

SemEval 2015 Task 12

Aspect Based Sentiment Analysis (ABSA)

Laptop Reviews Annotation Guidelines

1. Introduction

The goal of this annotation task is to identify opinions expressed within laptop reviews about specific entities and their attributes. An entity (that is evaluated) can be the whole laptop (e.g. MacBook, Satellite), the tangible (e.g. keyboard, battery, screen) and abstract parts (e.g. Win7 OS, browsers, games) of it, or the manufacturing company (e.g. Apple, Dell) and the services it provides (e.g. pre- and after-sales customer support).

In particular, given a laptop review, the task of the annotator is to identify the following types of information:

- **Aspect Category (Entity and Attribute).** Identify the entity E and attribute A pair E#A towards which an opinion is expressed. E and A should be chosen from the inventory of **entity types** (e.g. laptop, keyboard, operating system, company) and **attributes** (e.g. performance, design) that are described in sections 2 and 3, respectively. The identified entities should be assigned one or more attributes based on the context of the sentence they appear in. The E#A pair defines an aspect category.
- **Opinion Polarity.** Each identified E#A pair of a sentence has to be assigned a polarity, from a set $P = \{\text{positive, negative, neutral}\}$. The *neutral* label applies for *mildly positive or mildly negative sentiment* (e.g. *c, d*), thus it does not indicate objectivity. For example, sentence *e* has not been assigned any polarity label, since it conveys only objective information
 - a. *This is definitely a computer worth the money.* → {positive}
 - b. *The battery has never worked well.* → {negative}
 - c. *Overall, it's ok.* → {neutral}
 - d. *It does run a little warm but that is a negligible concern.* → {neutral}
 - e. *I bought this laptop yesterday.* → {}

The {E#A, P} annotations should be assigned at the sentence level taking into account the context of the whole review. For example, sentence *a₂* should be assigned a negative opinion about the customer support and not about the operation of the laptop, as it is implied by *a₁*. Similarly, in *b₁*, even though the reviewer starts by saying how happy he/she was with the laptop, he/she is expressing a negative opinion towards the laptop as it can be inferred from *b₂*.

- A) *a₁. Horrible customer support-they lost my laptop for a month-got it back 3 months later.*
a₂. Laptop still did not work, blue screen within a week...
- B) *b₁. I was so happy with my new Mac.*
b₂. For two months...

Below we give the definitions of the entity and attribute labels that were used in this task.

2. Entity labels

In the context of this annotation task the entity E of an E#A pair can be assigned 22 possible labels which are described below.

- **LAPTOP:** This label is assigned when the reviewed entity is a specific laptop as a whole. For example, in the following sentences a laptop is being evaluated with regard to particular attributes such as the speed (*a*) and the weight (*b*):
 - a. The computer was really good and it goes really fast just the way I thought it would of run.* → {LAPTOP}
 - b. My HP is very heavy.* → {LAPTOP}
- 14 labels that refer to single hardware components, parts or a set of components:
 - DISPLAY** (=monitor, screen), b) **CPU** (=processor), c) **MOTHERBOARD**, d) **HARD DISC**, e) **MEMORY**, **BATTERY**, f) **POWER SUPPLY** (*charger, charger unit, power supply cord, (power) adapter*), g) **KEYBOARD** (*keys, numpad*), h) **MOUSE** (*mouse pad and the buttons on it*), i) **FANS&COOLING** (*fan, cooling system, heat sink*), j) **OPTICAL DRIVES** (*CD, DVD or Blue-ray players, DVD drive, disc drive, DVD burner*), k) **PORTS** (*USB, HDMI, VGA, card reader, Firewire, SD, DVI, Thunderbolt*), l) **GRAPHICS** (*graphics card, video card, graphics chip*), m) **MULTIMEDIA DEVICES** (*sound, audio, microphone, (built-in) camera, webcam, speakers, headphone*). Below are some examples:
 - c. Also the screen is exceptional and the images are very clear!* → {DISPLAY}
 - d. The processor went on me and the motherboard went.* → {CPU, MOTHERBOARD}
 - e. This is a nicely sized laptop with lots of processing power.* → {LAPTOP, CPU}
 - f. It has plenty of memory and lots of hard drive.* → {MEMORY, HARD DISC}
 - g. Nice laptop and plenty of storage with 250 gb.* → {LAPTOP, HARD DISC}
 - h. My power supply cord developed exposed wires within the first year of ownership.* → {POWER SUPPLY}
 - i. It's so nice to look at and the keys are easy to type with.* → {LAPTOP, KEYBOARD} (Previous sentence: “*This laptop is insane!*”)
 - j. It had the full sized touch pad with 2 buttons instead of just one.* → {MOUSE}
 - k. Fan vents to the side, so no cooling pad needed, great feature!* → {FANS&COOLING}
 - l. I actually had the dvd drive replaced twice.* → {OPTICAL DRIVES}
 - m. The plastic piece that covers the usb port wires have all come off.* → {PORTS}
 - n. Only good thing is the graphics quality.* → {GRAPHICS}
 - o. The features are great, the only thing it needs is better speakers.* → {LAPTOP, MULTIMEDIA DEVICES}

