchi, 59; Bosio, 3. 94B.

velenoso e portatovi d'altrove subito perde il veleno'; Dusina, 'et niun Serpente, o scorpione in quest'Isola è velenoso anzi se vi sono portati da' forestieri, mentre, che sono qui non usano il veleno, che 'sendo trasportati altrove pare che subito lo ripiglieno et usino'; Pantaleone, *Ab eo tempore quo D. Paulus viperam excussit in ea insula nullum maleficum animal gignitur, neque aliunde allatum nocet*; Porcacchi, 'che per suo rispetto non nasca, ne viua in quest'Isola alcun nociuo animale'; Bosio, 'nella quale non vi nasce Serpente, nè animale alcuno velenoso, e nociuo. E dicesi, ch'essendone portato quiui alcuno di fuori, subito perde la malignità, et il veleno'.⁷

It is evident from these passages that while Ouintinus was the main source and inspiration for later writers, their wording was very often influenced by that of writers who first borrowed from Ouintinus. In the case of Italian borrowings from Ouintinus, it is probable, and at times certain, that such writers were following Sansovino's translation of Ouintinus. It is enough to quote the second passage of Ouintinus from Sansovino for comparison with Cirni Corso, anonymous (2), Porcacchi, and Bosio (cf. supra): 'Et si crede che per suo rispetto non vi nasca animal nessuno o serpente nocivo, e velenoso, e se vi è portato di qualche altra parte perde la forza'.⁸ With the Latin borrowings, writers still followed others more often than Ouintinus. either because Ouintinus' text was not available to them, or because they found the borrowings of other writers from Ouintinus ready-made for them to copy. Thus R. Pirro sometimes copies from Fazellus, while Pantaleone also copies from Curio. Cf. the following examples: Ouintinus, p. 18: Romanorum enim esse incepit quum et Sicilia; semper eodem post iure iisdemque praetoribus usa; Fazellus and Pirro, Quo ijsdem etiam, quibus Sicilia iure ac praetoribus semper vsa; Quintinus, p. 28: Reliqua fere sui parte rupibus immensae altitudinis ac profundo mari septa; Curio and Pantaleone, reliqua pleraque mari saeuo et rupibus altissimus septa.9

Less frequently writers convey the gist of Quintinus' words in their own words and in this way they echo Quintinus. Such reminiscence can be found especially in Viperanus, Fazellus, and Castellanus who also borrow from Quintinus, as has been shown above.¹⁰ Others like Ph. Cluverius, B.

- 9. Fazellus, 8, and R. Pirro, Sicilia sacra disquisitionibus, et notitiis illustrata (Palermo, 1733), 901; Curio, 36, and Pantaleone, 211.
- 10. Viperanus, 1, 1v., passim; Fazellus, 8, 9, passim; Castellanus, 4v., 5, passim.

^{7.} Cirni Corso, 36v.; Curio, 32; anonymous (2), folio 314v.; Dusina, folio 21; Pantaleone, 212; Porcacchi, 59; Bosio, 3.95D.

^{8.} Sansovino, 151.

Niderstedt, G. F. Abela, M. A. Axiaq, anonymous (1), and O. Bres are dependent on Quintinus in a more general way. Writing on the island of Malta they, as well as others, have taken up the various subjects which Quintinus had treated and developed them in their own way.¹¹ Such subjects include the geographical position of the island, its traditions, and its agricultural aspects. Quintinus' book in fact became the model for other descriptions of Malta till the nineteenth century, when it appears to have become even rarer to find.

More frequently still Quintinus is quoted in Latin, Italian, English, and Maltese. Mention may be made of Abela, Niderstedt, Bres, D. I. Georgius, M. F. B. Attardi, Cluverius, Ciantar, I. Gagneius, G. Gesenius, A. P. Vella, G. P. F. Agius de Soldanis (1), V. Borg, and A. T. Luttrell.¹² These

- 11. Ph. Cluverius, Sicilia antiqua (Leyden, 1623), 526ff., passim; B. Niderstedt, Malta vetus et nova (Helmstedt, 1660), 4ff., passim; G. F. Abela, Della descrittione di Malta isola nel mare siciliano con le sue antichità, ed altre notitie, libri 4 (Malta, 1647), 18ff., passim; M. A. Axiaq (Haxac), 'Relatione della nuoua e grandissima deuotione introdotta nella S. Grotta di S. Paolo nell'isola di Malta', Notitie di Malta (Archives of the Cathedral Museum MS, Malta), folios 7ff., passim; anonymous (1) 'Descrittione compendiosa della nobilissima isola di Malta', Notitie di Malta (A.C.M. MS), folios 70ff., passim; O. Bres, Malta antica illustrata co'monumenti, e coll'istoria (Rome, 1816), 61ff., passim. It is evident from these writers that the most popular passages in Quintinus upon which they have been dependent are those that treat of the episode of Battus and Dido (18: Battus... Didone), Phalaris and Malta (20: Agrigentino... coniunctio), the temple of Juno (22: Iunonis ... defensa), the site of St. Paul's shipwreck (44: Visitur ... illisit), and the chapel at the same site (44: Ibi... extructa).
- 12. Abela, 29ff., passim; Niderstedt, 16ff., passim; Bres, 61ff., passim; D. I. Georgius, D. Paulus Apostolus in mari, quod nunc Venetus Sinus dicitur, naufragus et Melitae Dalmatensis insulae post naufragium hospes sive de genuino significatu duorum locorum in Actibus Apostolicis. Cap. XXVII.27 - XXVIII.1 inspectationes anticriticae (Venice, 1730), proemium Xff., passim; M.F.B. Attardi, Bilancia della verità risposta al libro intitolato Paulus Apostolus in mari, auod nunc Venetus Sinus dicitur, naufraghus, del P.D. Ignazio Giorgio Benedittino della congregazione Ragusina (Palermo, 1738), 11ff., passim; Cluverius, 534, 539, 540, passim; Ciantar, 8, 14, 24, 27, 259 passim; I. Gagneius, Clarissima et facillima in quattuor Sacra Iesu Christi Evangelia, necnon in Actus Apostolicos scholia (Paris. 1552). 284. passim; G. Gesenius. Scripturae linguaeque Phoeniciae monumenta quotquot supersunt edita et inedita ad autographorum optimorum que exemplorum fidem edidit additisque de scriptura et lingua Phoenicium commentariis (Leipzig, 1837), 92, passim; A. P. Vella, Storja ta' Malta (Malta, 1974), 178-181, passim; G. P. F. Agius de Soldanis, Annone cartaginese (Rome, 1757), 21, 22, passim; V. Borg, 'Tradizioni e documenti storici', Missione archeologica italiana a Malta 1963 (Rome, 1964), 43, 49, passim; A. T. Luttrell, 'Approaches to Medieval Malta', Medieval Malta: studies on Malta before the Knights (London, 1975), 54, 55, passim. From these writers it appears that the passages in Quintinus that have been quoted most are those which treat of the temple of Hercules (22: Herculani . . . stupendae), the temple of Juno (22: Iunonis ... defensa), and the cotton shrub (32-4: Speciem ... expetitum).

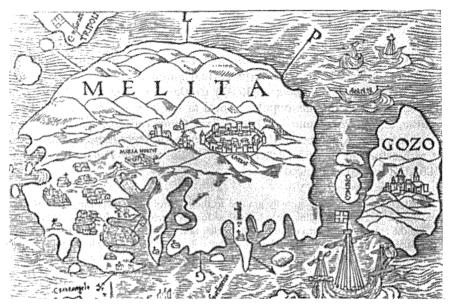
writers cover a period from the sixteenth century to contemporary times, which shows that whether for citing an authority or for criticism they had Quintinus as their source of information. These and other writers also refer to Quintinus without quoting him, as, for example, E. R. Leopardi (1), Luttrell, Agius de Soldanis (2), and Georgius.¹³

Sometimes the same passage is quoted, referred to, borrowed, and echoed by various later writers. For example in the case of Quintinus' references to the Maltese thistles and their use for the baker's oven, his words are quoted in Latin by C. L. Dessoulavy and G. Cassar-Pullicino, referred to by Leopardi (1), echoed by A. Kircherius, and borrowed by Cirni-Corso, anonymous (2), Bosio, and Georgius.¹⁴ Similarly when he mentions Gozo with reference to its geographical position, fertility, and jurisdiction under Malta, his words are quoted in Latin by Abela and Niderstedt, referred to by Agius de Soldanis (2), echoed by Dusina, Fazellus, Cluverius, and Pirro, and borrowed by Viperanus and anonymous (2).¹⁵ Such passages and others reveal the importance of their subject matter readily followed by later writers in various ways.

Quintinus' description of Malta, being the first one and giving an allround picture of the island, served as an essential source of information for others who in the following centuries also wrote about Malta. Its various detailed points also served as a starting point of reference for writers who

- 13. E. R. Leopardi Malta's heritage (Malta, 1969), 23-25, 57-59, passim; Luttrell, 11ff., passim; Agius de Soldanis, 'Il Gozo antico-moderno e sacro-profano, isola mediterranea adiacente a Malta africana (Malta Library) MS. 145, 1, 27, 38-40, 48; Georgius, proemium Xff., passim. The passages in Quintinus that have been referred to most frequently treat of the temple of Hercules (22: Herculani . . . stupendae), the quality of water (38: Salsae . . . scrobibus) and Quintinus' own incredulity at the Maltese tradition about St Paul's shipwreck (42: Nec enim . . . conantur). Leopardi in his book sometimes mistakes Quintinus' description with the report of the 1524 commission to Malta. He is also the author of 'The first printed description of Malta, Lyons 1536', Scientia 15 (1949), 52-63, which describes the form of Quintinus' book.
- Quintinus, 38: Carduis quibusdam incolae pro lignis utuntur, qui cum siccato boum editu, clibanis et furnis praebent usum: cf. C. L. Dessoulavy, 'Visitors to Malta from the 15th to the 18th century', The Sundial, 3 (1940), 98: G. Cassar-Pullicino, 'Antichi cibi maltesi', Melita historica 3 (1961), 31; Leopardi, Malta's Heritage, 24, 58; A. Kircherius, Mundus subterraneus (Amsterdam, 1678), 2.119; Cirni Corso, 35, anonymous (2), folios 314, 314v.; Bosio, 3.95B; Georgius, 123.
- 15. Quintinus, 46: Est insulae Gaulos breuissimo transitu a Melita, latitudine intercurrentis freti quinque millia non amplius passuum, parua quidem, ambitu duntaxat XXX. millia passuum; sed quae fertilitate non credit Melitae, cuius Praesulem cognoscit: cf. Abela, 118; Niderstedt, 35, 36; Agius de Soldanis, 'Il Gozo', folio 1; Dusina, folio 22; Fazellus, 9; Cluverius, 549E; Pirro, 928; Viperanus, 1v.; anonymous (2), folios 312, 313.

were concerned only about some particular parts of it. Quintinus' influence on them is seen not only in their treatment of the same subject-matter, but also, at times, in their style of language. It is evidently clear, however, that because of the rarity of his book, later writers were constrained to read Quintinus from the works of others.



