Identity change and the human dissection experience over the first year of medical

training

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Abstract

The aim of this study is to explore identity change in medical students over their first year of medical training, particularly in relation to their experience of human dissection. Each of our four participants completed two repertory grids at the end of term one and, again, towards the end of term three. One grid tapped their identity construction, and the other, their experience of human dissection. Our participants were optimistic about becoming similar to a doctor they admired and, towards the end of term three, began to develop a stable identity as a medical student. Their identity constructs involved three common themes: dedication, competence, and responsibility. However, the data also revealed negative reactions to the demands of training, such as feeling driven and stressed. Three major themes were apparent in their experience of human dissection: involvement, emotional coping, and ability. Our participants' dedication to their studies was reflected in their appreciation of the need to become involved actively in the process of dissection but some experienced an erosion of their self-confidence and perceived some of their colleagues to have lost much of their enthusiasm for learning. Emotional coping could be an additional challenge within this context and their reaction tended to reflect distancing processes previously identified in the literature. In all, we see a development of a vulnerable sense of professionalism alongside a frustration of losing out potentially on wider aspects of personal development due to the high work demands.

Keywords: medical education, professional identity, human dissection, repertory grids, gross anatomy, human anatomy laboratory

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It is known that education and occupation are important influences on identity in young

adults (Sato, Shimonaka, Nakazato, & Kawaai, 1997). The formation of professional

identity has, however, rarely been studied in relation to medical students even though the

ramifications of this process may be huge. For example, doctors who commit suicide may

have an emphasised reliance on professional identity making them vulnerable when this

is threatened due to illness or career setbacks (Lindeman, Heinaenen, Vaeisaenen, &

Loennqvist, 1998). Niemi (1997) states that "(t)he moments crucial for the future

development of professional identity probably occur at the beginning of the professional

training and career" (p.409). Therefore, in the present study, we chose to explore identity

change in medical students over their first year of medical training.

Interest in understanding the development of medical identity has grown since the

1990s, using both qualitative and quantitative methods. As a result of their values,

experiences and training, medical students appear to adopt one of several identities

(Bleakey, 2002; Coulehan & Williams, 2001; Henry, Leong & Robinson, 1992; Inglehart

& Brown, 1990; Matsuda & Uehara, 1995; Niemi, 1997; Palgi & Dorban, 1997). Perhaps

the most universal and recognisable step in making the transition from lay-person to

doctor-in-training is the process of conducting human dissection in the gross anatomy

laboratory (Dyer & Thorndike, 2000). An important aspect of the laboratory is that it

requires students to break taboos surrounding the desecration of human remains and

Harper (1993) and Good (1994) have argued that such an act has the effect of setting the

medical student apart from others. Hence, in exploring identity change in first year

3

medical students, it appears important to examine this in parallel with their experience of conducting human dissection. However, as Dyer and Thorndike (2000) explain, gross anatomy teaching is declining and human cadaver dissection is gradually being replaced with prepared pro-sections or even use of web-based virtual dissection environments (e.g., Visible Human project: http://www.nlm.nih.gov/research/visible/visible_human.html). It is therefore timely to capture the impact of full cadaver dissection on the identity formation of doctors in training in order to allow comparison with later cohorts of medical students and, hence, to gage the effect of this trend in medical education.

The centrality of the dissection experience on medical students' identity is emphasized in a number of studies (Gustavson, 1988; Hafferty, 1991; Horne, Tiller, Eizenberg, Tashevska & Biddle, 1990; Penney, 1985; Shalev & Nathan, 1985; Wear, 1987). However, there was disagreement on whether the experience was essentially traumatic or simply significant for identity formation. More recently, the human dissection experience is seen as a way to educate students about death and dying within a humanistic framework (Marks, Bertman & Penney, 1997; Rizzolo, 2002), particularly as studies confirmed the rapid development of coping mechanisms that could predispose students to distance themselves from patients (e.g., Charlton, Dovey, Jones & Blunt, 1994).

Studies on the experience of human dissection have tended to utilise participant observation, interviews, and/or surveys. Participant observation can produce detailed material but requires time that few researchers can afford. Interviewing has been critiqued for potentially creating accounts of traumatic experiences through the dynamics

of the interview process (McGarvey et al., 2001). However, it could be argued that both interview and survey studies could *under*-report student distress due to a culture of denial and use of defensive coping mechanism as identified in the literature. Therefore, our task in understanding the process of identity change in first year medical students, with particular emphasis on the impact of the human dissection experience, demanded a methodology that would allow us to capture unique and generic processes of identity formation while, at the same time, by-passing, as far as possible, defensive accounts of the dissection experience. We concluded that repertory grid analysis might fulfil these pre-requisites.

