

أخبار علم النفس في مصر والخارج

معهد علم النفس والتربية بجامعة ليون بفرنسا

أنشئ هذا المعهد في ٥ مارس سنة ١٩٤٢ « لجمع ونشر جميع المعلومات الخاصة بسلوكية الطفل العقلية والوجدانية والسلوكية ولتحديد أصلح مناهج التربية وتطبيقها في معاهد التعليم وجمعيات الشبان للكشف عن الاستعدادات والقدرات وإعداد الشبيبة للحياة »

ويرمى المعهد أيضاً إلى توثيق الصلة بين وزارة التربية القومية ومختلف المنشآت التربوية الفرنسية وكذلك إلى الاتصال بمعاهد علم نفس الطفل والتربية في الخارج . وتضم هيئة التدريس في المعهد عدداً من الأطباء المتخصصين في أمراض الطفولة العصبية والعقلية لمعاونة علماء النفس في المعهد في دراسة الأطفال الشواذ والمشكلين والعصبيين والمتقلبين والمجنحين ووضع الخطط الملائمة لتقويمهم وإصلاحهم . ويشمل نشاط المعهد ستة أقسام :

١ — البحوث النظرية : دراسة مناهج التعليم في فرنسا وتقديم مقترحات إصلاحية لوزارة التربية القومية — محاضرات عامة للجمهور — محاضرات خاصة لطلبة المعهد بنين وبنات ومدة الدراسة سنتان . ويمنح المعهد دبلوماً عاماً للدراسات البيداغوجية مع ذكر تخصص الطالب (تربية تجريبية ، دراسة الأطفال الشواذ ، تربية الصغار في الرياض) — مؤتمرات بيداغوجية — إصدار مجلة للمعهد ونشر مجموعات من الكتب في علم النفس والتربية .

٢ — البحوث البسيكوبيداغوجية : اختبارات الحس والحركة — اختبارات الذكاء والمزاج والشخصية .

٣ — الاتصال بجميع المنشآت البيداغوجية في فرنسا والخارج .

٤ — المكتبة البيداغوجية — وكتبها موزعة على أربعة أقسام : الفلسفة —

التربية النظرية والتطبيقية - تاريخ التربية وجغرافيتها - علم نفس الطفل السوي والشاذ . والمكتبة مستعدة أن ترسل بالبريد جميع البيانات عن الكتب والمراجع .
 ٥ - قسم الاستعلامات والمستندات : - نماذج الألعاب التربوية - بيانات عن النشاط المدرسي كالأشغال والموسيقى والغناء والرسم والتمثيل والألعاب الرياضية .
 - نماذج لجميع الكتب المدرسية المستعملة في المدارس - مكتبة الأطفال وإرشاد أولياء أمور التلاميذ لاختيار كتب المطالعة والتسلية . ويقام أيضاً في هذا القسم من حين إلى آخر معارض لأعمال التلامذة من مشروعات وتصوير وأشغال يدوية الخ .

٦ - مدرسة تجريبية لتطبيق أساليب التربية الحديثة وتمرين طلبة المعهد .
 وقد تلقينا نصوص بعض المحاضرات وهي مطبوعة بالرونيو :

نظرية كُنْت في التربية للأستاذ جان بورجاد Jean Bourjade (٣٤ ص)

نظرية جون لوك في التربية للأستاذ جان بورجاد (الجزء الأول ٣٣ ص)

مبادئ علم الخلق للأستاذ جان بورجاد (جزءان ٣٦ ص)

أين نبحت عن الإنسان للأستاذة هنريت فالنيس Henriette Waltz (٥٢ ص)

نحو التربية الديمقراطية للأستاذ برادي Brady من جامعة نيويورك (١٠ ص)

التربية الجديدة في المدرسة القديمة للأستاذ فيريل L. Verel (٦ ص)

الطرق الحديثة وحياة الأسرة للأستاذة رينيه ليبيل Renée Lebel (٢٦ ص)

طريقة فينتكا للأستاذ فنساندون Vincendon مدير مدرسة في الهواء الطلق (٣٠ ص)

طريقة مانيسوري وجُنَاح الأحداث للأستاذة رينيه ليبيل Renée Lebel (١١ ص)

كونت حكومة الولايات المتحدة لجنة من ستة أشخاص أسمتها « المجلس الاستشاري القومي للصحة العقلية » وقد بدأ هذا المجلس حملة جديدة على المرض العقلي تستند إلى ١٠ ملايين دولار ، ورأى أن العدد الموجود الآن من المتخصصين في الأمراض العقلية في الولايات المتحدة (٤٠٠٠ طبيب) لا يكفي مطلقاً ، لأن البلاد محتاج إلى عشرين ألفاً فوق العدد الموجود الآن . ولما كانت المعاهد والكلليات

الطبية الآن لا تكفي لإلتخريج ومران ٥٠٠ متخصص في العام فقد قرر المجلس إنشاء معهد للصحة العقلية (يتكلف إنشاؤه ٧٥٠٠٠٠٠٠ دولار) يتولى مران المتخصصين والقيام بالبحوث العلمية اللازمة ، ويعنى أيضاً بتعليم مبادئ الطب العقلي للأطباء العاديين حتى يستطيعوا فهم الاضطرابات الانفعالية البسيطة ومعالجتها قبل أن تستفحل .

سافر الأستاذ أحمد زكى صالح ، عضو جماعة علم النفس التكاملى ومدرس علم النفس المساعد بمعهد التربية العالى للمعلمين إلى إنجلترا للالتحاق بجامعة لندن لإعداد الدكتوراه في علم النفس .

ويسافر في أواخر هذا الشهر الأستاذ ابراهيم منصور أبو غرة ، عضو جماعة علم النفس التكاملى ومدرس علم النفس المساعد بمعهد التربية العالى للمعلمين إلى الولايات المتحدة للالتحاق بجامعة أوهايو Ohio State Un. لإعداد الدكتوراه في علم النفس . عين الأستاذ عماد الدين اسماعيل والأستاذ عطية هنا في وظيفة مدرس علم النفس المساعد في معهد التربية العالى للمعلمين .

أبحاث تجريبية في النشاط النفسى

فتح معمل علم النفس التجريبي في كلية الآداب أبوابه لمجموعة من الطلاب قاموا بدراسات تجريبية في موضوع النشاط النفسى تحت إشراف الأستاذ أبو مدين الشافعى . وقد بدأ الطلاب بحتمهم في أثناء السنة الماضية متبعين النشاط النفسى في مظاهره المختلفة : النشاط النفسى المتصل بالعمل العضلى البحت كما يظهر بقياس الديناموجراف ووقفوا على الصلة الموجودة بين شكل المنحنى والحالة العامة للنشاط النفسى .

واستعمل جهاز الإرجوجراف لدراسة النشاط النفسى الذى أخذ يستقل عن النشاط العضلى ويظهر ذلك في سرعة التكيف والخضوع للإيقاع المنظم للنشاط ويختلف العمل والتعب باختلاف الحالة الذهنية للشخص وقدرته على التركيز والتكيف وهكذا أمكن ملاحظة ما يطرأ على العمل العضلى من تغيير تحت تأثير العمل الذهنى .

وتتبع الطلاب دراسة النشاط النفسى فى مرحلة أعلى وهى مرحلة الانتباه فى حالة إدخال عوامل مُشْتَبِهَة للانتباه وفى حالة إخضاع الشخص لإيقاع معين ثم تغيير هذا الإيقاع لتعيين مقدرة الشخص على الكف والاتجاه الجديد .

ودرسوا النشاط النفسى فى مرحلة أخرى هى مرحلة التفكير فاستعملوا جهازاً خاصاً ابتكره الدكتور يوسف مراد يسمح بدراسة الخطوات التى يقطعها الشخص فى أثناء تفكيره للكشف عن مسألة مجهولة مهتدياً بما يحدثه المحرب من تغيير معين فى الأشكال البصرية المعروضة وفى الأصوات المصاحبة لها . هذا من ناحية النشاط النفسى السوى المتوازن ، وأما موضوع اضطراب النشاط النفسى فلم يكن بد من الخروج إلى الحياة الواقعية فخصصوا أشهر الأجازة لدراسة الانفعال وأثاره ووقفوا على حالة شاذة فى مصر الجديدة : شاب تعرض لصدمات انفعالية شديدة وبلغ به الاضطراب إلى حد إيقاف الحركة الجسمية فى اليدين والرجلين وانفكاكها فى الرأس والفكين . وظهر ضعفه فى الانتباه وشدة تأثره وسرعة بكائه وتقلبات ضحكه . وبعد أن فحص المريض الدكتور مستاكى المتخصص فى الأمراض العصبية وشهد بسلامة أعصابه من الوجهة الفسيولوجية أقبل الطلاب على تشجيع المريض على المشى وإبعاد كل ما يدعو إلى الخوف المتسلط عليه فكانت النتيجة حسنة بدرجة تدعو إلى الدهشة لدى كل من عرف هذا الشخص المقعد منذ خمس سنوات وكانت النتيجة النظرية الهامة فهم موضوع الانفعال فى ضوء المنهج التكاملى واكتشاف ناحية الضعف الأساسية فى نظرية جيمز - لانج .

وقد شرع الطلاب فى تركيز آرائهم الجديدة فى الأبحاث الآتية :

مقدمة — المنهج التكاملى والنشاط النفسى : أبو مدين الشافعى

نظرة إلى تاريخ دراسات النشاط النفسى : وليم بنى

الأسس الفسيولوجية للنشاط النفسى : ابراهيم شديد ويوسف مسيحة

النشاط النفسى فى مستويات النوم : محمد على الليثى

اضطراب النشاط النفسى فى الانفعال : أنيس منصور

هبوط النشاط النفسى فى الحالات الشاذة : مراد وهبة

et éducatives puisque l'opinion est au centre des relations de la vie privée et de la vie sociale. Le progrès résidera dans une unité plus grande de la personne et de la société où la distinction des deux états de l'opinion tendra à disparaître.

Ce travail de critique et de réflexion, Bonnardel le poursuit pour son compte dans le domaine de la psychologie appliquée. La psychotechnique, Bonnardel la connaît par une étude constante, mais aussi par les services qu'il dirige dans une de nos grandes firmes de construction mécanique. Son ouvrage "l'Adaptation de l'Homme à son Métier" ¹ est un exposé technique des méthodes dont nous disposons à l'heure actuelle pour éliminer le facteur subjectif dans l'orientation et la sélection des travailleurs. Cet exposé est destiné non seulement aux spécialistes, mais à tous ceux qui font appel aux psychotechniciens en leur montrant la portée et les limites de toutes ces méthodes. Il ne manque pas non plus d'éclairer les problèmes les plus concrets en soulignant les questions théoriques sous-jacentes. Cet ouvrage a eu un grand succès, il vient d'être réimprimé et dans un domaine où l'empirisme est souvent allié à de fausses prétentions scientifiques il fait le point d'une question en pleine évolution.

Ces ouvrages, de Wallon à Bonnardel, prennent d'ailleurs une importance particulière, étant donné que la France au seuil de sa reconstruction, par sa volonté d'utiliser au maximum toutes ses ressources humaines fait un appel nouveau aux psychologues. Dans la nouvelle armée, par exemple, le contingent des recrues sera désormais réparti grâce à des examens psychotechniques qui seront particulièrement fouillés pour la sélection des officiers. Dans l'industrie, les grandes entreprises développent d'importants services psychotechniques (Chemin de Fer, aviation, transports en commun, construction mécanique).

A l'école le psychologue aura aussi sa place à côté des maîtres et des éducateurs, le jour où sera réalisée la réforme de l'enseignement qui est en préparation, et que retarde seulement la pauvreté actuelle du pays.

Il n'est pas exagéré de dire que la psychologie française moins par la quantité de ses chercheurs que par la qualité de ses maîtres, garde une place très importante dans le monde. Dégagée de la philosophie, elle apporte cependant, face à l'essor américain, un souci de critique et de synthèse qui donne aux recherches psychologiques des bases nouvelles pour de nouveaux développements.

ستنشر ترجمة هذا المقال في العدد القادم .

1) P. U. F. 1945

apparaît comme se développant à partir d'un syncrétisme général, et d'une pensée moléculaire dont la forme élémentaire est le couple (mort-vivant, jour-nuit, etc...) où il y a à la fois identification et différenciation : "l'identique est dédoublé, le différent est ramené à l'unité." Par une série d'identifications et de différenciations successives se crée la discrimination, fonction essentielle de l'intelligence. L'objet qui était d'abord absorbé dans l'acte auquel il sert évolue de l'énoncé à la définition. Les définitions elles-mêmes en se précisant peu à peu nous permettent d'établir un système de relations qui, parti du simple constat de présence dans l'espace et dans le temps, aboutit à une explication causale.

Une pensée si riche et appuyée sur de si nombreuses observations ne peut qu'être trahie par ce rapide exposé, mais il est hors de doute que ces interprétations ouvrent de nouveaux horizons sur la genèse de la pensée dont les psychologues et les philosophes doivent tenir compte.

"La Théorie des Opinions" de Stoetzel ¹ (complétée par son "Étude Expérimentale des Opinions") est un ouvrage lui aussi très représentatif de la tendance que je mentionnais au début de cet article : il constitue un effort pour mieux poser un problème. Stoetzel qui a étudié en Amérique tous les travaux sur l'opinion, qui a fondé en France un Institut de l'Opinion, a eu l'intention très précise d'écrire une "théorie" de l'opinion. Toute théorie rend compte des faits et permet d'en poursuivre l'étude puisqu'il n'est pas en science comme, Guillaume le faisait remarquer, de fait brut, le fait est toujours construit.