Notice that in *e* the reviewer expresses an opinion about the speed of the CPU (*lots of processing power*), but also about the size of the laptop; hence, we have two entities being evaluated (**LAPTOP**, and **CPU**) with regard to specific attributes. In *g* the reviewer expresses an opinion about the laptop as whole not focusing on any

specific attribute (*nice laptop*), but also an opinion about the storage capacity of the hard disc (without explicitly mentioning the term “*hard disc*” or “*hard drive*” as in *f*); hence, two entities are being evaluated (**LAPTOP**, and **HARD DISC**). Notice that in *i* the pronoun “*It*” refers to the laptop as whole (as it is indicated by the previous sentence of the review); hence, the reviewer expresses an opinion focusing on the ease of use of the keys (**KEYBOARD**), but also an opinion focusing on the appearance of the laptop as a whole (**LAPTOP**).

- A general entity label **HARDWARE** is used for sentences that refer to the hardware in general or to hardware related entities that do not fall into one of the existing entity types e.g. *This is likely due to poor grounding and isolation between the components, and I'm hoping that it can be fixed.* → {**HARDWARE**}
- **OS**: This label applies to sentences discussing the operating system and its features (e.g. *start menu, safe mode, boot manager, drag and drop feature*). e.g.
 - a. *The Mac Os X is a clean and smooth operating system.* → {**OS**}
 - b. *The system it comes with does not work properly.* → {**OS**}
 - c. *The start menu is not the easiest thing to navigate due to the stacking.* → {**OS**}
- **SOFTWARE**: This label applies for the rest of the software applications (e.g. Office Suite (Office, iWork, Mac version of Microsoft Office, word processor, Microsoft Word, PowerPoint), browsers, Skype, iPhoto, iLife, photo detection software, Pages, Keynotes, antivirus programs, firewall, games), as well as for sentences/reviews that refer to the software in general e.g.
 - a. *I use iPhoto all the time, which is a great program for anyone who is into photography - amateurs and experts alike.* → {**SOFTWARE**}
 - b. *Also consider the MS Office apps are all trial versions, hope you have your own copies.* → {**SOFTWARE**}
 - c. *Love the stability of the Mac software and operating system.* → {**SOFTWARE, OS**}
 - d. *Its software and speed enable it to do amazing things.* → {**SOFTWARE, LAPTOP**}
 - e. *Of course, I also have several great software packages that came for free including iWork, GarageBand, and iMovie.* → {**SOFTWARE, LAPTOP**}

Furthermore, we have the following 4 entity types that refer to the manufacturing company as a brand and to the services/products it provides:

- **WARRANTY** that is provided by the manufacturer e.g. *The manufacturer's warranty only covers replacement/repair of parts.* → {**WARRANTY**}
- **SHIPPING** for the delivery service when the laptop is bought or during repairs e.g.
 - a. *The computer was two weeks late in delivery because HP forgot to complete the required import paperwork.* → {**SHIPPING**}
 - b. *I've spent as much for shipping as I would to buy a new netbook.* → {**SHIPPING**}
- **SUPPORT** for pre- and after-sales customer support, customer service, repair service, product support, replacement policy and the staff e.g.