A reproduction of Quintinus' map of the Maltese Islands, the earliest printed map of Malta.

THE CRITICAL FORTUNES OF GREAT EXPECTATIONS*

Richard Dutton

T HE initial reception of *Great Expectations* has to be seen in the context of the trough into which Dickens's reputation had fallen in the late 1850s; this 'reputation', though ultimately based on the sales of Dickens's novels, was to a large extent shaped and moulded, troughs and all, by the literary reviewers of the time. After early triumphant success, in the period from *The Pickwick Papers* (1836–7) to *David Copperfield* (1849–50), Dickens steadily lost his popular appeal as his later novels such as *Bleak House*, *Little Dorrit* and *A Tale of Two Cities* reflected an increasingly sombre mood. A number of the early reviewers of *Great Expectations* hailed it as a return to the old Dickens. E. S. Dallas in *The Times*, 17 October 1861, for example, rejoiced that

Mr Dickens has good-naturedly granted to the hosts of his readers the desire of their hearts. . . . Without calling upon his readers for any alarming sacrifices, Mr. Dickens has in the present work given us more of his earlier fancies than we have had for years. *Great Expectations* is not, indeed, his best work, but it is to be ranked among his happiest. There is that flowing humour in it which disarms criticism, and which is all the more enjoyable because it defies criticism.

H. F. Chorley in *The Athenaeum*, 13 July 1861, hailed *Great Expectations* as 'the imaginative book of the year':

Trying Mr. Dickens by himself, we find in this his last tale as much force as in the most forcible portions of *Oliver Twist*, as much delicacy as in the most delicate passages of *David Copperfield*, as much quaint humour as in *Pickwick*. In short . . . this is the creation of a great artist in his prime.

He tried to forestall some possible objections - 'There are those who will say that Miss Havisham's strange mad life is overdrawn; but such have not been conversant with the freaks and eccentricities which a haughty spirit in

^{*}The extract from the York Handbook An Introduction to Literary Criticism by Richard Dutton (Longman/York Press, Harlow and Beirut 1984) is reprinted by permission of the publishers. Copyright Librairie du Liban.

agony can assume' – but failed to convince a number of people, including the anonymous writer in the *Saturday Review*, 20 July 1861:

Mr. Dickens has always had one great fault . . . that of exaggerating one particular set of facts, a comic side in a character, or a comic turn of expression, until all reality fades away Miss Havisham is one of Mr. Dickens's regular pieces of melodramatic exaggeration.

This writer does, however, concede that 'Mr. Dickens may be reasonably proud of these volumes. After the long series of his varied works – after passing under the cloud of *Little Dorrit* and *Bleak House* – he has written a story that is new, original, powerful and very entertaining'; he particularly approves of the fact that 'there are passages and conceptions in it which indicate a more profound study of the general nature of human character than Mr. Dickens usually betrays.' Only Mrs. Margaret Oliphant, writing later than most in *Blackwood's Magazine* (May, 1862), was really disappointed:

So far as *Great Expectations* is a sensation novel, it occupies itself with incidents all but impossible, and in themselves strange, dangerous, and exciting; but so far as it is one of the series of Mr. Dickens' work, it is feeble, fatigued, and colourless. One feels that he must have got tired of it as the work went on. . . .

One of the crosses that a modern writer such as Dickens (unlike Shakespeare and Donne) has to bear is the reception of his published works by reviewers like this – all honourable people, no doubt, but their prejudices and preconceptions invariably seem to figure more prominently than we would expect in more formal criticism. But one striking feature of the reception given to *Great Expectations* is the number of themes and issues it raised which have echoed down in the criticism of the novel to this day, however much opinions may have shifted on some of these matters. Firstly, there is the determination to see the novel as part of Dickens's unfolding career rather than as an individual work; this is coupled with a favourite vice of reviewers, and perhaps of readers more generally, which is a wish that, once an author has done something well, he will go on doing the same thing for the rest of his life - the tendency to castigate Great Expectations for not being The Pickwick Papers or Oliver Twist is quite evident. There is also the question of Dickens's 'melodramatic exaggeration' of characters; opinion on this seems to divide between those who do not see it as a problem as long as it contributes to the 'flowing humour' which they value so much in Dickens, and those who are exercised about how 'realistic' such an approach may be. On the one hand there are those who insist that Miss Havisham is a truthful depiction of a 'haughty spirit', and on the other those who insist that she is merely an example of a character trait being exaggerated 'until all reality fades away'. The fundamental assumption is common to all, however, that *realism* is the name of the game – whatever differences there may be as to whether it is achieved or not, and whatever allowances are made for 'humour'. This was commonly the case of novel criticism at this time.

A number of the early reviewers also pointed to the obvious fact that *Great Expectations* follows the example of *David Copperfield* in being narrated as a first-person autobiography, with extensive childhood scenes. They seemed to find that the comic vitality of the earlier work pervaded the later one. They were followed in this by Dickens's friend and biographer, John Forster (1812-76):

It may be doubted if Dickens could better have established his right to the front rank among novelists claimed for him, than by the ease and mastery with which, in these two books of *Copperfield* and *Great Expectations*, he kept perfectly distinct the two stories of a boy's childhood, both told in the form of autobiography. . . . The characters generally afford the same evidence . . . that Dickens's humour, not less than his creative power, was at its best in [*Great Expectations*] (*The Life of Charles Dickens*, 1874).

This same book revealed for the first time that the ending of the novel as published, in which we are all but promised that Pip and Estella will marry. with reasonable happiness, was not the one Dickens originally conceived, which was altogether more disenchanted, and that the change was made at the instigation of his friend and fellow-novelist, Bulwer-Lytton (1803 - 73). Forster quotes a letter in which Dickens mentions (cynically?) flippantly?) that 'I have put in as pretty a little piece of writing as I could, and I have no doubt the story will be more acceptable through the alteration', and then comments himself: 'This turned out to be the case; but the first ending nevertheless seems to be more consistent with the drift, as well as natural working out, of the tale.' This has remained a fruitful source of critical controversy ever since; it perfectly focuses such issues as artistic integrity. the special problems of writing for periodical publication and whether there really can be such a thing as the 'natural working out' of a piece of creative fiction. See, for example, Martin Meisel, 'The Ending of Great Expectations', Essays in Criticism, 15 July 1965.

On the whole, however, *Great Expectations* does not figure very prominently in the criticism that appeared in the years after Dickens's death. The biographer and critic G. H. Lewes (1817 - 78) does not mention it in his retrospective essay for the *Fortnightly Review*, 'Dickens in Relation to Criticism' (1872); the novelist George Gissing (1857 - 1903) calls it 'that rich little book' but has relatively little to say about it in his *Charles Dickens* (1898). Similarly, the essayist, novelist and poet G. K. Chesterton (1874 –

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1936) acknowledged that it was a 'fine story . . . told with a consistency and quietude of individuality which is rare in Dickens'. By this he seems to mean that the first-person narrative subdued what he saw as the excesses of Dickens's usual style, but he shared the taste of Dickens's contemporaries for the comedy of the earlier novels and regretted 'the road of a heavier reality' which Dickens had travelled in this and other late works. In acknowledging the novel's moral and psychological power, he concedes that 'all this is very strong and wholesome; but it is still a little stern' and makes it clear that he approves of 'the robust romanticism of Bulwer-Lytton' which brought about the lighter ending' (Charles Dickens, 1906). Chesterton is aware that 'realism', 'the road to a heavier reality', is now a loaded term - novels can no longer simply be judged on subjective impressions of their 'lifelikeness'. The novelist and essavist E. M. Forster (1879-1970) addresses this question generally in his characteristically understated Aspects of the Novel (1927) and draws on Great Expectations for a number of examples: he compares the passage describing Mrs. Gargery's funeral with a passage from the novelist H. G. Wells (1866 - 1946):

The novelists are, both humorists and visualizers who get over an effect by cataloguing details and whisking the page over irritably. They are generous-minded; they hate shams and enjoy being indignant about them; they are valuable social reformers; they have no notion of confining books to a library shelf. Sometimes the lively surface of their prose scratches like a cheap gramophone record, a certain poorness of quality appears, and the face of the author draws rather too near to that of the reader.

Dickens is implicitly being contrasted with more discreet and self-effacing authors such as Jane Austen and Henry James; the inference is that their novels are 'art' while those of Dickens, whatever other virtues they have, are scarcely that. Forster makes the same point again in a famous passage about characterization:

Dickens's people are nearly all flat (Pip and David Copperfield attempt roundness, but so diffidently that they seem more like bubbles than solids). Nearly every one can be summed up in a sentence, and yet there is this wonderful feeling of human depth . . . Those who dislike Dickens have an excellent case. He ought to be bad. He is actually one of our big writers, and his immense success with types suggests that there may be more in flatness than the severer critics admit.

Forster's distinction between 'flat' and 'rounded' characters is one that Dickens criticism has never really shaken off; it is nearly always advanced to his discredit, partly because - for all Forster's deference to Dickens as 'one of our big writers' - his terms of reference keep implying that the 'rounded' characters of such as Jane Austen and Henry James are the product of a more sophisticated art.

It was symptomatic of a radical change of taste that, in the Preface to a 1937 edition of *Great Expectations*, George Bernard Shaw focused upon, and applauded, what he saw as the novel's essential seriousness: 'It is too serious a book to be a trivially happy one. Its beginning is unhappy; its middle is unhappy; and the conventional happy ending is an outrage on it.' Two long essays that appeared shortly thereafter mark a watershed in Dickens criticism as a whole, and incidentally set the tone for the criticism of *Great Expectations* that was to come. The first was George Orwell's 'Charles Dickens' (1939), which he described as an attempt to answer the questions 'Why does anyone care about Dickens? Why do *I* care about Dickens?' The answer he came up with was to some extent an answer for the times, just before the outbreak of the Second World War, and he summed it up in the idea of a 'face somewhere behind the page':

It is the face of a man who is always fighting against something, but who fights in the open and is not frightened, the face of a man who is *generously angry* - in other words, of a nineteenth-century liberal, a free intelligence, a type hated with equal hatred by all the smelly little orthodoxies which are now contending for our souls.