Repertory grid analysis is based on Kelly's (1955) theory of personal constructs which claims that individuals develop dichotomous concepts (e.g., fearful-confident, friendly-unfriendly) that they use to interpret their world. These constructs are expected to change and increase in number with experience. Repertory grids can be used to uncover broad categories used for understanding other people in one's social world, or for understanding a specific realm of experience. It has been validated through comparisons of different groups of people (Fransella & Bannister, 1967; Ryle & Breen, 1972) but has been particularly useful in the study of identity development and change (Edwards, 1988; Smith, 1990; Strachan & Jones, 1982; Turnbull & Norris, 1982; Ugazio & Castiglioni, 1998). A major benefit of the repertory grid method is that data can be analysed both nomothetically and idiographically. Nomothetic analysis captures commonalities in the construct systems of groups of participants relative to a shared experience whereas idiographic analysis allows more detailed exploration of the meaning systems of individuals or small group of participants. In the present study, we make use

of both nomothetic and idiographic analysis in order to investigate what each tells us about the identity process in medical students.

In summary, the aim of this study is to explore identity change in medical students over their first year of medical training, particularly in relation to their experience of human dissection, and in so doing increase understanding of the transition from lay-person to doctor-in-training.

Method

Recruitment

Ethical approval for this study was obtained from the Ethics Committee of the School of Psychology, University of Leeds, UK, permission to contact students received from the School of Medicine Faculty Committee on Practical Procedures from the department from which participants were recruited, and signed informed consent obtained from all participants prior to the study commencing. The participants were an opportunity sample of first year students in medical training at a large university in the North of England. The four taking part in the study responded to an e-mailed request to students on the first year medicine undergraduate mailing list. They comprised three men and one woman who were aged between 18 and 19 years. All were white and described themselves as British/English Christian.

Medical Program of Participants

The first year curriculum for the MBChB degree (Bachelor of Medicine and Surgery) consisted of the following; first aid, introductory cell and tissue biology, information technology skills, anatomy, biochemistry, physiology, clinical science topics, becoming a doctor, and behavioural sciences. They were not due to receive clinical exposure until the

third of their five-year undergraduate training programme. The first year anatomy course was conducted from weeks 3-11 of term one (autumn, 11 weeks long), weeks 1-9 of term two (winter, 9 weeks long), and weeks 1-8 of term three (spring, 10 weeks long). It consisted of both lectures and practical laboratories involving group dissection of a human cadaver, the study of cadaveric specimens, models, X-rays, and other preparations. Its stated aims were that students should gain sufficient knowledge and understanding of human anatomy to enable them to function competently during the later years of the degree, and to provide a foundation for more advanced anatomical and medical studies throughout a career in medicine. The students would continue an anatomy course during terms one and two of year two, but this did not include cadaver dissection.

Procedure and Measurement

Each participant met with a researcher at the end of term one (time 1, t1) and then again towards the end of term three (time 2, t2). The first time-point was selected as it allowed participants to reflect on their first term's experience of medical training and of human dissection. The second time-point allowed them to reflect on more extensive experience of their courses knowing that the end of the year was in sight, yet while still absorbed in the learning process. At each time-point, the participants had completed end-of-term examinations and had received feedback regarding their first term's performance some weeks before t2.

-----table 1 about here-----

At each meeting the participants completed two repertory grids; one designed to elicit their constructs in relation to their identity as a medical student and another the

7

impact of the human dissection laboratory. For each grid, five relevant roles were presented. These roles were selected by the two authors through their familiarity with the medical school featured in the study and reading of the research literature on the topic. For the identity grid the roles were: 'me before I was a medical student' (constituting a relevant identity baseline); 'me as a medical student' (tapping current student identity); 'me at home' (indicating the extent to which student identity dominated sense of self); 'me when I qualify' (tapping anticipated early professional identity); 'a doctor I admire' (indicating aspirational professional identity). For the dissection grid the roles were: 'me before I was a medical student (constituting a relevant identity baseline); 'me in the dissection lab' (tapping current sense of self in this setting); 'my ideal self in the dissection lab' (indicating aspirational sense of self in this setting); 'other lab group member coping best' (tapping current experience of relevant, competent peer); 'other lab group member coping worst' (tapping current experience of relevant, struggling peer).