Stoetzel a donc essayé de définir l'opinion en s'appuyant sur les travaux mêmes qu'elle a suscités, le fait scientifique étant toujours précisé par les méthodes qui permettent de l'étudier. Il arrive ainsi, après avoir successivement précisé les problèmes de la délimitation, de l'évaluation et de la détermination des opinions, à la définition suivante : "Les opinions d'un sujet ... sont les manifestations, consistant dans l'adhésion à certaines formules, d'une attitude qui peut être évaluée sur une échelle objective."

Ces opinions, il en étudie techniquement la distribution et cette étude révèle une double distribution qui s'explique par deux types différents d'opinion. L'un exprime l'opinion privée, celle du "Je", l'autre traduit l'opinion socialisée, celle du "Nous". L'étude de l'opinion conduit alors à une étude des rapports de l'individu et de la société, du psychologue et du sociologue et permet d'arriver à la conclusion suivante que nous ne pouvons qu'indiquer : "l'opinion est l'une des fonctions par laquelle le chaos des pensées s'organise en personnes et en sociétés" (p. 367).

Cette recherche ouvre alors des perspectives philosophiques, politiques

1) P. U. F. 1943

L'œuvre de Wallon a été considérable en ces dernières années. Suspendu par le gouvernement de Vichy, membre actif de la Résistance, il a pu cependant travailler et publier d'importants ouvrages qui donnent une ampleur nouvelle à ses publications antérieures.

Dans "L'Évolution Psychologique de l'Enfant"¹ il a en quelque sorte fait le point de ses recherches antérieures sur la vie affective, le comportement moteur, l'évolution du caractère chez l'enfant. Avec "l'Acte et la Pensée"², Wallon aborde un autre domaine du développement de l'être humain. Il part de son intuition fondamentale; l'objet de la psychologie n'est pas l'homme étudié comme une entité, mais l'homme en relation avec le réel dont la société est un aspect capital. Ce n'est plus alors l'image réplique de la sensation ou les seules réactions motrices du sujet qui sont fondamentales, mais l'activité de l'homme qui se manifeste par une intelligence pratique, c'est-à-dire par une intelligence des situations concrètes. L'homme les résout comme l'animal grâce à la souplesse dynamique de l'ensemble des facteurs subjectifs et objectifs qui constituent une situation donnée. L'homme a, en outre, accès à l'intelligence discursive, mais ce n'est pas par un simple développement de l'intelligence pratique. Il n'y a antériorité ni de l'acte, ni de la pensée. L'intelligence discursive se développe grâce à notre fonction symbolique et grâce à l'influence de la Société, d'une manière en quelque sorte dialectique, à partir de l'acte d'imitation où s'accuse la différenciation entre l'acte et le réel. L'imitation elle-même est "sortie de son contraire, c'est-à-dire de l'assimilation totale entre soi et autrui". L'idée dans ce processus n'apparaît pas comme une représentation qui se suffit à elle-même, mais comme un moyen de créer et de réaliser.

Les distinctions que les philosophes ont tentées entre la pensée et les choses et entre les théories qui définissent la pensée par rapport à la vérité ou par rapport au réel sont statiques et elles isolent deux aspects d'une même fonction que l'on ne comprend bien que dans la genèse de la pensée.

Ces vues, Wallon en a fait en quelque sorte une application dans les deux volumes qu'il a publiés récemment sur les "Origines de la pensée chez l'Enfant"³. Ces volumes rendent à la fois compte de ses recherches et des conclusions qu'il en tire, tout comme les ouvrages de Piaget. Mais la méthode est différente. Il ne s'agit plus d'observations, mais de questions telles que le dialogue révèle les insuffisances et les modalités propres de la pensée enfantine. A cette lumière la pensée de l'Enfant

1) Colin 1941

2) Flammarion 1942

3) P. U. F. 1945

est par rapport à la psychologie scientifique, ce qu'était la physique d'Aristote à la physique contemporaine.

La physiologie des sensations a en France un maître, H. Piéron, qui domine la psychologie française depuis 25 ans. Autour de Piéron, malgré a guerre et les difficultés que nous avons relatées, les recherches se sont multipliées dans son laboratoire et le premier volume de l'Année Psychologique¹ paru depuis la Libération apporte d'intéressants résultats. D'autres travaux sont encore à l'état de mémoires. Citons ceux de Chocholle sur l'audition, de Jampolsky et Galifret sur la vision, et les travaux de Piéron lui-même sur la loi d'Abney. Il a été amené à formuler une nouvelle théorie de la vision chromatique² qui rend compte de tous les faits actuellement connus et qui renforce la théorie trichromatique. Elle postule l'existence d'une tétrade réceptrice unitaire, c'est-à-dire un groupe de quatre cônes dont trois contiendraient une substance photo-sensible différente correspondant aux trois couleurs fondamentales et le quatrième un mélange des trois substances dans des proportions différentes.

Piéron a en outre publié depuis la libération un livre qui était attendu depuis longtemps, ouvrage que je qualifierai volontiers de Somme, au sens du Moyen Age. Il s'agit de "La Sensation Guide de Vie"³. Loin des théories et des systématisations hâtives, Piéron, fort de tous ses travaux et de tous ceux de ses élèves, fort aussi de l'immense documentation qu'il a amassée, présente dans cet ouvrage une précieuse mise au point de tous les problèmes que posent les sensations. Il part de la stimulation, étudie la différenciation des divers systèmes récepteurs, s'attache ensuite aux différents mécanismes d'excitation (mécanique, thermique, lumineuse, chimique, algique). Arrivé aux sensations elles-mêmes, il étudie longuement les fondements de leur qualité et de leur quantité, apportant sur tous ces problèmes des précisions qui permettront sans aucun doute nombre de nouveaux travaux.

Dans le domaine psycho-physiologique, le Dr. Delay s'inscrit dans une ligne féconde dont l'originalité est d'unir un sens de l'expérimentation où il se montre l'élève de Piéron et de Lapique à l'application de la méthode clinique dans le domaine des maladies mentales qu'il doit à P. Janet.

Son ouvrage sur "Les Dissolutions de la mémoire"⁴ est particulièrement révélateur de ces tendances et ses travaux sur le diencéphale enrichiront beaucoup la psychologie de la vie affective⁵.

1) L'Année Psychologique (1940 - 1941) P. U. F.

2) Le mécanisme de la vision des couleurs. Sciences, 43, 1943, p. 267 - 295.

3) Nouvelle Revue Française 1945

4) P. U. F. 1942

5) La Psycho-physiologie. Coll. "Que Sais-je ?" 1945

une date dans l'histoire de la psychologie scientifique. Ce livre a paru malheureusement au milieu de la guerre, et en France même il s'est peu répandu car les revues et les journaux scientifiques n'ont pu en rendre compte. A fortiori n'est-il pas encore très connu au delà de nos frontières.

L'Introduction à la Psychologie est un ouvrage qui se rattache à la philosophie des sciences. Son souci est de montrer que les sciences de la nature et la science de l'homme se construisent à partir des mêmes données : les phénomènes tels que nous les livrent nos perceptions. Elles cheminent aussi par des voies analogues de l'implicite à l'explicite. La connaissance, d'empirique ne devient scientifique qu'en transformant le phénomène lié à la subjectivité de notre connaissance intuitive en un fait construit qui se définit par les relations causales qu'il assume avec les autres faits. Dans les sciences de la nature nous ne dépassons le phénomène qu'au moment même où nous prenons conscience du décalage qui existe entre deux modes de connaissance d'un même objet. Du même coup, nous réalisons que l'objet est différent de ses apparences et que nous y mettons beaucoup de nous-mêmes.

Plus les faits physiques sont connus et mieux nous saisissons ce qui est relatif à notre mode de sentir, de parler et de penser. Nécessairement le progrès scientifique en psychologie est précédé par un progrès suffisant des sciences de la nature. Le "Je pense" implique que l'objet même de la pensée est suffisamment dégagé de son immanence même à la pensée. Ce n'est pas par hasard que la psychologie scientifique a attaché à ses origines une grande place à l'étude des erreurs de la perception car nous y saisissons ce qui appartient en propre au sujet.

De même, l'étude de la causalité psychologique nous fait saisir le décalage qui existe entre les motifs conscients de l'acte et l'acte lui-même.

A partir de données privilégiées de cet ordre, grâce aux progrès de la physique et de la biologie, nous passons peu à peu de la psychologie des phénomènes à la psychologie causale et scientifique. Ce progrès va de pair avec la création d'une nouvelle langue. En Physique, le chemin parcouru va de la description anthropomorphique des phénomènes à leur analyse en un système de formules et de symboles; en psychologie la langue scientifique se crée peu à peu sous nos yeux et les behavioristes, un peu brutalement sans doute, ont ouvert cette voie. L'analyse factorielle donnera des possibilités nouvelles à cette création nécessaire.

Du coup la psychologie sort de son âge philosophique où tout l'effort portait sur la systématisation des données du sens commun. Les philosophes croyaient avoir approché de la réalité en perfectionnant sans cesse un jeu de définitions qui, sans relation suffisante avec l'expérience, ne pouvaient être que tautologique. La psychologie des facultés, par exemple,

fragmentaires dont il est nécessaire de faire de temps à autre le point, non seulement pour les synthétiser, mais aussi pour les critiquer.

Les psychologues français sont d'ailleurs particulièrement attirés par ces travaux, qui sont dans le génie propre de notre pays, génie à la fois inventif (Binet, pour les tests d'intelligence, Janet, en psycho-pathologie, ont été des initiateurs incomparables) et philosophique porté par le souci du général et le besoin de saisir la ligne directrice du progrès. Ribot, à la fin du siècle dernier inaugura en psychologie cette voie par ses travaux sur la psychologie anglaise et allemande. Bergson se situe aussi dans cette lignée quoiqu'il ait sans doute voulu tirer trop de conclusions métaphysiques des résultats scientifiques.

Il n'est sans doute pas vain de faire remarquer que Dumas, mort récemment, avait entrepris, avec de nombreux collaborateurs, ce vaste Nouveau Traité de Psychologie dont il n'existe aucun équivalent dans les autres pays. Son œuvre reste inachevée, mais ses collaborateurs la termineront et les derniers volumes paraîtront prochainement. Dans le même ordre, le volume "La vie mentale" de l'Encyclopédie Française, dirigé par Wallon, avait juste avant la guerre réalisé une synthèse originale des connaissances psychologiques.

Pendant la guerre, Tilquin ¹ a fait paraître un ouvrage sur le Behaviorisme où il a dégagé les tendances polymorphes de cette école. Malheureusement, il ne nous donnera pas l'ouvrage critique qui l'aurait complété car il est mort très prématurément au lendemain de la Libération.

P. Guillaume est particulièrement représentatif de cette tendance de la psychologie scientifique française que nous avons soulignée. Certes, il n'est pas étranger à la recherche pure. On lui doit de précieux travaux sur l'Enfant ² et sur la psychologie des singes, mais son œuvre essentielle a été de réunir, en des ensembles, des travaux expérimentaux, qui, par leur rapprochement même, prennent une nouvelle signification. Son ouvrage sur la "Psychologie de la Forme" ³ est, dans ce genre, un modèle et on a pu dire que Guillaume avait écrit le livre que n'avait su nous donner aucun des chefs de cette école. Ses deux ouvrages sur "La Formation des Habitudes" ⁴ et sur "La Psychologie Animale" ⁵ se rattachent à cette même veine.

Mais Guillaume a sans doute publié son ouvrage essentiel en 1943 avec son "Introduction à la Psychologie" ⁶, œuvre qui marquera à notre avis

1) Le Behaviorisme — Vrin 1942

2) L'Imitation chez l'Enfant — Alcan 1925

3) La Psychologie de la Forme — Flammarion 1937

4) La Formation des Habitudes — Alcan 1936

5) La Psychologie Animale — Colin 1941

6) Introduction à la Psychologie — Vrin 1943

LES ORIENTATIONS ACTUELLES DE LA PSYCHOLOGIE FRANÇAISE

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Lentement, chaque pays isolé par la guerre renoue avec le monde entier et s'enquiert de ce que les autres peuples ont fait pendant la tourmente. Le champ est vaste, journaux et magazines ont une matière abondante. Les échanges littéraires et artistiques recréent peu à peu cette culture internationale qui caractérise notre siècle. Pour les hommes de science cette curiosité est plus essentielle car depuis longtemps déjà la science est internationalisée et tout chercheur se sait solidaire des autres chercheurs, non seulement dans sa discipline propre, mais dans tous les autres domaines.

Il est donc indispensable que nous nous soucions de faire connaître les progrès réalisés dans chaque pays pendant ces rudes années. Chez les Alliés il est manifeste que toutes les forces scientifiques ont été mises au service de la guerre, la psychologie comme les autres. La vie scientifique française a aussi été marquée par la guerre, mais d'une manière différente. Notre mobilisation scientifique était à peine achevée quand l'invasion allemande et l'occupation obligèrent chacun à se terrer. Les plus heureux purent rejoindre leur laboratoire, mais le travail de laboratoire lui-même était difficile. De nombreux collaborateurs étaient prisonniers, tous les juifs et les suspects devaient vivre cachés. Les étudiants disparurent, eux aussi, quand l'Allemagne déporta les jeunes. Peu à peu, d'ailleurs, l'appareillage fit défaut, le courant électrique manqua, les locaux ne furent plus chauffés. Nous ne recevions aucune revue étrangère et nous ne pouvions même plus publier nos propres travaux.

Dans ces conditions, il est évident que, sauf sur des points particuliers, la recherche française ne put apporter beaucoup de nouvelles contributions à la science.