This was an attempt to lay the ghost of Dickens as primarily the author of *Pickwick* and *A Christmas Carol*, to insist that, *despite his popularity*, he should still be taken seriously by intelligent people. One consequence of the insistence on the novel as an art form, largely instigated by Henry James and followed by critics like Forster, was that popularity became a suspect criterion: how could something be great art if it was also widely accessible? Orwell tries to counter this by insisting that the spirit and content of Dickens's novels matter more than their artistic 'form'. It was indicative of the climate of opinion that Orwell was protesting about, that there was no place for Dickens (except, rather oddly, for *Hard Times*) in F. R. Leavis's *The Great Tradition* (1948).

The second of the two long essays, and in many ways the more influential, was Edmund Wilson's 'Dickens: The Two Scrooges', published in *The Wound* and *The Bow* (1941). Wilson too starts from the assertion that Dickens 'has become for the English middle class so much one of the articles of their creed – a familiar joke, a favourite dish, a Christmas ritual – that it is difficult for British pundits to see in him the great artist and social critic that he was'. He sets out to counter this by stressing the element of social criticism in Dickens's novels and by emphasizing the psychological gloom they so often reflect; the latter point in particular causes him to accord unusual prominence to the later novels, from *Bleak House* (1852-3) onwards. These are, for Wilson, and for virtually all the critics who follow him, the

richest and most rewarding of Dickens's achievements; and *Great Expectations* emerges as a pivotal work:

In *Great Expectations* we see Pip pass through a whole psychological cycle. At first, he is sympathetic, then by a more or less natural process he turns into something unsympathetic, then he becomes sympathetic again. Here the effects of both poverty and riches are seen from the inside in one person. This is for Dickens a great advance. . . .

Among the criticism of *Great Expectations* which may be said to follow directly from Wilson's essay are Dorothy Van Ghent's 'On *Great Expectations*' in *The English Novel: Form and Function* (1953); G. R. Strange's 'Expectations Well Lost: Dickens' Fable for his Time' (*College English*, XVI, October 1954); and Julian Moynahan's 'The Hero's Guilt: the Case of *Great Expectations'* (*Essays in Criticism*, January 1960). All are connected in seeing the question of guilt as central to the novel's psychological, moral and artistic concerns. J. Hillis Miller (*Charles Dickens: the World of his Novels*, 1958) places Pip's guilt in a wider vision of the novel as a kind of reworking of *Paradise Lost*, while Barbara Hardy (*The Moral Art of Dickens*, 1970), focuses the whole question of moral accountability in the novel through its preoccupation with food: 'Food in *Great Expectations*, as in *Macbeth*, is part of the public order, and the meals testify to human need and dependence, and distinguish false ceremony from the ceremony of love.'

Recent criticism of Great Expectations, in short, is virtually unanimous in regarding it as a sombre and successful moral fable; there has been some occasional interest in the technical questions of the first-person narrative, periodical publication and the changed ending, but even these are generally measured in terms of their bearing on the overall moral tone/design of the novel. The revolution in taste that has taken place in the century or so since Dickens's death could hardly be more complete; it bears comparison with the shift in taste between Johnson – who looked to Shakespeare's comedies for the true artist - and Coleridge, who looked to the tragedies. Where Dickens's contemporaries looked for comedy, and apparently found it, we discover disturbing psychological concerns; where some of them - and later proponents of the 'art' of the novel - decried the caricature-style of the characterization or rather feebly tried to defend it as 'realistic', most of us now calmly accept it as part of his complex, symbolically pointed style; where they yearned for him to keep repeating his exuberant early triumphs, we seem to be rather pleased, in a way, that his later years were riddled with doubts and anxieties - as titles such as The Melancholy Man: a Study of Dickens's Novels (John Lucas, 1970, 1980) and The Violent Effigy: a Study of Dickens's Imagination (John Carey, 1973) testify.

Like Shakespeare, Dickens seems to be sufficiently multi-faceted to have

something significant to offer to each successive generation of critics. This may be one definition of greatness. It says something for Dickens's stature that so forceful a critic as F. R. Leavis, after all but dismissing him in *The Great Tradition*, felt obliged to recant and, with his wife, Q. D. Leavis, produced a full-scale study of the novels: *Dickens the Novelist* (1970). (The chapter on *Great Expectations* is in the characteristic imperative mode of his later years: 'How We Must Read *Great Expectations*'). The tradition of criticism of Dickens poses one question most acutely: how proper or useful is it to discuss individual texts in relation to a writer's other works or against the background of his supposed 'imaginative career'? Dickens seems especially to attract such criticism, with all the dangers it runs of prejudging or distorting a text in order to make it fit some preconceived pattern.

Once again, we should be aware that the popularity in the classroom of the text we have been considering is not entirely due to the qualities most frequently discussed in formal criticism. *Great Expectations* has the merit of being relatively short, unlike *Bleak House* (1852-3) or *Little Dorrit* (1855-7), the other masterpieces of Dickens's later career (which many critics would judge to be even finer works), and unlike Dickens's other fictional 'autobiography', *David Copperfield* (1849-50). It is also generally believed that young people find stories of growing up inherently interesting and 'relevant' to themselves: hence the frequent appearance of such texts as *Great Expectations*, James Joyce's *A Portrait of the Artist as a Young Man* (1914-15), D. H. Lawrence's *Sons and Lovers* (1913), J. D. Salinger's *The Catcher in the Rye* (1951) and Laurie Lee's *Cider with Rosie* (1959) on school syllabuses.

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THAT MUCH ABUSED WORD 'ENVIRONMENT': A PROBLEM OF DEFINITION

Patrick J. Schembri

I T is, perhaps, best to start with defining what we mean by the term 'environment education'. One definition is 'the imparting of knowledge on fundamentals about the environment that informed citizens should know if they are to deal intelligently with the complex environmental issues of modern living'. Not everybody will agree with this definition but it can be regarded as a working one before one proceeds to deal with the nub of the matter – what is this 'environment' that we are educating about?

To some this may seem a trivial question since everybody intuitively knows what the environment is and expressing this concept as a formal definition is an academic exercise of little practical value; but is it? Stop for a second and think about what you understand by *environment* then quickly jot down a definition, however unrefined, that expresses your conception of this term. This exercise was attempted with a class of some 50 students attending the University of Malta's Diploma Course in Environmental Science. Most definitions offered centred on the theme of 'all that is around us' or 'all that affects man' or 'factors which affect life'. There is no reason

'A personal definition of Environment'

By environment is meant the entire range of external factors, both non-living (*i.e* physical) and living (*i.e.* biological), acting upon the organism.

From the human viewpoint, the environment may be divided into: (i) the *natural environment* and (ii) the *human environment*.

The natural environment comprises living (= biotic) and non-living (= abiotic) components. The living components are species which are organized into populations, which are in turn organized into communities and ecosystems (a term which describes the community of living organisms, the region they occupy (= habitat), their interaction with each other and with the physical environment and the flow of energy and matter through them). The non-living component consists of the physical life-support systems of the plant: geophysical, atmospheric, hydrological, the material which forms them and the energy which drives them.

The human environment consists of the physical and biological forces of nature which surround and affect the life of man, and the interaction of man with these forces. These include the same natural processes which affect all other life on the planet but also others of special importance to humans, such as urban living, land-use, transportation, and environmental quality.

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to think that a repetition of this exercise with any group of people would yield different results.

All the definitions offered are good ones but do they actually tell us anything? All that is around us and/or affects life really leaves very little that is not part of the environment! What we need is a definition that breaks down what these factors 'out there' could be such that we might focus our attention on each in turn and, having an appreciation of the constituent parts, we may gain a better understanding of the whole. Before proceeding with doing this, however, one point raised by the class definition exercise described above deserves attention. This is that all the thumb-nail sketches of environment put forward fell into one of two classes: environment was either defined with reference to man (e.g. the 'all that affects man' type of definition) or else was defined in a more general way (the 'all that affects life'' type of definition). We may call definitions of the first type human-centred definitions and those of the second type, life-centred definitions. This dichotomy of approach suggests that there are two components to the environment, a view further strenghtened by the expressions human environment and natural environment that one finds continuously used (including in the programme of this workshop!). Are there really two kinds of environment?

Strictly speaking there are not. Humans are but one of several million different forms of life found on our planet and the second definition really encompasses the first. Having said this, it is members of the human species that are discussing the environment so it is understandable that they should be concerned with the factors that affect their life above all else, and this should be reflected in our final definition.

It is often said that we are products of our backgrounds and I shall be true to my training in the life-sciences and approach the environment from the biological point of view. As a biologist, my definition would be 'the entire range of external factors both living and non-living acting upon an organism'. This definition applies to all life, from a bacterium to a whale, but I want to give special importance to human life so my definition would continue 'from the human viewpoint, the environment may be divided into two: the natural environment and the human environment'. Let us now consider each separately.

The natural environment has two components: the living component, or as biologists would call it, the biotic component, and the non-living or abiotic component. The living component is all the organisms that inhabit the plant: in short, life. These organisms group together into units which we call species. Defining *species* is almost as great a problem as defining the environment, but at least for those that reproduce sexually we can take a

UNIVERSITY OF MALTA

Matriculation Examination

NOVEMBER / DECEMBER 1990 SESSION INTERMEDIATE LEVEL

Subject:SYSTEMS OF KNOWLEDGEPaper Number:Paper I

Answer four questions, one from each section. Answer may be given either in Maltese or in English.

PART A

Section 1: Man and Symbols

1. Say whether the following arguments are true or false. If you think they are false, say why. (a) I never drink unless I am with friends. On Sunday afternoon, I either go out with friends or I am alone. If I am alone I either read or listen to some music. If I read I do not drink. If I listen to music I do.

(b) If she passed her examination, it means she studied hard. There is no doubt that she studied hard. Therefore she passed her examination.

(c) He did not get a prize unless he won the race. He got a prize. Therefore he won the race.

(d) He did not get a prize unless he won the race. He won the race. Therefore he got a prize.

(e) Of all the boys who played in the team, only some took French. Of those who took French, only some took history. Of those who took history, none played the piano. Therefore, none of the boys who played in the team played the piano.

2. Giving examples, discuss the relation between thinking about something and doing it.

3. What is mind? How is it related to matter?

4. Discuss whether there can be thinking without language.

5. (a) What do we mean when we say that linguistics is a **descriptive** not a **prescriptive** science? OR

(b) Write short notes on langue and parole; diachronic and synchronic description; phonology; morphology; and semantics.

6. What does the slogan "the meaning is the message" mean exactly? Is the slogan true?

Section 2: Man and Environment

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7. Nuclear energy offers an alternative to many of the environmental and social costs of fossil fuels, but it introduces serious problems of its own. Discuss this statement.