To obtain the personal constructs, the roles were presented in groups of three (a triad) with the instruction to think of a way in which two of the roles are alike and thereby different from the third. When participants provided a construct (e.g., confident), they were asked to provide a construct that means the opposite in this context (e.g., fearful). Ten triads, representing all possible combinations of the five roles in threes, were presented for each grid, thus producing ten opposing construct pairs. Participants were asked to rate each of the five roles on each construct pair using a scale of 1-5 where '1' indicated strong similarity with the construct pole on the left and '5' strong similarity with the construct pole on the right. For an example of a completed grid, see table 1.

<u>Method of Analysis</u>

Repertory grids contain two important sets of data: the relationship between the roles and the nature of the constructs used by participants to distinguish amongst them. Analysis aimed to examine the perceived similarity between the roles for the whole group and how this varied over time (i.e., nomothetically), and to describe the individual pattern of beliefs for each participant as reflected in the constructs elicited (i.e., idiographically). To examine the relation between roles at different points in time, two non-parametric correlation analyses (Spearman's rho) were conducted on the scores obtained for the five roles in the identity grids at t1 and again at t2. The resulting two correlation matrices were then explored using McQuitty's (1957) elementary linkage analysis; a simple, objective clustering technique which provides a visual depiction of the strength of the relationships among roles. In this procedure, the roles are linked by arrows such that the role at the tail of an arrow has its largest correlation with the role at the head of the arrow. A double-headed arrow is used where roles correlate mutually most highly with each other. The direction of the correlation (positive or negative) is indicated next to each arrow.

Specific constructs used by each student were analysed with principle components analysis (PCA) which demonstrates how the constructs cluster together to create higher-order factors. Four PCAs with varimax rotation were therefore conducted on the data (t1 identity data, t2 identity data, t1 dissection data, and t2 dissection data). Each factor extracted was then given a bipolar label descriptive of the constructs loading most highly on that factor. To investigate how participants saw themselves in relation to the extracted factors, a mean self-rating was calculated for each participant on each factor

from scores they awarded the role 'me as a medical student' on the constructs loading on that factor. Means scores were then translated into a percentage where 10% (mean score of '1') represented highest identification with the right hand pole of the factor and 100% (mean score of '5') represented highest identification with the left hand pole.

Results

Identity change: Analysis of roles

The results for the identity data are shown in figures 1 and 2.

-----figure 1 about here-----

At t1, roles 'me before I was a medical student' and 'me at home' were reciprocal in that each had its highest positive correlation with the other. This indicates that, in their home time, our participants considered themselves to be very similar to how they had been before starting medical school. Roles 'me as a medical student' and 'a doctor I admire' were reciprocal in each having its highest negative correlation which the other. Hence, our participants perceived their admired doctor to be very different to how they currently experienced themselves to be as medical students. However, the highest positive correlation for 'me when I qualify' was with 'a doctor I admire' which demonstrates their optimism about developing valued professional characteristics by the end of their college training.

-----figure 2 about here-----

The positive correlation between 'me when I qualify' and 'a doctor I admire' was maintained at t2. Moreover, students no longer perceived themselves to be as distinct from this ideal as they had at t1. However, dissimilarity between 'me at home' and 'a doctor I admire' suggests awareness of the personal development required to reach this

high standard. The participants also began to identify more with being medical students toward the end of their third term in that the highest positive correlation to 'me as a medical student' was with 'me at home'. This development suggests that, by t2, our participants were bringing their medical student identity into their home life. Finally, the highest negative correlation for the role 'me before I was a medical student' is with 'me when I qualify'. This suggests that students were becoming aware that medical training would change them in fundamental ways.

In summary, the difference in roles between t1 and t2 suggests a process of enculturation as a medical student. Our participants continued to be optimistic about becoming like a doctor they admired, however, they made a shift from identifying with how they were before starting medical training at t1 to having a more stable identity as a medical student at t2.

Identity change: Analysis of constructs

A close inspection of the meaning of the factors extracted by PCA suggests three common themes in relation to identity change; dedication, competence, and, to a lesser extent, responsibility (see table 2). However, the factors elicited indicate that our participants utilised these themes in complex ways. In particular, construct poles linked to all three themes were often set against a pole reflecting the idea of being relaxed.

----- table 2 about here-----

At t1, factors from two of our participants were related to the theme dedication; 'accepting work constraints-being free', 'planning-letting happen', and 'eager-satisfied'. This suggests frustration with the impositions that dedication requires, something that was also apparent at t2, when dedication had become the most represented theme but was

contrasted with being 'well-rounded' and having 'time-off'. Hence, it seems that

dedication to medicine was viewed as essential, yet potentially damaging, in not allowing

enough time for wider personal development and relaxation.