- d. *I Contacted HP about this situation and was given excuses, without results.* → {SUPPORT}
 - e. *They really do have the worlds very worst repair service.* → {SUPPORT}
 - f. *They played games with me for the warranty period.* → {SUPPORT}
 - g. *I sent it back AND THEY LOST IT.* → {SUPPORT}
- COMPANY for sentences that refer in general to the manufacturing company. For example in (a-c) the reviewers are expressing opinions not only about the reviewed laptop but also about the manufacturing company by mentioning the brand name. In sentences (d-f), the reviewers' (previously expressed) negative/positive opinions about the under review laptop are generalized for the manufacturing company (and its products).
 - a. *I can guarantee this will be the last Dell I will ever purchase!* → {COMPANY, LAPTOP}
 - b. *I thought we were paying for quality in our decision to buy an Apple product.* → {COMPANY, LAPTOP}
 - c. *I love this product because it is Toshiba* → {COMPANY, LAPTOP}
 - d. *I will only buy apple laptops from now on.* → {COMPANY}
 - e. *In my house, HP is a nasty word.* → {COMPANY}

Opinions expressed towards entities not described above are considered to be **out of the scope** of the SemEval 2015 ABSA task, and the corresponding sentences should be tagged accordingly. Such entities are laptops or products of the same or a competitive brand, theirs components, or other companies (e.g. competitive brands or retailers like Amazon, Best Buy, MacConnection etc.); see more examples below (a-e).

- a. *I previously owned a Toshiba and it only lasted about 2 years.* → {OutOfScope} (Previous sentence: *The apple MacBook is the best investment that I have ever made*)
- b. *I would recommend anyone to buy from pconnection express.* → {OutOfScope}
- c. *Never any doubt I would get a MacBook, just wasn't sure which one.* → {OutOfScope}
- d. *MACS ARE AMAZING!!!* → {OutOfScope}
- e. *I love my Samsung TV and Galaxy S smartphone, but this Netbook was a very poor computer.* → {OutOfScope}

In (c-e) the reviewers are expressing opinions about Macs, Macbooks or other products. Even though these opinions are related somehow to the reviewed entity, they are also considered to be out of scope. Furthermore, comparative opinions are out of the scope of this annotation task. These opinions could be expressed towards either specific entities that are explicitly (f-h) or vaguely mentioned (n-o) or classes of entities (i-m) such as NetBooks, PCs etc.

- f. *Mac software is just so much simpler than Microsoft software.* → {OutOfScope}
- g. *It is much faster than my desktop which is a Core2 Quad running at 2.83 GHz.* → {OutOfScope}

- h. *The display is incredibly bright, much brighter than my PowerBook and very crisp.* → {OutOfScope}
- i. *I wasn't a big fan of the Netbooks but this one was very well designed.* → {OutOfScope}
- j. *This is my first personal Satellite purchase but had very good experience through previous Satellite work issued laptops.* → {OutOfScope}
- k. *This is much faster than the average laptop out there.* → {OutOfScope}
- l. *That is how it is able to function better than any other PC.* → {OutOfScope}
- m. *I've been a PC user and I just finally switched and I am never going back.* → {OutOfScope}
- n. *The Toshiba laptop I am using is easier to use than most I have tried.* → {OutOfScope}
- o. *This is my second laptop, and it is head and shoulders above my first.* → {OutOfScope}

3. Attribute labels

In the context of this annotation task the attribute A of an E#A pair can be assigned 9 possible labels which are described below.

1. **GENERAL.** This attribute label is used for general opinions expressed about an entity as a whole (e.g. laptop, hardware, software, company) not focusing on any specific attribute etc.
 - a. *Keyboard is nice.* → {KEYBOARD#GENERAL, positive}
 - b. *Do not buy it!* → {LAPTOP#GENERAL, negative}
 - c. *Hopefully Amazon will take this back.* → {LAPTOP#GENERAL, negative}
2. **PRICE** for opinions focusing on the price (cheap or expensive) of the laptop and the services provided by the manufacturer (support, shipping and warranty) e.g.
 - a. *Luckily, for all of us contemplating the decision, the Mac Mini is priced just right.* → {LAPTOP#PRICE, positive}
 - b. *I took it to the shop and they said it would cost too much to repair it.* → {SUPPORT#PRICE, negative}
3. **QUALITY** for opinions referring to the following attributes of an entity: construction/build quality, materials quality, enduring/long-lasting quality (=durability, longevity), broken components, noise, overheating problems, general feel, security (virus-resistant), screen quality (picture quality, screen colors, resolution and clearness), quality of service/shipping. Here are some examples:
 - a. *Screen is crystal clear.* → {DISPLAY#QUALITY, negative}
 - b. *Keyboard was also very nice and had a solid feel.* → {KEYBOARD#GENERAL, positive}, {KEYBOARD#QUALITY, positive}
 - c. *This computer gets very hot, before shutting down.* → {LAPTOP#QUALITY, negative}
 - d. *I don't have to worry about viruses.* → {LAPTOP#QUALITY, positive}