8. The Food and Agricultural Organization of the United Nations (FAO) estimates that 750 million people are chronically undernourished or malnourished and that 18 to 20 million die each year from diseases related to malnutrition. Yet, there is enough food to supply everyone in the world with more than the minimum daily food requirements. Explain this paradox.

9. "Man did not weave the web of life, he is merely a strand in it. Whatever he does to the web, he does to himself." (Chief Seattle, 1852). Discuss this statement and illustrate with specific examples.

10. "We sometimes . . . hear it said that governments ought to confine themselves to affording protection against force and fraud; that these two things apart, people should be free agents, able to take care of themselves, and that so long as a person practises no violence or deception, no injury to others in person or property, legislatures and governments are in no way called on to concern themselves about him". (J. S. Mill). Do you agree with this viewpoint? Give reasons for your answers.

11. Can a democracy turn into a tyranny of the majority? What can prevent it from doing so, if it can?

12. "Social Justice" is an expression which is often on the lips of politicians and other people. What do you think it means, and how would you achieve it in Maltese society?

Section 3: Man and History: The Mediterranean and its Role in the World

13. Imagine you were a Christian mercenary soldier at the Battle of Lepanto. Talk of your experience.

14. Rewrite the story of the Great Siege of Malta from a Turkish point of view.

15. Religion was one of the major causes of division in the Mediterranean basin and it was often at the root of fratricidal wars. Discuss.

16. If you were a poor peasant living at the time of the French Revolution how would you react to the Reign of Terror? Give reasons for your answer.

17. In your opinion which were the major historical landmarks (events, political upheavals, scientific or technological discoveries) that shaped the Mediterranean before A.D. 500? Give reasons for your answer.

18. What role did the Mediterranean play in the story of the emergence of Man from a hunter and food-gatherer to a member of the earliest urban civilizations?

Section 4: Set Texts

19. Discuss the part that luck (good or bad) plays in the adventures of the hero in any two of the books you have studied.

20. To what extent did Socrates' attitude provoke his enemies to bring about his tragic end? Do you think that a hero of our age would behave in a similar manner?

21. The role of women in society has changed a great deal since Homer's times. Discuss the role of Penelope from the standpoint of a modern woman (not necessarily or exclusively feminist).

22. Dante's **Divine Comedy** is essentially based on the fundamental metaphor of light and darkness, which is developed fully in order to project the concepts of intelligence and ignorance, of good and evil. Illustrate with reference to the atmosphere, landscape and a few representative personalities in Hell, Purgatory and Paradise.

23. Compare the use of the grotesque (exaggeration) in Cervantes' adventures of Don Quixote with that in modern cartoons like Popeye or in films like those about Superman, Rambo or Indiana Jones.

24. If you were a film director, which of the texts you have read would you choose to make a film of? Give reasons for your choice.

25. Discuss **one** of the following statements with reference to the texts you have studied. In my beginning is my end.

T. S. Eliot - 'East Coker'

Oh yet we trust that somehow good,

Will be the final goal of ill.

Tennysone - 'In Memoriam'

26. What in your view are the social conditions which cause literature (or the Arts in general) to flourish?

Paper Number: Paper II

Answer three questions only, one from each Part and any other. Answers may be given either in Maltese or in English.

PART B: Scientific Methods and History of Science

1. Discuss the validity of the following statement:

"Evolution is an idea first proposed by Charles Darwin. It states that man evolved from monkeys and that this happened because he was more fit for survival."

2. In science, we never expect a hypothesis to be true or false. We only expect it to be useful. Do you agree? Give reasons for your answer, together with reference to specific examples.

3. The events of the 1930's in Europe, which eventually led to World War II, represent a confrontation of culture: that represented by science and the principle of uncertainty against political despotism and the principle of absolute certainty. Discuss.

4. Write about transmutation of elements.

In your answer, you may include some or all of the following aspects of the topic: alchemical dreams; atoms and nuclear structure; neutron bombardment; nucleogenesis.

5. "Notwithstanding the seminal ideas about *atomos* originating from ancient Greece, the first truly scientific atomic theory was enunciated by John Dalton in 1803."

Discuss this statement. In your answer show clearly that you understand the significance of the term "truly scientific" as it applies to Dalton's theory.

6. It is claimed that a record of earth's history is "written in the rocks". Support this claim by specific examples of your choice.

PART C: Artistic Aims and Achievements

7. Compare the Greek Hellenistic Nike of Samothrace (marble c. 190 BC) – shown in Plate A – with Umberto Boccioni's Unique Forms of Continuity in Space (bronze 1913) – shown in Plate B.



species to be a group of organisms that breed together but do not breed successfully with others outside their own group. On this definition, the domestic dog, cat, donkey and horse are all separate since they either do not interbreed (e.g. cat/dog) or else if they do (e.g. horse/donkey) their offspring is not fertile (mule).

Each species is organized into populations, that is, a group of conspecific individuals (i.e. belonging to the same species) that occupy a given area at a given time and actively interbreed. Note the key words: *conspecific, area, time* and *interbreed*; the members of a population must be of the same sort, occur together in the same place and at the same time, and breed together.

Populations are in turn organized into larger units called communities. Biologically a community is a collection of populations of different species that occupy a given area at a given time and which interact with each other. The key concept here is *interaction*, occurring together in the same place and at the same time is not enough, the different species populations must also act upon each other. There are many ways in which this could happen: one species may feed upon another or one species may use another for support (e.g. lichen growing on tree bark) or two species may compete together for some resource needed by both, and so on.

Let us now analyse the non-living or abiotic component of the natural environment. This consists of the physical systems upon which life depends and of which there are three: land, water, and air, or more scientifically, the geophysical, atmospheric, and hydrological systems comprising not only the material which forms them but also the energy which drives them.

Having split the natural environment into the biotic and abiotic components, we must keep in mind that each acts upon the other and modifies it. To take but one example: soil is composed mainly of fragmented rock (abiotic) with added organic material (biotic); soil is formed by physical erosive agents such as percolating water, ice, and wind (abiotic) but also by the action of living organisms such as microbes and fungi (biotic). Neither the biotic not the abiotic component alone is sufficient to produce soil but rather it is a product of the interaction of both.

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In biology, the term ecosystem is used to describe the interaction of the biotic and abiotic components. An ecosystem consists of the community of living organisms, the region they occupy (which is called their habitat), their interaction with each other and with the physical environment and the flow of energy and matter through the system. As an example of an ecosystem let us take the relatively simple one that is found on the flat stone roofs of traditional Maltese houses. The species present here include various types of lichens, mosses, small arthropods, and microorganisms. Their habitat is the

exposed limestone of the roof. Numerous interactions take place: lichens colonize the bare limestone and break it up, making the substratum suitable for colonization by the more complex mosses. These provide shelter for small arthropods and microorganisms which in turn break down organic matter released by the lichens and mosses. Energy flows through the system initially in the form of sunlight which the lichens and mosses trap for photosynthesis and thereafter in the form of 'food energy', that is, organic matter that is synthesized by the plants and becomes available to the non-photosynthesizing organisms of the system. Matter which flows through the system includes water from rain and condensation and other inorganic compounds necessary for life (nutrients) from the atmosphere, the substratum, and the dust which settles on the roof. The ecosystem just described occupies an area of just a few square metres but the same concepts apply to all other ecosystems of any size: a pond, a lake, the ocean . . .

The scientific study of ecosystems is one concern of ecology, others being the study of communities, populations, and individual species. Having mentioned the word ecology, I should like to digress slightly and point out that *ecology* and *environmentalism* are not synonymous. An ecologist is a biologist engaged in the scientific study of living orgnisms in relation to each other and to their physical environment. An environmentalist, on the other hand, is one who seeks to protect and improve the environment.

What of the human environment? This consists of the physical and biological forces of nature which surround and affect the life of man, and of the interaction of man with these forces. As already pointed out, man is but one of several million life-forms that live on this planet and as such these physical and biological factors are the same one that affect all other organisms. There are some however that are of special importance to humans, for example, urban living, transportation, land-use, and environmental quality. I will leave it to the speakers which follow to expand upon this aspect of environment.

We have come a long way from our first definition of 'all that affects life' and in so doing have seen that what affects life is a complex set of factors and processes that are intricately interrelated. As an appendix to this paper I provide a summary of the foregoing discussion in the form of a definition of environment. I stress, however, that this is my personal definition and that differently worded statements, stressing different aspects, are possible.^{1, 2} However, whatever definition is used, it should by now be obvious that *environment* is a much-abused word, especially locally. This is perhaps understandable when one considers that we have only started becoming conscious of the environment in which we live and of the environş

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mental problems that face us relatively recently. Abuse of this word ranges from the trivial to the serious. Thus, at one level we find ecological movements³ – a term that does not make sense unless the members are biologists concerned with the scientific study of the relationships between organisms and their environment. More worrying is the local environmental legislation which deals only with a limited subset of factors that are important in shaping and maintaining our environment, and these in an unintegrated way: other factors are completely ignored.^{4,5} A Government agency concerned with the environment has existed in various guises for some time but then we find that it has no jurisdiction over certain key areas of the local environment.¹ Again, although both main political parties included sections on the environment in their 1981 electoral programmes, these were mostly concerned with a narrow segment of the totality of factors that shape our environment.^{6, 1} a situation memoranda to the political parties on environment-related items to be included in their electoral programmes for the 1987 elections.^{2, 4, 7} The environment has suddenly become fashionable and has started to feature prominently in the local media. Glibness and the use of buzzwords are no substitutes for real understanding however, which is what is really necessary if we are to tackle our not inconsiderable environmental problems.⁸

Let us go back to our point of departure environmental education. How aware of the environment is the local population, particularly the younger, school-going generation? This is an area which my colleagues and I are actively researching. Although not complete, I should like to present here some of our results. We asked students what they understood by *environment*. Responses were graded into five classes: 0, no answer; I, a very limited idea of what the environment is (a typical type I response was 'the environment is keeping the streets clean'); II, only one aspect of the environment was mentioned (e.g. 'to me the environment means nature'); III, multiple aspects of the environment were mentioned (e.g. 'all that is around us'); and IV, multiple aspects were mentioned and elaborated upon (e.g. 'the environment consists of nature and human constructions'). The table overleaf shows the scores obtained by four separate groups of students from different local educational institutions.