The second theme, competence, also featured at both t1 and t2. Two participants

contrasted the task of becoming a professional doctor with poles such as the 'anxious

novice' and the 'uncertain novice', and 'the real me', suggesting an awareness of their

own sense of incompetence at this task. Competence was less evident in the construct

system of participant two, although it appears related to the factor 'active professional-

relaxed individual'. However, this participant, too, rated himself only marginally towards

the 'active professional' side of this factor. Participant one had a stronger sense of

competence although, even here, the related construct of 'efficient' was contrasted with

being 'relaxed'. Thus, although our participants highlighted the importance of competence

in their construct systems, they appeared to find the notion somewhat intimidating or

stressful.

The third theme was responsibility. Interestingly, this only appears at t1 and for

only two participants. It is contrasted to poles correlated with constructs in the raw data

such as 'relaxed', 'carefree', and 'switching off' suggesting that responsibility is viewed

onerously. However, there is also an appreciation that responsibility requires some

maturity as poles in the raw data relating to this theme are also contrasted to 'flippant',

'irresponsible', and 'ignoring'. By t2 the theme of responsibility is eclipsed by a more

narrow focus on themes of dedication and competence by all four participants.

Our participants' construct systems can also be interpreted idiographically.

Participant one viewed himself as realistic, competent ('efficient'), and reasonably

responsible at t1. By t2, he was still rating himself as highly competent, with this theme now taking on a sense of professionalism. Dedication appears at t2 in the sense that he retained some interest in his studies, however he appeared particularly keen to balance this with being relaxed and 'at ease'.

Participant two rated himself as fairly dedicated and responsible at t1 and, by t2, was developing some identity as an 'active professional', However, he scored himself lower on dedication than at t1 indicating growing concern with being 'well-rounded' and 'relaxed'.

Participant three viewed himself as highly dedicated at t1, but this was paired with a sense of incompetence expressed through the construct of the 'anxious novice'. His sense of competence increased slightly by t2, although he still considered himself to be a 'hesitant trainee'. However, continuing dedication to his studies is suggested by his identification with the construct 'motivated learner'.

Finally, at the end of term one, participant four was concerned with developing professional competence, although could not yet identify strongly with this. By the end of her first year she demonstrated a shift towards becoming a 'competent professional' but still saw herself, in essence, as an 'uncertain novice'. However, the theme of dedication had become pertinent in that she rated herself as 'hardworking' although still concerned to have adequate 'time-off'.

This idiographic interpretation of the participants' construct systems demonstrates the differing ways in which our participants developed over their first year of medical training. They appeared to have a growing sense of professional identity over this period

but also a developing appreciation of the tension between the effort required to succeed in their studies and the need for adequate relaxation.

Dissection experience: Analysis of roles

The scores obtained for the roles in the dissection grids were subjected to a correlation analysis and McQuitty's elementary linkage analysis as described in relation to the analysis of roles for the identity grids.

-----Figure 3 about here-----

At t1, roles 'other lab group member coping best' and 'my ideal self in the dissection lab' were reciprocal in that each had its highest positive correlation with the other. This indicates that, as a group, our participants aspired to be like fellow students they perceived to be coping particularly well. However, they still demonstrated confidence in their own abilities in that the highest correlation to 'me in the dissection lab' was with 'my ideal self in the dissection lab' which was, in turn, distanced from the 'other lab group member coping worst'. The highest negative correlation with 'me before I was a medical student' was with 'other lab group member coping best'. So, although reasonably content with their sense of self in the laboratory, our participants showed awareness of how much they had had to develop over this first term.

-----Figure 4 about here-----

The reciprocal highest positive correlation between 'other lab group member coping best' and 'my ideal self in the dissection lab' was maintained at t2, although the positive relationship between 'me in the dissection lab' and 'my ideal self in the dissection lab' has been lost. This suggests that our participants had experienced a drop in confidence by the end of term three. However, they still appreciated how far they had come in that 'me

before I was a medical student' had the highest negative correlation to 'me in the

dissection lab'. In order to interpret the reciprocal highest negative correlation between

'other lab group member coping worst' and 'me before I was a medical student' we

inspected the scores awarded these roles on constructs elicited from participants at t2.

This revealed that, although the lab member can seem 'at ease', and may be appreciated

as having a certain amount of knowledge, they were also perceived to have experienced a

drop in confidence in their academic ability since starting medical training.

Hence, in summary, the analysis of roles suggests that our participants

experienced an erosion of their self-confidence as they proceeded through their human

dissection laboratory and perceived some of their colleagues, at least, to have lost much

of their enthusiasm for learning.