Ce tableau de nos difficultés ne doit pas laisser croire que nos savants n'ont pas continué leur œuvre, mais il explique le caractère de cette dernière, particulièrement en psychologie. Les psychologues français ont mis à profit ce temps de retraite et de silence pour préparer des travaux critiques, de vastes synthèses particulièrement nécessaires dans notre jeune science. La richesse et la diversité même de la psychologie ont conduit, surtout sous l'impulsion des Américains, à une grande quantité d'études

تلخيص مقال أون هولوى المدرس بكلية الآداب — جامعة فؤاد الأول

المنظور في فنون المكان والزمان

يتناول هذا المقال موضوعاً دقيقاً للغاية وهو الصلة بين المكان والزمان كما يمثلها الفنان في آثاره الفنية . فعني « الوحدة » في فن التصوير الغربي ، يعوزه الحركة والدينامية إلى حد كبير وتمثل هذه الوحدة في المنظور الهندسى الذى يمتد خطاً أنه نسخة طبق الأصل للموضوعات الخارجية . الواقع أن العين في نظرتها إلى لوحة فنية تتوق إلى التجول في الصورة وتتبع تفاصيلها كما هي الحال عندما تنتشر أمامنا بالتدرج هذه الصور الصينية أو البيانية المرسومة على لفة طويلة من الورق أو النسيج . ففي مثل هذه الصور الصينية تكون العين متقادة من أول الصورة إلى آخرها في أثناء نشرها وفي هذه الحالة يتم الاتحاد بين اتجاه المكان واتجاه الزمان فهناك تتابع في الحوادث من الوجهتين المكانية والزمانية معاً .

وعندما نريد أن نمثل أو أن نصور التغير في قصة تسرد لنا حوادث متتابعة فلا بد من أن يتضمن التصوير أحد الأمور الثلاثة الآتية (١) إما مجموعة متواصلة من اللحظات التي يستغرقها الحدث أو (٢) للتواصل التام غير المميز بين مناظر تتكرر أو (٣) منظر مركب خال من التكرار . ففي الفن البياني مثلاً كما في الفن السينمائي الحديث يتحقق التواصل على الرغم من الانفصال الحقيقي — غير المشعور به — القائم بين أجزاء المنظر البياني أو صور الفيلم السينمائي . وقد لوحظ أيضاً أن التواصل في المسرحية ليس أمراً قائماً بذاته ، بل يجب أن يمهده له في ذهن النظارة لكي يدركوا وجوده . أو بعبارة أدق لكي يشاهدوا تكوين هذا التواصل خلال الحوادث المنفصلة التي تتتابع على المسرح في أمكنة وأزمنة مختلفة . فوحدة المسرحية تبنى بناء وتتحقق رويداً رويداً في ذهن من يشاهد المسرحية .

وفي الأدب القصصى أيضاً لا بد من أن يحذف الكاتب توزيع الوقائع المنفصلة بحيث يكون منها كلا متصلاً موحداً على الرغم من الفواصل المكانية والزمانية . وتمتاز الوحدة الزمانية باتجاهها من الماضى إلى الحاضر بحيث يشعر القارئ بأنه من المحال قلب هذا الاتجاه الذى يتطلع نحو المستقبل وما يبنى به من جديد وذلك على الرغم من قدرة القارئ على أن يتصور لحظات الزمان في لحظة واحدة وموحدة كأنها ماثلة أمامه في مكان تصورى واحد . وتوضيح آرائه يستشهد المؤلف بأمثلة كثيرة مستمدة من فن التصوير ومن القصة .

pen. Reality has caught up with the diarist, and has taken the upper hand.

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ment in what is primarily an action in a local present solves, for this particular art of time, the problem of the over-all unity of art in a linear medium, and points as well to wider issues.

The modern discrepancy between thought and action, between theory and practice is especially striking in respect of events called afterwards historic, but whose significance one who is actually playing a part in them does not understand. It is not only the idealist (like MUIR 120) who will notice as Tolstoy did (*War and peace* IX. i, XII. iv, Epil. I. iv) a difference between the fact of an event, done justice to by the narrator as it comes about, and (on the other hand) a historical exposition in the light of results, which in some sense sacrifices the parts, and of course the 'side' issues, to the unilinear causal series of the whole. The instinctive orientation of the novel, in an era of individualism, shows the same danger, from the fact that, as Goethe once (*Wilhelm Meisters Lehrjahre* V. vii) noted, action related is almost necessarily action with a wishful overtone of rationality; the onward developing prospect is not so much counterpointed upon as harmonized with the understanding that puts things in their place, and even in *War and peace* Tolstoy was too ready to harmonize the aims of individuals with cosmic purposes beyond their ken. The polyphonic possibilities of the medium, however, can be seen in a simple case like that of Gide's tragic idyll, *La symphonie pastorale*. The form is ostensibly that of a diary, its first part consisting of entries extending over a period of one month, but relating occurrences which are all from 2 1/2 years to 6 months old at the time of writing. A contrast is from the first invited between the perspective of the narration, looking backwards up the stream of time, and the forward-looking, local current of the events divined at this remove; the former, it is subtly suggested, is tantamount to ignorance of the situation and this situation continually asserts itself against the fixed idea in the record when the narrator ironically notes, without understanding them, his wife's successive warnings. In the second part, there is a mounting tension between the point of view of the narrator and the logic of the facts (advancing now by leaps and bounds at a cadence of its own); the relation in the diary has changed its settled purpose, and now practically contemporary with the events themselves, is taken up for darker and more imperative reasons than snowbound inactivity or pedagogical interest. As the end approaches, the entries are shorter and more sharply emotional, harder and harder pressed by the accumulated happenings to which now they cannot do much more than allude, till at last the reader is actually plunged *in medias res* into the final catastrophe, before either he or the narrator can find out what did hap-

room, and when you do look out over all the traffic, what you hear is not that, but the original cry; when finally your eye picks out the victim of the accident, you are just as likely to start hearing the traffic din, and so on. This rhythmic punctuation proper also to art is particularly far-reaching in the polarization of perspective specific to the medium of narrative art in words. As Sterne, its first great theorist, knew (*Tristram Shandy* (1759-67) I. xxii, VI. xxxiii) melody is listened to in terms of the relation of every tone to its key and not (in the first place) because it may express some emotion or other, and so the very meaning of a story will be not so much events continuously emerging one after the other in time, as the very troubling of this prospect in a local present with a contrary pressure back as well as forth, and hither and thither, in an unravelling of the outcome which does justice to a more complex expectation at the same time that it includes the elegiac feeling* for the past and done with. In fact (JOHNSON 57, 81, 93-4) we not only perceive but conceive a temporal world of events, and the grammatical time of an action is its temporal direction "as viewed by the speaker from his current conceptual position in time", so that a time that is conceptually past or future may constitute a secondary present, a time at which (in the non-temporal sense), or relatively to which, a different time is past or future.† Now, versatility of spatio-temporal outlook in a narrative which disposes freely of a variety of times (this one and that one) at different *tempi*** creates the impression that the artist has welcomed in the diversity of life, at the same time that it actually brings out the intense directionality at the root of genuine experience with time. Besides being a virtue in itself in the idiom of narrative art, the acknowledged integration of narrative state-

* The ambivalence, directionally speaking, of this handling can be tested in single statements like "The night before the earthquake, I was sitting in the kitchen with mother etc." ("I had been sitting", e.g., might further counterpoint conclusiveness upon affairs in course).

† And so yield a past present, a past at a past present, the rarer future at a past present, the still rarer past at a future present, and so on, means for expressing which synthetically or analytically are found in English and in other languages. A tertiary present-further, would yield a time which is past relatively to a present which is past relatively to a past present, i.e. a past at a past at a past, and so on.

** "That Friday made the last of our fine days for a month"; "About 12 o'clock that night was born the Catherine you saw . . . An unwelcomed infant it was. It might have wailed out of life, and nobody cared . . . during those first years of existence. We redeemed the neglect afterwards; but its beginning was as friendless as its end is likely to be". Emily Bronte's *Wuthering Heights* with, say, the first part of *The Narrative of A.G. Pym* by Poe (one of the first to use ratiocination as a source of artistic effects) heralds the new era of conscious distribution of continuity, instituted in narrative art by William Faulkner (*The sound and the fury; Light in August; Absalom, Absalom*).

psychologist's account of perception which — like non-Euclidean geometries — had shown it to be the destiny of man to comprehend many different perspectives in his own. When the expressionism of the 1920's sent actors or scenery on treadmill, belt-driven journeys (Piscator's *Good Soldier Schweik*) or rotated the auditorium instead of the stage (Gropius-Piscator), the instrument already existed that was to do all this effortlessly, namely, the motion-picture camera, which consciously uses the catastrophe of the stage observed by Dryden, and realizes Schiller's dream of a new epic by accomplishing evolutions on the part of the subject (flexibility in his angle of vision) as extensive as any to be remarked in the object.*

The art of the film, with its dialectical reciprocity of subject and object, is justly a symbol of the new basic ideology of perception,† but narrative art in words has possibilities as great or greater. It is normal in literature for there to be exchanges between the different planes discoverable, by means of the language medium, in the matter under consideration, and the account of meaning in causal terms launched by Ogden and Richards permits the identification (MORRIS) of various dimensions in the use of signs. Their ostensibly primary function as symbol of states of affairs to which they have been applied in fact hangs on the 'syntactical' dimension of overtones set up through other signs of closely related use or similar appearance, and both these aspects, finally, are involved with the 'pragmatic' dimension that gives play to the feeling of the user of the signs about what is under notice, or to his purpose in so expressing himself, or to the tone he has adopted for the appeal he desires.** Elements of a whole which commonsense believes to be indissoluble are in fact more often dissociated and recombined in perception. The simplest example is the counterpointing of sound on visual image that goes on unperceived in the sound film, for synchronization of sound (e. g. the actor's lines) and image is as much the exception as polarization of the scene into subjective and objective *tempi* is the rule. As in life (PUDOVKIN 159 ff.) : hearing a cry for help, what you see is the window of your

* So in Chinese painting; the way a scroll-picture unfolds itself to eyes perusing it slantingly from above has for centuries been the way it was constructed also, but the beholder must "adjust himself to the artist rather than compel the artist to work as if an observer could not move". (FERGUSON 93).

† The transitions, changes of focus and frankly visual or even auditory effects in *the Dynasts* in 1908 show Hardy groping for a medium as selective as that of sound film.

** Reciprocity between the different aspects being what it is, no wonder the film artist (PUDOVKIN 54; EISENSTEIN 34-5; HITCHCOCK; VIGNEAU 67) is reluctant to decide whose interest in particular is represented - that of the director, or of a character or characters or (by anticipation) of the spectator.

revealed a dependence on psycho-physical conditions of perception and on subjective point of view. The result was fundamentally confusion. Scott, whose tirelessly misdirected industry made bourgeois narrative art what, epistemologically, it came to be, had not any idea what he meant by "the perfect appearance of reality" that he required of fiction, and his disciple, Victor Hugo, at one moment deplored chapter divisions as an arbitrary encroachment by the author on the province of his characters, and at another moment censured a first-personal style because it did the reverse. The sole remedy for a century of this sort of thing appeared, in the 1920's, to be the expressionism hailed indeed by Virginia Woolf in James Joyce. Yet, at sea in a universe which was essentially nothing but a symbol of subjective crises and ecstasies, the outlook in *Ulysses* (e. g. I. iii, "Ineluctable modality", etc.) was little of an advance upon the relativism of stage setting and characters wittily stigmatized by Dryden!

That a story should take on "the perfect appearance of reality" means that it is automatically translated into an action in a speciously dramatic present. There is nevertheless a difference between the fact that "It is Sunday night, the 20th July, 1578" when the curtain goes up on the stage, and, on the other hand, the novelist's development (for development it is) of the same point into "It *was* Sunday, etc.". The beauty is in the very medium, and that, not any mere matter of point of view, is the responsibility shouldered in the latter case. The most solidly realistic of all Western painting, Vermeer's, shows the artist to have chosen habitually to paint his Dutch interiors not as such, but as suspended in a small mirror. It is not so much that events are contemplated at a remove through *someone's* consciousness of them*, though the film adaptation of a novel will often show, because it cannot really use it, the significance of the story's being put in the mouth of one of the characters in it. Nor need we stop at the compromise position of the ripest bourgeois narrative art as its chief theorist Henry James finally formulated it, namely that "vision and opportunity reside in a personal sense and a personal history", and that no short cut has ever been found to the unity that comes from having a situation "all, as it were, phenomenal to a particular imagination, ... and that imagination, with all its contents, phenomenal to the reader". This was in fact glaringly inadequate to the contemporary

* The traditional obligation which once caused Jane Austen to transform "two or three young women were issuing from the house" to "were now seen issuing". The truth is (as Far Eastern scroll art, even before film montage, revealed) that a scene is not brought home to one integrally (then one cannot see the trees for the wood) but grasped bit by bit.

But the procedure was essentially inappropriate to stage display, and belonged by right to the new art, that of the novel, which was then ousting a moribund drama from its popularity and influence.