Although the sample is very small, some trends are nonetheless evident: very few students (except technical school students) did not have any idea what the environment was (type 0 response), but then few also could give a good definition (type IV response); most responses were types II and III with type III predominating in the sixth-form group, type II in the two secondary-school groups, and an almost equal distribution between the two types of the technical-school group; type I responses (only a vague idea of

School:	Sixth Form (mixed)	Technical (males)	Secondary (males)	Secondary (females)
number:	20	31	22	21
average age:	18	17	14	14
response (%):				
0	0	22.6	4.5	0
Ι	15.0	3.2	27.3	28.5
II	35.0	32.3	59.2	42.9
III	45.0	38.7	4.5	23.8
IV	5.0	3.2	4.5	4.8

(Fiott, J.; Grech, P.; Schembri, P.J. & Ventura, F., unpublished data).

what the environment is) were quite high in the secondary-school groups and surprisingly, also in the sixth-form group; there are also differences between the sexes in the secondary school groups.

My objective in presenting this data is for us to gain an insight into whether there is need for developing further environmental education in Malta or whether the current level of activity in this field is sufficient. I hazard to suggest that we have still some way to go before we can say that the Maltese people as a whole are sufficiently informed about the environment to be able to appreciate it and manage it wisely.

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- Żghażagh ghall-Ambjent, Memorandum dwar l-ambjent, (Valletta: Bord Pubblikazzjonijiet, Żghażagh ghall-Ambjent, 1986).
- 3. Dikjarazzjoni ta' principji u manifest '83, (Tal-Qroqq: Moviment '83, 1984).
- 4. Memorandum to political parties, (Malta: Chamber of Architects & Civil Engineers, 1986).
- 5. Macelli, N. *Maltese legislation relating to the physical environment*. (Valletta: International Environment Institute, Foundation for International Studies, 1986).
- 6. H. C. Vassallo, 'Il-qasam dwar l-ambjent'. In: MIFSUD, T. (ed.) Malta centru ta' Paci: 'Il quddiem flimkien. Il-programmi elettorali tal-Malta Labour Party u tal-Partit Nazzjonalista (1981) mehudin flimkien: studju u sintesi. (Valletta: Centru Tmexxija Socjali, Moviment Azzjoni Socjali, 1985).
- 7. Memorandum to political parties on the inclusion of items dealing with the conservation of the natural environment in electoral manifestos. (Valletta: International Council for Bird Preservation (Malta Section), 1985.
- 8. T. Macelli, *State of the environment*, (Valletta: International Environment Institute, Foundation for International Studies, 1986).

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THE CONCEPT OF FREEDOM

Anthony Saliba

H ISTORY records various occasions where man strove hard to obtain freedom, or to maintain what he already possessed of it. Every man desires to be free though not all men agree about what constitutes freedom. Too often, freedom is attached to and influenced by political ideologies or religious beliefs.

When we ask: 'What is freedom?' we must bear in mind that this concept is predicated in different ways of beings of very different types. Many misunderstand this concept as a 'free-for-all' principle. Others reduce freedom to a choice between good and evil. Ethics, or moral philosophy, insists that human actions can only be so considered provided that such actions result from man's free will. At the same time, ethics goes into the problem of freedom versus determinism.

What do we mean by freedom? Two points may be very useful in discussing freedom (a) freedom of choice: the ability to choose this or that, selecting from various objects/values; (b) freedom as constituting a basic right of man (e.g. the French Revolution sought to present freedom as such. This does not imply that freedom was not a fundamental human right before the American or French Revolutions). This freedom covers the freedom of expression - to express reality as one sees it, the freedom of worship, and the freedom to follow a particular career or state of life. It constitutes man's right to live out his life as he wants to.

As a fundamental human right, freedom has two aspects: (a) negative – freedom from . . . any unnecessary interference from others. This in no way implies the removal of authority. To be free, man needs authority to guide him, and public order has to be respected; (b) positive – freedom to . . . man should not be manipulated, but he has the right to live according to his desires. True freedom helps man become what/who he is. Thus, freedom should be attached to the concepts of man's self-realization and self-expression.

Freedom leads man to construct a positive relation with others. Paul Ricoeur believed that morality should begin from man's desire to fulfil himself. Henri Bergson contrasted freedom with obligation, while Ricoeur posited a free spontaneous kind of morality together with the idea of obligation

Hyphen - Vol. VI. Number 5

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or law.

Bergson saw a static-legalistic morality in religion and insisted that freedom is something dynamic. Ricoeur agreed with Bergson that freedom should be the starting point of moral life, but at the same time he saw a progress of man in freedom to the idea of law. Ricoeur was concerned to reconcile freedom and necessity (law).

One should also pay attention to the negative aspect of freedom – freedom from ourselves or from things that are outside us. We have to be very critical, in the sense of being aware that we have to fight for our freedom, that is to be constantly aware of the need to free ourselves from what is enslaving us. This critical attitude incorporates the political, economic, and social levels as well. Such an emphasis on the negative side of freedom is meaningful only in relation to the positive aspect of freedom: to become what one should be in reality.

St Thomas Aquinas dealt with human freedom after dealing with divine freedom. About the latter he supposed the existence of the three realities (God-man-world) in the mentioned order, which were not doubted in his time and before. The freedom of man is modelled on God's freedom. In his *Summa Theologica*, I, *secundae partis*, Aquinas refers to God as the Immanent Trinity (God in Himself) and as the Economic Trinity (God out of Himself). In the first instance, God the Father, the Son, and the Holy Spirit accept each other equally, even though they are distinct. Self-expression is here total. For man, it means that if he wants to reflect God more and more, he should try to communicate with the other in a total way, even though man is not yet complete (*in toto*).

Reflecting upon the Economic Trinity, Aquinas envisages God communicating Himself to a being who is not God and who knows his existence from God Himself. Man's response to God's call implies the acceptance of Christ as the perfect man. If Christ is perfect, the rest of mankind should be like him, to become the true mankind. This idea of freedom in Thomas Aquinas is essentially based on the idea of 'becoming a true man through freedom'.

Man's self-becoming through freedom takes place in time and involves the whole person and the development of man's abilities as an intelligent being who can love and trust others. All this requires a proper education. Freud insisted that this development starts from the womb. Man is a creature who is always growing and has to do so freely: this freedom belongs to every living human being.

What are the actual possibilities of freedom? Is it really possible for man to become really himself, and which are the conditions?

There are many obstacles which come both from within and without

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man. Traditionally, ignorance and instinctive impulses were considered as obstacles to human freedom: they hindered man from taking the right decisions. From outside, there is always the coercion factor (intimidation) which does not allow man to act freely, but out of fear. This last factor is that which hinders freedom most. Fear as a result of coercion could be antecedent to the human act or it could come after. The degree of fear/ coercion also has to be considered in each particular case, when passing moral judgements, or analysing freedom from a philosophical/ethical view-point. However, fear can never be quantified.

The Thomistic viewpoint depicts man's freedom as 'situated freedom'. Man could not simply decide what he should be. He has both possibilities and limitations. Human freedom does not imply man creating new energies, but guiding the possibilities that he has. The idea of freedom therefore implies the perfection of man as a being in the world (use of things and property), and as a being in relation with others (justice and power). Aquinas talks of man as achieving human freedom in society. Freedom is an unhindered search for those things which satisfy man to be what he should be, to be himself, and let others be themselves. Unfortunately, the concept of freedom in Aquinas is bound with a static view of the world.

Moral theologians before Aquinas gave a lot of importance to acts themselves, and lost sight of the agent (human being) who performed those acts. The importance of freedom was thereby diminished. Aquinas, however, elucidated the agents' freedom in a proper human act. With Kant as well there was a concentration on the agent: the morality of the human person. His morality revolved round the will of the individual. The will is the only thing which can be termed good or evil. Kant was very much concerned to develop an autonomous morality – the awareness of reasoning to do this or that. He restated the irreplaceability of the human person. For him, this should not create chaos, for what I do is that which others would do in similar circumstances: but what if this does not occur?

There is one big problem in Kantian philosophy as noted by Marx and Marcuse. Kant has a reduced concept of freedom and a distorted vision of it, because of his insistence on autonomous morality, and his insistence on the individual to emancipate himself from all kinds of authority. Marx remarked that Kant was so concerned with individual freedom that he forgot that the individual could be perhaps living under an unjust government. Kant, so to say, was considering human freedom like the freedom of a prisoner - in spite of being arrested in a limited space, he can still be free. One must not forget that Kant was a Lutheran, and Luther himself had a similar concept of human freedom. This model of freedom reduces and

distorts freedom.

According to Marxists, freedom is the ability to free oneself from what is hindering one, one's growth, one's relation with others. We are free when we are able to express ourselves before any authority, speaking on what is harming us, and making our lives better. The Marxist view of freedom may be correct, though there is a danger in losing sight of the fact that man is irreplaceable, neither by the State nor by society. Like others, we have to plan our systems and structures, but the person should continue to occupy his place, and the power that belongs to the State should create those requirements which any person or association needs to fulfil himself or itself in order to realize himself or itself in the highest possible degree.

When talking about freedom, we should continue to regard the person as irreplaceable (Kant), and at the same time we should accept the fact that we are free in so far as we are able to speak on what is hindering us (Marx) and change these things. In totalitarian States, people have this last problem and they are trying either to adapt themselves or get rid of the whole system.

Talking about freedom is one thing: putting it in practice is quite another. One doubts whether one can really define systems of freedom or freedom itself by any sentence or traditional definitions. More than words, freedom is a life-style whereby man, independently of his own and others's limitations, is allowed and allows himself to become what he was created for.

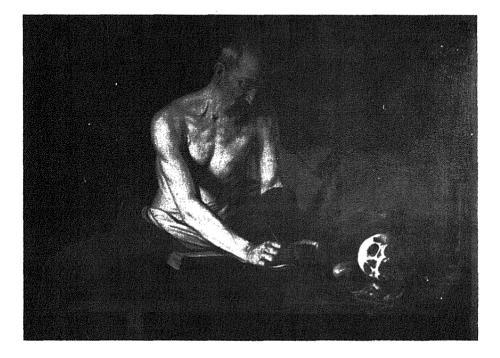
What is freedom? One may suggest an old dictum as a guideline: 'Freedom is not the right to do what one wills, but the will to do what is right.' This statement in turn gives rise to many other philosophical considerations about freedom.

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8. Plate C shows Caravaggio's famous painting of St. Jerome, painted in 1607. Write your comments about it as a work of art.

Plate: C



9. Plate D reproduces a painting by Salvador Dali named Apparition of a Face and a Fruit Dish on a Beach (Oil, 1948). Describe it and say how you would interpret it.