- e. *Then HP sends it back to me with the hardware screwed up, not able to connect.* → {SUPPORT#QUALITY, negative}
- f. *The technical service for Dell is so 3rd world it might as well not even bother.* → {SUPPORT#QUALITY, negative}
- g. *The computer is currently in West Virginia due to the method of shipping chosen by Toshiba.* → {SHIPPING#QUALITY, negative}
- h. *I dropped this once from the table when my baby girl grabbed me one day and it is still working with NO issues!* → {LAPTOP#QUALITY, positive}

Note that sentence *e* has been assigned the entity label SUPPORT and not HARDWARE, since the reviewer is expressing an opinion towards the quality of the technical support.

4. **OPERATION & PERFORMANCE** for opinions that focus on the operation, the speed, the power, the stability and the responsiveness of an entity, opinions referring to freezing, crashing issues, as well as for opinions evaluating the battery life. Below are some examples:

- a. *It fires up in the morning in less than 30 seconds and I have never had any issues with it freezing.* → {LAPTOP#OPERATION_PERFORMANCE, positive}
- b. *It crashes, and when it goes flat, it just DIES and I lose all my open documents!* → {LAPTOP#OPERATION_PERFORMANCE, negative}
- c. *The battery life seems to be very good.* → {BATTERY#OPERATION_PERFORMANCE, positive}
- d. *Sometimes you will be moving your finger and the pointer will not even move.* → {MOUSE#OPERATION_PERFORMANCE, negative}
- e. *Love the stability of the Mac software and operating system.* → {SOFTWARE#OPERATION_PERFORMANCE, positive}, {OS#OPERATION_PERFORMANCE, positive}
- f. *The Internet Explorer was very slow from the very beginning.* → {SOFTWARE#OPERATION_PERFORMANCE, positive}
- g. *I got the blue screen of death the first month I got it.* → {LAPTOP#OPERATION_PERFORMANCE, negative}
- h. *Sometimes the screen even goes black on this computer.* → {DISPLAY#OPERATION_PERFORMANCE, negative}
- i. *It works exactly like it did the day I took it out of the box.* → {LAPTOP#QUALITY, positive}, {LAPTOP#OPERATION_PERFORMANCE, positive}
- j. *After replacing the hard drive the battery stopped working (3 months of use) which was frustrating.* → {BATTERY#QUALITY, negative}, {BATTERY#OPERATION_PERFORMANCE, negative}

Note that sentence *g* has been assigned the entity label LAPTOP and not DISPLAY, since blue screen issues are related to the operation of the laptop. On the other hand a black screen (*h*) or other types of screen issues may be related to the graphics, to the operation of the laptop or the screen itself. Such cases are assigned the entity label DISPLAY. In *i* and *j* the opinions do not refer only to the operation of the laptop (*i*) and the battery (*j*), but also to their quality (durability) too (*like it did the day I took it out of the box, 3 months of use*).

5. **USABILITY** for opinions focusing on the easiness or convenience to use/ learn/ (un)install/ handle/ operate/set up/work with/navigate/update/configure/etc., as well

as for opinions evaluating properties like the upgradeability, the compatibility, and ergonomics*. Here are some examples:

- a. *The mouse jumps around all the time and it clicks stuff I don't want it to!* → {MOUSE#OPERATION_PERFORMANCE, negative}, {MOUSE#USABILITY, negative}
- b. *The OS takes some getting used to especially after being a Windows user for so long!* → {OS#USABILITY, neutral}
- c. *The applications are also very easy to find and maneuver.* → {SOFTWARE#USABILITY, positive}
- d. *The only downfall is a lot of the software I have won't work with Mac.* → {SOFTWARE#USABILITY, negative}
- e. *What's really great about this product is you may have a family member who is computer illiterate and you can pretty much just let them loose on this computer without any real supervision.* → {LAPTOP#USABILITY, positive}
- f. *Memory is upgradable.* → {LAPTOP#USABILITY, positive}
- g. *Upgrading from Windows 7 Starter, thru Windows 7 Home Premium, to Windows 7 Professional was a snap;* → {LAPTOP#USABILITY, positive}
- h. *I had a USB connect but, I can't use it because it is not compatible.* → {LAPTOP#USABILITY, positive}
- i. *All you have to do is turn it on and it works!* → {LAPTOP#OPERATION_PERFORMANCE, negative}, {LAPTOP#USABILITY, negative}
- j. *Windows Vista makes this computer almost unusable for online service. !* → {OS#GENERAL, negative}, {LAPTOP#USABILITY, negative}