In this realm of narrative art the same epistemological difficulties have been felt as elsewhere. When a manifesto (by Virginia Woolf in 1919) at last indicted the complacency of middlebrow novelists like Bennett, Galsworthy or Wells, it was not only the intellectual mediocrity of the middle-class that was found to be offensive, but the persistence of an outworn idea of the relations of man with his environment. This writer suffered agonies (she said) from *Robinson Crusoe* because of the shipwrecked sailor's innocence of 'psychological' problems. Yet it had been as psychologist that Locke, who might be called *Crusoe's* master, came to dominate the age of the Enlightenment. His clear-cut contrast between the almost necessary fallibility of the traditions of men, and the relative fidelity of their direct consultation, on the other hand, of the external world is resumable in the polarities (subject—object; passivity—activity; pleasure — pain) that Freud has discerned naively underlying our relations with our fellows. Locke was the very soul of the anthropocentric individualism latent in the bourgeois division of labour. He helped translate into practice that opposition of man, the titan, to a nature of which he becomes the self-satisfied lord which so strikes anyone (COOMARASWAMY (1942) 11; BINYON(1911) 25, (1934) 23, (1939) 1915; FISCHER 124, 126; FERGUSON 95-6) who is accustomed to the undifferentiated continuity of heaven, earth and man, or of human, animal and plant life, in typical Asiatic art. Prior to the Renaissance in Europe also, no doubt, the citizen was assured of his place in the world much as in an Asiatic civilization like that of China, where (GRANET) time or space would not be conceived in themselves as homogeneous duration or extension, because the integral world-order was regulated by symbol and institution rather than (as in the West) by reason* and science. Renaissance science, however, as the question of perspective in painting reveals (PANOFSKY 287), both created a distance between man and things and abolished it again. It encouraged 'objectivity' and brought artistic appearances down to their own mathematically exact laws, but at the same time, favouring as it were the struggle for power of the human mind, it

* In the sense concurred in by two of the deepest historians and thinkers (WEBER; WEBLEN) of our form of civilization.

where it was really to be found. First he plunged into a theory that since an action never is in fact suspended, what has happened in the intervals must be exactly conveyed*. He got nearer to the point, however, when he faced the *discrepancy* there is in the successive presentation which is the dramatist's way of communicating issues which in reality are simultaneous; could he somehow stage them simultaneously, the dialogue combined with wordless tableaux, say, turn and turn about, the effect would be tremendous, and this not merely because it was cumulative, but *because the spectator would be seeing things as precisely the characters, ignorant of each other's presence, could not do*. Finally Diderot came out with the thesis that is his real contribution (it was hailed by Beaumarchais at the time as a new gospel), namely that suspense in general will be greater if even from the start the spectator is given to understand what the persons of the drama do not know, how it is all going to turn out. The irony involved is not so facile as it looks. It is indeed to some extent at the expense of the characters. To the academic critic like Jules Lemaitre a century later, it stood to reason that more pleasure was derivable from seeing how the characters would solve a mystery than from solving it oneself — a pleasure of the mind, to make us the equals of the gods. Here, decidedly, was the culmination of the trend begun by Corneille towards replacing action by the logic of action, the real action of the play apprehended at a remove, and the healthy shock and active curiosity about what was *different* in the course of events diverted into an intenser but consumingly logical fascination with issues which were a foregone conclusion, nakedly 'a matter of time' (time as spatiality, in Meyerson's terms). And Schiller, on finishing the composition of a drama already of this sort, could not resist a hankering, for his next, after the even more perfect and positively automatic necessity of the old Oedipus theme — a play that was the play of the discovery of what is ineluctable just because it is past. There is nevertheless more to all this than the trivialization of fate (often as the rather portentously ironic implication of simple things) in many of the 'serious' dramas (as they were called) of the time, which did no more than flatter the spectator with the feeling that he was in league with the power that pulled the strings. As Schiller pointed out, only by analytical retrospect could the playwright gather up any great complexity of issues.†

* If not by pantomime to the audience, as Beaumarchais (1767) continued the suggestion, then at least privately to the actors; or if not to them, then at least let it be present to the dramatist's mind!

† In *The Dynasts*, when neither mechanical contemporaneity nor chronological succession was good enough to make "the far off Consequence appear Prompt at the heel of foregone Cause", Hardy was driven to provide roles for ghostly Intelligences endowed with various moods.

of the supposed action's being laid everlastingly out of doors in one part or another of a public place, the dramatist could both postulate that his scene remained unchanged, and yet dispose of as many different scenes as the characters could demand to go about their several avocations*. So easily is art compromised by naturalism, however, that the relatively innocent subterfuge of Corneille had already spelled disaster even before Voltaire got his hands on it. We have the contemporary evidence (1668) of Dryden that with perfect continuity being sought within the limits of the act, the press of so many persons on one place did in fact raise the question whether, in giving them all impartially some business there, the unity of art had not done violence to the diversity of life. If on the other hand the scene *imperceptibly* extended or changed, as when two characters were supposed out walking on the stage, then (says Dryden) the spectator would risk getting the impression that *the street and the houses walked about while these persons stood still!*

Half-measures had created this problem; only a complete *reductio ad absurdum* solved it. By sheer force of logic, Diderot concluded (1757-8) that positive delusion must be the aim of the new middle-class art. His own first play accordingly purported not merely to be based on a real-life story, but to *be* it, and he did not scruple to postulate a wall to separate his actors from the body of the theatre: they were to pay as little attention to the spectators as if the latter did not exist; they were to play as if the curtain had not gone up. The Shakespearean play had addressed itself to a participating audience who in more than one sense surrounded the stage on three sides of it: Diderot's argument, on the contrary, was that the intensity of their reaction would depend on the extent to which the play could approximate to real life, which (in turn) depended on the extent to which it excluded them, reduced them to a passive role on their side of the invisible fourth wall. But as a famous debate between Schiller and Goethe was later to decide (1797), if the playwright thought of his action thus as an end in itself, and wished to subjugate the spectator, then sooner or later a way would be made for the opposite idea, of an art in which the issues of the action were re-ordered in some sense at the will of this same mind that was their measure. By wanting continuity hard enough, Diderot did at last hit on the place—the mind of the spectator—

* This quantitative solution depended perhaps on the sheer weight of facaded monumental arches of the Vicenza theatre, and the vast perspective enjoyed by each member of the audience down one or other of five more or less real streets that ran into the stage. In O'Neill's *Desire under the elms* (1924) however, the doll's house effect of the section of farmhouse and grounds needed to develop action simultaneously in kitchen and bedrooms and out of doors, might easily influence the tone of events.

as an intangible quality borne on the tide of imagery in the verse — that its very theme is the contrast of Roman and Egyptian, just as time is the essence of the vital scenes, though they are 22 in number and half of them brief flashes, which carry the story from the first engagement with Caesar to the death of Antony. That this was feasible was due no doubt to the traditional radical difference of *place* in installations severally, even if simultaneously, quartered about the boards, and to the consequent delocalization, in the mind of the audience, of the neutral territory that remained of empty playing space. When actors formally paraded from 'place' to 'place', no one would regard the distance in fact travelled, and there was the intangible locality to fall back on. So flexible in any case was the movement from immediate to much wider concerns in the metaphysical verse of Shakespeare's generation, that even while some (if not all) of the same characters were still on the stage, the mere echo in their lines of a change of scene would be enough to put it into effect, even without the possible symbolic curtaining or uncurtaining of the propertied inner stage.

Everything, from spectators camped about the stage to his own intellectualistic character, predisposed Corneille likewise to a finely conventional drama. Even if the logic of the bourgeois conquest of the world led the European theatre in search of illusion, there was far more convention than naturalism in the psychological type of tragedy he inaugurated. As Lessing (1767) said, ostensibly of its Greco-Roman original, if the plot were pruned for a point of attack sufficiently late in the story, and the *dramatis personae* were so selected that each was familiar enough with all the rest for it to be plausible for him at any moment to meet them, then events could develop with the minimum reinforcement from circumstances of time and place, the stage not clearing before the end of the act, but each exit and each entrance leading smoothly out of what had gone before. This, of course, on the tacit additional assumption that a great deal could be supposed to happen between acts. Voltaire, however, as he once (1731) admitted, himself looked to make the best of both worlds, and while as devil's advocate he professed (1764) to arraign Corneille for infringement of the conventional beauty of unbroken continuity, he nevertheless wanted nothing so much as a crassly naturalistic rationalization. Corneille had contended that there might be dramatic as well as legal fictions, and that the desire for literal illusion of multifariousness could be reconciled with the opposing aesthetic demand for unity of place if a whole city were understood as in general the 'scene'. But the fiction was ruined as soon as it was taken literally. Voltaire proposed the choice of such a stage as that of the Teatro Olimpico at Vicenza where, on the sole condition

next in the depth of a landscape). An initial episode of the Boston scroll, the abduction of the emperor, is diverted into a rush towards the beholder, when it is blocked by a runaway draught bull and a convenient garden wall. In film art (BUCKLE; PUDOVKIN 35-6) an image would only be more clearly fixed in the mind by rapid removal in favour of another, whereas by a fadeout it is diverted to another plane of attention, so leaving the mind "free to advance on new lines", and something of the sort is perhaps involved in scroll continuity. There undoubtedly the whole is more than the sum of its parts* and the Japanese artist is as indifferent to space as the maker of the screen play, who from his subject matter retains as *intangible qualities* the chronology or geography which he has taken care *not* to register.

In other arts in the West besides painting there is to be found the same hesitating epistemology as emerged in the conquest of geometrical perspective. During the evolution of stage spectacle in the last three centuries towards film art, the highly imaginative Elizabethan practice gives us a standard by which to judge the nonsense talked a few years later by Corneille's rationalizing contemporaries about the very modest discrepancy which was all *they* were prepared to admit between literal and imaginative space and time. Shakespeare no more registers actual time and space than the modern film does, and no spectator reflects upon the months in fact necessary for Hamlet to attain his ends, or on the years of Macbeth's reign, any more than on the circumstance that it is only a matter of hours before Othello, the devoted husband, turns into a wife-murderer. Shakespeare worked for preference in short scenes of rapid climax or contrast, and (GRANVILLE - BARKER) it is only naturalistic modern staging† which obscures the fact that each scene of *Antony and Cleopatra* "has an effective relation to the next which a pause between them will weaken or destroy". Yet change of scene in this play is so real — space

* In the silent film, the musical accompaniment, precisely when it did *not* concern itself with each several scene, was felt to accentuate a structural rhythm won from the mosaic of images (LONDON; JAUBERT). So with the scroll sequence as opposed to the mere series like (say) Goya's six paintings (c. 1802; in Chicago) of incidents in the life of the bandit Margato. The convention as to sequence in the scroll, which runs from right to left, seems to have depended on two features: figures facing left were understood to be going and those that face right to be coming, and the diagonal lines of buildings might be understood to direct attention to objects thus on the left.

† Or rationalizing editors, like the one who put an *act* division in *Antony* II. vii. between our successive glimpses of the rulers of the world drunk, and of the soldiers at their duty who are the immediate comment on it. In *Othello*, when Cassio is to see Desdemona alone, and we cut, before going on, to a 6-line flash (III. ii) of her husband actually leaving the house, the procedure is exactly that of a film.

to suspend or to compromise on, its obsession being the quantity of it which (with the consequent sheer bulk of objects) must be included in order to justify one plausible, unified but complex, moment of the subject. In the Middle Ages*, when naivety was nothing to be ashamed of, one and the same composition might contain the several moments which the painter had been powerless to reconcile, but the rapid reappearance of the hero was a rude reminder of the ungainliness of the jumps in time between the different stages of the action, despite the road that might be depicted linking them. The Japanese procedure, by the very extent of the means available, was more resourceful. The central and last part of the *Heiji Monogatari* scroll in Boston, e. g., is an attack on a palace, the burning and slaying that go on inside, and the departure and final parade of the attackers, and succession is telescoped in a highly composite representation. But it is hard to say whether greater skill was shown in disguising or in taking advantage of the necessary minimum of discontinuity. An example of the former is a composite scene in the Flying Warehouse scroll of the three which make up the *Shigisan Engi* at Nara. In order to reconcile rice-bales still on the ground with the simultaneously 'present but actually subsequent process of their departure (as it were, one by one) through the air in the train of their motive force (a miraculous bowl) now no longer on the ground, but leading them, attention is concentrated on a servant tending the bale that rests on this same bowl, on the ground; further query as to this part of the scene is then blocked by the front and side of a building, after which, as a Japanese description (TODA 68-70) puts it, 'one sees the continuation but does not notice the absence of a division'. That deliberate experimentation was at work there can be no doubt (TODA 5-6, 21; FISCHER 120). There are ingenious boundaries to the scenes which are superficially no boundaries at all, like the conventional blankets of mist† which run one episode into the next (or one plane into the

* No historical and geographical survey (like that in WICKHOFF 6-9, 60) is here attempted of the three possible narrative methods: the series of framed and selected moments, the repetitive panorama and the elaborately composite scene.