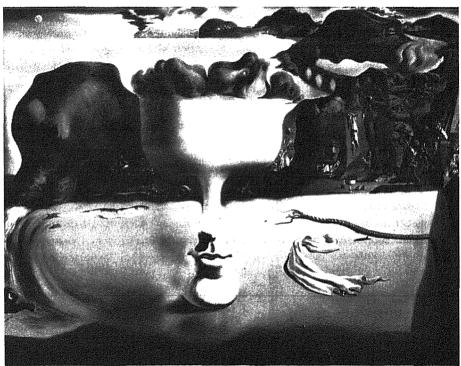


Plate: D

10. Religion has been, from the earliest times, a vital inspirational force for art in the Western world. Do you think that this is still true today? How do today's religious artists differ, if at all, from those of the past?

11. Discuss the merits and demerits of having a modernistic gate like Piano's for a baroque city like Valletta.

12. Take some work of art in the Baroque style that you like and admire, describe it, and discuss its contribution to the history of Western civilization.

ERNLE BRADFORD'S MEDITERRANEAN: PORTRAIT OF A SEA

E rnle Bradford's masterpiece Mediterranean: Portrait of a Sea, first published by Hodder & Stoughton in 1971, is once again available in an excellent reprinting by Tutor Publications.

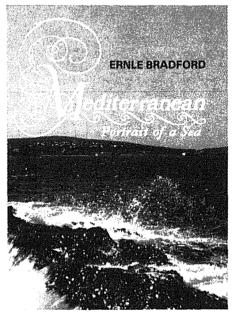
Bradford's easy yet deep style is what makes Mediterranean so eminently readable. While the layman will find it a fascinating interpretation of the saga of the Middle Sea, the historian will appreciate Bradford's sound research, his clear exposition of facts and his wise conclusions - a combination of qualities in which Bradford's personal experiences sailing the seas has certainly had a great bearing.

Bradford guides the reader around the sea that gave birth to Western culture and civilization – introducing the traders, the sailors, and the fighters who have all left their mark on its history and our civilization, itself the result of the continual interplay between East and West.

The author skilfully presents the history of the Mediterranean with one eve on its geography and another on the succession of historical events Indeed the story of this sea is impossible to understand if one ignores the geographical environment of the various regions that form part of it. The Mediterranean

emerges as one whole, almost as a distinct personality whose portrait Bradford will so lovingly and so convincingly present to us.

For the variety of peoples and races that have been so inexorably attracted to its shores, the Mediterranean has been a link rather than a barrier, giving rise to, but finally overcoming, a diversity of cultures and beliefs.



AENEAS, ROME'S MAN OF DESTINY*

Jean-Paul Brisson

W RITTEN between 29 BC and 19 BC, the Roman poet Virgil's epic, the *Aeneid*, recounts the adventures of the Trojan hero Aeneas, fruit of the union of the mortal Anchises with the goddess Venus.

Having miraculously survived the destruction of Troy, Aeneas, accompanied by his father, his infant son Iulus and a handful of faithful companions, sets sail in search of the place, appointed by destiny but as yet unknown to him, where he is to build a new Troy. As his journey unfolds, he comes to realize that the city's mysterious new site is situated in Italy, in the region of Latium.

Warrings and wanderings

Before reaching his goal, however, he is fated to wander the length and breadth of the Mediterranean for seven years. This is partly because the utterances of the oracles, who purport to guide him in his quest, are inevitably far from clear. A false interpretation of one oracular message makes him think for a time that his destination is Crete until, warned of his error by the outbreak of a terrible plague, he is forced to flee the island. But the prime cause of his misfortunes is the unrelenting hatred of the all-powerful Juno, wife of Jupiter, the king of the gods.

This hatred stems from an ancient incident recounted by Homer – the famous judgement of Paris, the Trojan who dared to award the prize for beauty to Venus rather than to Juno. As depicted at the beginning of Virgil's epic, the queen of Olympus neither can nor wishes to forget what she considers to be a personal affront for which, through Paris, she holds all Trojans responsible. She finds it intolerable that a small group of Trojans should have survived her vengeance and have the temerity to want to rebuild a city that is for her accursed. No subterfuge that may prevent Aeneas from achieving his aim and ensure his final downfall is too low for her.

After seven years of wanderings, Aeneas lands in Sicily where his old father dies. By now he knows for certain how and where he will discover the site to which destiny will lead him and it is with confidence and a light heart that he sets out for Italy. Seeing him so near his goal, Juno succumbs to a murderous rage and bribes Aeolus, the keeper of the winds, to unleash a furious tempest. The Trojan fleet is scattered and largely destroyed; the few survivors are thrown up on the African coast not far from Carthage.

Thanks to the intervention of Venus, anxious to ensure the safety of her son, the sovereign of those parts, the Phoenician queen, Dido, welcomes the shipwrecked survivors with generous hospitality. Taking advantage of these events in a further attempt to detain Aeneas far from his Italian goal, Juno, with the complicity of Venus, thrusts the unfortunate Dido into the arms of her Trojan guest.

Surrendering himself to the delights of a mad passion, the Trojan hero forgets his predestined mission for twelve long months. When Jupiter imperiously takes him to task, however, he remembers the duty fate has laid upon him and leaves Carthage and the delights of love, setting sail to the light to the funeral pyre on which the despairing Dido has thrown herself.

A stop at Cumae gives Aeneas, guided by the Sibyl, the opportunity to descend into the nether regions where he encounters his father's shade, who presents to him those who will play leading roles in the accomplishment of Rome's future glory. Aeneas next arrives at the mouth of the Tiber where the fulfilment of a prophecy confirms that his long voyage is over. Recognizing in him the foreigner his diviners have predicted will marry his daughter Lavinia, Latinus, the king of the region, welcomes Aeneas with open arms.

Juno, however, returns to the charge. Arousing the jealousy of Turnus, a suitor of Lavinia who cannot bear to find himself set aside in favour of the newly-arrived stranger, she sets the scene for a desperate struggle. A long series of combats ensues in which the warriors of both camps distinguish themselves by brilliant individual exploits.

Finally, weary of the usless carnage, the two sides make a solemn pact to leave the resolution of their quarrel to the outcome of a single combat between Aeneas and Turnus. Aeneas, of course, emerges victorious and at this point the epic draws to a close. However, a number of predictions inserted throughout the poem foreshadow the future course of history that the epic itself leaves untold - how Iulus, Aeneas' son, will found the city of Alba from whence, 300 years later, will come forth Romulus and Remus, the twin founders of Rome.

An epic that reinterpreted history

The choice of such a subject offered many advantages. In literary terms it demonstrates fidelity to the Homeric tradition without being a slavish imit-

ation of it. Of the twelve books that make up the epic, the first six, in which the hero's perilous voyage from Troy to Italy is recounted, conjure up in the reader's mind overtones of the *Odyssey*; the last six, in which the war in Italy incited by Juno is related, are an open evocation of the *Iliad*.

Yet though the Homeric model was clearly in the minds of both the poet and his readers, it was used to tell a quite different tale. Furthermore, while deliberately placing itself within the context of Greek epic poetry, the *Aeneid* appears to be an extension of it, since the action begins at the precise point where it ends in Homer – with the capture and destruction of Troy.

Above all, the subject furnished political advantages. The legend unfolded in the *Aeneid* provided justification for Rome's complex relationship with the Hellenic world, which involved military and political domination coupled with a certain cultural dependency. Representing Rome as a resurgence of a Troy destroyed by the Greeks gave the Roman conquest of Greece the colouring of legitimate revenge. Virgil did not miss the opportunity to put into the mouth of Jupiter, in a lengthy prophecy addressed to Venus, a proclamation that Rome would destroy the most renowned cities of Greece, which were responsible for the fall of Troy.

Yet Rome was indebted to Greece for this justificatory legend, which has its roots in the *Iliad*. By the end of the fourth century BC, at the latest, Greek historians had given shape to the myth of the arrival of Aeneas in Latium and of his founding of Lavinium (today Pratica di Mare). Thus began a subtle interplay between victor and vanquished with the victory of Roman arms over Greece finding justification in legendary tales evolved in Greece itself.

Not least of the advantages of Virgil's epic was that it glorified Augustus, the first Roman emperor. Adopted by Julius Caesar, Augustus belonged to the Julian family which claimed direct descent from Aeneas. The claims were supported by a phonetic play, obligingly echoed by Virgil, on the name of Aeneas' son. From the original 'Ilus' (which simply means Trojan), 'Iulus', then 'Iulius', were derived. The philologists of old were very partial to such approximations.

The predictions inserted throughout the epic, foretelling the future grandeur of the descendants of Aeneas, naturally referred to the one who was foreseen to be the most illustrious among them – the emperor Augustus. Contemporary readers had no difficulty in making the link between the great future foretold for the descendants of the epic hero and the new régime of their own day. By the same token, this new régime no longer appeared to be the result of chance but the fulfilment of an eternal destiny.

The war that Aeneas was compelled to wage to secure a firm foothold in Latium also provided the opportunity to foretell the coming of the multicultural empire over which Augustus was to rule. For in his struggle against Turnus, Aeneas was aided both by a small Greek community established on the site of the future city of Rome and by an Etruscan prince. This coalition of peoples of such diverse cultures - Latin, Hellenic, and Etruscan - was already, in itself, a foretaste of the cultural situation of historic Rome.

Furthermore, at the close of the epic, Juno renounces her vendetta and accepts the defeat of her protégé Turnus on condition that the newly-arrived Trojans in turn abandon their customs and their language and merge with the native population to constitute a single people. The *Aeneid* concludes less with the vision of a bloody fight to the death than with the promise of the harmonious fusion of different cultures within the framework of a political union. Thus the Virgilian epic made Augustus, the prestigious descendant the oracles were united in telling Aeneas he would sire, the guarantor of that fusion and that union.

A poem for all time

Though it may have been a piece of topical propaganda, placed within a historically limited context, the *Aeneid* is well worth reading today because it was written by a very great poet, a genius of such stature that the style and the events of his epic narration are rich in connotations and implications that go far beyond the author's immediate purposes.

The modern reader will be all the more at ease with Virgil in that the hero of his epic is not cast in the monolithic mould of the Homeric model. Robots tirelessly performing feats of arms, Homer's heroes maintain virtually unchanging patterns of behaviour and feelings throughout his narrative and the reader leaves them at the end of the epic as they were at the beginning. Virgil, however, endows his hero with the full panoply of human psychological complexity, with doubts, uncertainties, and moments of despair.

The *Aeneid* breaks new ground in epic poetry by its use of the narrative technique to reveal the inner feelings of Aeneas. Instead of being related by an aloof third person, the dramatic episodes of the destruction of Troy and the hero's wanderings in search of the site on which his city is destined to be rebuilt are recounted by an 'I' still pulsating with the excitement of the events through which he has lived. From the start, a kind of intimacy is established between the hero and the reader, to whom he seems to speak personally. And this initial intimacy is reflected throughout the narrative.