Dissection experience: Analysis of constructs

As before, the data from the repertory grids tapping our participants' dissection

experience were analysed using principal components analysis (PCA). Each participant's

self-rating on each factor was then calculated from the scores for the role 'me in the

dissection lab'. A close inspection of the meaning of the factors extracted by PCA

suggests three common themes; involvement, emotional coping, and ability (table 3).

-----Table 3 about here-----

The theme involvement featured in the construct systems of two participants at t1;

'interested – unfocused', 'trying to understand – soaking up facts', and 'the trier – the

apathetic'. However, at t2 it dominated the constructs of all four participants. At t2

involvement was linked by one participant with the theme of ability: 'bright and

competent – uninterested' and 'trying and falling short – not trying'. In contrast, it was

15

linked by two others with the theme emotional coping; 'positive feeling and focus on variety – negative feelings and narrow focus on work', 'practical focus – distracted', suggesting that the capacity to remain focussed on the learning experience offered by the dissection can be perceived as a product of intellectual ability or success at managing its psychological impact.

At the end of the first term, two participants were preoccupied with the theme emotional coping; 'controlling feelings-letting them show' and 'coping emotionally – not coping emotionally'. Both continued to identify emotional coping as an important issue at t2, although refocused some concern to the degree of involvement the laboratory demanded. All three participants whose factors related to emotional coping rated themselves as coping extremely well, yet, in the raw data, their construct poles were also related to such potentially unhelpful strategies as 'blocking out feelings' and 'hiding feelings' (participant one, t1), and 'detached from emotions' (participant 4, t1).

Only participant three identified ability as an issue at t1; 'the highflier – the drone' and 'coping – naïve'. He continued to experience this at t2; 'the perfect student – the struggling student', and was joined by participant one; 'bright and competent – uninterested', 'trying and falling short – not trying'. Both rated themselves low-to-middling on their constructs related to ability, although participant one rated himself high on trying. Hence, it may be that their perceived comparative lack of competence made intellectual ability more salient to these students than to others more confident in their skills.

As with the data on identity change, our participants' construct systems relating to their experience of human dissection can also be interpreted idiographically. Participant

one considered himself to be 'controlling his feelings' well by the end of the first term and was able to re-construe emotional coping in term of being very 'relaxed' towards the end of term three. This appeared to allow him to refocus his effort on becoming involved in the learning process, although with limited success. He rated himself as rather uninterested in the laboratory and, although willing to try, falling short of requirements. His construct poles suggested that his lack of success was linked to a perceived lack of ability as he rated himself as not particularly 'bright and competent'.

Participant two showed an inverse pattern. He became highly involved in the dissection laboratory during the first term, but began to acknowledge the relevance of the emotional side of his experience towards the end of term three when he identified with having positive feelings.

Ability was particularly salient for participant three. Although highly involved in the laboratory during the first term, one of the triers, he perceived himself as a bit of a 'drone'. By the end of term three he still considered himself to be one of the 'struggling students' and, furthermore, his motivation had dropped.

Finally, the female participant was concerned primarily with dealing with the emotional impact of the dissection experience during term one. She rated herself as coping well with this and moved on to focus more on the learning experience during term three, although emotional coping still coloured these attempts. She concentrated on having a 'practical focus' and not becoming 'distracted' during this second term, with moderate success.

Hence, although our four participants had their own particular experience of the human dissection laboratory, three major themes were clearly apparent; involvement,

emotional coping, and ability. These themes merged together in interesting ways for three of our participants as they came to the end of their third term, while perceived lack of ability remained of primary salience for participant three. For two, their involvement with the process became eroded by their sense of relative incompetence. The three that identified emotional coping, considered themselves coping well, if using questionable strategies, and for two, emotional coping was linked, with varying degrees of success, to their ability to become involved in the learning process the dissection laboratory presented.

Discussion

Our participants showed progression towards the development of a professional identity by the end of their first year of training that was linked to two over-riding themes; competence and dedication. However, most of our participants were still very aware of their novice status at the end of their first year and tentative about the level of professional competence they had achieved. A similar finding is reported by Stewart et al. (1997) at an equivalent point in medical training so, arguably, our participants had made a realistic evaluation of their position. However, we may also speculate that, as Gaensbauer and Mizner (1980) found, stiff competition at medical school may have had a negative effect on their sense of competence. This is reflected in our findings vis-à-vis the human anatomy labs in that, worryingly, by the end of term three, our participants perceived some of their colleagues to have lost much of their enthusiasm for learning and it seems that vulnerable students may experience an erosion of their academic self-confidence. This pattern of decreasing intellectual curiosity has been noted over the course of medical education (e.g., Whittemore, Burstein, Loucks, & Schoenfeld, 1985)

alongside steeply increasing levels of depression (Zeldow & Daugherty, 1987) and a link is suggested in Pfeiffer's (1983) observation that the self-worth of many medical students in based on their performance.