† Justified as convention, and not because mist was common near the capital; this makes them different from (say) the steep hills that elevate the figures at the back in the crude perspective of Hellenistic art. The Japanese recognized discontinuity even when they disguised it, whereas undifferentiated continuity would be that of the crude composite scene in the Bayeux Tapestry (11th. century) where one side of the citadel of Dinan is being defended whilst the other, an inch or two away, formally surrenders. Subordinated simultaneity is found in the use of the borders of tapestry where, when Harold in the main strip is apprehensive of invasion, his thoughts take shape in the border in a ghostlike fleet of little boats. The decisive step in film art was when a person's thoughts were no longer portrayed by a miniature 'dream balloon' inset in one corner of the scene but represented by the causal convention of cutting—passing to the thought in the following scene (as also in the 4th. cent. Genesis M.S. in Vienna, WICKHOFF fol. XV. 29; cf. fol. V. 9).

the elements of a given field, before they establish a meaning in it. Now, a far Eastern landscape scroll is without parallel in classic European art in the way in which space in it is bound up with time (FISCHER 24). It invites a different kind of familiarity from that repeated lightning consultation, mentioned by Lessing, which at last "breeds contempt", for *it is not there all the time* to the extent a canvas or wall painting in Europe is apt to be, but must specifically be unrolled and as specifically be perused. It enjoys a more elaborate compositional formula, in that *it is never there all at once*, for not more than 2 feet of its length (anything from 20 to 40 feet, by 1 or 1 1/2) will be unfolded on the table at a time. Since, therefore, the particular passage that greets the eye may be continually different, the scroll artist would seem to have the film director's problem of composition with an extra dimension to his rectangle (more bewildering even than the literal third dimension, which already complicates all relations, of a work of art in the round).*

However developed by the perusal made of it, the landscape of the Chinese type of scroll was in itself, at least, timeless. It was another matter when initiative passed in the 12th century to the Japanese, and when the form was deliberately chosen for the treatment of narrative, for then time was involved in the theme itself. There is no denying that we tend to think of any process of change in the form of the more or less instantaneous specific states that can be elicited from it. Gide has remarked that all that some novelists do is to bring successive episodes monotonously forward before the reader and then let them go again, each in its place in the chronological series. Whether or not this "cinematographic" attitude may be held, as Bergson thinks, to have relegated the notion of change itself to the back of the mind (as something vaguely conceived to combine at need with the said states) would depend on the extent to which we agree, as Bergson, writing before montage was established, could not, that presentation of continuity by discontinuity is in fact a leaven working to some degree in all the arts. The one thing certainly wrong is the belief of commonsense rationalism that (*Laokoon*, c. 17) the irreversibly linear medium of an art of time is enough to render the constitution of any over-all unity as difficult as the preceding analysis of the whole into parts has been thorough. Time, as we have seen, Western painting undertakes

* The first fully conscious handling (1874-90) of the evolution of stage players in (and not, as previously, upon) a motionless setting was doubtless that in the ensemble, mass scenes typical of the historical dramas enacted by the Meiningen company (GRUBE). It was the resistance specific to the "kneading in time" (VIGNEAU 48, 76) of each several set up (position, distance, angle of background, etc.) of the film camera, or within a series of such scenes with the same setting, which, as Eisenstein says, originally led to the variety of styles of montage—ways in which discontinuous scenes themselves were juxtaposed.

bound to be the extent to which perspective implied some one actual spectator; in China, on the other hand (FISCHER 134), one of the greatest masters was censured for hasarding so material a conception: "your real spectator (his critics objected) would be likely to look up at a mountain from the foot of it, which would make our habitual landscape rendering of range upon range of hills impossible". Oriental art was under no obligation to employ a single source of light and cast shadows. The Chinese painter's usual monochrome medium translated volume by line, and he had no disposition to lose sight of the essence of natural objects in the accidents of their appearance under any one colour or at any one hour in any one spot or from any one point of view.

But, the critic trained in our geometry will ask, just how did landscapes "refuse the cramped horizon visible from the level of the eye" and seek one with "rich lines flowing out and beyond... in the undulations of the Dragon" (BINYON (1911) 82) which (FISCHER 131) would reconstruct the objective universe "out of the inner law of its own nature"? The Far Eastern artist has been accused of sheer ignorance for landing his vanishing point in the heart instead of in the depth of his picture (though this is what gives their unique vitality to the classic scenes in which a Japanese crowd is made by the scroll painter to run in every direction), and the presentation of the elements of a painting so that those which are behind appear above those in the foreground "in half-bird's-eye view, with the horizon practically out of the picture" has been characterized as at best a shelving of the problem, or as "a handy sort of empirical perspective" (COOMARASWAMY (1927) 27, (1942) 8; FISCHER 128-30, 132; BINYON (1939) 1913). There is, however (FERGUSON 92), ground for a belief that the Sung painting of China was the same sort of blend (of literature with a more representational art using the same materials of brush and ink) as the one (literature plus painting plus stage plus music) which constitutes the uniqueness of modern film art. The clear superiority of Far Eastern painting in the annals of artistic discovery is epitomized in the difference between the relatively static European canvas and the long horizontal scroll that in China unfolds the successive mysteries and vast distances of a landscape, or, in Japan, of a narrative of action. Even as document, European perspective is not (PANOFSKY 260-1) a specially efficient abstraction from the psycho-physical reality of perception. Not so much because, e. g., it may have calculated on a plane surface rather than on the spherical one of the retina, or because, woodenly monocular, it has made no allowance for the parallax of objects, as because its fixity of point of view does small justice to the way in which the eyes find time to rove over and select from and generally to explore

varying time of different parts of the scene, and the artist's main job is "to make the beholder imagine a lot of things that are not actually in the plate." But the one thing that never seems to occur to Rousseau, though he was not merely a print-collector but even himself an engraver, is that the illustrations could ever stand on their own feet. What in the end it all comes down to is that "really to have brought off a drawing, the artist must have seen it, not as it would be on his paper, but as it was in nature."

The function of art in the Western world was determined during the Renaissance when (PANOFISKY 258, 278, 280, 285-6, 292) the conquest of perspective by the painter in his studio could be, and was, adopted by mathematician and scientist. Renaissance art milieus have left the world in no doubt as to what they tried for; a picture was essentially to be a window through which we might imagine ourselves looking out into space. In the course of the 14th century ideas had changed about the wall on which the forms of things were applied; the existence as such of the flat surface was denied, and painted scenes came to be regarded as extending behind it* as they do in a box-set on a stage with the ideal spectator firmly planted in the centre of the auditorium; his reason (and not his eyes) was to persuade him of the dogma that emerged with the Flemish painters by the middle of the next century, of the horizon established by the convergence of lines to one vanishing point. There were of course differences in the tone of particular perspectives,† but the contrast between West and East in painting remains that (COOMARASWAMY (1927) 27) with the latter "the 'atmosphere' is not supposed to be seen in lateral section, but forms an ambient including the spectator and the whole picture", and (COOMARASWAMY (1942) 8) in an Indian scene, e. g., objects are thought of as emerging from space and being led into the field of vision, "rather than as existing in a depth into which the eye is to be led". That is (FISCHER 123-6), the interest is in presentation and intelligibility, not in space for its own sake as prime condition of a scientific outlook. In the end (PANOFISKY 324) the problem for Renaissance artists was

* Progressive achievement of this notion of "a slice of life itself" is identifiable in the career of one and the same painter, Jan van Eyck (PANOFISKY 281).

† The almost exactly central viewpoint of the typically objective Italian painting of St. Jerome in his study by Antonello da Messina (National Gallery, London) shuts us out from a space that begins explicitly on the other side of the picture surface, whilst the oblique rendering of the same subject in Durer's slightly later engraving encourages us on the contrary to step into the room (PANOFISKY 268, 288). The replacement of central by oblique perspective in architecture on the stage which was the work of Ferdinando Galli Bibiena two centuries later, however, aimed at something more (or less) than art, namely at definite illusion on the spectator's part.

Time in this sense may be diagnosed even in what has been in the west a static art enough, namely in painting. So far from attending to everything in a picture at once, the beholder must in fact begin at the point, and follow the specific path, laid down by the artist, and this path is not merely embodied in the grouping and proportioning of parts in the scene represented, as such, but is conveyed also by gradations of tone and of densities of chiaroscuro, as of volumes and distances (WAHL; EISENSTEIN 123, 138). Yet it has been the custom to minimize the fact of this progression, so much so that (BINYON (1911) 47) it would seem as if something more than the mere limitations of picture space were compelling us to compress more and more into one central incident. There is an immediate difference no farther away than Persian (miniature) painting, which (BRONSTEIN) does not proceed as ours naively does "from the complex (mobility of forms) to the simple (unity of the entire composition)", but goes instead "from the simple (figures mostly separated, not crowded, — simplicity of the superimposed planes, simplicity in colours) towards the complex (projection outside and away from the centre, ... contrast of empty as against filled-in spaces." In contrast to this, it was quite advisedly that the opinion got about in the classic era of philosophical aesthetics in the West that "what is done by painting must be done at one blow" (as Sir Joshua Reynolds put it in 1778). There could be no question of the rhythm that in an art of time comes from suspense, and even the avowal that time was required for the beholder to exhaust the wealth of a complex composition did not prevent Lessing, the author of the best known treatise on the subject (*Laokoon*, 1766), from declaring that the several operations required to grasp the whole of a picture from its parts were probably in fact but one, and that speed was indispensable — the tacit corollary of course being that the beholder would have to return to the picture again and again ! Time must somewhere enter in, and if none (save as an afterthought) is being given to the receptive process, then it will emerge as a problem of the subject matter. Given the permanence of the particular point of view and moment selected, patently transitory scenes will *ipso facto* be taboo, and since the various parts are to be taken in *at a glance*, there will obviously be a high priority on "things whose parts lie near each other", even though this will threaten to produce the same effect (that of an instantaneous photograph). The stipulation for what the French Encyclopedists (1765) were already calling the unity of time reduced a picture to the status of an illustration, and it is in what Rousseau has to say (1761) about the plates to his own *Nouvelle Héloïse* that the position is best expounded : a certain latitude must be allowed the action, as the moment is protracted by the slightly

PERSPECTIVE IN THE ARTS OF SPACE AND TIME.

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What fundamentally needs to be explained about any phenomenon is the fact of a recognizable before and after. For the scientist as for the man in the street, however, there would appear to be sufficient reason why it was thus and not otherwise only when it is shown to be nothing more or less than the logical consequence of its antecedents. Thus the perfect explanation of change in time is actually reckoned to be one which can demonstrate that nothing has been created and nothing lost, and that there has been no real change at all, but only a sort of rearrangement of the factors in space ! This solicitude to explain away change and diversity as illusions concealing an actual identity* has nevertheless seemed to Emile Meyerson to be a ground for argument that the substance of mental process is *not* to be reduced to a tautology. The very distaste the mind betrays for something that gives pause to its comfortable deductive operations is evidence enough of a diversity not easily to be reduced to identity. Movement in time is (JOHNSON 12) inevitably in one direction, so that its passing is different from the mere passage from one place to another† ; things happen that we cannot go back upon, and with memory forming in its wake there is a course of affairs (e. g. birth to death) that would be unimaginable in the reverse order. Time irreversible, in short, is the very type of the irreducible something in the march of thought that distinguishes a contribution to knowledge from a tautology.

* It is often (MUIR 61,65 116-8) held against documentary fiction, e.g., that it is "not audacious enough to attempt a picture of society valid for all time", but "makes everything particular, relative and historical", and the same critics assume that just as diversity can be elicited only by static definition, so the scene of the highest type of art will prove to be no ordinary one, "but rather an image of humanity's temporal environment"; difference will not merely "at times", but finally, "merge . . . into identity". The similar opposition (MUIR 41,63) of the social values of diversity to the "individual or universal" values of a story in which difference merges into identity shows the latter to result merely from an exclusive interest, as with a more celebrated version (BERGSON 165,170-3) of the modern monadology of *Selbstentfremdung* ("souls are impenetrable to each other") which exalts the tragic self-perception of the poet at the expense of the only sort of observation of others that is possible, namely, the externality of the types in comedy (which is scarcely art at all!).

† As the mystical Spengler put Meyerson's point, "it is of the essence of extension (*des Ausgedehnten*) to abolish directionality (*Gerichtetsein*)". In fact, however, it is as absurd to suppose that we can move about as freely in time as we do in space, as it would be to suppose we could not so move, in space.

of personality; and hence they fall within the sphere of the psychologist, not of the doctor. A proportion need a preliminary and psychiatric examination to rule out the possibility of definite illness. But the majority can be examined and treated far more effectively by a school psychologist (aided, it may be, by teachers and home visitors) whose psychological, educational, and social training will equip them to understand and treat such cases far better than the training received by the school doctor or the psychiatric specialist. And, since further research is so urgently needed, the trained psychologist is also in a better position to make his own scientific contributions.

سنشمر في العدد القادم ترجمة مقال السير سيرل بيرت وموضوعها « تقدير الشخصية » . ومؤلف هذا المقال هو أستاذ علم النفس بجامعة لندن وزعيم مدرسة « تحليل العوامل السيكولوجية » في إنجلترا . وقد اكتسب السير سيرل بيرت شهرة عالمية ببحوثه في جناح الأحداث وفي الطفل المتأخر عقلا وفي تحليل عوامل العقل .
ول هذه المقالة أهمية كبرى إذ أنها توجه البعثات في علم النفس توجيهاً جديداً ، هو تطبيق الأساليب الرياضية الإحصائية في تحليل عوامل الشخصية في حالي السواء والانحراف . ويتضح من هذا المقال الذي كتب خاصة لمجلة علم النفس المصرية ما لمعنى التكامل من قيمة عظمى لفهم طبيعة الشخصية وتكوينها .

they may be, the Freudian theories and concepts, as formulated, do not lend themselves to experimental confirmation. If, however, we translate them into terms of general psychology, then in my view we have much that we can subject to experimental study.

Hitherto some of the most instructive studies in the experimental field have been those inspired rather by the Pawlow school. Thus Pawlow and his followers have shown that types of personality, not unlike those observed in human beings, can be discovered in dogs and other animals; and that it is possible by experimental methods to induce, analyse, treat, and cure different types of neurotic personality in such animals. The Pawlowian writers have their own terminology; but, in the view of most recent experimenters, the essential cause of an experimentally produced neurosis is a conflict between two strong emotional impulses. Thus, one of the most effective methods is to feed a dog at a particular bin, and then, whenever he is on the point of going to the accustomed bin, send a sharp blast of air against his face. In general, the mechanisms found to be operative are then seen to be analogous to those described by psychoanalytic writers; but it is far easier to describe them in terms of simple mental processes than in terms of the somewhat fanciful concepts and picturesque phraseology introduced by Freud. In my own work it has been possible to study the genesis, course and cure of minor neurotic symptoms by similar methods in students who have volunteered to take part in such studies. It is still easier to study the training and reconditioning of certain types of personality by experimental means when the hypotheses I have outlined above are taken as the starting point.