Notice that in *f* and *g* the opinions are expressed about the laptop and not the memory or the operating system respectively, since the capability of upgrading the memory and operating system is related to the laptops usability.

6. **DESIGN&FEATURES** for opinions focusing on the design, the appearance (shape, color, look), the size, the weight and ergonomics* of an entity, the placement of components, the software design, opinions referring to (extra/missing) features/components, as well as for opinions focusing on the duration and the terms/conditions of the warranty. Below are some examples:

- a. *The unibody design is edgy and durable.* → {LAPTOP#DESIGN&FEATURES, positive}, {LAPTOP#QUALITY, positive}
- b. *It is also extremely pleasing to the eyes without looking too much like an Alienware gaming machine.* → {LAPTOP#DESIGN&FEATURES, positive}
- c. *The backlit keys are wonderful when you are working in the dark.* → {KEYBOARD#DESIGN&FEATURES, positive}
- d. *Fan vents to the side, so no cooling pad needed, great feature!* → {FANS&COOLING#DESIGN&FEATURES, positive}
- e. *The magnetic plug-in power charging power cord is great (I even put it to the test by accident)-excellent innovation!* → {POWER_SUPPLY#DESIGN&FEATURES, positive}
- f. *I dislike the quality and the placement of the speakers* → {MULTIMEDIA DEVICES#DESIGN&FEATURES, negative}, {MULTIMEDIA DEVICES#QUALITY, negative}

- g. *Oh yea, has no numeric pad on the side.* → {KEYBOARD# DESIGN&FEATURES, negative}
- h. *I like this machine because it's very lightweight.* → {LAPTOP# DESIGN&FEATURES, positive}
- i. *I bought it from HSN because it was "bundled" with extra software, but as it turns out, that software just crashes it more often.....* → {LAPTOP# DESIGN&FEATURES, positive}, {SOFTWARE#GENERAL, negative}, LAPTOP# OPERATION_PERFORMANCE, positive}
- j. *It also does not have Bluetooth.* → {LAPTOP# DESIGN&FEATURES, negative}

NOTE that Ergonomics* is an attribute that is related both to DESIGN&FEATURES and USABILITY in that a bad/good design of an entity may affect its usability. In such cases (e.g. a-c), both attribute labels should be assigned:

- a. *I do transcription work on the side, and the flatline keyboard makes typing quick and easy as well.* → {KEYBOARD#DESIGN&FEATURES, positive}, {KEYBOARD#USABILITY, positive}
- b. *With the switch being at the top you need to memorize the key combination rather than just flicking a switch.* → {LAPTOP# DESIGN&FEATURES, negative}, LAPTOP# USABILITY, negative}
- c. *I'm learning the finger options for the mousepad that allow for quicker browsing of web pages.* → {KEYBOARD# DESIGN&FEATURES, positive}, LAPTOP# USABILITY, positive}

7. **PORTABILITY** for opinions focusing on the easiness to transfer the laptop and/or use it in limited space e.g.

- a. *Very convenient when you travel...* → {LAPTOP#PORTABILITY, positive}
- b. *This laptop is very large and barely fits in any carrying cases.* → {LAPTOP#DESIGN&FEATURES, positive}, {LAPTOP#PORTABILITY, positive}
- c. *I get a ton of compliments on its size, and speaking as someone who regularly commutes on a bus, I can attest to the fact that this is the perfect size computer if you're restricted to the width of your body for computing room.* → {LAPTOP#DESIGN&FEATURES, positive}, {LAPTOP#PORTABILITY, positive}
- d. *I dislike the weight and size, cumbersome.* → {LAPTOP#DESIGN&FEATURES, positive}, {LAPTOP#PORTABILITY, positive}

8. **CONNECTIVITY** for opinions referring to the ability or the easiness to connect via ports, VGA, HDMI, USB, Bluetooth to peripherals etc., as well as for opinions focusing on wireless and internet connections e.g.