Huebner, Royer and Moore (1981) suggest that in order to avoid stress, medical students often have to compromise and accept a realistic, if not perfect, level of academic and clinical mastery. Indeed, although our participants' construct systems indicate a concern with not having adequate relaxation time, most appeared to accept the need to make the necessary sacrifices such as 'accepting work constraints' and being 'hardworking'. These results are consistent with Gaensbauer and Mizner's (1980) finding that most medical students cope with academic frustrations by simply working harder.

The main theme to emerge from our data on the students' experience of human dissection was 'involvement'. Towards the end of the third term, all our participants identified degree of involvement as an important element of their dissection experience and the capacity to remain concentrated on the learning experience offered by the dissection laboratory was perceived to be linked to the student's intellectual ability but also their success at managing its psychological impact (see also Hafferty, 1991). This resonates with findings of McGarvey et al. (2001) who found the most used strategy in the human anatomy laboratory to be 'focusing on the task'. We have already discussed how the process of medical education could have a negative impact on some students' sense of academic competence and it is interesting to see how some of our participants sensed a link between their ability to learn from the human anatomy laboratory and their emotional reaction to the experience (see also Dickinson, Lancaster, Winfield, Reece, & Colthorpe, 1997).

Happily, all three participants whose factors related to emotional coping rated themselves as coping extremely well, although on closer inspection 'coping' involved 'blocking out feelings', 'hiding feelings', and becoming 'detached from emotions'. This reflects previous findings that medical students often utilise defensive strategies to minimise anxieties arising from conducting human dissection (e.g., Abu-Hijelh et al., 1997; Charlton et al., 1994; Sanner, 1997). Smith and Kleinman (1989) noted how defensive strategies, such at overly intellectualising the process of human dissection, could allow students to become more involved in the process of learning in which they "gradually come to see the human body as an interesting object, separate from the person" (p. 65). This sentiment was reproduced by our female participant who, towards the end of her first year, articulated the construct 'a learning tool – a body'. Studies do suggest that the main stress for medical students is the sheer volume of work and of assessments so that there may be little time to be overly concerned with their emotional reaction to the nature of the work undertaken (Becker et al., 1961; McGarvey et al., 2001).

Early commentaries on medical education noted this effect and articulated concern that students could be encultured into a professionalised coldness with an ensuing negative impact on their ability to work sensitively with patients (e.g., Keniston, 1967) and students have been reported to recognise and fear this process (e.g., Gustavson, 1988). The traditional philosophy of contemporary medical education is to enable students to develop a detached concern. This is compatible with the notion of being a professional in many spheres as such people are usually expected to demonstrate an affective neutrality (Smith & Kleiman, 1989). However, not all medical students agree

with the need to develop detachment and Dickinson et al.'s (1997) study reveals the notion to be linked, most likely, to the traditional preponderance of men in the professions as women students were much more likely to disagree with the need for detachment than were the men. In fact, Dyer and Thorndike (2000) observe a growing trend amongst medical students that discussion of feelings is healthy and necessary and, indeed, report "a sense of pressure to experience dissection as an emotional event rather than as simply an intellectual one" (p. 976).

This is also reflected in our participants' understanding of dedication in relation to their identity as medical students. Participant three suggested that 'eagerness' may actually reflect a lack of personal contentment and participant two indicated that dedication can be at the expense of being a 'well-rounded' individual. Hence, it seems that dedication to medicine was viewed, by some of our participants at least, as essential yet potentially damaging in not allowing enough time for wider personal development. So, in all, we see a development of a vulnerable sense of professionalism alongside a frustration that many could lose out on wider aspects of personal development and emotional growth due to the high workload a degree in medicine entails.

A report by the British General Medical Council (1993) makes recommendations for changes in medical education that recognise these problems, including a reduction in the factual load of medical courses and the introduction of new problem-focussed methods of teaching. Such changes, which are currently being implemented in British Universities, should allow students greater scope for personal development both within and outside of their studies. The cohort from which our participants were drawn were the

last year before the introduction of these reforms and their construct systems attest somewhat to the need for changes as identified by the GMC.

This study focuses on a very small sample from a particular cohort of medical training from one medical school. Moreover, as our four participants were volunteers to our study it is possible that they were more open to self-exploration than many of their peers. As such, it would be unwise to draw any major generalisations from this study. However, four motivated participants were a good number for exploring the fruitfulness of idiographic analysis of repertory grids which provided a layer of complexity to the study through demonstrating how individuals can vary in their reaction to experiences while sharing broadly similar construct systems. Since the method has proved suitable for tapping identity change in medical students, the procedure could be used with some confidence with a larger sample.