Conclusion. We are still only at the beginning of such research. But already certain practical conclusions seem to emerge from the theoretical considerations I have summarized.

Many years ago I pointed out that among children in the elementary schools of this country the pathological forms of mental deficiency, which figured so largely in the medical textbooks, were comparatively rare, and definite psychoses ('insanity') almost non-existent. Equally, I believe, neuroses (functional nervous illnesses), though far from non-existent, are much more rare than is commonly supposed: what are usually diagnosed as such are, for the most part, non-pathological deviations, bearing much the same relation to true neuroses that dullness, backwardness, and the commoner forms of mental deficiency bear to the pathological cases. To have all these cases of 'difficult children', 'problem children', 'delinquent children', 'maladjusted children', and the like treated by medically qualified psychiatric specialists would be exceedingly expensive, and not very effective. Such cases are suffering from deviations in personality, not from disease

dissociation, i.e., a kind of mental dislocation or lesion. Whether mild or severe, conflicts may be met in one of various irrational ways; and these methods of meeting them tend (as a result of 'conditioning') to become habitual. This leads to certain types of mal-integrated personality which (especially during childhood) are apt to be diagnosed as neurotic, i.e., as definitely ill, when in my view they are not ill at all. What they need is either preventive training or re-training ('de-conditioning' or 'reconditioning') to stop the growing irrational habit becoming permanently fixed. This is a matter of educational treatment, not therapeutic treatment. It is no more the concern of the physician than is voice-training or piano-teaching.

The causes both of the conflict and of the wrong conditioning often lie in the environment. Hence in addition to moral education or re-education social changes may often be required (altered treatment by parents, teachers, employers, companions, etc., or possibly removal from home, school, place of business, neighbourhood, etc.). This again is not a medical matter.

After Histories. The truth of this view can be tested by the subsequent histories of such cases so far as they are obtainable. With children mere visits to a clinic or a doctor's consulting room produce a comparatively small number of successes (with adults, on the other hand, such visits or 'treatments' are far more effective). I have no space to cite any detailed analysis of the follow-up results; this has already been given in my official L.C.C. reports. We find that with cases examined psychologically and treated by educational and social methods nearly 70 per cent. improved, whereas only 55 per cent. of the cases treated exclusively at a clinic turned out successful; at the clinics success followed or failed to follow regardless of the particular view obtaining at the clinic (i.e., whether is Freudian, Jungian, Adlerian, or somatic). Incidentally we also followed up the after-histories of a number of children who were left on the waiting list of clinics and (owing to pressure of cases) were never actually treated at all: of these, over 40 per cent. recovered spontaneously.

Experimental Study. During the period in which psychoanalysis was attracting wide attention, it was often claimed that Freud and his followers had revealed the main mechanisms by which the personality normal and neurotic, was built up. If the Freudian hypotheses were true, it ought to be possible to verify them experimentally along the general lines we should adopt for any other scientific or medical hypothesis. Now, strangely enough the psychoanalytic schools have carried out very little experimental work; and on reflection it is easy to see that, suggestive though

tional disorder is bound more or less to disturb the cognitive; but these disturbances are secondary. Secondly, although most neurotics show a high degree of innate general emotionality (or rather perhaps of instability, i.e., an excess of general emotionality as compared with general intelligence) nevertheless a high degree of innate emotionality or instability does not of itself constitute a neurosis. Instability is a matter of degree; and among psychologists it seems generally agreed that a degree, severe enough to render the person in need of care, supervision or control, should be designated 'temperamental deficiency'. It is, like the commoner forms of mental deficiency, not necessarily a pathological condition, and innate rather than acquired.

An essential characteristic of the neurotic is that his personality is incompletely integrated: i.e., it is internally inconsistent, ill-organized or dis-organized, not harmoniously coordinated. But again defective integration by itself is a matter of degree. It is tempting to draw the borderline at the point at which the mal-integrated person needs care or special provision: i.e., to say that a person becomes mentally ill when for mental reasons he is unable to carry the ordinary requirements of the working citizen, or (to put it a little differently) unable to comply with the day-to-day demands of his environment and therefore (in this sense) socially maladjusted or maladapted. These form useful practical criteria; but do not mark the fundamental distinction. It is true most of those who are physically ill would fall under the same characterization: but in physical cases we do not regard it as indicating the essential feature. Indeed, an appreciable proportion of those who are ill, whether physically or mentally, can and do carry on their everyday work. An habitual idler does not and apparently cannot carry on his everyday work; but (without stretching the word so as to use it metaphorically rather than literally) we should not say that habitual idleness was an 'illness'. My view is that, before we say that so and so is suffering from a nervous illness, his discordant personality must exhibit a pattern which is qualitatively different from the normal. Usually this will mean that it is qualitatively different from the pattern exhibited by the patient before he became ill: the friends or parents will express this in popular language by saying "Since then he's been so different", "He's so changed I hardly know him", "He's so peculiar"

What the qualitative differences are, I need not here discuss. Briefly I should say that the changes are of various kinds, roughly corresponding to the syndromes characterizing the different nervous disorders. I hold that the best way to investigate their nature would be by a group-factor analysis above. The cause usually seems to be some critical mental conflict. This is usually so severe as to produce, not merely disintegration, but

many of the differences due to the group factors, but the group factors themselves overlap to a greater extent. Among adults, therefore, the distinction between the different neuroses is easier to draw than it is with children.

Classification of Neuroses. What classification of neurotic disorder do these factor-patterns or 'syndromes' suggest? First, both among adults and children there is a twofold division into (i) those marked chiefly by sthenic or demonstrative tendencies (restlessness, irritable temper, sex, assertive, aggressive and even delinquent traits, and in many cases by excessive talking, laughing, or even weeping, and with adults heightened emotionality generally); (ii) those marked chiefly by asthenic or inhibitive tendencies (unsociability, daydreaming, timidity, depression, and, among adults, an even greater lack of integration in the personality than is found among neurotics generally). This, of course, is a contrast that has been familiar since the work of Janet and Kraepelin in the last century. Within each group a second subdivision is discernible. Among the 'sthenic' cases we have (a) a subgroup marked by conversion symptoms, suggestibility, and some tendency to physical disorders, and (b) a subgroup marked by compulsive actions, obsessive thoughts, and hypochondriacal preoccupations. Among the 'asthenic' cases we have (a) a subgroup marked by certain physical symptoms (palpitation, headache, etc.) and above all by fatigability and apathy, and (b) a subgroup marked by various manifestations of fear and anxiety.

Among children the same subdivisions are discernible; but they are by no means so well marked. Indeed, with them the broad classifications correspond rather more closely with the temperamental classifications found among normal children; and the subclassifications with the main instincts. The evidence for this further statement requires fuller and more specialized tables giving detailed assessments for the several traits indicated in my scheme above. When that is done we find far less distinction between those with and those without physical symptoms; and what we have rather is the 'fear neuroses' and the 'submissive neuroses' contrasted with the 'anger neuroses' and the 'assertive neuroses'.*

Definition of Neurosis. How far do these results enable us to express in words the condition which is or should be diagnosed as neurotic? First of all, neurotics are marked primarily by emotional rather than by cognitive symptoms. Since every personality is a unitary whole, the emo-

* For further details in regard to the study of neurotic disorders, I may refer to my book on *The Subnormal Mind*, where the classification proposed was largely the outcome of factor analyses such as the present.

Factor Analysis of Symptoms of Alleged Neurotics. The following table (Table II) is based on a series of 216 child patients and 143 adult patients. The presence or absence (or occasionally the degree) of the commoner symptoms were correlated; and the correlations factorized.

First, let us note that nearly all the correlations were positive; and there is a large common factor running through all the traits. So far, therefore, we are justified in regarding all the examinees as belonging to a single group or type.* What is the most distinctive feature characterizing the group? On studying the column of saturations for the first factor, we see that with children it is 'general emotionality' and with adults 'disintegration of personality'. The word 'instability' might serve to cover both. In a child, owing to his very immaturity, we do not as yet expect a perfectly integrated personality; for that (or the lack of it) is largely an acquired characteristic. In an adult we expect an integrated personality and quickly note the lack of it; but we are less likely to decide that he is born with a high or low degree of innate general emotionality, because the degree to which emotionality is expressed is, in a civilized adult, largely controlled or concealed.

Secondly, we find that among children the correlations are higher and more nearly hierarchical: so that with them the general factor contributes far more to the variance than with adults. Among adults the saturations for the group factors are large. Thus with adults certain groups of symptoms tend to cluster together into comparatively clear-cut types of disorder (never, of course, *absolutely* clear-cut); and in consequence neurotic adults tend to fall more definitely into diagnosable classes or subtypes. With children, on the other hand, not only does the general factor tend to swamp

* There is a missing premiss in the argument, which I am compelled to omit for lack of space. Because (say) "general emotionality" is the trait showing the highest saturation for the first or 'general' factor, we cannot infer (without other evidence) that this is the most distinctive feature in that factor. As I have said elsewhere, "we cannot adequately define a general factor until we have converted it into a group factor". We have not shown that the general factor common to all cognitive traits is a 'general *cognitive* factor' so long as we correlate cognitive traits only: It might be a trait common to the whole mind. We must therefore include emotional traits (for example) as well and show that our factor has approximately zero saturations for this. How often have investigators found a general factor common to a set of verbal tests and concluded that this is therefore a verbal factor, when a more extended battery would show it is (very largely at any rate) a general factor common to non-verbal as well as verbal activities. A complete research must therefore include a control-group of normal children (and their characteristic traits) as well as a crucial group of neurotic children (and their characteristic traits). Actually the whole series of our investigations has included such wider groups; but a full comparison of the data is scarcely possible here.

TABLE II. Factor Saturations for Neurotic Symptoms.

	Children							Adults						
	I	II	III	IV	V	VI	VII	I	II	III	IV	V	VI	VII
General Emotionality	.86					.13		.44						.37
Disintegrated Personality	.54	.06				.42		.62	.41					.58
Timidity	.45	.43	.35					.25	.61	.69				
Fear of Persons	.47	.32	.46					.29	.41	.53				
Fear of Things	.41	.29	.29					.21	.19	.65				
Nightmares	.68	.26	.44					.32	.24	.55				
Insomnia	.79		.38	.09				.47		.62	.21			
Depression	.38	.47	.13	.16				.51	.56	.28	.63			
Weeping	.42	.36	.14			.31		.17		.29				
Suicidal Threats	.06		.13			.11		.25		.41				.37
Hypochondria	.23	.09	.26			.14		.33	.67	.61				.45
Stammering	.65	.22	.37					.22	.16	.09				
Incontinence	.71		.33			.09								
Dyspepsia	.52	.12	.21	.11				.56	.33	.51	.38			
Loss of Appetite	.44	.17	.27	.17				.48			.35			
Tremor	.31		.16	.06				.45		.47	.27			
Anaemia	.48	.12	.19	.23				.19	.32		.47			
Palpitation	.28			.16				.45			.69			.13
Breathlessness	.19			.12				.41			.61			
Faintness	.24			.18	.08			.31	.15		.54			.29
Giddiness	.19			.08	.12			.39			.52			.28
Muscular Hypotonia	.49	.14	.25	.32				.24	.30		.16			
Headache	.41	.08		.27	.11			.52	.16		.58			.17
Sweating	.29		.11	.13				.28			.26	.33		
Flushing	.50	.21	.32			.09		.23				.28	.24	
Fatiguability	.38			.42				.54	.13		.72			
Loss of Memory	.21			.15	.13			.49			.42			.26
Apathy	.32	.18		.34				.43	.35		.67			
Daydreaming	.40	.52		.10	.17			.48	.59		.34			.35
Unsociability	.24	.44	.27	.18	.32	.21		.31	.39	.41		.26		
Suggestibility	.44	.40		.18	.25			.32	.53					.38
Lisping	.39	.38			.18									
Nailbiting	.23	.11	.09					.14	.25					
Masturbation	.31	.15		.23				.16			.29			
Conversion Symptoms	.18				.24			.15						.52
Delinquency	.37			.51	.19	.32		.08				.26		.27
Assertiveness	.19			.55	.35	.13		.16				.61	.46	.41
Irritable Temper	.39		.16	.21				.51		.22		.55	.15	.36
Restlessness	.62			.14	.47	.32		.37				.35	.19	
Talkativeness	.23		.24	.57	.26			.18				.65	.12	
Laughter	.17			.48	.37			.06				.61	.33	
Sex	.26			.42	.31			.23				.58	.27	
Obsessive Thoughts	.22	.13		.26	.09	.14		.45	.38					.62
Compulsive Actions	.19			.32	.21			.24				.44		.59
Habit Spasms	.53				.13	.26		.09				.21		
Tics	.58	.11		.14	.24									.17
Lefthandedness	.36					.13	.12							

disease. If a person is merely small in stature as in every other dimension, he is so far not diseased; but when, as in the cretinoid dwarf, the small stature is a pathological symptom, there is a qualitative change as well. The same is true of mental defectives; a child of 10 with a mental age of $6\frac{1}{2}$ may be perfectly healthy, but legally certifiable as mentally defective. Nevertheless he is merely subnormal not abnormal. But a cretinoid defective of 10 with a mental age of $6\frac{1}{2}$ differs not only in the degree of intelligence (as the age figures indicate) but also in the quality of his mental life and behaviour.