By introducing the psychological factor, Virgil avoids the snare of a simplistic dualism between good and bad people. Dido and Turnus are, it is true, formidable obstacles to the accomplishment of Aeneas' mission and can be counted among the negative characters in the epic. But it would be too simple to leave it at that and Virgil succeeds in portraying them with sufficient complexity to make them seem more worthy of compassion than of enmity. His lines on Dido's tragic suicide are among the most sensitive ever written by a poet of Antiquity and even today it is impossible to read them without being profoundly moved.

Finally, what makes the *Aeneid* an epic apart is its initiatory connotations. The difficulties the hero has to face to accomplish his mission are a poetic transposition of the classic ordeals of an initiation ceremony. Aeneas comes through these ordeals not only as the victor but as a man transformed. The Aeneas who finally settles in Latium is a new man, destined for a new life.

The rites and mysteries of the religions of Antiquity may be of little interest to the modern reader, but no-one can remain unmoved by this lesson in self-transcendence, by this splendid example of a mastered fate.



'Virgil presents Dante to Homer.' Detail of a fresco by the French painter Eugene Delacroix (1798 - 1863) in the cupola of the library of the Senate, Paris.

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VARIOUS WAYS OF SEEING AN UFO C. O. Stolper

T HE TIMES of 27 October 1989 published a photograph of an UFO over Xemxija Bay. The accompanying story only reported from where and how the picture had been taken. According to *The Times*, the photographer stood at San Martin, and: 'The moment the photographer pressed the trigger, he spotted something flashing in the sky through the viewfinder. When he removed the camera from in front of his eyes, all he could see was a speck which seemed to have disintegrated into thin air.'

With commendable reticence the editors did not try to give any sort of interpretation for this purported phenomenon. To them the lozenge-shaped object was apparently exactly what the abbreviation stands for: an Unidentified Flying Object, no more, no less.

Identified?

A sceptical-minded Maltese suggested to me that it simply concerned a print that had been lifted from a negative that had been tampered with beforehand. Maybe a little too sceptical, or a sceptic with clairvoyant powers? For, when I enquired at the photographic section of *The Times* in Valetta, it turned out that the negative in question does not repose in their files but was taken home by the (unknown?) tourist who shot the picture.

But let us give the tourist the benefit of the doubt and not impute him with devious motives.

That, however, brings us to the question: was something actually photographed, hovering over Xemxija Bay? In that case it is likely that others would have observed the object too, and at the same time. After all, some scaling shows that an UFO in that position must have been more than 100 metres in diameter! To the best of my knowledge no such reports exist.

Could a blemish in the film emulsion or a nick in the film negative account for the picture? In the absence of the negative, no pronouncement is possible, if then. Nor would a speck of dirt on the lens of the camera provide a solution. It does not result in such an image on the negative and, contrary to our intuition, it can no more be observed through the viewfinder than a faulty negative can. And here lies the puzzle: the concurrence of photographically recording something and personally observing something. But the camera and the observer registered something *different*, however. The

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camera recorded 'something flashing', which does not tell us whether the dark brown blob on the photograph was the flash of the object or the object itself by the way. Immediately thereafter, if we are to take his word for it, the observer said he saw 'a speck which had disintegrated into thin air'. If we do not wish to construe this too literally as having seen nothing at all, we should ask ourselves: can we be fooled by our own visual perception? And the answer is: yes, we can.

Visual perception: the eye

The trouble starts with the eye itself. Even the best of eyes is a far from ideal an instrument for 'recording a picture'. Evolutionally our eye fills in a gap in our perception of the world around us, namely information that comes to us in the form of light-impulses. The implementation gives the impression of having been realized efficiently but rather haphazardly. The need to be able to focus on objects near and far called for an arrangement whereby either a single lens could be altered in shape, or for the distance between lens and retina to be variable.

The choice fell, at least for humans, on the first alternative. It required a stable medium to keep the distance between lens and retina fixed. The eye therefore is filled with vitreous humour. This jelly-like substance contains debris, consisting of detached dead cells, and which are responsible for throwing shadows on the retina. If we look at a clear sky we can observe these 'floaters' which follow the movements of our eyes.

They are by no means the only shadows. It may come as a surprise to some that the blood-vessels that feed the light-sensitive cells in our retina are situated in front of these same cells. Knowing that, it should come as less of a surprise that we also can see red blood-corpuscles circulating in these arteries; they appear as darting pinpoints.

Some constructional economies

Ideally, to record all relevant visual information in detail, the retina should contain an almost infinite number of closely-packed light-sensitive cells, each individually corresponding to a neuron in the visual cortex. Matters are complicated by the fact that one and the same individual light-sensitive cell cannot react to both a faint stimulus and to a difference in wave-lengths, meaning colour. We are, therefore, equipped with two different kinds of light-sensitive cells, the rods and the cones, each with their own particular task. In other words, night-observations that report colours are suspect.

To accommodate such a huge number of corresponding neurons would require a head the size of a melon just for the visual cortex only. The solution given by evolution is very simple.

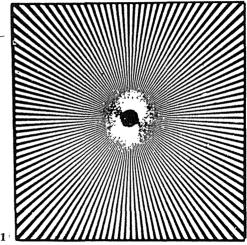


Figure 1

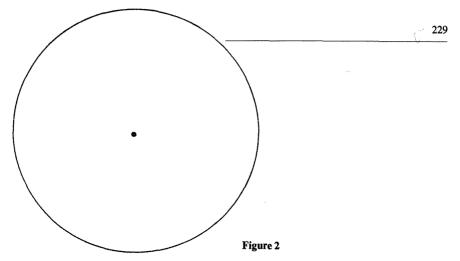
Only a small central part of the retina contains closely-packed lightsensitive cells. This is the part used for detailed observation. Detailed is a relative notion. It suffices for reading fine print, but if we look at figure 1 we are overwhelmed by detail, resulting in a kind of cloudy movement. Some people even start to perceive pastel-shades, and that in a black-andwhite picture!

Around the central part of the retina the cells are spaced much wider, resulting in a far less detailed picture. In other words: periphally we know that there is 'something', not 'what' it is. Try for example to 'read' what is written on the page next to this one without moving the eyes. It is even very hard to do so as ingrained habit makes us shift our eyes to capture detail.

In addition the information emanating from these wider-spaced cells is bundled in small groups to one nerve-fibre per group. This has the added advantage that the total nerve-bundle leaving the eye from somewhere in the retina is comparatively limited to diameter. It is an advantage because this area cannot contain light-sensitive cells, thus forming a 'blind spot'; even so this blind spot is responsible for a gap in our visual field equivalent to the image of 50 times the size of the moon. In practice this does not normally handicap us because one eye compensates for the other.

Sensitivity

How do light-sensitive cells perform their function? Roughly speaking, they react to a light-stimulus by means of a chemical alteration. It is this alteration that in its turn evokes an electrical potential for transmission to the brain. No change in stimulation means that no further electrical impulses are generated, and that we would cease 'seeing' stationary objects. To retain an image our eyes move slightly but continuously throwing the image on



'fresh' parts of the retina all the time and enabling the 'used' cells to recuperate. When we do not, an image can disappear.

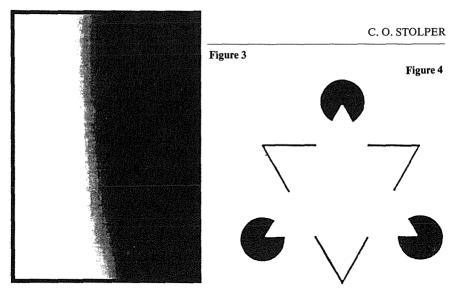
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Stare, for example, at the dot in the centre of the circle of figure 2, and admire the disappearing act of the circle itself, helped along by the fact that the image of the circle falls outside the central area of the retina: the slight involuntary eye movements are too small to engage fresh cells.

We are not conscious of these eye-movements. Nor of the fact that they become larger when not checked by reference to a total visual field. In complete darkness we lack this kind of reference, resulting in a stationary pinpoint of light which seems to 'move' erratically, the so-called Troxler effect. This pinpoint may be very small indeed. The eye is so sensitive that it can see a candleflame at a distance of more than 10 kilometres.

If, however, a light-sensitive cell is stimulated, the surrounding cells become less responsive. This aids in adding 'artificial' contrast to an image that contains too little contrast in itself. Think, for example, of trying to perceive something in the shade of a tree without this mechanism at one's disposal. It makes us see contours that are not given in reality, the so-called Mach bands. You can 'see' them in figure 3 as a glaring light and an extra dark broad line in the white and black areas respectively. In the dawn of Xray diagnosis it gave rise to a flood of faulty diagnoses. That we 'see' an extra bright triangle in figure 4, the so-called washing-powder-illusion, is rather paradoxical.

Over-stimulation of the light-sensitive cells results in an extended recovery-time; this, and maybe some sort of nerve- and/or brain-function, gives rise to an after-image. If you direct your gaze at this moment to a neutral dark background, the image of the page persists for a while. In other words, great contrast has the same effect as over-stimulation. The



amazing thing is that the after-image of a brightly coloured object appears in its complementary colour. When somebody reports having seen an aura, he may well have been confused by an after-image . . .

Visual perception: the optic nerve

By now we have made a first tentative step away from the eye as such to the brain and the tentacles of the brain: the nerves. Here again we encounter an anomaly. When the originating stimulus is fainter, nerve-impulses travel slower than the usual 30 metres per second and take longer before being recorded in the brain. When we observe a moving object with both eyes, one of which is covered by dark sun-glasses, we sometimes see two identical objects chasing each other. Another and easier way of observing a manifestation of this phenomenon is to stand at the end of a street the moment the street lighting is switched on. It looks as if the street lamps are switched on one after the other, away from us. An observer at the other end of the street will see exactly the same thing from *his* perspective, however.

Visual perception: the cortex

What is the cortex to make of this jumble of disjointed and sometimes misleading information it is presented with? That the neurons in the visual cortex do correspond topographically to the cells in the retina is of little help. Unless we assume the existence of a small little man in the brain, a homunculus, that sees for us. And who does the seeing for this homunculus? Another even smaller homunculus? And where does this end?

As we have seen, a little pre-processing takes place in the eye itself, but

this is not enough by far. It is up to the visual cortex to present us with a *stable* and *reliable* picture of the world around us. It is hardly surprising that things tend to go awry occasionally.

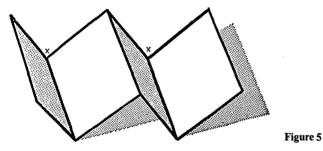
Stability at the cost of reliability?