- a. *It is extremely portable and easily connects to WIFI at the library and elsewhere.* →{LAPTOP#PORTABILITY, positive}, {LAPTOP#CONNECTIVITY, positive}
- b. *In 5 months the connect quality got worse and worse.* →{LAPTOP#CONNECTIVITY, positive}, {LAPTOP#QUALITY, positive}
- c. *The internet capabilities are also very strong and picks up signals very easily*→{LAPTOP#CONNECTIVITY, positive}
- d. *I had my IWORKS, Itunes, Email, MS Office, network and printers set up and completely working perfectly within an hour.* →{LAPTOP#USABILITY, positive}, {LAPTOP#CONNECTIVITY, positive}, {LAPTOP# OPERATION_PERFORMANCE, positive}

- e. *I can barely use any usb devices because they will not stay connected properly.* → {LAPTOP#CONNECTIVITY, negative}
- f. *The internet speed is spectacular.* → {LAPTOP#CONNECTIVITY, positive}, {LAPTOP# OPERATION_PERFORMANCE, positive}

9. **MISCELLANEOUS** for attributes that do not fall into any of the above cases. Such cases may be:

- Opinions focusing on specific types of a laptop's usage (e.g. *personal use* or *recommendations* for specific purposes like gaming, programming, daily/school/business use etc.). For example in *a*, the reviewer expresses a positive opinion about the laptop as whole, but also a positive opinion focusing on its performance as a gaming machine; hence, this sentence has been assigned the labels **GENERAL** and **MISCELLANEOUS**. Similarly, sentence *b* has been assigned the label **MISCELLANEOUS**, since it conveys a negative opinion towards the laptop as a gaming or media machine. In *c* the reviewer expresses a positive opinion about the quality of the laptop (solid machine) recommending it at the same time for college students, whilst the reviewer in *d*, does not recommend the particular laptop for children because of its overheating problems; hence, sentences *c* and *d* have been assigned the labels **QUALITY** and **MISCELLANEOUS**.

- a. *This is not a serious gaming laptop or a serious media machine;* → {LAPTOP#MISCELLANEOUS, negative}
- b. *I highly recommend this computer for students looking for a solid machine to get them through college.* → {LAPTOP#MISCELLANEOUS, positive}, LAPTOP#QUALITY, positive}
- c. *It is not ideal for children because of the temp.* → {LAPTOP#MISCELLANEOUS, negative}, LAPTOP#QUALITY, negative}
- d. *The built-in webcam is great for Skype and similar video-chat services.* → {MULTIMEDIA DEVICES#MISCELLANEOUS, positive}
- e. *Aside from the trial software and the short battery life, lack of a webcam, it's great.* → {SOFTWARE# MISCELLANEOUS, negative, LAPTOP# DESIGN&FEATURES, negative, LAPTOP# GENERAL, positive , BATTERY# OPERATION&PERFORMANCE, negative}
- f. *The video card is great for media, and above average for gaming, but not a gamer's first choice.* → {GRAPHICS#MISCELLANEOUS, positive}, {GRAPHICS#MISCELLANEOUS, negative}

- Opinions referring to other types of advantages/disadvantages related to the target entities (e.g. the free printer in *h* or the absence of a hardcopy manual in *i*), and to miscellaneous problems (e.g. *j*), attributes (e.g. *k*) and opinions in general (e.g. *l*, *m*):

- g. *And the best part is that it even comes with a free printer* → {LAPTOP#MISCELLANEOUS, positive}
- h. *The one thing I wish it had was a detailed hardcopy manual.* → {LAPTOP#MISCELLANEOUS, negative}
- i. *MY ONLY PROBLEM IS I CAN NOT REG. THE PRODUCT KEY.* → {LAPTOP#MISCELLANEOUS, negative}
- j. *I will NEVER buy (Refurbished) again, I don't care how cheap it is.* → {LAPTOP#MISCELLANEOUS, negative}

- k. *Lightweight, long battery life, excellent transition from PC.* → {LAPTOP#MISCELLANEOUS, positive}
- l. *Oh and if that's not bad enough it doesn't come with a recovery cd so you can make one if you know how to or buy one if you buy it the cost is \$25 for two cds.* → {LAPTOP#MISCELLANEOUS, positive}