Neurosis as a Disorder of the Personality. In keeping with the same general trend there has of late been a marked inclination among certain psychiatrists to treat the terms 'neurosis' and 'disorder of personality' as synonymous; and consequently to infer that all behaviour indicating 'disorder of personality' is the province of a medically qualified examiner. Now there is a certain amount of truth in the first suggestion, though, as it stands, it is unquestionably misleading. And the word 'neurosis' is used in so many different ways that many have doubted whether there is any one single state or entity corresponding to the term. Elsewhere* I have argued that the most fruitful way of solving the difficulty would be to compare the symptoms actually found in a series of cases referred for psychological or psychiatric examination and diagnosed (or diagnosable) as neurotic, and to undertake a formal factor-analysis of the data.

*) 'The Analysis of Temperament', *Brit. J. Med. Psych.*, XVII, 1938, 159 *et seq.* The table given below is based on the material referred to in that paper. Out of the 500 cases there mentioned I have selected only those that were, or might be, regarded as suffering from nervous disorder. The data was drawn on material collected during my work with the L.C.C. from children and teachers in the Council's schools and from students in what was formerly the Council's Training College. The detailed figures and factorial results were embodied in one of my memoranda; and, while acknowledging permission to publish the results, I am required to say that the Council does not hold itself responsible for the views expressed by its officers or for the deductions drawn. The traits or trait-assessments were first correlated in the usual way; and a group factorization was then carried out with an abridged correlation table from which traits with overlapping factors had been so far as possible excluded. The saturations for the excluded traits were then expressed in terms of the factors obtained from the abridged table.

I should add that my tabulations are intended merely as illustrative. It is always possible that the views held by an interviewer may affect his original assessments; and further with a complicated pattern the distribution of overlapping factors is bound to be somewhat arbitrary. One of my research students is repeating the results on data obtained from *different* clinics, where the interviewers hold different theories; and is proposing to complete the analysis with code numbers for the traits to avoid the unconscious influences that are apt to arise in choosing between alternative rotations.

at all, and can generally be taught to read with perfect ease by appropriate methods of instruction.

Much the same fallacy has attended the treatment of behaviour-disorders. In earlier years doctors and social workers who were anxious to do their best for neurotic or delinquent children were apt to describe them as cases of mental illness. This was undoubtedly an effective way of bringing home to the magistrate or the teacher the fact that the child was not always responsible for his slow progress in school or for his mischievous actions at home or in the street. Nevertheless, it easily leads to serious misconceptions. Teachers, parents, and education authorities imagine that a mental illness must be an illness of the brain; and therefore infer that the doctor is the right person to deal with such cases. The doctor himself is apt to interpret normal reactions in the light of his own experience of abnormal or pathological disturbances. Before the advent of psychoanalysis he nearly always looked solely for material or organic causes. Now, among a certain group of psychiatrists at any rate, the pendulum has swung rather in the opposite direction, and repressed complexes, sex fantasies, and unconscious wish-fulfilment, such as have so frequently been reported among adult patients of a hysterical type, are more likely to be invoked. It is not to be supposed that such causes are never to be found or sought for; but among children they are comparatively rare, and the underlying mental mechanisms are usually of a far simpler and less eccentric type. Indeed, such terms as 'neurosis*', 'mental illness', 'functional nervous disorder', are constantly applied to cases where the reaction is entirely normal.

How then are we to draw the line? Owing to the fact that individual variation is a ubiquitous and perfectly natural phenomenon, there are considerable differences in the efficiency with which individual organisms and their parts perform their functions. So long as the difference remains a difference not of degree but of kind, it cannot be regarded as pathological. But when the deviation involves not a quantitative but a qualitative difference, then the case becomes one of illness. There is thus a discontinuity between soundness and sickness, between health and

* Originally the word 'neurosis' designated certain definite types of functional nervous diseases. But of late it has become more and more frequently used to cover almost any kind of social maladjustment or 'lack of adaptation'. Hence delinquency, which evidently falls under this description, is nowadays frequently considered by psychiatrists to be a kind of mental illness. Actually very few delinquents are ill in any sense of the word. Even when they are ill, whether physically or mentally, the illness is as a rule an unimportant factor in their behaviour. Most delinquencies are perfectly normal reactions to an abnormal social environment.

So far as the subnormal were concerned — and these always present the problems most conspicuous in the public eye — the success of the work was so great that it rapidly led to the establishment of a number of child guidance centres throughout the county of London. And more recently many similar centres have sprung up in various parts of the country. Under the new Education Act, this will probably become the branch of practical psychology which in the near future is likely to develop most rapidly.

The Treatment of Subnormal and Abnormal Deviations in Personality. Since other countries are following the same path, it may be useful to summarize a few of the more important principles that have emerged from this work. The first and most important principle is to realize that personality is a highly variable characteristic, and that, particularly in children, the vast majority of the peculiarities observed are not symptoms of disease or illness, but are deviations or disturbances calling rather for special training from an educator than for medical or surgical treatment from a doctor or psychiatrist.

The introduction of compulsory and universal education quickly led to the discovery of a group of children who could not possibly be brought up to the average educational level by any form of teaching. Medical writers suggested that these children might be suffering from some congenital disease of the brain.* They were thus supposed to be pathological cases requiring diagnosis by a medically qualified doctor, who relied for his diagnosis chiefly upon physical “stigmata of degeneration” and a measurement of the skull: surgeons argued that the best treatment was to cut the skull-bones, so that the brain might be allowed to expand. It was the psychologists who first insisted that the majority of these children were in no way diseased or pathological; that the diagnosis should be based on mental tests, not physical; and that most of cases formed merely the tail-end of perfectly normal deviations about the general average. In much the same way school medical officers supposed that backward readers suffered from a congenital form of alexia, similar to the ‘alexia’ produced in adults by haemorrhage or by disease of the brain. Once again the psychologist has shown that these are not cases of brain-disease

* This view is still retained in Stoddart's *Mind and its Disorders: A Textbook for Practitioners of Medicine* (4th ed. 1921, p. 494): “Idiocy and Imbecility (mental deficiency or amentia): these are states of arrested or retarded development occurring as a result of some disease, or of injury to the child in utero or during the first few years of extra-uterine life”.

of Ward and his disciples, will show that these older writers were fully acquainted with the concept and had already adumbrated the more fundamental principles which have since been verified and amplified in the concrete at psychological clinics. In his admirable volume on *Psychology applied to Education*, Ward regularly insisted that education was concerned, not merely with the intellectual instruction of the child, but with the development of his whole personality. This view was entirely in keeping with the traditional trend of British schools, particularly with that of our more famous 'public schools'. It may have been temporarily overlooked on the first introduction of universal education in our country (in 1870), when, naturally enough, the first concern was with the "three R's" — with reading, writing, and arithmetic. But, before the close of the 19th century, it was becoming more and more clearly realized that, even in the elementary schools, the essential aim is to train the child's character quite as much as to inform his intellect.

This, moreover, was explicitly recognized in the problems put to the school psychologist. In 1914 the London County Council appointed an official Psychologist to examine the more difficult cases in its schools, whether referred by teachers, magistrates, parents, care committee workers, or school medical officers. This was the first appointment of its kind. And the office of the Council's psychologist was thus the first 'child guidance clinic' in England.* Very quickly it became clear that the study of the intellectually dull, backward, or defective pupils formed the easiest part of the psychologist's task. And from the outset he was regarded as equally responsible for the examination of delinquent and neurotic cases, and for bringing home to teachers the importance of considering the emotional and moral aspects of the child's development. Nor was his work limited solely to the subnormal. He was expected to review, and where necessary to improve, the methods of selecting children for scholarships to secondary schools, to trade schools, to central schools of a commercial type; and later to take part in planning schemes for vocational guidance among those about to leave.

* Actually I had, while holding a University appointment under Sir Charles Sherrington (the eminent neurologist in Liverpool) some years previously, examined backward and delinquent children referred by teachers and others. The scheme for official "psychological clinics" for school children was outlined in my official reports to the London County Council; and subsequently published in my book on *The Young Delinquent*. It was owing largely to the energy and interest of Mrs. St. Loe Strachey (a magistrate at a juvenile court and the wife of the well known editor of *The Spectator*) that, on my transfer from the service of the L.C.C. education department to that of the University, a child guidance clinic, financed by the generosity of an American friend of hers (Mr. Harkness of the American Commonwealth Fund) was established with the hearty cooperation of the Council and its officials.

like him to think about them. And consequently the real import of each question has usually to be camouflaged. Thus, when the examinee is asked: "Do your parents, teachers, employers, etc., treat you fairly?" his replies may seem to state that all his acquaintances are in a conspiracy to persecute him: but the examiner (basing his interpretation partly on replies to other questions) will probably infer, not that the examinee's environment is exceptionally hostile, but that the examinee himself is a little too prone to fantasies of persecution. Or again, instead of asking "Are you good-tempered?", the questionnaire may ask: "Would you like to be a good-tempered person?" or "Though you would doubtless like to be good-tempered on most occasions, do you think you would be justified in showing bad temper in such and such situations?" There is an endless variety of ways in which each question may be worded; and much intensive research is required to decide which forms yield the most instructive and trustworthy answers.

Need for Training. This means a basic knowledge of general psychology, a theoretical study of individual psychology, and a practical course in applied psychology — i. e., a course which will yield a first-hand experience in testing, interviewing, and assessing personalities of every important type. The business man or the doctor who thinks that he can size up a personality intuitively as a result of common sense in a plain straightforward interview is continually slipping into numerous pitfalls of which the trained psychologist is only too well aware.

Practical Applications of the Psychology of Personality. In actual practice the study of personality has until recently been concerned more with children than with adults, with deficiency than with superiority, with the intellectual aspect than with the temperamental aspect or with personality as a whole. Intelligence tests arose for the purpose of diagnosing the mentally defective, particularly in schools. Assessments of character arose from the need to investigate the juvenile delinquent and the 'difficult' or 'problem' child. Both lines of approach have been followed by attempts to investigate the other end of the scale, namely, to devise intelligence tests for picking out the ablest candidates for secondary schools, for University careers, for appointments in the Civil Service, and to apply methods of personality-assessment for discovering men of leadership, courage, and initiative for military or commercial positions.

During recent years the word "personality" has cropped up most frequently in the study of disturbances of behaviour, especially those due to temperamental or emotional factors. Medical writers on psychology appear to think that the concept is a new one, contributed chiefly by psychiatrists. But a glance at the earlier textbooks of psychology, like those

visible whole. Hence the analytic approach to personality must always be supplemented by a synthetic approach. We endeavour to describe how the personality combines the distinguishable traits into one organic whole; and this demands, not a mere table of marks or measurements or even a diagrammatic representation or 'profile', but a kind of pen-picture or vivid character-sketch. Here the most important point to note will be the degree and the mode in which the entire personality is integrated — how far it forms a stable and harmonious unity and what way that unity is achieved or broken.

Sources of Personality Assessments. In practice our study of any given individual may be based on four main sources. First of all, we may seek *reports* from competent observers. Secondly, we may apply *tests* for the various predominant traits. Thirdly, we may watch the actual behaviour of the individual in *standardized situations*, corresponding so far as possible to those of everyday life. Fourthly, we may endeavour to complete our assessments and combine them into a whole by means of a personal *interview*.

On these various methods that of direct testing is most useful on the intellectual side (e.g., for assessing intelligence) and least useful on the orectic side. For the assessment of emotional and moral characteristics the interview and the standardized situation are at once more illuminating and more trustworthy. But all these methods still require much further refinement; and years of research are needed to show what kinds of improvement will lead to the quickest and most accurate assessments.

Need for Research. Take, for example, the questionnaire. A great many inquiries have recently been attempted, particularly by psychiatrists both in the forces and in civilian hospitals, based on questionnaire methods. These, for the most part, naively assume that, to determine the presence of a particular characteristic, the investigator has merely to put the appropriate question in its direct and simple form, and the examinee will give a scientifically correct reply, regardless of his intelligence, powers of self-observation, private and personal motives, and the like. Thus investigators will give a group of neurotic patients a long list of printed questions inquiring about their traits of personality: "Are you a cheerful person?" "Are you bad-tempered?" and the like. It should need no great knowledge of technical psychology to guess that the answers to such questions can rarely be taken at their face value. Let us imagine the same questions put to Socrates, St. Paul and Oscar Wilde: would not Socrates' replies emphasize his ignorance; St. Paul's his sinfulness; and Wilde's his superb perfection?

Most examinees naturally enough tell the examiner what they would

affective side, as we have already noted, we can distinguish between a factor of general emotionality and other narrower factors making for temperamental types or (narrower still) corresponding with what are commonly termed instincts.

Thus in outline the psychographic scheme in terms of which we may seek to analyse any given individual personality may be set out as follows.

PERSONALITY

AA. ANALYSIS

I. PHYSICAL

- a. General bodily health or vigour
- b. Special physical abilities and disabilities

II. MENTAL

A. Cognitive

1. *Innate*

- a. General Intelligence
- b. Special Aptitudes

2. *Acquired*

- a. General Culture
- b. Special Educational and Vocational Skills and Knowledge.

B. Orectic

1. *Innate*

- a. General Emotionality
- b. Special Temperamental Types
- c. Still more specialized Instincts and Emotions

2. *Acquired*

- a. General moral attitude
- b. Special complexes, sentiments and interests.

BB. SYNTHESIS

Mode and degree of integration into a unique individuality.

Observe in passing what a vast amount can be inferred, with a reasonable degree of probability, from four key-factors only: namely, the degree of each man's general physical vigour, general intelligence, general emotionality, and general moral attitude.

Having analysed and measured the distinguishable factors, we have still to remember that these component factors form a unique and indi-

ments from members of the general population. We shall then be able to measure a man's degree of extra- or intro-version. The averages themselves will be measurements for the several factors : and from these measurements we may hope to predict each examinee's probable behaviour. The special advantage of using a factor, instead of a single trait or test, is that it enables us to predict behaviour for all the characteristics that enter into the factorial pattern. The predictions are, of course, merely forecast probabilities; they do not guarantee certainties. They state tendencies rather than facts; and thus we may conveniently regard a factor as a more or less complex tendency.