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	me before I was a medical student	me as a medical student	me at home	me when I qualify	a doctor I admire	
self-respect	5	5	5	2	1	inexperienced
inexperienced	1	1	1	5	5	trained
not knowledgeable	2	2	2	5	5	knowledgeable
intelligent	5	4	4	2	1	untrained
fearful	1	1	2	3	5	confident
fear of the unexpected	1	2	1	5	5	fulfilment
uncertain	1	2	1	3	5	found niche
competitive	1	1	4	2	2	relaxed
eager	1	2	3	2	2	satisfied
unintelligent	5	2	4	5	5	intelligent

Table 1: Example of completed repertory grid tapping identity: Participant three, t1

Particip't	Time 1		Time 2	
	Label (self-rating toward left pole) *(common theme)*	Variance explained	Label (self-rating toward left pole) *(common theme)*	Variance explained
1	Realistic (100%)-idealistic *(no common theme)*	37.5%	Professional (73.3%)-incompetent *(competence)*	43.5%
	responsible (65%)-irresponsible *(responsibility)*	30.5%	Stimulated (65%)-bored *(dedication)*	33.8%
	efficient (100%)-relaxed *(competence-relaxed)*	30.2%	at ease (80%)-uneasy *(relaxation)*	15.5%
2	accepting work constraints (76%)-being free *(dedication-relaxed)*	34.7%	active professional (62.5%)-relaxed individual *(dedication/competence-relaxed)*	51.3%
	planning (66.6%)-letting happen *(responsibility/dedication-relaxed)*	32.7%	too focused (56%)-well rounded *(dedication)*	28.1%
	responsible (80%)-carefree *(responsibility-relaxed)*	29.0%	stressed dedication (60%)-relaxed *(dedication-relaxed)*	16.1%
3	contented expert (32.5%)-anxious novice *(competence)*	68.5%	mature achiever (50%)-hesitant trainee *(competence)*	49.1%
	eager (90%)-satisfied *(dedication)*	19.6%	successful graduate (30%)-motivated learner	39.3%

			(dedication)	
4 (female)	worthy professional (50%)-the real me *(competence)*	89.9%	competent professional (60%)- uncertain novice *(competence)*	71.8%
			hardworking (64%)-time off *(dedication-relaxed)*	24.8%

Table 2: Bipolar identity factors, common themes, and self-ratings elicited from participants at Time 1 and Time 2

	Time 1		Time 2	
Participant	Label (self-rating toward left pole) *(common theme)*	Variance explained	Label (self-rating toward left pole) *(common theme)*	Variance explained
1	controlling feelings (70%)-letting them show *(emotional coping)*	85.7%	bright and competent (56%)-uninterested *(involvement/ability)*	41.8%
			relaxed (92%)-uneasy *(emotional coping)*	39.9%
			trying and falling short (90%)-not trying *(involvement/ability)*	15.7%
2	Interested (88.6%)-unfocused *(involvement)*	55.3%	positive feelings and focus on variety (72%)- negative feelings and narrow focus on work *(emotional coping/invovlement)*	83.4%
	trying to understand (65%)-soaking up facts *(invovlement)*	36.2%		
3	the highflier (48%)-the drone *(ability)*	46.9%	the perfect student (43%)-the struggling student *(ability)*	48.5%
	coping (60%)-naive *(ability)*	27.9%	low motivation (73.3%)-high motivation	22.9%
	the trier (80%)-the apathetic	22%		

	(invovlement)		*(involvement)*	22%
			settling in – not settling in (72%)	
			(involvement)	
4 (female)	coping emotionally (74%)-not coping emotionally *(emotional coping)*	91.3%	practical focus (66%)-distracted *(involvement/emotional coping)*	83.3%

Table 3: Bipolar dissection factors, common themes, and self-ratings elicited from
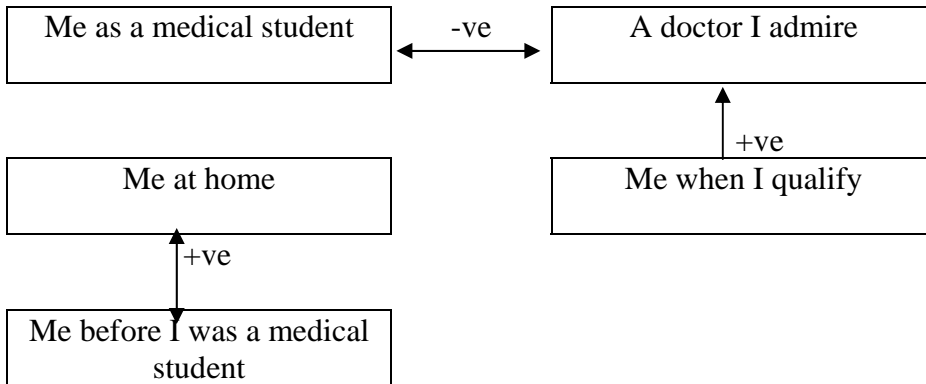
participants at Time 1 and Time 2