One of the factors that contribute to a stable image is size constancy. When we hold our hand at 30 cm from our eye and then move it away from us to 60 cm, subjectively nothing changes. Objectively, however, the image on the retina is halved in size. 'Something' tells us that we are observing the same hand and the mental image remains unchanged. As we perform this action without consciously attending to it, this 'something' may be either of two things: proprioception or stereo-vision.

Proprioceptors are pressure-sensitive cells in our joints and tissue that keep us posted as to the relative position of the various parts of our body. Stereo-vision, properly speaking, takes place only up to about 3 metres as it apparently depends primarily on comparison of the slightly different images our two eyes receive. But it may well be a combination of proprioception and stereo-vision that is responsible for the apparent stability. This could be an example of how we sometimes confirm the veracity of the information derived from one sense-modality by having it checked out by another: when seeing velvet, it is hard to resist stroking it.

And if confirmation is not forthcoming, we get pretty confused. Fold a strip of paper as shown in figure 5 and fix your gaze, closing one eye, on the central raised rib of the W. That the strip suddenly tilts to stand upright like a screen is one thing, though rather disconcerting. But now experience some real unease by holding the strip by the outer flaps, slightly rotating it . . .

Similarly, when we are viewing people in a classroom, they do not range from giants to dwarfs, though the size of their images on the retina can go through this whole range. Apparently we are taking into account the actual distances, and compensating for it. But clues to actual distance are derived from the surroundings. When we disregard these clues, for example through



fatigue or through attending to inner imagery, an object or a person can suddenly diminish in size. Or rather we perceive this was a retreating into the background, showing how closely size and distance are interrelated for us.

The same mechanism is responsible for the fact that we get the illusion of the setting sun being larger-than-life by using the horizon as a yardstick: we tend to enlarge objects artificially when we 'know' that they are far away. The illusion disappears when we 'remove' the horizon by looking at the sun through a pin-hole in a piece of cardboard, or when we take a photograph.

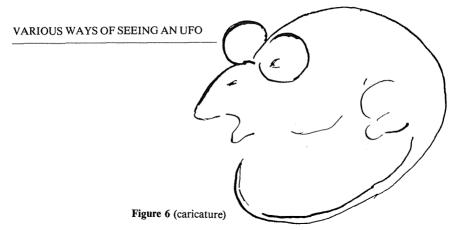
In other words, failing a yardstick, we are inept at estimating distances. As a consequence we are, under those kinds of conditions, also ill-equipped for estimating the velocity of objects; if they move in line with the direction of our gaze, we cannot even tell whether they are approaching or moving away from us. Take a look at the stars. Are they standing still, approaching us, or increasing their distance? Knowing that the universe expands makes no difference.

Size-constancy is not as constant as the name conveys, however. At close quarters, say in the living-room, size-constancy makes that we do not see parallel lines converging. But, when looking at a landscape, we need this convergence as a clue to depth-vision. Vertically, however, size-constancy does not work at all, and why should it: as humans we deal with a horizontal world only. You can easily convince yourself of this by placing yourself at the end of a bookcase. The shelves at eye-level do not converge, but, looking upwards, the vertical supports do.

i + 1 = 1

Distinction has, therefore, been made between depth-vision and stereovision. Depth can be observed with one eye, stereo-vision depends on using two eyes simultaneously. Two images are combined into one. The use of both eyes does not mean that we use them both to the same extent. One eye is dominant. We all are aware of dominance in the use of hands. In the case of the eye we are not; in fact, most people even do not know that it exists. It is demonstrated easily enough: with both eyes open, point with outstretched arm at an object in the distance. Close one eye at a time, keeping the other one open. When the finger 'jumps', the non-dominant eye is open. Instead of your own finger you could have used any object near at hand.

Besides size-constancy and the exigencies of depth-vision there are many other anomalies resulting from cortical activity that need not concern us here. They have one thing in common, however: there actually is a stimulus



outside us that gives rise to perception. Notwithstanding the occasional anomaly, we are presented with a fairly *stable* and reasonably *reliable* image of the world.

Meaning, at any price

Things become decidedly weird when we go beyond the visual cortex to the rest of our cognitive apparatus. It tries to attach *meaning* to our perception. Meaning not as metaphysical speculation (that too, by the way), but meaning as a first step towards that ideal: 'making sense of'.

We are not as rational as we think we are.

See what you believe

The well-known psychologist Odent once performed the following experiment. He showed an audience a film of two cars approaching each other on a road too narrow to accommodate both. The result was an accident. After the show half the audience was asked to fill in a questionnaire, containing the question: 'At which speed did the cars *hit* each other?' The other half of the audience received a questionnaire that asked: 'At which speed did the cars *collide*?' The slightly different wording resulted in the first half of the audience estimating 50 kilometres per hour on the average, the other half 70 kilometres per hour.

Both were wrong. To avoid any damage, the film had been taken at very low speed; but it had been projected at normal speed. In spite of that, the half of the audience that had been whispered 'collision' in their ear, was unanimous that it had seen broken glass lying in the road after the accident. Logical, isn't it? When cars collide, their headlamps shatter.

To me the most remarkable part of the story is that it was exactly the genial but very myopic Odent (see caricature), who hit on the idea of using vision to investigate how easy it is to instil belief and the consequences of such belief. Supplying the misinformation beforehand is equally effective.

Did you fall for it? The (non-existent) Odent's initial was R. And now try the story on somebody else, emphasizing R. Odent (= rat), and show the same caricature.

See what you want

In 1903, shortly after the discovery of X-rays, professor René Blondlot discovered some mysterious rays that emanated from almost any material with the exception of dead wood. These rays, which he dubbed N-rays after his place of residence, Nancy in France, could only be observed through a spectroscope which contained a prism of aluminium instead of glass. Within a short span of time, N-rays were observed by numerous other scientists, with the French Academy publishing more than one hundred papers on the subject.

The American physicist Wood, however, had never been able to replicate the experiment successfully. He therefore paid a personal visit to Blondlot's laboratory and during a demonstration of this phenomenon, removed the crucial aluminium prism from the apparatus at a moment when Blondlot's attention was diverted. Blondlot blissly continued the experiment, still reporting N-rays.

This was the first-known case of theory-laden observation; it was to be followed by many others. As a sceptic once remarked: 'Scientists believe in observation. They are better in believing than in observing'. It should make one wary of submitting to a lie-detector test.

See what you know

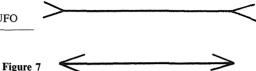
The ancient Greek conceived of the universe as a balloon-like firmament to which the stars were attached. To their eyes the brightest stars were simply the largest.

We, knowing that the stars are not at the same distance away from us, explain the brighter stars as being so because they are nearer to us.

Yet, astronomers see the stars in still another way: the brightest stars are simply the brightest. They know that the nearest star is hardly visible to the naked eye, and they have no idea which star is the largest.

In other words, our perception is sometimes shaped by our conception of the world. The ancient Greeks also presumed that the setting sun sank into the sea. They even heard it hiss. Proving that even the checking out of the evidence from one sense-modality by another sense-modality is no safeguard against this paradigm-laden perception.

Nor is knowledge of the objective state of affairs a fool-proof means of perceiving correctly. Even after having measured the two line-segments in



the Müller-Lyer illusion of figure 7 and having ascertained that they are of equal length does not make us see them as such. How to account for these anomalies is at present the subject of heated discussions in philosophical and psychological circles. In the context of this article I have therefore confined myself to the relevant phenomenology. To go into the influence of drugs, illness, fatigue, and other such factors which may cause amongst others hallucinations would lead us too far afield.

Do you see what I mean?

Knowledge of visual anomalies does not aid in perceiving the world more correctly. It may help however at arriving at a parsimonious explanation of the UFO phenomenon in general.

For the Xemxija UFO I opt for the following scenario. From the apparent foreshortening in the photographic image we can infer that a telephoto lens was used. From the enclosed angle one then arrives at a focal length of 85 mm minimum. Mister Tourist sets the range-finder on infinity, points his camera to the north and sees Xemxija Bay through his viewfinder, very much enlarged because of the effect of the telephoto lens. Nearby (the exact distance cannot be determined; there also is a discrepancy in the story about the subsequent enlargement, but it is of no account!) an insect flies past. The sun, shining over the photographer's left shoulder (it was 3.30 p.m.), shimmers on the insect's wings. This was subsequently reported as flashing. The insect is not identified as such by the tourist, as the image in the viewfinder, utilizing an open diaphragm, is very unsharp.

Now the camera is removed from the eye. Gone is the enlarging effect of the telephoto lens. The insect promptly shrinks to the insignificant size of . . . an insect. It would hardly be noticeable, if noticed at all, being an integral part of the immediate surroundings. Nor does size-constancy come into play. The object may even have 'jumped' by the photographer suddenly re-engaging his dominant eye. Like 'a speck which seemd to have disintegrated into thin air'?

This particular wording makes me suspect that the tourist was not even an UFO-buff, as it does not tally with the usual lore of UFOlogists, who tend to see what they believe. He may have been genuinely puzzled. I hope that the reader is, by now, less so. And that he has noticed one aspect I have not accounted for: the shape of the 'insect'. It could well have been a blurry image. Though a camera adjusts the diaphragm for prevailing light-conditions

when the button is pressed (it was 3.30 p.m.), which at the same time increases the range over which objects are in focus, even f16 leaves anything within 5 metres still very much out of focus. Here again only the actual negative can provide an answer.

Should anybody after all this still have incontrovertible proof of the existence of 'real' UFOs, I would be most interested to hear from him. Better still, send me a specimen. Though I would prefer a specimen of an insect with a vague disk-shape.

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inn meta ħareġ l-ewwel darba fl-1977, Hyphen gie stabbilit bhala periodiku akkademiku ta' interess kemm għall-istudiuż u kemm għall-istudent. L-artikli dwar kull aspett ta' melitensia huma miktuba minn awturi Maltin u barranin bhal A. Luttrell, A. Hoppen, D. G. Lochart, J. Boissevain, G. Wettinger. A. Bonanno, V. Mallia Milanes, A. Bonnici, O. Friggieri, u ħafna oħrain. Hyphen huwa wkoll ta' ghainuna indispensabbli għall-istudent li giegħed ihejji ruħu f'suggetti ta' livell avanzat, specjalment ghal min se jaghmel l-eżami ta' l-Ogsma ta' l-Gherf (Systems of Knowledge). Hyphen jista' jinkiseb mil-Liceo 1-Ġdid Ġ.F. Abela, l-Imsida, kull numru 60c, jew Volum (b'sitt numri) Lm3.25c (posta mħallsa). Jistgħu jinkisbu wkoll hargiet ta' l-imgħoddi (60ċ kull kopja).



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