The Psychographic Scheme. The result of factor-analysis, then, is to classify personal characteristics in such a way that they may be described in terms of group-factors of wider or lesser generality. The first and broadest distinction is between what we may loosely call the physical traits and the mental traits respectively. Here as elsewhere the distinction between the two broad groups is a relative distinction, not an absolute distinction. Although body and mind are distinguishable aspects of the personality, nevertheless they are combined inseparably to form a unitary whole, and neither is without its influence on the other. The second broad distinction is between innate or inheritable traits and acquired traits such as result from individual experience or learning. Once again the distinction is only relative, and must not be forced. No doubt in the future the distinction will be based, not on statistical comparison of crude observable traits, but on the accumulated results of experimental research into genetic constitution; and here we see that, as so often in the complex sciences and occasionally even in physics, statistical generalizations are temporary expedients taking the place of the more detailed knowledge which will slowly be achieved by experimental work. The third main distinction is between cognitive or intellectual traits, on the one hand, and irectic or temperamental (that is, affective and conative) traits, on the other.

Within the broad groupings formed by these three broad cross-classifications, yet further distinctions can be drawn. In particular we may distinguish between factors of wide generality and those of a more specific or narrower type. Thus on the cognitive side we find a general factor entering into all that we can think or say or do. This we may identify with 'intelligence' : so that 'intelligence', as the psychologist uses the word, may be defined as 'innate general cognitive ability'. But in addition to this general factor there are numerous more or less specialized abilities or aptitudes — verbal capacity, numerical capacity, practical capacity, aesthetic capacity, memory, imagery, and the like. Similarly, on the

holds true of the features of the environment as well as of those of the personality itself; and we are accordingly led to realize that a personality cannot really be studied in isolation from its surroundings: the psychologist is always concerned with the dynamic interaction between the two.

Secondly, it will be seen that, though most of the coefficients are positive, many of them are fairly low, while others group themselves into clusters. There is little or no sign of the 'hierarchical order' on which Spearman used to insist: approximations towards a hierarchy only appear when we confine our tables to certain limited aspects of mental life — e. g., to intellectual qualities and nothing else. This grouping or clustering suggests that certain aspects of the personality are relatively (never wholly) independent of the rest; and the systematic application of factor-analysis to the whole or part of such tables would enable us to determine the nature of these relatively independent aspects and to express them as 'factors'.

The outcome of such investigations is that the statistical psychologist is gradually succeeding in analysing the total human personality into a number of so-called mental factors, some with a wide, and others with a narrower range. It should be noted that the technical term 'factor' does not denote a simple or elementary causal entity like the old-fashioned faculties or propensities; it rather designates a patterned tendency, which is measured in terms of an average. Just as we use a boy's average or total marks in Greek and Latin, Arithmetic and Algebra, to measure his general intellectual ability, so we can use his average or total marks for such emotions as fear, anger, affection, grief, and joy to measure his general emotional disposition — i. e., whether he is highly emotional and excitable, or quiet and comparatively phlegmatic. And just as we take sub-totals for narrower groups of subjects — the literary on the one hand, the scientific on the other — so we can average assessments for special types of emotion — the extraverted as contrasted with the introverted, the optimistic or pleasurable as contrasted with the pessimistic or depressed. The averages will be weighted averages, not simple averages or simple totals such as the Headmaster doubtless took; and the factor-analysis will incidentally tell us what are the best weights to use.

But the main task that we require our preliminary factor-analysis to do at the very outset is simply to supply an acceptable answer to this initial question: "What measurable characteristics are we justified in grouping together, and which may we most profitably average?" If with Jung and Kretschmer we feel inclined to believe in extraverted and introverted types, that belief can best be justified, not by classifying extreme cases in the asylum, but by correlating and factorizing personality-assess-

TABLE I. Correlations between Assessments for Environmental, Physical, and Mental Conditions.

	1.	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Economic Condition of Home.....	—	.33	.48	.17	.08	.05	.16	.03	.15	.18	.26	-.02	.12	-.08	.13
2. Cultural.....		—	.61	.14	.07	.11	.08	.37	-.09	.44	.37	-.04	.26	-.13	.21
3. Educational Efficiency of School ..	.48	.61	—	.12	.18	.14	.12	.39	.07	.25	.48	.01	.13	-.06	.16
4. Physical Health .....	.17	.14	.12	—	.69	.63	.48	.07	.11	.16	.12	.12	.10	-.09	.07
5. Physical Vigour .....	.08	.07	.18	.69	—	.72	.50	-.06	.13	.18	.15	.17	.10	.08	-.01
6. Physical History .....	.05	.11	.14	.63	.72	—	.56	.08	.17	.19	.18	.15	.12	-.11	.08
7. Family History : Physical .....	.16	.08	.12	.48	.50	.56	—	.12	.17	.10	.08	.11	.17	-.14	.02
8. Intellectual .....	.03	.37	.39	.07	-.06	.08	.12	—	.24	.51	.61	.06	.19	-.16	.17
9. Emotional .....	.15	-.09	.07	.11	.13	.17	.17	.24	—	.13	-.06	.51	-.16	.23	-.09
10. General Intelligence .....	.18	.24	.25	.16	.18	.19	.10	.51	.13	—	.87	.13	.31	-.21	.18
11. Acquired Attainments.....	.26	.37	.48	.12	.15	.18	.08	.61	-.06	.87	—	.08	.28	-.16	.13
12. General Emotionality.....	-.02	-.04	.01	.12	.17	.15	.11	.06	.51	.13	.08	—	-.18	.27	-.05
13. Acquired Sentiments .....	.12	.26	.13	.10	.08	.12	.17	.19	-.16	.31	.28	-.18	—	-.46	.84
14. Acquired Complexes	-.08	-.13	-.06	-.09	-.03	-.11	-.14	-.16	.23	-.21	-.16	.27	-.46	—	-.16
15. General Morality .....	.13	.21	.16	.07	-.01	.08	.02	.17	-.09	.18	.13	-.05	.84	-.16	—

lity the pupils are subdivided into two antithetical types — the Classical type and the Mathematical type, which are apparently treated as special cases of the Arts type (the person with the literary bent) and the Science type (the person whose bent is towards numerical and experimental subjects rather than literary or verbal). How are we to check or justify this further assumption.

The statistician will seek to verify it by first eliminating the effects of the general factor and then studying the residual correlations. In point of fact, from actual investigations we know that, as a rule, after differences in general intelligence have been eliminated, there is a tendency for ability in mathematical subjects, like Arithmetic and Algebra, to go together; moreover, the first kind of ability commonly exhibits a negative correlation with the second. This confirms the view that there are two specialized and antithetical types or tendencies; and we explain it by supposing that there are what are termed 'group-factors' in addition to the 'general factor' — a verbal or literary group-factor, and a numerical or scientific group-factor, in addition to the general factor of intelligence.

Extension of Factor-Analysis to All Psychological Assessments.

I have explained the statistical procedure by reference to one rather limited branch of human life—the field of grammar school education. It was indeed, in the field of intellectual and educational abilities that the technique of factor analysis was first worked out; and many investigators still seem to suppose that factor analysis is merely a method for discovering mental abilities and that 'factors' are in some sense or other nothing but primary abilities. The practical psychologist, however, wishes to study the whole range of human personality. What he has to do, therefore, is to apply the same factorial technique, not to a few school subjects only, but to assessments for every assessable characteristic.

With this aim in view, in my annual reports on my case-studies for the L. C. C. I regularly included tables of correlations for all the item assessed for each child. Table I shows a table for one of the largest and most representative groups. To save space I have omitted many of the intellectual, emotional and moral assessments, since the more detailed correlations for these lend themselves best to separate study, and the features shown by them are fairly well known. In Table I it will be noted first of all that, with few exceptions, the intercorrelations between nearly all assessments tend to be positive: (even those for "acquired complexes" would be positive if we converted this to "relative absence of acquired complexes"). Thus all good features tend to go together. This

linguistic subjects was higher than his mark for the two mathematical subjects, that boy was transferred to what was called the 'classical' side; and was destined (if he made sufficient progress) to sit for a scholarship at Oxford University and take up an Arts career. If, on the other hand, his mark for the two mathematical subjects was higher than his mark for the classical, he was transferred to the 'mathematical' side: in this case he would be told to aim at securing a scholarship at Cambridge University, and there he would probably take the 'mathematical tripos' or possibly become a student not of Arts but of Science.

That was nearly fifty years ago. A modern educational psychologist would not be satisfied with this procedure until he had carefully checked it by statistical investigation.

As a preliminary he would try to obtain the after-histories of pupils who had gone to one University or the other. He would then correlate the marks obtained by those pupils in the Headmaster's examination at the age of 12 $\frac{1}{2}$ with their achievements later on in their University examinations or subsequent careers. If the correlations were fairly high, he would conclude that these early examinations might justifiably be used to estimate or predict the pupil's suitability for this or that type of professional training. From this and similar results he would further infer that he was dealing with relatively *permanent* abilities or traits. What then is the nature of the permanent trait or traits which the Headmaster's procedure tacitly assumes?

First, it will be noted that the Headmaster has assumed the existence of a single general factor underlying the boys' performances at all four examinations. This implies that the marks obtained in all four papers must be correlated positively. Obviously, if the correlations were approximately zero, then in the long run the differences in the marks for the various subjects would tend to neutralize each other; and every boy would receive very much the same average or total. (This will be obvious if we think of an examination in which there are, not 4 subjects only, but 40 or 400 uncorrelated subjects.) From actual trial we know that marks in all such papers almost invariably show positive correlations, each with each; and we explain this by supposing that there must be one or and the same commfactor entering into all four. We might call this common factor "general intelligence". With only the four particular subjects I have mentioned the general factor would be a little narrower: it would probably represent a slightly more specialized manifestation—say general educable capacity, or 'intellectual ability' in a somewhat restricted sense.

But secondly, it is assumed, within the field of general intellectual abi-

thousands. Clearly it is impossible for the working psychologist, who has to report on this or that individual, to consider in detail every one of the possible tendencies denoted by the terms we could find in the dictionary. Indeed, even in ordinary life we commonly realize that certain of these descriptive terms imply a large number of other tendencies : if, for instance, we are told that Joseph Jacob is 'conscientious', we can infer that he will not lie, steal, or cheat, but on the contrary apply himself assiduously to whatever he has undertaken to do; if we hear that old Akbar is a hardened thief, we shall not be surprised to discover that he is also untruthful, deceitful, lazy, and incompetent; if little Ali is good at foreign languages, we shall not be surprised to learn that he is also good at reading, spelling, and written composition in his native tongue. Economy of time and labour, therefore, demands that we should, if possible, discover what tendencies or traits are most fundamental in the sense that they enable us to deduce with reasonable probability a large number of others. These fundamental tendencies we may call the key-qualities or factors of personality. And it thus becomes the primary task of the student of personality to ascertain by careful research what traits or tendencies are really fundamental in this sense.

Factor Analysis. What we eventually require are assessments which will enable us to estimate or predict the behaviour of Joseph or of Akbar in as many different situations as possible. Now estimation and prediction are statistical tasks. It follows that the method that the psychologist must adopt for this purpose will be a statistical method. He begins, therefore, by determining what traits are correlated closely with one another and what traits are relatively unconnected or independent. When he finds a group or cluster of traits that hang together in this way, and yet seem comparatively unrelated to the rest, he expresses the result by saying that all the items in the group depend upon a "common factor". And to assess an individual's ability in this key-quality or 'common factor', we average his assessments in all the traits or tests in which that factor manifests itself.

The Determination of Factor-Measurements for Intellectual Abilities. The procedure can perhaps be made clear by taking a simple illustration. When I was a boy at school, the Headmaster used to submit all pupils who reached the age of about $12\frac{1}{2}$ to a fourfold examination in Latin, Greek, Arithmetic and Algebra. He added the marks for each of these subjects together; and every candidate whose total mark rose above a specified borderline was then promoted to the Upper School. But he then added together (a) the marks for Latin and Greek and (b) the marks for Arithmetic and Algebra. If any boy's mark for the two

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THE ASSESSMENT OF PERSONALITY

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Definition. 'Personality' is a word with a long and venerable history. It is a term both of ancient philosophy and of modern psychology; and from time to time its meaning has, naturally enough, varied very widely. During the past ten years it has come into frequent use among practical psychologists and psychiatrists with meanings which are not always clearly explained. Today its use may, I think, be expressed by the following definition. By personality we may understand the entire system of relatively permanent tendencies, both physical and mental, that are distinctive of a given individual, and determine his characteristic adjustments to his material and social surroundings. My object in this paper is to suggest that, in the present state of knowledge, one of the most valuable approaches to the psychological study of personality as thus defined lies, not in brilliant or intuitive observations and classifications, nor even in experiments and formal testing, but in patient statistical analysis and proof. I propose to show how, in the investigation alike of normal and abnormal personalities, what is called 'factor analysis' may supply a valuable preliminary aid. And I hope to do this by illustration rather than by argument by summarizing in brief detail what has already been tentatively achieved along these lines.

The Factors of Personality. If we searched through a dictionary and made a list of all the words that could be used to describe the various features of a given personality, we should find that they ran into many

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المشمول برعاية سمو الأميرة شيوه كار

تمت الطبع

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تأليف

الدكتور يوسف مراد

دكتوراه الدولة في الآداب من السربون
مدرس علم النفس بجامعة فؤاد الأول

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