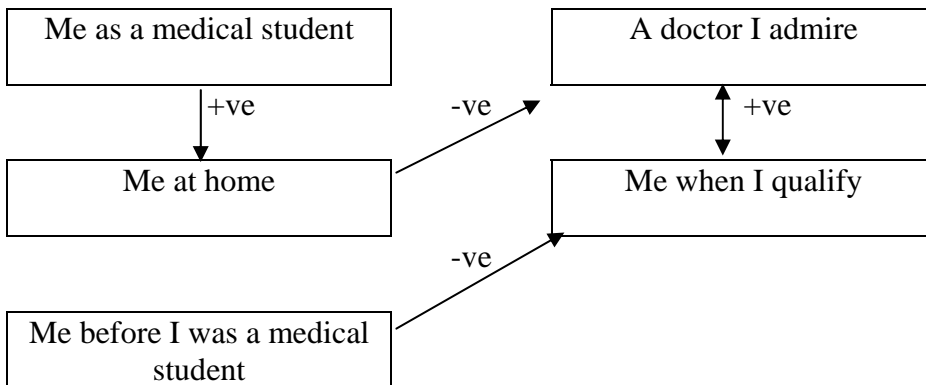Figure 1: Identity: Depiction of relationships between roles at t1

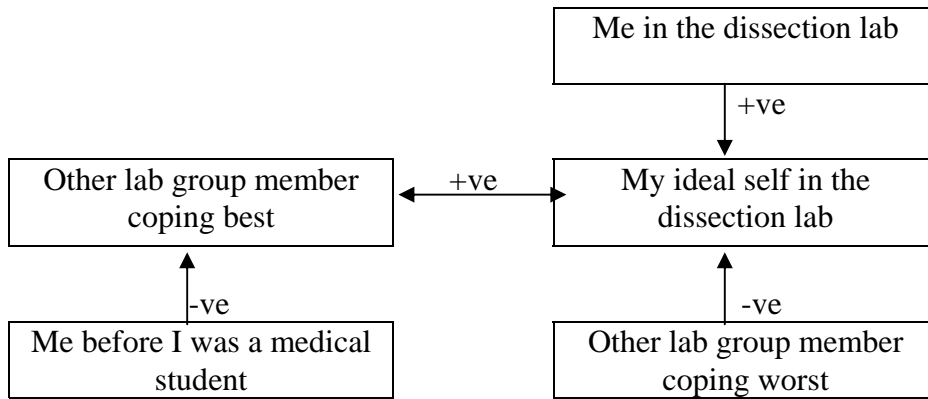Figure 2: Identity: Depiction of relationships between roles at t2

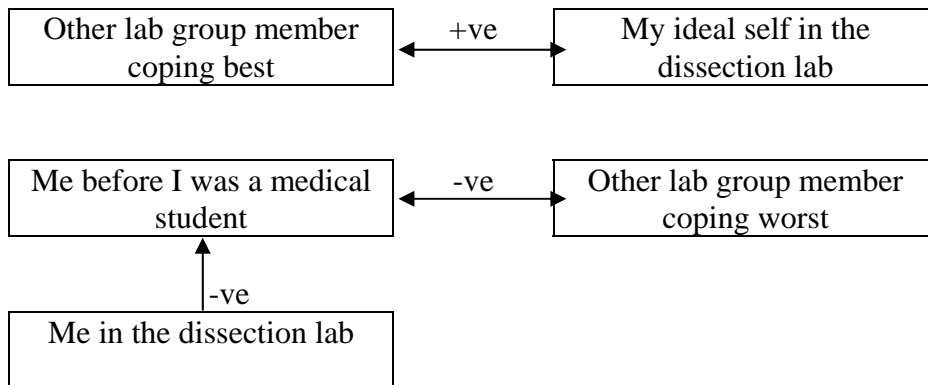Figure 3: Dissection experience: Depiction of relationships between roles at t1

Figure 4: Dissection experience: Depiction of relationships between roles at t2